



**Draft Capital Plan
Building Condition Assessment
Richmond Arena
3122 Whiteside Road, Louisdale
Richmond County, Nova Scotia**

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Table of Contents

1 INTRODUCTION..... 2

2 PURPOSE..... 2

3 METHODOLOGY 2

 3.1 Project Approach..... 2

 3.2 Expected Outcomes..... 3

 3.3 General Methodology..... 3

 3.4 Building Condition Assessment..... 4

 3.5 Supporting Documents..... 6

4 BUILDING CONDITION ASSESSMENT & CAPITAL PLAN..... 7

 4.1 Salient Property Information..... 7

 4.2 Site Work..... 8

 4.3 Structure..... 10

 4.4 Roofing..... 11

 4.5 Architectural Exterior..... 12

 4.6 Architecture, Interior..... 13

 4.7 Mechanical Systems..... 17

 4.7.1 Plumbing..... 17

 4.7.2 Heating, Ventilation and Air Conditioning..... 19

 4.7.3 Vertical Conveyance..... 20

 4.8 Electrical System..... 21

 4.9 Life Safety..... 23

 4.10 Specialty Systems..... 24

 4.10.1 Ice Plant..... 24

 4.10.2 Arena Specialty Systems..... 27

5 CAPITAL PLAN – RICHMOND ARENA 30

 5.1 Opinion of Costs..... 30

 5.2 Capital Plan Recommendations..... 31

 5.3 Facility Condition Index..... 31

 5.4 Anticipated Facility Condition Index Graph..... 32

6 LIMITATIONS 34

APPENDIX A - CAPITAL PLAN A

APPENDIX B - PHOTO LOG..... B

APPENDIX C – STRUCTURAL ANALYSIS SUMMARY C

1 Introduction

Capital Management Engineering Limited (CMEL) was retained by Mr. Chris Boudreau of the Municipality of the County of Richmond (Municipality) to complete a 25 year capital plan of the property known as Richmond Arena (Arena) located at 3122 Whiteside Road in Louisdale, Richmond County, Nova Scotia. To support the development of the capital plan a building condition assessment was completed.

2 Purpose

The Municipality owns, operates and maintains the Richmond Arena. The Municipality has initiated a comprehensive review of the condition of the Arena in support of the Municipality's long term asset management plan. The Building Condition Assessment and the resulting long range Capital Asset Management Plan, are intended to provide support to the Municipality's long term management of the facility.

3 Methodology

3.1 Project Approach

The project was broken down into the following phases:

➤ **Data Collection & Site Assessment**

Background information was collected on the facility. The information included a list of recent capital expenditures, and previous reports.

Following the collection of background data, a site assessment was scheduled and completed. The site assessment was carried out to determine the makeup of the building, including type of construction, identification of major systems including:

- architectural and structural;
- roof construction and covering;
- interior finishes;
- mechanical and electrical; and
- specialty systems.

The systems and their respective components were visually assessed with respect to their rate of wear and observed condition to support the determination of their remaining useful life. During the site assessment, additional information was gathered from the site contact and site personnel, where possible, to further support the determination of the system and component conditions.

In addition to CMEL's assessment, Campbell Comeau, a structural engineering firm was engaged by CMEL to complete an analysis of the existing structure and provide an opinion with respect to the conformance of the design with current code.

➤ **Capital Plan Calculations**

Following site visit, the building was modelled using industry data to provide an anticipated replacement schedule for the constituent major components over the next twenty-five years with the objective of maintaining the current level of operations over the evaluation period. The remaining useful life of the major components was calculated by determining the year of installation, the expected useful life and adjusted where necessary based on the site observations.

In conjunction with the determination of the expected date for renewal of the major components, a corresponding cost estimate was developed. Estimates were based on the client's historical records, preferred client rates, local contractor pricing, and/or industry pricing guides such as RSMMeans estimating guides.

➤ **Reporting and the CPT**

The last phase of the project consisted of developing recommendations from the various calculations and modelling. In addition to the report, the findings were populated into CMEL's Capital Planning Tool (CPT) which provides an effective means of managing the basic capital planning data. The CPT also provides Municipality of the County of Richmond with a tool to capture the recapitalization information on a going forward basis to support future capital investment and asset management strategies for the facility.

3.2 Expected Outcomes

The objective of the Building Condition Assessment portion of the project was to examine the condition of building components, to determine their expected useful lives and to prepare a replacement repair schedule for each based on using "as like as kind" component replacement.

The objective of the Capital Asset Management Plan component of the project was to produce a plan that, based on the current building condition, identifies the capital investment requirement to sustain the facility over the next twenty-five years. The capital plan for the facility will continue to be a baseline for comparative analysis of potential component refurbishments or substitutions over that period.

3.3 General Methodology

The analysis for the facility was prepared following:

- Interviews with the on-site building managers and maintenance staff as made available;
- Review of available building drawings, and equipment specifications;
- On-site assessments that included building walk-throughs, data collection, measurements, operating schedules and observation of building, equipment and component conditions;
- Identification of building component and equipment replacement requirements, estimated costs and schedule;

- Population of the CPT with building condition data to produce a 25 year Capital Plan; and
- Responses to a review of a draft report by the Municipality.

3.4 Building Condition Assessment

The Building Condition Assessment (BCA) carried out by Capital Management Engineering Limited and Campbell Comeau on the property was based on the ASTM Standard Guide for Property Condition Assessments: Baseline Property Condition Assessment Process (ASTM E 2018-15) and consisted of the following:

- Interviews with building managers and maintenance staff and review of existing documentation including drawings, specifications and previous reports when available;
- A site visit to visually review the types and conditions of the building systems and elements;
- The identification of actions, with costs in present value dollars, to remediate health and safety issues, to mitigate code violations¹ and to repair major defects in materials or systems that may significantly affect the value of the building or continued operation of the site during the evaluation period;
- Recommendations, with cost estimates, for further investigations if required and an Opinion of Costs for work that may be required as a result of these investigations; and,
- The preparation of a report, presented herein.

ASTM E 2018-15 defines a 'Physical Deficiency' as a conspicuous defect or significant deferred maintenance of a Site's material systems, components or equipment as observed during the site assessor's site visit. Included within this definition are material systems, components or equipment that are approaching, have reached, or have exceeded their typical Expected Useful Life (EUL) or whose Remaining Useful Life (RUL) should not be relied upon in view of actual or effective age, abuse, excessive wear and tear, exposure to the elements, lack of proper or routine maintenance, etc.. This definition specifically excludes deficiencies that may be remedied with routine maintenance, miscellaneous minor repairs, normal operating maintenance, etc., and excludes *de minimis* conditions that generally do not constitute a material physical deficiency of the Site.²

¹ Code compliance is beyond the scope of this project; however specific codes may be referenced during the discussion as a reference standard.

² ASTM E 2018 Section 2.3.22

The assessment of the Site was based on a visual assessment of the visible and accessible components of the property, buildings and related structures. The site components, building exterior, roof membranes and interior finishes of the on-site buildings and related structures were visually reviewed to check their condition and to identify if any obvious physical deficiencies were present. The review did not include an intrusive investigation of wall assemblies, ceiling cavities or any other enclosed spaces.

No physical tests were conducted and no samples of building materials were collected to confirm or support the findings presented unless otherwise noted in this report. Recommendations and estimates for additional testing or investigations may be presented as part of the report when, in the assessor's opinion, a condition may exist that would substantially alter the findings and cannot be adequately assessed by non-intrusive visual means.

The review of the mechanical and electrical systems at the property included discussions with the site contacts. A visual review of the mechanical and electrical systems was conducted to determine the type of systems present, age and aesthetic condition. No physical tests were conducted on the mechanical and electrical operating systems.

A detailed evaluation of the property development's compliance with national and provincial building codes and/or fire codes is not part of the scope of this assessment with the exception of the structural assessment.

The estimated costs outlined in this report are based on the conditions observed during the site assessment and the documents provided. Estimated costs are based on a combination of past experience, known contractor pricing and estimating guides such as RSMeans. The opinions of cost are intended for global budgeting purposes only. Actual costs for work recommended can only be determined after preparation of tender documents and/or soliciting quotations from qualified contractors. Costs associated with site and scheduling restrictions, and impacts to ongoing operations have not been taken into account in determining costs. The replacement, repair or maintenance recommendations in this report should be confirmed with a more detailed site investigation and project evaluation prior to implementation.

For the purpose of this report the following temporal units have been applied:

- Immediate - year zero to one;
- Short term - years one to five;
- Long term - years six to ten; and
- Extended term - years eleven to twenty-five.

3.5 Supporting Documents

The following documents were provided during the completion of this report:

Supporting Document	Type	Issued By	Date Issued
RFP – MOCR201819	RFP with History	The Municipality of the County of Richmond	10/10/2018
Building Evaluation Report	Report	CJ MacLellan & Associated Inc.	03/03/2006
Facilities Energy Audit Report	Report	Nova Dynamics Limited	DD/03/2010
Facilities Energy Audit Report Appendices	Report	Nova Dynamics Limited	DD/03/2010

4 Building Condition Assessment & Capital Plan

4.1 Salient Property Information

Property Name	Richmond Arena
Street Address	3122 Whiteside Road
City, Province	Louisdale, Nova Scotia
Primary Use	Arena – Single Pad Conference and Multipurpose Spaces
Number of Buildings on Site	One
Foundation	Concrete
Superstructure	Pre-Engineered Steel
Cladding	Prefinished metal siding
Roof Membrane	Galvanized Standing Seam Metal
Reported Year Built	1976; addition in 1999
Reported Building Area	37,275 ft ²
Evaluation Period	25 Years
Site Assessment Conducted By	Gerard Wttewaall

The subject property is located at 3122 Whiteside Road in Louisdale, Richmond County, Nova Scotia. The property is bordered by White Road to the north, wood lands to the east and south, and municipal fields and an access road to the west.

The building was originally developed in 1976 as a single NHL sized ice surface arena. An addition was built onto to the west side of the building in 1999 and included a canteen, ice resurfacer storage, multipurpose rooms and lounge area.

The original and addition to the building are supported by concrete spread footings supporting a concrete frost wall with concrete slab on grade floors. The superstructure of the original building consists of a pre-engineered steel structure with the exterior walls clad with prefinished metal panels with vinyl backed insulation. The superstructure of the addition to the building is also pre-engineered steel framed and clad with prefinished metal panels with vinyl backed insulation.

The main entrances are located on the north elevation and consist of aluminum framed exterior doors with insulated glazing units. Additional entrance doors are located on the east and west elevation and also consist of aluminum doors in aluminum frames with insulated glazing units. There is a single metal framed metal service door located on the north elevation providing access to the ice plant. There is a large sectional overhead door located on the south elevation that provides access for equipment into the rink surface and ventilation when taking out the ice at the end of the season. A second sectional overhead door is provided on the west elevation and provides access to the ice resurfacer storage room.

Mr. Gerard Wttewaall of CMEL conducted the site visit on December 13th, 2018. CMEL was accompanied by Mr. Rene Babin, the building operator, and James Miller of Cambell Comeau Engineering Limited during the site visit. All areas of the site and building were accessible during the site visit with the exception of areas above suspended or the Low-E ceilings, and the roof. Areas of the site were not visible during the assessment due to heavy snow cover. An aerial drone was deployed to view the roof of the building; however the assessment of the roof was limited due to the extent of snow cover.

Selected photographs of the site are presented in **Appendix A**.

4.2 Site Work

Description

Vehicle access to the property is via a gravel driveway from Whiteside Road to the north. Gravel parking is provided to the north, west, and south of the building, allowing parking for approximately 70 vehicles. Concrete pads are provided to the entrances on the north elevation, while a concrete pad and ramp is provided to one west entrance and the icesurfacers overhead door. A concrete pad with stairs is provided to the other set of west elevation entrance doors. This pad also provides support to a set of wood emergency stairs to the second level.

There are wood clad awnings at the north entrances that provided shelter from wind and sheeting snow and rain. These awnings are provided with asphalt shingle roofing.

Site lighting consists of a combination of building mounted HID light fixtures and a pole mounted HID light in the south parking area.

Minimal landscaping is associated with the property, is assumed to consist mainly of grassed areas and trees. The majority of the property was covered in a layer of snow.

A second building is located to the south west of the Arena. This building was reported to have been constructed in the past ten years and houses sports equipment and supplies for neighbouring sports fields.

Observations/Comments

The gravel parking areas were plowed and well kept for the time of year and weather conditions. Typically gravel paving will have an indefinite expected useful life with routine maintenance including the addition of gravel and grading. Based on the observed condition no major repairs or replacements are expected to be required during the evaluation period. No costs have been included in the Cost Table.

The concrete pads at entrances on the north elevation appeared to be in good condition and were generally clear of snow. This concrete is assumed to have been installed during the addition in 1999. Typically concrete flatwork will have an expected useful life of forty years. Based on the observed condition and estimated remaining useful life replacement is not anticipated to be required during the evaluation period. No costs have been included in the Cost Table.

The concrete pad to the west of the building covered in a layer of ice and snow. This pad was reported to be in good condition and was installed 1999 with the addition. Typically concrete flatwork will have an expected useful life of fifty years. Based on the reported condition and estimated remaining useful life replacement is not expected to be required during the evaluation period. No costs have been included in the Cost Table.

The concrete pad to which the exterior wood stairs are founded appeared to be in fair condition with damage to the concrete steps. Typically concrete flatwork and stairs will have an expected useful life of fifty years. Based on the observed condition and estimated remaining useful life complete replacement is not expected to be required during the evaluation period. Repairs to the steps are expected to be completed as part of operations and maintenance budgets. As such, no costs have been included in the Cost Table.

The wood constructed awnings at entrances on the north elevation appeared to be in generally good condition with no noted deterioration to the painted wood surfaces. Typically wood finishes will have an expected useful life of forty years with routine painting. Based on the observed condition and estimated remaining useful life replacement is anticipated to be required during the extended term of the evaluation period. The estimated cost and timing of replacements have been included in the Cost Table.

The wood exit stairs on the west side of the building appeared to be in fair to poor condition with deterioration to wood decking, and major deterioration to the stair stringers. These stairs are assumed to have been erected during the addition in 1999. Typically exterior wood decking and stairs will have an expected useful life of eighteen years. Based on the observed condition and estimated remaining useful life replacement is anticipated to be required during the short term of the evaluation period. The estimated cost and timing of replacement have been included in the Cost Table.

The building mounted lighting appeared to be in fair condition with some yellowing to the fixture lenses. These fixtures are assumed to have been installed during the addition in 1999. Typically exterior lighting will have an expected useful life of twenty-years. Based on the observed condition it is anticipated that replacement will be required during the short term of the evaluation period. The estimated costs have been included in the Cost Table.

The pole mounted light fixture appeared to be in good condition and is estimated to be three years in age. Typically exterior lighting will have an expected useful life of twenty years. Based on the observed condition and estimated remaining useful life replacement is anticipated to be required during the extended term of the evaluation period. The estimated cost and timing has been included in the Cost Table.

Cost Estimate

Item	Action	Year of Install	Expected Useful Life	Anticipated Year of First Expenditure	Quantity	Unit Cost	Cost per Occurrence
Gravel Parking	No major recapitalization anticipated	1976	75	2051	-	-	-
Concrete Pads at North Entrances	No major recapitalization anticipated	1999	50	2049	-	-	-
Concrete Pad for Ice Resurfacer	No major recapitalization anticipated	1999	50	2049	-	-	-
Concrete Pad at West Entrance	Repair stair nosing as part of O&M	1999	50	2049	-	-	-
Wood Exit Stairs	Replace wooden exit stairs	1999	18	2019	1	\$3,000	\$3,000
Entrance Awnings	Replace wood constructed awnings and shelters at end of useful life	1999	40	2039	1	\$10,000	\$10,000
Building Mounted Lighting	Replace building mounted lighting	1999	20	2019	14	\$840	\$11,760
Pole Mounted Light	Replace pole mounted light at end of useful life	2016	20	2036	1	\$1,570	\$1,570

4.3 Structure

Description

The original arena was constructed in 1977 with an addition to the west side of the building completed in 1999. The foundation of the building was reported to consist of concrete spread footings supporting a concrete frost wall. The main floor consists of a concrete slab on grade that supports the ice surface, changing rooms, washrooms, etc.. The superstructure of the building consists of a prefabricated steel structure spanning the width of the arena which supports the exterior envelope. The metal roof is supported by metal purlins that are in turn supported by the steel structure. The superstructure of the 1999 addition consists of a pre-engineered steel structure supporting a metal deck that supports the poured in-place concrete floor of a second level.

Bleachers in the Arena consist of cast in-place concrete. There is no basement associated with either the original building or the addition.

Observations/Comments

No evidence of major structural faults was observed with the structure of either the original building or the addition. No significant cracking or heaving was observed in the finished floors that would suggest that the foundation is cracking or shifting. The roofs appeared to be level and stable; no significant signs of deflection or movement were observed. Based on the analysis and structural review by Campbell Comeau Engineering Limited, “the main rigid frames do not have sufficient capacity to satisfy the current NBCC 2015 requirements for snow loading”. These buildings are typically grandfathered into buildings codes, though insufficient loading capacity can pose a risk to building occupants if such loads and risks are not considered or mitigated.

Based on the structural analysis and use of the building, a renovation or augmentation to the structure of the building is anticipated to be required. Similar projects have varied in

pricing from \$1.2 Million to \$2 Million to complete depending on approach and project variables. These costs have been included in the Cost Table.

The complete structural analysis summary has been included in **Appendix C** of this report.

The ice slab surface has been reported on in section **4.10.1** of this report.

Cost Estimate

Item	Action	Year of Install	Expected Useful Life	Anticipated Year of First Expenditure	Quantity	Unit Cost	Cost per Occurrence
Original Arena - 1977	No major recapitalization anticipated	1977	60	2045	1	\$2,000,000.00	\$2,000,000
Addition - 1999	No major recapitalization anticipated	1999	60	2059	-	-	-

4.4 Roofing

Description

Roofing for the original arena and the addition consist of a sloped standing seam roof. Drainage for the roof is by sheeting action to grade level. Ice and snow restraints are installed on the north slope of the roof.

Observations/Comments

The roof was not accessible during the site visit. CMEL used an aerial drone to capture imagery of roof, though a large portion of the roof was obstructed by snow cover. The roofing of the addition is assumed to have been installed in 1999, while the roofing above the original arena was reported to be original to the building. Both areas of roofing appeared to be in fair condition with no signs of corrosion where visible. Typically galvanized metal standing seam roofing will have an expected useful life of fifty years. Based on the observed condition the original roofing is anticipated to require replacement during the long term of the evaluation period while the roofing of the addition is not expected to require replacement. The estimated costs and timing of replacement of the original roofing have been included in the Cost Table.

It was reported that the ice and snow restraints were installed in 2017. Typically these devices will have an expected useful life of twenty-five years or more. Though beneficial from a falling snow point of view, with the current insufficient loading capacity of the roof structure, these devices should be removed to lessen the chance of snow build up. An estimated cost for this work has been included in the Cost Table.

Cost Estimate

Item	Action	Year of Install	Expected Useful Life	Anticipated Year of First Expenditure	Quantity	Unit Cost	Cost per Occurrence
Metal Standing Seam Roof - 1977	Replace original roofing at end of useful life	1976	50	2026	27,900	\$11.00	\$306,900
Metal Standing Seam Roof - 1999	No major recapitalization anticipated	1999	50	2049	-	-	-
Snow Arrestors - 1977	Replace at time of roofing replacement	2017	25	2019	225	\$26.00	\$5,850

4.5 Architectural Exterior

Description

The exterior walls are clad in prefinished metal siding with vinyl backed insulation on all elevations.

The main entrances are located on the north elevation and consist of aluminum framed exterior doors with insulated glazing units. Additional entrance doors are located on the east and west elevation and also consist of aluminum doors in aluminum frames with insulated glazing units. There is a single metal framed metal service door located on the north elevation providing access to the ice plant. There is a large sectional overhead door located on the south elevation that provides access for equipment into the rink surface and ventilation when taking out the ice at the end of the season. A second sectional overhead door is provided on the west elevation and provides access to the ice resurfacers storage room.

Observations/Comments

The exterior prefinished metal siding appeared to be of three vintages. The majority of the south elevation is clad in siding original to the construction of the building in 1976; the north and west elevation and a portion of the south elevation are cladding in siding from the 1999 addition; and a section of the south elevation and the east elevation appear to have been installed in the past ten years. The original siding appeared to be in fair to poor condition with deterioration at the base of the wall and at fasteners. The 1999 siding appeared to be in generally fair condition with some damaged areas near the ice resurfacers entrance and parking spots, as well as deterioration at the base of walls on the north elevation; and the more recently installed siding of the east elevation appeared to be in good condition. Typically prefinished metal siding will have an expected useful life of forty years. Based on the observed condition and estimated remaining useful life replacement of the original siding is anticipated to be required during the short term, while the 1999 siding is expected to require replacement during the extended term. The newer siding is not expected to require replacement during the evaluation period. The estimated costs and timing of replacement replacements have been included in the Cost Table.

The insulation for the building appeared to be in fair condition with a large amount of missing or damaged sections at the upper levels. Deterioration to the vinyl membrane was noted at the base of the building in the compressor room. Holes in the insulation were also noted at the roof level; these are assumed to be from changes to lighting and propane heater locations. Typically vinyl backed insulation will have an expected useful life in excess of fifty years. Based on the observed condition major replacement is not expected to be required though an allowance for repairs has been included in the Cost Table.

The entrance doors were observed to be in generally good condition and were reported to have been installed in 2011. The doors on the east elevation were noted to require replacement of weather-stripping at the base. Typically, glazed aluminum doors have an expected useful life of thirty-five years with regular maintenance and occasional hardware replacement. Hardware replacement is typically completed as part of operations and maintenance budgets. Based on the observed condition and estimated

remaining useful life, replacement of the doors is not expected to be required during the evaluation period. Repairs to weather-stripping should be completed as part of operations and maintenance. No costs have been included in the Cost Table.

The metal service door at the compressor room appeared to be in poor condition with corrosion noted at the base of the door and frame. This door is assumed to be original to the construction of the building. Typically metal service doors will have an expected useful life of twenty-five years. Based on the observed condition replacement is anticipated to be required during the short term of the evaluation period. The estimated cost and timing of replacement have been included in the Cost Table.

The overhead doors on the south and west elevations appeared to be in good condition and appear to be fewer than ten years in age. Typically overhead doors will have an expected useful life of fifteen to twenty years with routine maintenance. Based on the observed conditions and estimated remaining useful life replacements are anticipated to be required during the extended term of the evaluation period. The estimated costs and timing of replacement have been included in the Cost Table.

Cost Estimate

Item	Action	Year of Install	Expected Useful Life	Anticipated Year of First Expenditure	Quantity	Unit Cost	Cost per Occurrence
Metal Siding - 1977	Replace original building siding	1977	40	2019	3,900	\$12.00	\$46,800
Metal Siding - 1999	Replace addition siding at end of useful life	1999	40	2039	8,600	\$12.00	\$103,200
Metal Siding - New	No major recapitalization anticipated	2011	40	2051	-	-	-
Insulation	Repair existing insulation	1977	60	2019	1	\$5,500.00	\$5,500
Aluminum Entrance Doors	No major recapitalization anticipated	2011	35	2046	-	-	-
Metal Service Door	Replace metal service door at compressor room	1977	25	2019	1	\$1,450.00	\$1,450
South Overhead Door	Replace overhead door at end of useful life	2011	20	2031	1	\$7,500.00	\$7,500
West Overhead Door	Replace overhead door at end of useful life	2011	20	2031	1	\$4,200.00	\$4,200

4.6 Architecture, Interior

The scoreboards, rubber flooring, dasher boards, low emissivity ceiling, safety glass and netting are discussed in Section 4.10.2 Specialty Systems of this report.

The building is separated into three main areas of interior finishes; the original arena; the lower level of the addition; and the upper level of the addition.

The original arena is typically finished with painted concrete floors with carpeted or rubber mats, painted concrete block walls, gypsum wall board, or acrylic wall panels, and ceilings open to structure above and gypsum board or suspended ceiling tiles in changing rooms. Changing rooms are provided with laminate counter top vanities. The majority of the seven changing rooms have been renovated over the years with funding

being provided by sponsors and thus have varied finishes. Washrooms have been provided with metal toilet partitions.

The arena seating areas consist of concrete bleachers with wood board seats and metal railings.

The lower level of the addition is provided with painted concrete at floors in mechanical and storage spaces, a sealed floor coating at the main corridor and washrooms, and large format rubber tiles in the canteen. The wall finishes generally consists of painted concrete block while ceilings consist of painted gypsum board, suspended ceilings, or are left open to the structure above.

The upper level of the addition consists of vinyl composite tile (VCT) flooring, painted gypsum board or block walls, and suspended ceilings.

The stairs to the upper level are provided with rubber treads and risers.

Observations/Comments

The original arena's painted concrete floors appeared to be in generally good condition with some minor staining at entrances. Typically concrete flooring will have an expected useful life in excess of fifty years with cyclical repainting being completed as part of operations and maintenance activities. Based on the observed condition and estimated remaining useful life replacement is not expected to be required during the evaluation period. No costs have been included in the Cost Table.

The painted block walls in the original arena appeared to be in good to fair condition with some chipping of paint at corners. Typically concrete block walls will have an expected useful life in excess of fifty years with cyclical repainting being completed as part of operations and maintenance activities. Based on the observed condition and estimated remaining useful life replacement is not expected to be required during the evaluation period. No costs have been included in the Cost Table.

The acrylic wall panels appeared to be in good to fair condition with typical wear on their surfaces. These panels were reported to have been installed in the past five years to prevent damage to gypsum board finishes in the hallways. Typically these acrylic finishes will have an expected useful life of thirty or more years. Based on the observed condition and estimated remaining useful life major replacement is not expected to be required during the evaluation period; individual panels should be replaced as required as part of operations and maintenance activities. No costs have been included in the Cost Table.

The gypsum board finishes in the changing rooms appeared to be in fair condition with typical wear at higher traffic locations and at the bases of walls and corners. Typically painted drywall finishes will have an expected useful life of sixty years or more with routine painting and repairs completed as part of operations and maintenance. Based on the observed condition major replacements at not expected to be required during the evaluation period. No costs have been included in the Cost Table.

The suspended ceiling tile finishes located in a portion of the changing rooms appeared to be in fair condition with minor damage to tiles noted. It was reported that these ceiling finishes had been installed as renovations were completed over the past five to seven years. Typically suspended ceiling tiles will have an expected useful life of twenty-five years. Based on the observed condition and estimated remaining useful life replacements are anticipated to be required during the extended term of the evaluation period. Due to the small amount of this ceiling finish, replacement is expected to be completed as part of operations and maintenance. As such, no costs have been included in the Cost Table.

The changing room vanities, millwork, and benches appeared to be in good to poor condition with some of the components being original to the construction of the arena in 1977 and others having been renovated as recently as 2017. Based on the observed conditions and varying ages, an allowance for cyclical renovation of one changing room every three years has been included in the Cost Table.

The toilet partitions in the washrooms of the original arena appeared to be in generally good condition with no signs of major damage or corrosion. These partitions are estimated to be ten years in age. Typically toilet partitions will have an expected useful life of twenty years. Based on the observed condition these components are expected to exceed their expected useful life, and will require replacement during the extended term of the evaluation period. The estimated cost and timing of replacement have been included in the Cost Table.

The concrete bleachers appeared to be in generally good condition. Minor expansion cracking was noted in various locations. The wood seats appeared to be in fair condition with some damaged seat areas. The stairs in the bleachers were noted to be very steep and likely non-compliant with current code, though it is assumed that they have been "grand-fathered". These components are original to the construction of the arena. Typically the concrete will have an expected useful life in excess of sixty years, while the wood bench seats will have an expected useful life of thirty years with routine maintenance and painting. Based on the observed condition partial replacements and repairs are anticipated to be required to the wood seats during the short term of the evaluation period. These repairs are expected to be completed as part of operations and maintenance activities. As such, no costs have been included in the Cost Table.

The metal railings at the stands were in good condition and were reported to have been installed in 2012. Typically interior metal railings will have an expected useful life of fifty years. Based on the observed condition and estimated remaining useful life replacement is not expected to be completed during the evaluation period. No costs have been included in the Cost Table.

The painted concrete floors in the lower level of the addition appeared to be in overall good condition with some minor staining in the boiler and ice resurfacers storage rooms. Typically concrete floors will have an expected useful life in excess of fifty years. Based on the observed condition and estimated remaining useful life replacement is not expected to be required during the evaluation period. No costs have been included in the Cost Table.

The coated floors in the hallways and washrooms appeared to be in fair condition with some subsurface cracking noted in the hallway to the west entrance. Typically floor coatings will require replacement at twenty year intervals depending on the volume of traffic and usage. Based on the observed condition and estimated remaining useful life these floor are anticipated exceed their expected useful life and will require replacement during long term of the evaluation period. The estimated cost and timing of replacement have been included in the Cost Table.

The large rubber tiles in the canteen appeared to be in generally good condition with typical marring and cuts in the surfaces from ice skate blades. This flooring is estimated to have been installed in the past ten years. Typically these rubber floor tiles will have an expected useful life of fifteen years depending on usage. Based on the estimated remaining useful life replacement is anticipated to be required during the evaluation period. The estimated cost and timing of replacement have been included in the Cost Table.

The VCT flooring on the upper level of the addition appeared to be in generally good condition with some wear at tiles in proximity to the stairwells. This flooring is assumed to have been installed during the construction of the addition. Typically VCT flooring will have an expected useful life of twenty-five years. Based on the observed condition the VCT is anticipated to exceed its expected useful life and will require replacement during the extended term of the evaluation period. The estimated cost and timing of replacement have been included in the Cost Table.

The painted block walls of the addition appeared to be in good condition. Typically concrete block walls will have an expected useful life in excess of fifty years with cyclical repainting being completed as part of operations and maintenance activities. Based on the observed condition and estimated remaining useful life replacement is not expected to be required during the evaluation period. No costs have been included in the Cost Table.

The gypsum board finishes in the addition appeared to be in generally good condition. There is a portion of wall missing at the base of the main stairwell that is currently allowing heated air to escape to the back of the cladding system that should be repaired. Typically painted drywall finishes will have an expected useful life of sixty years or more with routine painting and repairs completed as part of operations and maintenance. Based on the observed condition major replacements are not expected to be required during the evaluation period and repairs are expected to be completed as part of operations and maintenance activities. No costs have been included in the Cost Table.

The suspended ceiling tile finishes in the addition appeared to be in good to fair condition with minor staining. These ceilings are assumed to be original to the construction of the addition. Typically suspended ceiling tiles will have an expected useful life of twenty-five years. Based on the observed condition and estimated remaining useful life replacements are anticipated to be required during the extended term of the evaluation period. The estimated cost and timing of replacement have been included in the Cost Table.

The rubber treads at stairs to the upper level of the addition appeared to be in fair condition with some cracking to the stair nosing. These finishes are assumed to be original to the construction of the addition. Typically rubber stair finishes will have an expected useful life of fifteen years. Based on the observed condition and estimated remaining useful life replacement is anticipated to be required during the short term of the evaluation period. The estimated cost and timing of replacement have been included in the Cost Table.

Cost Estimate

Item	Action	Year of Install	Expected Useful Life	Anticipated Year of First Expenditure	Quantity	Unit Cost	Cost per Occurrence
Concrete Floors	No major recapitalization anticipated	1977	50	2045	-	-	-
Painted Block Walls	No major recapitalization anticipated	1977	50	2045	-	-	-
Gypsum Board Finishes	No major recapitalization anticipated	1977	60	2045	-	-	-
Changing Room Suspended Ceilings	Replace ceilings as part of O&M	2010	25	2035	-	-	-
Acrylic Wall Finishes	Replace acrylic wall finishes as required as part of O&M	2010	30	2040	-	-	-
Changing Room Fittings	Allowance for cyclical replacement of changing room finishes	1977	3	2019	1	\$9,650.00	\$9,650
Toilet Partitions	Replace toilet partitions in washrooms at end of useful life	2010	20	2030	10	\$860.00	\$8,600
Concrete Bleachers	Repair wood seats on bleachers as part of O&M	1977	60	2045	-	-	-
Bleacher Railings	No major recapitalization anticipated	2012	50	2062	-	-	-
Concrete Floors - Addition	No major recapitalization anticipated	1999	50	2049	-	-	-
Coated Flooring - Addition	Replace coated floor at end of useful life	1999	20	2025	715	\$10.61	\$7,586
Rubber Tile Flooring - Addition	Replace at end of useful life	2008	20	2028	1	\$3,500.00	\$3,500
VCT Flooring - Addition	Replace VCT in addition at end of useful life	1999	25	2030	3,560	\$8.35	\$29,726
Painted Block Walls - Addition	No major recapitalization anticipated	1999	60	2059	-	-	-
Gypsum Board Finishes - Addition	No major recapitalization anticipated	1999	60	2059	-	-	-
Suspended Ceilings - Addition	Replace suspended ceiling at end of useful life	1999	25	2030	3,560	\$5.63	\$20,043
Rubber Stair Finishes - Addition	Replace stair finishes	1999	15	2021	1	\$2,800.00	\$2,800

4.7 Mechanical Systems

4.7.1 Plumbing

Description

Domestic water is supplied and metered to the arena by the municipality. The one and a half inch incoming line and meter are located in the northeast corner of the building

below a trap door in a changing room washroom. Domestic hot water is provided by an indirect hot water tank in the boiler room in the west end of the building, as well as electric water heaters strategically placed in three of the changing rooms on the east side of the building. Domestic hot and cold water is transported by copper plumbing lines with the majority of hot lines having insulation.

Domestic water services the building ice plant, the flood water system, the cafeteria kitchen, washroom fixtures, and changing room showers. Washroom fixtures consist of vitreous china toilets and urinals with a combination of vitreous china and stainless steel sinks in washrooms and changing rooms.

The Arena is connected to the municipal sanitary system with plastic piping.

Observations/Comments

The domestic water and sanitary distribution systems appeared to be in good condition. Typically, domestic and sanitary piping have an expected useful life in excess of forty years with periodic minor repairs throughout its life cycle. It is not anticipated that the systems will require major repairs/replacements during the term of the evaluation period. Minor repairs can be completed under maintenance budgets. No costs have been included in the Cost Table.

The domestic hot water system was reported to have had a major change in 2011 including the addition of electric hot water heaters in changing rooms to remedy the slow delivery of hot water from the boiler and indirect tank. The hot water tanks have been provided with insulated blankets. The hot water tanks appeared to be in good condition with manufacturing dates on the tanks from 2009 and 2010. Typically electric hot water tanks will have an expected useful life of fifteen years. Based on the observed conditions and estimated remaining useful life replacements are anticipated to be required during the long term of the evaluation period. The estimated costs for replacement have been included in the Cost Table.

The indirect water heater connected to the boiler appeared to be in fair condition and is assumed to be original to the construction of the addition in 1999. Typically these tanks will have an expected useful life of twenty years. Based on the observed condition and estimated remaining useful life replacement is anticipated to be required during the short term of the evaluation period. The estimated cost and timing of replacement have been included in the Cost Table.

The washroom fixtures appeared to be in good to fair condition with some older fixtures in the changing rooms. It was reported that the majority of the fixtures have been changed during renovations and updates to the changing rooms over the past ten years. Typically washroom fixtures will have an expected useful life of thirty-five years. Based on the observed condition and estimated remaining useful life some replacements will be required during the evaluation period. It was reported that currently replacements to plumbing fixtures are completed as required by operations and maintenance activities. It is assumed that this practice will continue and as such, no costs have been included in the Cost Table.

4.7.2 Heating, Ventilation and Air Conditioning

Description

The original arena is heated by a combination of ceiling mounted propane fired radiant tube heaters in the seating and rink areas, and ceiling mounted electric heaters. The addition is heated by an oil fired hot water boiler, manufactured by NY Thermal with a Riello burner that feeds plastic in-floor piping. Additional electric heaters have been added to some areas of the addition. The oil for the boiler is stored in an 1136L fibreglass above ground tank located in the interior of the building. Ventilation is provided by a series of heat recovery ventilators (HRV). Ventilation fans are provided in the mechanical spaces. Two dehumidifiers are provided to the ice rink area.

Observations/Comments

The propane fired radiant tube heaters appeared to be in fair condition with the heaters over the ice surface corroding at their low points. It was reported that the over ice heaters are very rarely used and would likely be removed in the event of replacement. The heaters are assumed to have been installed during the addition in 1999. Typically these heaters will have an expected useful life of twenty-five years. Based on the observed condition and estimated remaining useful life replacement is anticipated to be required during the long term of the evaluation period. The estimated cost of replacement of the heaters at the seating stands, and removal of the heaters over the ice surface have been included in the Cost Table.

The electric heaters in the building appeared to be in good to fair condition with some units being reported to have been installed in the past ten years during renovations. Typically these units will have an expected useful life of forty years or more. Based on the observed condition and estimated remaining useful life, it is anticipated that a portion of these heaters will require replacement during the evaluation period. Due to the low cost of these units, replacement is expected to be completed as part of operations and maintenance activities. As such, no costs have been included in the Cost Table.

The NY Thermal manufactured boiler appeared to be in fair condition with some corrosion to the exterior case of the boiler. The boiler was installed during the construction of the addition in 1999. Typically these units will have an expected useful life of twenty-five years. Based on the observed condition and estimated remaining useful life, replacement is anticipated to be required during the short term of the evaluation period. The estimated cost and timing of replacement have been included in the Cost Table.

The plastic piping for the in-floor heating of the addition appeared to be in fair condition with corrosion noted to some connectors at copper and plastic intersections. The plastic piping was noted to consist of Kitec manufactured IPEX piping. This piping is known to have premature failures and is the subject of an ongoing class action suit. It was reported that portions of the in-floor heating system in the canteen have cold spots and have required the installation of additional electric heating devices. It is recommended that a frequent assessment of the heating system be completed as evidence of early deterioration has been noted on some of the connectors. It is likely that this system will require replacement during the evaluation period. Replacement of these systems typically includes abandoning the existing in-floor heating loops and installing a secondary system; either hydronic baseboards or electric. An allowance for the

replacement of this system with baseboard radiators has been included in the Cost Table. It is recommended that the Municipality investigate the potential to make application for reimbursement through the Kitec lawsuit.

The fibreglass oil tank appeared to be in good condition with a manufacturing date of 2013. The tank has been provided with a protective plywood enclosure and a catch pan. Typically fibreglass oil tanks will have an expected useful life of thirty years. Based on the observed condition and estimated remaining useful life replacement is anticipated to be required at the end of the evaluation period. The estimated cost and timing of replacement have been included in the Cost Table.

The HRV units appeared to be in good condition. These units are estimated to have been installed in 2008. Typically HRVs will have an expected useful life of twenty-five years with routine maintenance and replacement of filters. Based on the observed condition and estimated remaining useful life replacements at anticipated to be required during the extended term of the evaluation period. The estimated cost and timing of replacement have been included in the Cost Table.

The exhaust fan in the compressor room has been recently installed was in good condition. The exhaust fan in the boiler room appeared to be original to the construction of the addition and has been permanently disconnected. Typically these fans will have an expected useful life of twenty years. Due to the low cost of these units replacement is anticipated to be completed as part of operations and maintenance activities. As such, no costs have been included in the Cost Table.

The dehumidification units in the arena appeared to be in good condition and were reported to have been installed in 2013 and 2015. The eastern unit is mounted on an elevated platform and was not accessible. It was reported that these units are run during the start and end of the ice making season and have had little issue with operating or controlling humidity. Typically these units will have an expected useful life of twenty to twenty-five years. Based on the observed condition and estimated remaining useful life replacement is anticipated to be required during the extend term of the evaluation period. The estimated costs and timing of replacements have been included in the Cost Table.

4.7.3 Vertical Conveyance

Description

A two stop Concord manufactured hydraulic lift is located in the 1999 addition. The lift is rated for 750lbs/340kg or two persons and a wheelchair.

Observations/Comments

The elevator appeared and was reported to be in good condition and seldom used. The hydraulic unit was dated with a manufacturing date of 2002. Typically these elevators will have an expected useful life of fifty years with interior finishes and controls requiring updates at twenty-five years. Based on the reported usage and observed condition, major replacements are not expected to be required during the evaluation period. No costs have been included in the Cost Table.

Cost Estimate

Item	Action	Year of Install	Expected Useful Life	Anticipated Year of First Expenditure	Quantity	Unit Cost	Cost per Occurrence
Domestic Water	No major recapitalization anticipated	1977	60	2045	-	-	-
Sanitary System	No major recapitalization anticipated	1977	60	2045	-	-	-
Domestic Hot Water Tanks	Replace electric hot water tanks at end of useful life	2011	15	2026	3	\$1,500.00	\$4,500
Indirect Hot Water Tank	Replace indirect water heater in boiler room	1999	20	2019	1	\$2,000.00	\$2,000
Washroom Fixtures	Replace washroom fixtures as required as part of O&M	2010	35	2045	-	-	-
Propane Radiant Tube Heaters	Remove heaters above ice surface and replace heaters at seating stands	1999	25	2024	6	\$3,200.00	\$19,200
Electric Heaters	No major recapitalization anticipated	2010	40	2050	-	-	-
Oil Fired Boiler	NY Thermal 265 MBH; Replace boiler at end of useful life	1999	25	2022	1	\$10,000.00	\$6,300
Oil Storage Tank	1136L; Replace at end of useful life	2013	30	2043	1	\$2,500.00	\$2,500
IPEX Piping	Allowance for replacement of hydronic infloor system	1999	40	2019	1	\$18,000.00	-
HRVs	4x Vanee 6LC; Replace HRV's at end of useful life	2008	25	2033	4	\$7,500.00	\$30,000
Exhaust Fans	Replace and repair exhaust fans as required as part of O&M	1999	20	2019	-	-	-
Dehumidification Unit - East	Dectron DA2-035-8; Replace dehumidifier at end of useful life	2015	25	2040	1	\$30,000.00	\$30,000
Dehumidification Unit - West	Dectron; Replace dehumidifier at end of useful life	2013	25	2038	1	\$30,000.00	\$30,000
Passenger Elevator	No major recapitalization anticipated	2002	50	2052	-	-	-

4.8 Electrical System**Description**

Electricity is fed from NS Power distribution lines underground to a NS Power pad mounted transformer located on the north side of the building at the exterior of the electrical room. The main electrical room is in the original arena. The main switchgear was manufactured by Siemens and is rated at 800A 347/600V three phase. 600V power is split and directed the ice plant, dehumidifiers, three step-down transformers, and a distribution panel. The transformers consist of two 45kVa with 120/208V secondary windings; and a 25kVa with 120/240V secondary winding. These transformers service the distribution panels throughout the building before feeding lighting and receptacles.

Lighting over the ice surface consists of T8 fluorescent suspended six-tube fixtures with protective cages. Arena sitting is provided lighting from T8 fluorescent twin tube suspended fixtures. Arena corridors, mechanical rooms, changing rooms, and washrooms are provided with lighting from surface mounted T8 fluorescent fixtures. The majority of the addition is provided lighting from troffers style T8 fluorescent fixtures located in the suspended ceiling.

Observations/Comments

The electrical system and the majority of its components underwent major replacements in 2013. These replacements included the main switch gear, distribution panels, and the transformers with the exception of the 25kVa transformer. It is assumed that a portion of the wiring was replaced during this time as well. Typically these electrical components will have an expected useful life of forty years or more. Based on the observed condition and estimated remaining useful life the majority of the electrical is not anticipated to require replacement during the evaluation period. The existing 25kVa transformer is anticipated to require replacement during the short term of the evaluation period. The estimated cost and timing of replacement has been included in the Cost Table.

The over ice T8 fluorescent fixtures appeared to be in good condition and reported to be operating properly. These fixtures were reported to have been installed in 2008. Typically interior lighting fixtures will have an expected useful life of twenty-five years. Based on the observed condition and estimated remaining useful life replacement is anticipated to be required during the extended term of the evaluation period. The estimated cost and timing of replacement have been included in the Cost Table.

The common area lighting in the building appeared to be in good to fair condition. The majority of these fixtures are assumed to have been installed in 1999 during the construction of the addition. The expected useful life of light fixtures is typically twenty-five years, with lamps replaced as they fail. Based on the observed condition and estimated remaining useful life a replacement is anticipated during the long term. The estimated cost and timing has been included in the Cost Table.

The lighting in the changing rooms appeared to be in fair condition and have generally been replaced as renovations have been completed. The expected useful life of interior light fixtures is typically twenty-five years, with lamps replaced as they fail. Based on the observed condition and estimated remaining useful lives replacements are anticipated to be completed in tandem with changing room renovations. Allowances have been included in the costs for changing room renovations located in section 4.6. No costs have been included in Electrical Cost Table.

Cost Estimate

Item	Action	Year of Install	Expected Useful Life	Anticipated Year of First Expenditure	Quantity	Unit Cost	Cost per Occurrence
Electrical Switch Gear	No major recapitalization anticipated	2013	40	2053	-	-	-
25 kVa Transformer	Replace original 25kVa transformer	1977	40	2019	1	\$2,500.00	\$2,500
Over Ice Lighting	Replace T8 over ice lighting at end of useful life	2008	25	2033	21,000	\$3.50	\$73,500
Common Area Lighting	Replace common area lighting at end of useful life	1999	25	2024	11,650	\$3.50	\$40,775
Changing Rooms Lighting	Replace lighting in changing rooms during cyclical renovations	1999	25	2024	-	-	-

4.9 Life Safety

Description

The building is equipped with an Edwards FireShield Plus fire alarm panel. The fire alarm panel is connected to heat and smoke detectors and manual pull stations. The building is provided with strategically places fire extinguishers. An exhaust hood in the kitchen area is provided with an Ansul fire suppression system.

Emergency lighting is accomplished with individual battery back-up units. Emergency exit signs are also present in the building.

Observations/Comments

The fire alarm panel was observed to be in good condition, and was installed in 2016. The fire alarm panel was most recently inspected in April of 2017 and is currently overdue. Typically, fire panels are will have an expected useful life of approximately twenty years. Cyclical replacement of the panel is anticipated to be required at the end of its remaining useful life. The estimated cost and timing has been included in the Cost Table.

It was reported by staff that the heat detector unit in the ice resurfacers storage is in line with the exhaust with the ice resurfacers and tends to trip frequently. It is recommended that the heat detecting device be moved to a similarly suitable location as part of operations and maintenance activities. No costs have been included in the Cost Table for this work.

The fire suppression system in the canteen kitchen appeared to be in fair condition. This system is assumed to be original to the construction of the addition in 1999. Other than yearly inspections and occasional replacements of suppressant, no significant capital renewal costs are expected to be required. No cost has been included in the Cost Table.

Emergency lighting and exit signage were observed to be in good condition overall throughout the building. The majority of these units are estimated to be five years in age. Typically, these units have an expected useful life of twenty to twenty five years. However, due to their small size and replacement cost, they can usually be replaced on an as needed basis under operations and maintenance budgets.

The fire extinguishers were observed to have been recently inspected in May 2018 by K&D Pratt. Other than yearly inspections and occasional replacements, no significant capital renewal costs are expected to be required. No cost has been included in the Cost Table.

Cost Estimate

Item	Action	Year of Install	Expected Useful Life	Anticipated Year of First Expenditure	Quantity	Unit Cost	Cost per Occurrence
Fire Alarm Panel	Edwards Fire Shield Plus; Replace at end of useful life	2016	20	2036	1	\$4,000.00	\$4,000
Heat Detector	Relocate heat detector in ice resurfacers storage room	2016	20	2019	-	-	-

Item	Action	Year of Install	Expected Useful Life	Anticipated Year of First Expenditure	Quantity	Unit Cost	Cost per Occurrence
Range Hood Fire Suppression System	No major recapitalization anticipated	1999	20	2044	-	-	-
Emergency and Exit Lighting	Replace as part of O&M	2013	20	2033	-	-	-
Fire Extinguishers	Replace as part of O&M	1999	20	2044	-	-	-

4.10 Specialty Systems

4.10.1 Ice Plant

Description

The ice plant for the arena consists of an R-22 based refrigeration plant that provides chilled brine through a piped header system to the ice sheet concrete slab. The ice plant is located in a dedicated room in the original arena and consists of an Alfa Laval chiller (Model No. M10-BWFGR) with suction accumulator; two – 50hp compressors manufactured by Carlyle (Model No. 5H60-A104) with surge drums, and an evaporative condenser manufactured by Imeco with a 7.5HP motor. A 1.5HP pump is provided to move condensate to the condenser from a sump tank. Brine is circulated by one - 25hp circulation pump through a distribution system including supply / return piping, header and the sheet piping. The ice plant is provided with TechCold International and Litetec controls to manage ice and brine temperatures. The room is equipped with an emergency exhaust fan and control and alarm system from Cimco.

It was reported that the chiller and suction accumulator with associated plumbing and brine pump were installed in 1998 as a skid mounted module by Cimco. The exterior condenser was installed at this time as well.

In 2013 a Therma-Stor heat recovery system was installed and is used for flood and resurfacer water. The arena is provided with a Jet Ice system that consists of a Pro-Ice demineraliser, water softener, and storage tank.

All refrigeration equipment was reported to be serviced by Cimco.

Observations/Comments

The ice surface concrete slab and associated brine piping could not be viewed at the time of the site assessment, but was reported to be in fair condition with a large amount of cracking. It was reported that there is deterioration at header walls. Operators have reported issues with intermittent brine lose in previous seasons, with replacement to a header connection remedying some loses. It was reported that no brine loss has been experience since ice went in September 2018. The concrete could not be visually assessed during the site visit due to ice being on the surface. The piping and headers were reported to be original to the construction of the arena in 1977. The arena operator reported that studies have been completed but no conclusions have been drawn to the cause of the previous brine loss, the current condition of the brine piping or in slab components. No signs of frost heave or uneven settlement were reported from operators, nor should permafrost be an issue due to the arena only having ice in from

mid September to mid March. Typically ice rink slabs and piping will have an expected useful life of fifty years. Based on the reported condition and possible brine loses, replacement is anticipated to be required during the short term of the evaluation period. The estimated costs for removal and reinstatement have been included in the Cost Table.

The chiller appeared to be in fair condition and was reported to have been installed in 1998. Typically plate chillers will have an expected useful life of twenty-five years. Based on the observed condition and estimated remaining useful life replacement is anticipated to be required during the extended term of the evaluation period. The estimated cost and timing of replacement have been included in the Cost Table.

The compressors were reported to be in fair condition with no issues or reported unscheduled down time. The compressors are original to the construction of the arena. It is believed that one of the compressor motors was replaced during the upgrades in 1998. Typically compressors will have an expected useful life of twenty-five to thirty years with routine maintenance. Based on the reported age of the compressors replacements are anticipated to be required during the short term of the evaluation period. The estimated costs and timing of replacement have been included in Cost Table.

The Imeco condenser appeared and was reported to be in fair condition with deteriorating membranes and ongoing repairs to seals and joints. The unit was stamped with a manufacturing date of 1998. Typically, exterior condensers will have an expected useful life of eighteen to twenty years. Based on the age of the unit replacement is anticipated to be required during the short term of the evaluation period. The estimated cost and timing of the replacement has been included in the Cost Table.

The condensate pump appeared to be in poor condition with corrosion to the motor and pump housing. Typically, the pumps and motors will have an expected useful life of twenty-five to thirty years with a rebuild at approximately mid life. Based on the observed condition and estimated remaining useful life, it is expected that the pump will require replacement in the short term of the evaluation period. The estimated cost and timing of the replacement has been included in the Cost Table.

The plastic condensate tank appeared to be in fair condition with minor staining and evidence of previous leaks. This tank is assumed to have been installed with the condenser in 1998. Typically plastic bulk storage tanks will have an expected useful life of forty years. Based on the observed condition and estimated remaining useful life replacement is anticipated to be required during the extended term of the evaluation period. The estimated cost and timing of replacement have been included in the Cost Table.

The brine circulation pump appeared to be in poor condition with heavy corrosion to the motor and pump housing. This pump and motor were installed in 1998. Typically, the pumps and motors will have an expected useful life of twenty-five to thirty years with a rebuild at approximately mid life. Based on the observed condition and estimated remaining useful life, it is expected that the pump will require replacement in the short

term of the evaluation period. The estimated cost and timing of the replacement has been included in the Cost Table.

The suction accumulator appeared to be in fair condition with some minor deterioration the exterior insulation. This unit was installed in 1998. Typically these pressure vessels will have an expected useful life of forty years. Based on the estimated remaining useful life, replacement is anticipated to be required during the extended term of the evaluation period. Due to the typically modular systems used in current ice plants, replacements is understood to likely be completed at the same time as the chiller, and as such has been included in the short term in the Cost Table.

The ice plant is an R-22 based refrigeration plant. Due to the environmental impact of R-22 refrigerant it is being phased out. This phase out includes import of R-22 being stopped after the year 2020, though recycled R-22 will remain available. This also means that servicing of R-22 equipment will be more difficult and cost prohibitive.

Due to the age of the ice plant components as well as the presence of R-22 refrigerant a complete replacement with a packaged ice plant may be a favourable strategy for replacement. In keeping with the “as like and kind” replacements of this building condition assessment, no costs have been included in the Cost Tables for a package unit. Though for completeness of this report an estimated cost of \$750,000 would be appropriate for such work to be completed.

The TechCold controls appeared to be in like new condition with it being reported that these were installed in 2017. Typically these controls will have an expected useful life of thirty years. Based on the observed condition and estimated remaining useful life replacement is not expected to be required during the evaluation period. No costs have been included in the Cost Table.

The Litetec controls appeared to be in fair condition and were reported functioning correctly. It is assumed that these controls were installed during the 1998 upgrade. This control center will have an expected useful life of approximately twenty-five years. It is anticipated that the system will require replacement during the short term of the evaluation period. Estimated replacement costs have been included in the Cost Table.

The ThermaStore heat recovery system tanks in the compressor room appeared to be in good condition. These two tanks were marked with serial numbers indicating manufacturing in 2013. Typically these tanks will have an expected useful life of twenty to twenty-five years. Based on the observed condition and estimated remaining useful life replacement is anticipated to be required during the extended term of the evaluation period. The estimated cost and timing of replacement have been included in the Cost Table.

The Smart branded indirect hot water tank located in the ice resurfacers storage room and connected to the heat recovery system appeared to be in good condition. This tank was reported to have been installed in 2013. Typically these tanks will have an expected useful life of twenty to twenty-five years. Based on the observed condition and estimated remaining useful life replacement is anticipated to be required during the extended term

of the evaluation period. The estimated cost and timing of replacement have been included in the Cost Table.

The Jet Ice demineralizer, plastic storage tank, and water softener appeared to be in good condition and were reported to all have been installed in 2013. Typically these components will have an expected useful life of twenty-five years. Based on the observed condition and estimated remaining useful life replacement is anticipated to be required during the extended term of the evaluation period. The estimated cost and timing of replacement have been included in the Cost Table.

4.10.2 Arena Specialty Systems

Description

The ice surface is provided with dasher boards with glass and netting. The dasher boards are a metal framed modular system. Rubber flooring is located around the perimeter of the ice surface, and hallways that access the changing rooms. The ice resurfacers storage room houses an ice resurfacers and associated ice maintenance equipment.

The Arena is provided with a large LED scoreboard on the west side of the rink and a smaller incandescent scoreboard on the east side. The ceiling over the ice surface has been finished with a low emissivity (Low-E) ceiling mounted just below the roof structural members.

Observations/Comments

The rubber flooring throughout the building was observed to be in fair to good condition throughout the majority of the building. Typically, the flooring will have an expected useful life of fifteen to twenty years but can vary significantly depending on usage. Due to the nature of the installation of rubber tile flooring, it is easily replaced on an as-needed basis. Based on the observed condition, it is expected that ongoing localized replacement will be required during the evaluation period. For the purposes of the capital plan, an allowance for phased replacement has been included in the Cost Table at three year intervals during the evaluation period to address as needed replacements.

The dasher boards and glass appeared to be in good condition with no indications of significant damage to the boards or hardware. It was reported that the boards are worked on as needed each year when the ice surface is not installed and that they were original installed in 2012. Metal framed dashboards have an expected useful life of approximately thirty years. Based on the observed and reported condition of the boards, it is anticipated that there will be a replacement of the boards required during the extended term of the evaluation period. The estimated cost of replacement has been included in the Cost Table.

The dasher boards at the ice resurfacers entrance are provided with a vertical lift gate to allow the ice resurfacers to enter and exit the ice surface without assistance. These components are similar to that of an overhead door. It was reported that an issue with the lift cable resulted in minor maintenance work being completed in 2017. Typically the lifting components will have an expected useful life of fifteen to twenty years while the

structure of this system will have an expected useful life in excess of fifty years. Based on the observed condition and estimated remaining useful life replacement of the lift mechanism is anticipated to be required during the extended term of the evaluation period. The estimated cost and timing of replacement has been included in the Cost Table.

The player benches appeared to be in good condition and were installed at the same time as the dasher boards. Typically these components will have an expected useful life of twenty-five to thirty years. Based on the observed condition an estimated remaining useful life replacement is anticipated to be required during the extended term of the evaluation period. The estimated cost and timing of replacement have been included in the Cost Table.

The protective netting above the glass was reported to be installed in 2012 with a portion on the west side of the rink having been replaced in 2018. This netting appeared to be in good to fair condition with some minor damage to the netting. Typically this netting will have an expected useful life of twenty years. Based on the observed condition and estimated remaining useful life replacements are anticipated to be required during the extended term of the evaluation period. These replacements are typically completed as part of operations and maintenance activities. As such, no costs have been included in the Cost Table.

The incandescent scoreboard appeared to be in fair condition with minor damage to the case. This scoreboard was reported to be in fair operating condition with parts becoming difficult to source. The scoreboard was reported to have been installed during the addition in 1999. Typically scoreboards will have an expected useful life of approximately twenty years. Based on the observed condition and estimated remaining useful life replacement is anticipated to be required during the short term of the evaluation period. The estimated cost and timing of replacement have been included in the Cost Table.

The LED scoreboard appeared to be in good condition and was reported to be operating properly. The score board is estimated to have been installed in 2012. Typically scoreboards will have an expected useful life of twenty years. Based on the observed condition and estimated remaining useful life replacement is anticipated to be required during the extended term of the evaluation period. The estimated cost and timing of replacement have been included in the Cost Table.

The Low-E ceiling appeared to be in good condition and was reported to have been installed in 2012. Typically Low-E ceilings will have an expected useful life of thirty years. Based on the observed condition and estimated remaining useful life replacement is anticipated to be required near the end of the evaluation period. The estimated cost and timing of replacement have been included in the Cost Table.

The ice resurfacing machine manufactured by Zamboni and model number 445 was reported to have been purchased new in 2010. The machine is reported to be operating properly with routine maintenance completed. These units have a typical expected useful life of approximately twenty years. Based on the age of the resurfacing machine and estimated remaining useful life replacement is anticipated to be required during the

extended term of the evaluation period. The estimated costs and timing of the replacements have been included in the Cost Table.

Cost Estimate

Item	Action	Year of Install	Expected Useful Life	Anticipated Year of First Expenditure	Quantity	Unit Cost	Cost per Occurrence
In Slab and Piping	Estimate for removal and replacement of ice slab, piping and headers	1977	40	2019	1	\$840,000.00	\$840,000
Compressors	Replace ice plant compressors	1977	30	2019	2	\$45,000.00	\$90,000
Chiller	Replace ice plant chiller at end of useful life	1998	25	2023	1	\$50,000.00	\$50,000
Brine Circulator Pump	Replace brine pump at end of useful life	1998	25	2021	1	\$25,000.00	\$25,000
Condenser	Replace exterior condenser	1998	20	2019	1	\$35,000.00	\$35,000
Condensate Pump	Replace condensate pump at end of useful life	1998	25	2023	1	\$3,500.00	\$3,500
Condensate Tank	Replace tank at end of useful life	1998	40	2038	1	\$1,500.00	\$1,500
Suction Accumulator	Replace at end of useful life	1998	40	2038	1	\$25,000.00	\$25,000
TechCold Controls	No major recapitalization anticipated	2017	30	2047	-	-	-
LiteTec Control Panel	Replace control board at end of useful life	1998	25	2023	1	\$20,000.00	\$20,000
ThermaStore Heat Recovery System	Replace heat recovery system at end of useful life	2013	25	2038	2	\$3,000.00	\$6,000
Indirect Hot Water Tank	Replace Smart indirect tank at end of useful life	2013	25	2038	1	\$2,500.00	\$2,500
Jet Ice System	Replace at end of useful life	2013	25	2038	1	\$15,000.00	\$15,000
Rubber Flooring	Allowance for cyclical partial replacement of rubber flooring	1999	3	2024	1	\$3,000.00	\$3,000
Dasher Boards and Player Benches	Replace dasher boards and benches at end of useful life	2012	30	2042	1	\$175,000.00	\$175,000
Ice Resurfacer Gate	Replace gate lift equipment at end of useful life	2012	20	2032	1	\$2,500.00	\$2,500
Protective Netting	Replace safety netting as part of O&M	2012	20	2032	-	-	-
Incandescent Scoreboard	Replace scoreboard	1999	20	2019	1	\$10,000.00	\$10,000
LED Scoreboard	Replace scoreboard at end of useful life	2012	20	2032	1	\$15,000.00	\$15,000
Low-E Ceiling	Replace low-E ceiling at end of useful life	2012	30	2042	1	\$30,000.00	\$30,000
Ice Resurfacing Machine	Allowance for replacement of ice resurfacer	2010	20	2030	1	\$125,000.00	\$125,000

5 Capital Plan – Richmond Arena

The foregoing recommendations of the Building Condition Assessment have been integrated into a Capital Asset Management Plan for the Richmond Arena. A key element of the Plan is the Capital Planning Tool.

5.1 Opinion of Costs

Priority Repair Recommendations

Priority repair costs are for deficiencies observed during the Building Condition Assessment that require immediate action to prevent further deterioration to the element or other components of the facility, or to prevent possible injury due to unsafe conditions and/or code violations. There were no priority repairs identified in this assessment.

Major Component Repair and Replacement Project Costs

Probable costs for the major component replacements identified during the site assessment were estimated. Major component replacements can be defined as components:

- That are the responsibility of the property owner;
- For which major repair or replacement costs are anticipated to be incurred during its useful life; and
- For which costs of repair or replacement will not be covered as part of the annual maintenance budgets.

Major component replacements and information for developing their estimated costs, are based on observations made during the site assessment on December 13th, 2018. Quantities and areas are based on field observations, site interviews and/or client supplied drawings and equipment specifications. More precise quantity surveying or site measurements were beyond the scope of this assessment. Replacement and repair costs are approximate and based on industry standards or CMEL experience. More detailed engineering designs may be required for more complex replacements. It is recommended that quotations from qualified contractors be obtained by the Municipality before any specific project is undertaken.

Some identified projects may be undertaken without specific building or other permits. However, investigation of such needs, including detailed studies and engineering, was beyond the scope of this project and remains the responsibility of the Municipality.

Our opinion on the probable costs to remedy observed physical deficiencies, replace items that will exceed their expected useful life over the immediate term (0-1 years), short term (1-5 years), long term (6-10 years) and extended term (11-25 years) are summarized in the Cash Flow Report in ***Appendix A***.

5.2 Capital Plan Recommendations

The site assessment of the Richmond Arena was completed on December 13th, 2018. The site appeared to be in fair overall condition and the building appeared to be well maintained in operable condition. It is recommended that asphalt pavement, interior finishes, mechanical equipment and lighting be closely monitored and replaced as indicated in the probable cost tables.

The estimated costs for the recapitalization projects have been entered into the Capital Management Engineering Limited's Capital Planning Tool (CPT) spreadsheet. The CPT provides the Municipality with a list of major components by system. The CPT also provides a probable cost table identifying the anticipated cost by year and calculates the corresponding Facility Condition Index (FCI).

The CPT takes into consideration the hard costs as well as incorporates soft costs on an annual basis.

The basic CPT input and output sheets are presented in [Appendix A](#).

The populated and editable version of this base Capital Asset Management Plan has been provided, along with additional instruction and advice, to the Municipality in addition to this supporting report.

5.3 Facility Condition Index

The Facility Condition Index (FCI) is a metric often used for benchmarking in the real estate industry. It is used to assess the current and projected condition of a building asset. By definition, the FCI is defined as the ratio of the Accumulated Deferred Maintenance (ADM) costs to the Current Building Replacement Value (CRV). The FCI can be defined in terms of the following equation:

$$\text{Facility Condition Index (FCI)} = \frac{\text{Accumulated Deferred Maintenance (ADM)}}{\text{Current Building Replacement Value (CRV)}}$$

Building condition is often defined in terms of the FCI. Generally accepted industry standards for FCI's are as follows:

FCI	Remark
0-5%	excellent to good condition
5-10%	good to fair condition
>10%	fair to poor condition

Overall the lower the FCI the better the condition of the building and the lower the risk that an unexpected recapitalization issue will arise which could result in a specific building shutdown or restricted operation. As an FCI increases, the building is in increasingly poor condition as the backlog of poorly operating or inoperable components in need of replacement rises. An increasing FCI, or backlog of deferred

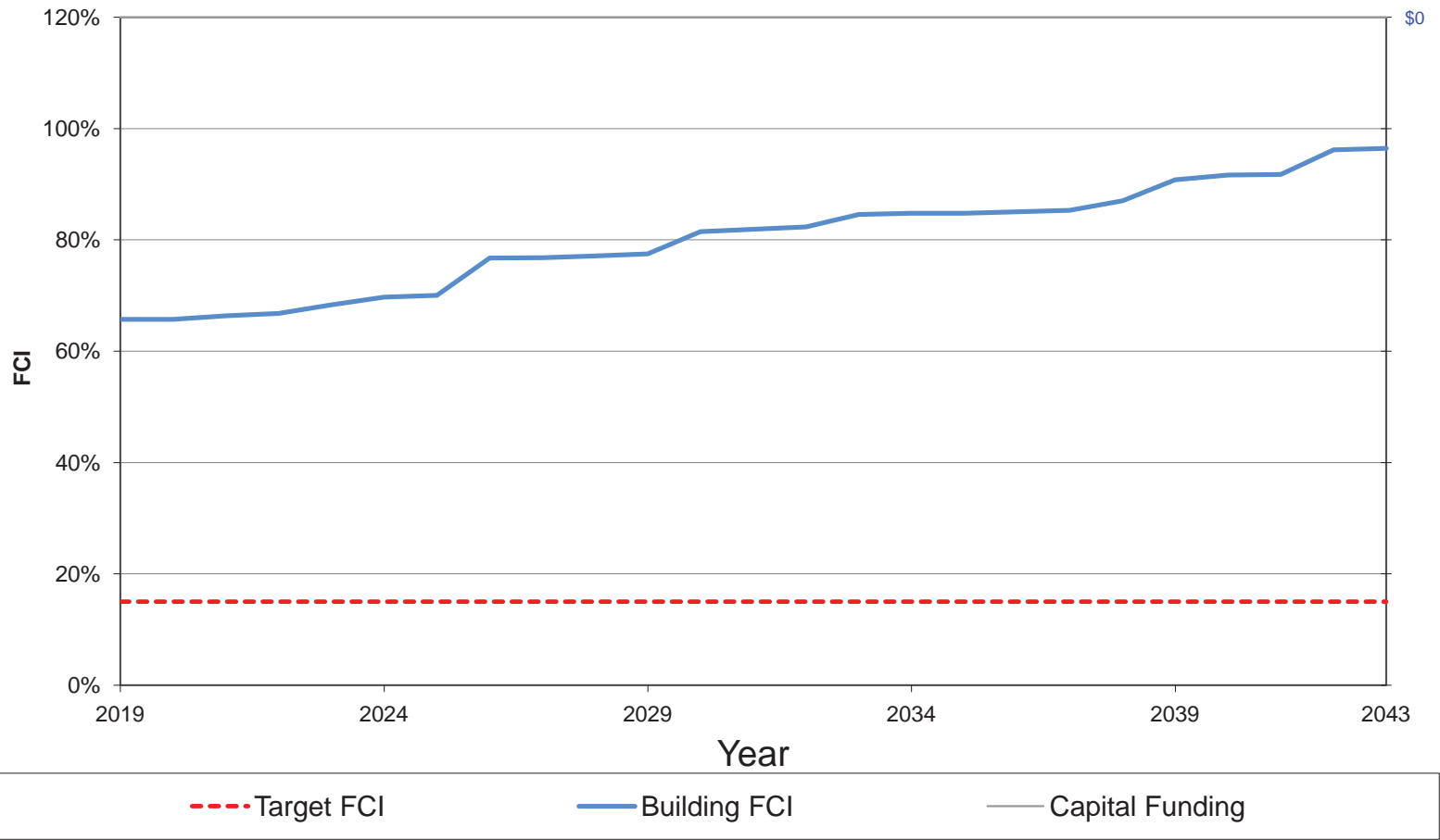
maintenance, impacts not only the capital requirement but leads to increased operation costs especially through emergency maintenance costs.

5.4 Anticipated Facility Condition Index Graph

The CPT has the ability to project an FCI for a given facility taking into account the anticipated probable costs by year over the evaluation period and offsetting the requirement by a proposed funding allowance. Multiple funding streams can be modelled. Typically a target FCI would be determined and the funding requirement calculated to meet the preferred FCI value.

Projected Facility Condition Index of Richmond County Arena

January-18-19



6 Limitations

This report may not be relied upon by any other person or entity without the expressed written consent of Capital Management Engineering Limited and the Municipality of the County of Richmond. Any other parties that rely or make decisions based on this report do so solely at their own risk.

Capital Management Engineering makes no warranties, whether written or oral, statutory, expressed or implied, in connection with the services provided, including, without limitation, any warranty of fitness for any particular purpose or use with respect to the property or building components and systems.

Capital Management Engineering's cumulative liability for all claims relating to this report or the services provided shall not exceed the total amount of all fees actually paid for this report.

The opinions of cost are intended for global budgeting purposes only. Actual costs for recommended work can only be determined after preparation of tender documents, detailing the site restrictions, effects and or restrictions on ongoing operations of the building and requirements associated with the construction schedule.

The recommendations made in this report are based on the visual observations made by the assessor during the site assessment and are limited to the areas of the site and building that were observed and accessible during the assessment. Concealed, inaccessible and un-observed areas may be in a different condition than what is reported herein. During the site assessment the assessor will attempt to verify any additional information provided by the site contact. However, in many cases the information will be relied upon and presented without field verification.

1801099 Richmond County Arena

Appendix A - Capital Plan

General Building Information Worksheet

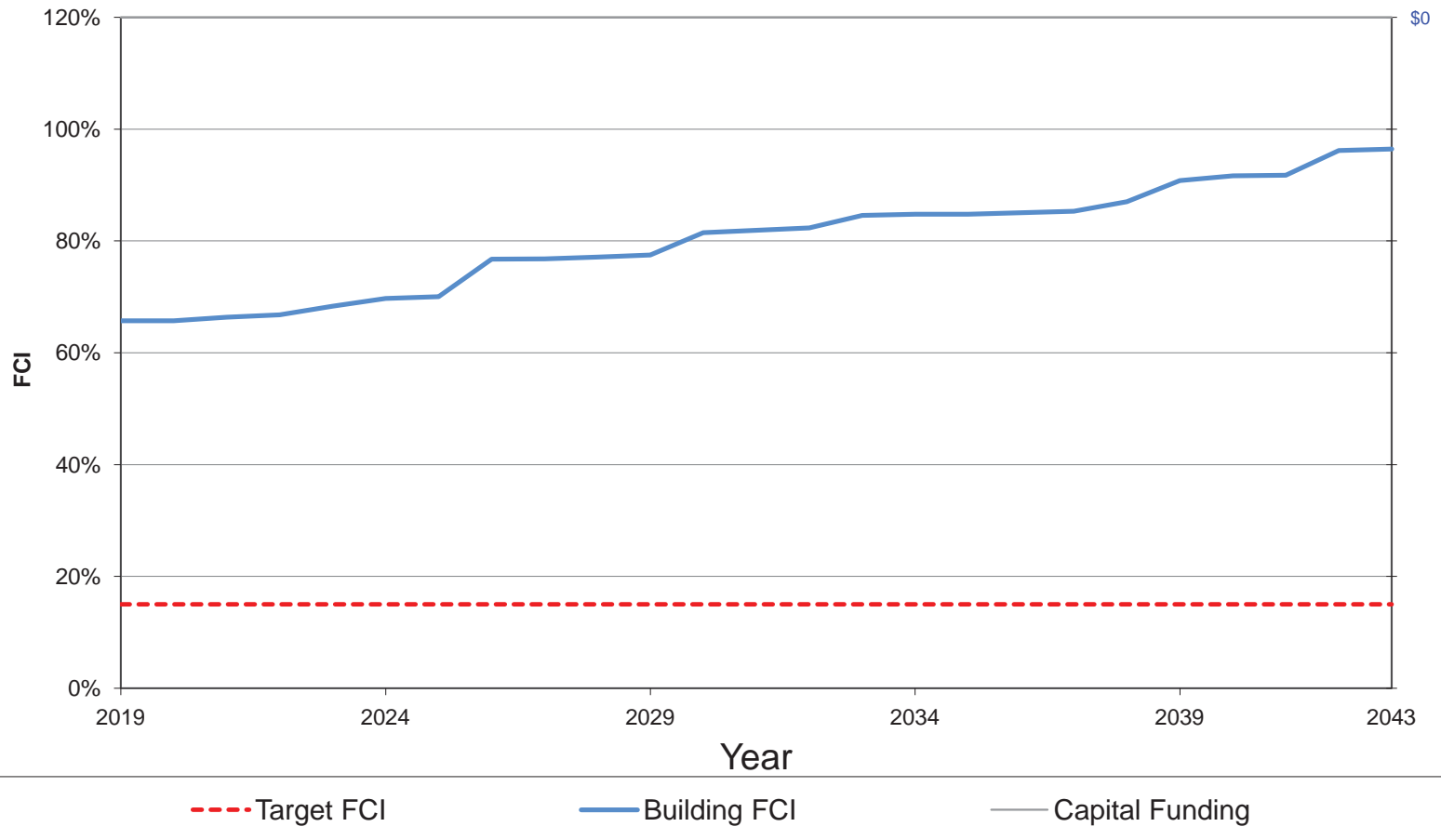
Building Name	Richmond County Arena
Civic Address	3122 Whiteside Road
Municipality, City	Louisedale, Richmond, NS
Primary Use / Building Type	Ice Rink Arena
Primary Units	Square Foot
Building Area Square Foot	37,275
Replacement Cost per Square Foot	\$ 150
Building Replacement Cost	\$ 5,591,250
Year of Construction or Major Renovation	1999
Start Year	2019
Current Year	2018
Target FCI	15%
Soft Costs (%)	20%
Interest Rate	
Inflation Rate	

Asset Definition Columns

1	Site Work
2	Structure
3	Roof
4	Exterior Envelope
5	Building Interior
6	Mechanical
7	Electrical
8	Life Safety / Fire Suppression
9	Specialty Systems

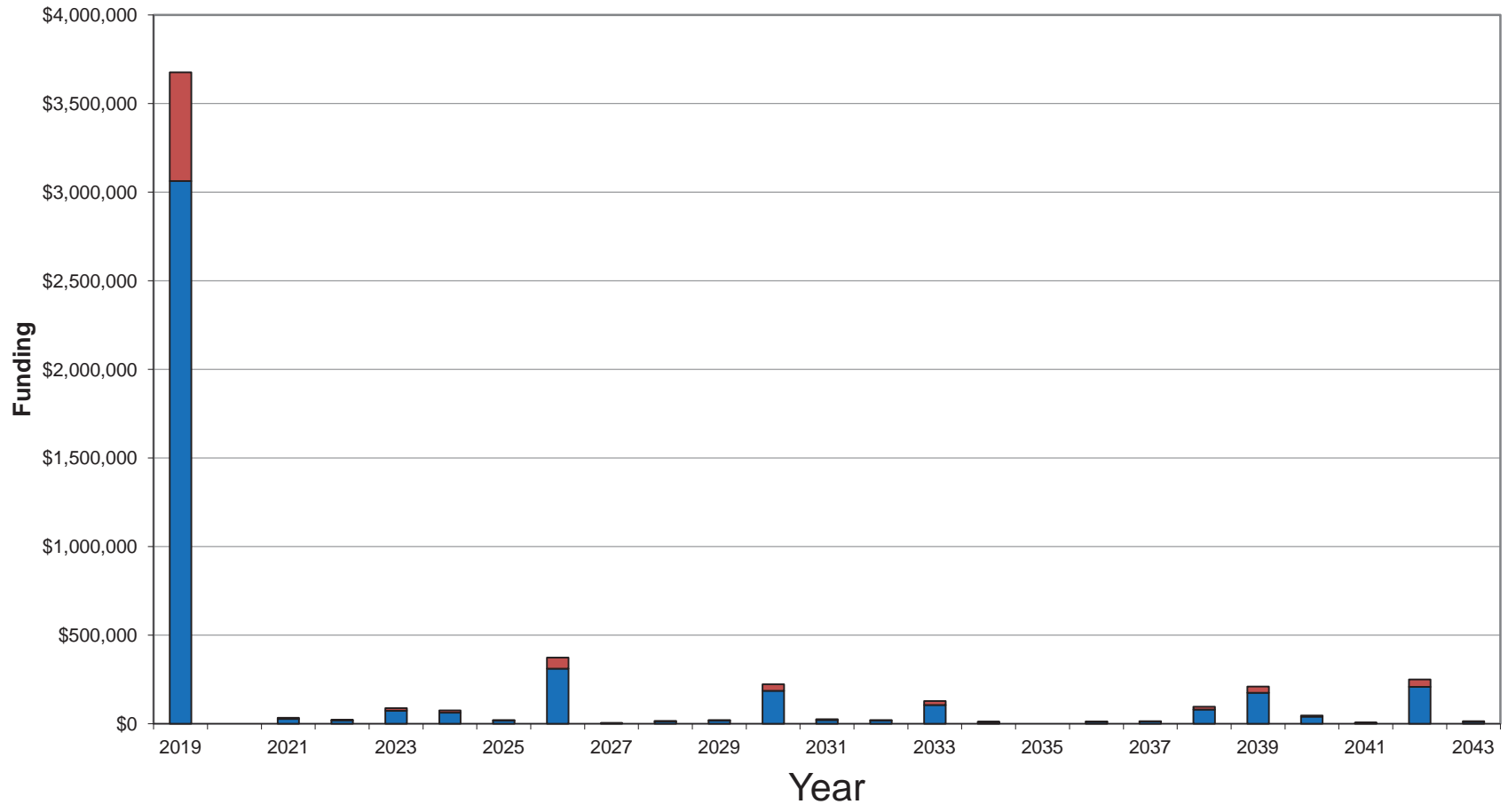
Projected Facility Condition Index of Richmond County Arena

January-18-19



Recapitalization Costs by Year for Richmond County Arena

January-18-19



■ Annual Requirements ■ Soft Costs

Capital Management Engineering Limited

Richmond County Arena Project Output Sheet for Period from 2018 to 2023

Component	Uniformat Code	Recapitalization Detail	Year of Replacement	Expected Useful Life (EUL)	Current Age	Decision Parameters						Total	Total Cost
						Life Safety	O&M Impact	Impact to Business	Utility	Vision			
Heat Detector	D5030 - Communications and Security	Relocate heat detector in ice resurfacers storage room	2019	20	3	Yes	Yes	No	Normal	No	2	\$ -	
Snow Arrestors - 1977	B3010 - Roof Coverings	Replace at time of roofing replacement	2019	25	2	Yes	No	No	Normal	No	1	\$ 5,850	
Metal Siding - 1977	B2010 - Exterior Walls	Replace original building siding	2019	40	42	No	Yes	Yes	Normal	No	2	\$ 46,800	
Oil Fired Boiler	D3020 - Heat Generating System	NY Thermal 265 MBH; Replace boiler at end of useful life	2022	25	20	No	Yes	Yes	Normal	No	2	\$ 10,000	
Common Area Lighting	D5020 - Lighting and Branch Wiring	Replace common area lighting at end of useful life	2024	25	20	No	Yes	Yes	Normal	No	2	\$ 40,775	
Changing Rooms Lighting	D5020 - Lighting and Branch Wiring	Replace lighting in changing rooms during cyclical renovations	2024	25	20	No	Yes	Yes	Normal	No	2	\$ -	
In Slab and Piping	D3040 - Distribution Systems	Estimate for removal and replacement of ice slab, piping and headers	2019	40	42	No	Yes	Yes	Normal	No	2	\$ 840,000	
Compressors	D3030 - Cooling Generating Systems	Replace ice plant compressors	2019	30	42	No	Yes	Yes	Normal	No	2	\$ 90,000	
Chiller	D3030 - Cooling Generating Systems	Replace ice plant chiller at end of useful life	2023	25	21	No	Yes	Yes	Normal	No	2	\$ 50,000	
Brine Circulator Pump	D3030 - Cooling Generating Systems	Replace brine pump at end of useful life	2021	25	21	No	Yes	Yes	Normal	No	2	\$ 25,000	
Condenser	D3030 - Cooling Generating Systems	Replace exterior condenser	2019	20	21	No	Yes	Yes	Normal	No	2	\$ 35,000	
Condensate Pump	D3030 - Cooling Generating Systems	Replace condensate pump at end of useful life	2023	25	21	No	Yes	Yes	Normal	No	2	\$ 3,500	
Rubber Flooring	C3020 - Floor Finishes	Allowance for cyclical partial replacement of rubber flooring	2024	3	20	No	Yes	No	Normal	Yes	2	\$ 3,000	
Incandescent Scoreboard	E1090 - Other Equipment	Replace scoreboard	2019	20	20	No	Yes	Yes	Normal	No	2	\$ 10,000	
Original Arena - 1977	A1010 - Standard Foundations	Estimated cost to renovate structure to meet current snow loading codes	2019	60	42	No	No	Yes	Normal	No	1	\$ 2,000,000	
Indirect Hot Water Tank	D2020 - Domestic Water Distribution	Replace indirect water heater in boiler room	2019	20	20	No	No	Yes	Normal	No	1	\$ 2,000	
Propane Radiant Tube Heaters	D3020 - Heat Generating System	Remove heaters above ice surface and replace heaters at seating stands	2024	25	20	No	Yes	No	Normal	No	1	\$ 19,200	
Exhaust Fans	D3090 - Other HVAC Systems Equipment	Replace and repair exhaust fans as required as part of O&M	2019	20	20	No	Yes	No	Normal	No	1	\$ -	
25 kVa Transformer	D5010 - Electrical Service and Distribution	Replace original 25kVa transformer	2019	40	42	No	No	Yes	Normal	No	1	\$ 2,500	
LiteTec Control Panel	D3060 - Controls and Instrumentation	Replace control board at end of useful life	2023	25	21	No	No	Yes	Normal	No	1	\$ 20,000	
Wood Exit Stairs	G2040 - Site Development	Replace wooden exit stairs	2019	18	20	No	No	No	Normal	No	0	\$ 3,000	
Building Mounted Lighting	G4020 - Site Lighting	Replace building mounted lighting	2019	20	20	No	No	No	Normal	No	0	\$ 11,760	
Insulation	B2010 - Exterior Walls	Repair existing insulation	2019	60	42	No	No	No	Normal	No	0	\$ 5,500	
Metal Service Door	B2030 - Exterior Doors	Replace metal service door at compressor room	2019	25	42	No	Yes	No	Low	No	0	\$ 1,450	
Changing Room Fittings	C1030 - Fittings	Allowance for cyclical replacement of changing room finishes	2019	3	42	No	No	No	Normal	No	0	\$ 9,650	
Rubber Stair Finishes - Addition	C2020 - Stair Finishes	Replace stair finishes	2021	15	20	No	No	No	Normal	No	0	\$ 2,800	

Building Component Summary Worksheet Richmond County Arena

Component	Unifomat Code	Recapitalization Detail	Year of Installation or Repair	Expected Useful Life (EUL)	Current Age	Theoretical Remaining Useful Life (RUL)	Useful Life Corrected For Observations	Year of Replacement	Decision Parameters						Type of event (Cyclic/Single)	Unit	Quantity	Unit Cost	Total Cost
									Life Safety	O&M Impact	Impact to Business	Utility	Vision	Total					
Site Work																			
Gravel Parking	G2020 - Parking Lots	No major recapitalization anticipated	1976	75	43	32	32	2051	No	No	No	Normal	No	0	Cyclical				\$ -
Concrete Pads at North Entrances	G2040 - Site Development	No major recapitalization anticipated	1999	50	20	30	30	2049	No	No	No	Normal	No	0	Cyclical				\$ -
Concrete Pad for Ice Resurfacers	G2040 - Site Development	No major recapitalization anticipated	1999	50	20	30	30	2049	No	No	No	Normal	No	0	Cyclical				\$ -
Concrete Pad at West Entrance	G2040 - Site Development	Repair stair nosing as part of O&M	1999	50	20	30	30	2049	No	No	No	Normal	No	0	Cyclical				\$ -
Wood Exit Stairs	G2040 - Site Development	Replace wooden exit stairs	1999	18	20	-2	0	2019	No	No	No	Normal	No	0	Cyclical	LS	1	\$ 3,000.00	\$ 3,000
Entrance Awnings	G2040 - Site Development	Replace wood constructed awnings and shelters at end of useful life	1999	40	20	20	20	2039	No	No	No	Normal	No	0	Cyclical	LS	1	\$ 10,000.00	\$ 10,000
Building Mounted Lighting	G4020 - Site Lighting	Replace building mounted lighting	1999	20	20	0	0	2019	No	No	No	Normal	No	0	Cyclical	Ea	14	\$ 840.00	\$ 11,760
Pole Mounted Light	G4020 - Site Lighting	Replace pole mounted light at end of useful life	2016	20	3	17	17	2036	No	No	No	Normal	No	0	Cyclical	Ea	1	\$ 1,570.00	\$ 1,570
Structure																			
Original Arena - 1977	A1010 - Standard Foundations	Estimated cost to renovate structure to meet current snow loading codes	1977	60	42	18	0	2019	No	No	Yes	Normal	No	1	Cyclical	LS	1	\$ 2,000,000.00	\$ 2,000,000
Addition - 1999	A1010 - Standard Foundations	No major recapitalization anticipated	1999	60	20	40	40	2059	No	No	Yes	Normal	No	1	Cyclical				\$ -
Roof																			
Metal Standing Seam Roof - 1977	B3010 - Roof Coverings	Replace original roofing at end of useful life	1976	50	43	7	7	2026	No	Yes	Yes	Normal	No	2	Cyclical	ft²	27,900	\$ 11.00	\$ 306,900
Metal Standing Seam Roof - 1999	B3010 - Roof Coverings	No major recapitalization anticipated	1999	50	20	30	30	2049	No	Yes	Yes	Normal	No	2	Cyclical				\$ -
Snow Arrestors - 1977	B3010 - Roof Coverings	Replace at time of roofing replacement	2017	25	2	23	0	2019	Yes	No	No	Normal	No	1	Cyclical	LS	225	\$ 26.00	\$ 5,850
Exterior Envelope																			
Metal Siding - 1977	B2010 - Exterior Walls	Replace original building siding	1977	40	42	-2	0	2019	No	Yes	Yes	Normal	No	2	Cyclical	ft²	3,900	\$ 12.00	\$ 46,800
Metal Siding - 1999	B2010 - Exterior Walls	Replace addition siding at end of useful life	1999	40	20	20	20	2039	No	Yes	Yes	Normal	No	2	Cyclical	ft²	8,600	\$ 12.00	\$ 103,200
Metal Siding - New	B2010 - Exterior Walls	No major recapitalization anticipated	2011	40	8	32	32	2051	No	Yes	Yes	Normal	No	2	Cyclical				\$ -
Insulation	B2010 - Exterior Walls	Repair existing insulation	1977	60	42	18	0	2019	No	No	No	Normal	No	0	Cyclical	LS	1	\$ 5,500.00	\$ 5,500
Aluminum Entrance Doors	B2030 - Exterior Doors	No major recapitalization anticipated	2011	35	8	27	27	2046	No	Yes	No	Normal	No	1	Cyclical				\$ -
Metal Service Door	B2030 - Exterior Doors	Replace metal service door at compressor room	1977	25	42	-17	0	2019	No	Yes	No	Low	No	0	Cyclical	Ea	1	\$ 1,450.00	\$ 1,450
South Overhead Door	B2030 - Exterior Doors	Replace overhead door at end of useful life	2011	20	8	12	12	2031	No	Yes	No	Normal	No	1	Cyclical	Ea	1	\$ 7,500.00	\$ 7,500
West Overhead Door	B2030 - Exterior Doors	Replace overhead door at end of useful life	2011	20	8	12	12	2031	No	Yes	No	Low	No	0	Cyclical	Ea	1	\$ 4,200.00	\$ 4,200

Building Component Summary Worksheet Richmond County Arena

Component	Unifomat Code	Recapitalization Detail	Year of Installation or Repair	Expected Useful Life (EUL)	Current Age	Theoretical Remaining Useful Life (RUL)	Useful Life Corrected For Observations	Year of Replacement	Decision Parameters						Type of event (Cyclic/Single)	Unit	Quantity	Unit Cost	Total Cost
									Life Safety	O&M Impact	Impact to Business	Utility	Vision	Total					
Building Interior																			
Concrete Floors	C3020 - Floor Finishes	No major recapitalization anticipated	1977	50	42	8	26	2045	No	No	No	Normal	No	0	Cyclical			\$ -	
Painted Block Walls	C3010 - Wall Finishes	No major recapitalization anticipated	1977	50	42	8	26	2045	No	No	No	Low	No	-1	Cyclical			\$ -	
Gypsum Board Finishes	C3030 - Ceiling Finishes	No major recapitalization anticipated	1977	60	42	18	26	2045	No	No	No	Normal	No	0	Cyclical			\$ -	
Changing Room Suspended Ceilings	C3030 - Ceiling Finishes	Replace ceilings as part of O&M	2010	25	9	16	16	2035	No	No	No	Normal	No	0	Cyclical			\$ -	
Acrylic Wall Finishes	C3010 - Wall Finishes	Replace acrylic wall finishes as required as part of O&M	2010	30	9	21	21	2040	No	No	No	Normal	No	0	Cyclical			\$ -	
Changing Room Fittings	C1030 - Fittings	Allowance for cyclical replacement of changing room finishes	1977	3	42	-39	0	2019	No	No	No	Normal	No	0	Cyclical	LS	1	\$ 9,650.00	\$ 9,650
Toilet Partitions	E2010 - Fixed Furnishings	Replace toilet partitions in washrooms at end of useful life	2010	20	9	11	11	2030	No	No	No	Normal	No	0	Cyclical	Ea	10	\$ 860.00	\$ 8,600
Concrete Bleachers	B1010 - Floor Construction	Repair wood seats on bleachers as part of O&M	1977	60	42	18	26	2045	No	No	No	Normal	No	0	Cyclical			\$ -	
Bleacher Railings	B1010 - Floor Construction	No major recapitalization anticipated	2012	50	7	43	43	2062	Yes	No	No	Normal	Yes	2	Cyclical			\$ -	
Concrete Floors - Addition	C3020 - Floor Finishes	No major recapitalization anticipated	1999	50	20	30	30	2049	No	No	No	Normal	No	0	Cyclical			\$ -	
Coated Flooring - Addition	C3020 - Floor Finishes	Replace coated floor at end of useful life	1999	20	20	0	6	2025	No	No	No	Normal	No	0	Cyclical	ft²	715	\$ 10.61	\$ 7,586
Rubber Tile Flooring - Addition	C3020 - Floor Finishes	Replace at end of useful life	2008	20	11	9	9	2028	No	No	No	Normal	Yes	1	Cyclical	LS	1	\$ 3,500.00	\$ 3,500
VCT Flooring - Addition	C3020 - Floor Finishes	Replace VCT in addition at end of useful life	1999	25	20	5	11	2030	No	No	No	Normal	No	0	Cyclical	ft²	3,560	\$ 8.35	\$ 29,726
Painted Block Walls - Addition	C3010 - Wall Finishes	No major recapitalization anticipated	1999	60	20	40	40	2059	No	No	No	Low	No	-1	Cyclical			\$ -	
Gypsum Board Finishes - Addition	C3010 - Wall Finishes	No major recapitalization anticipated	1999	60	20	40	40	2059	No	No	No	Low	No	-1	Cyclical			\$ -	
Suspended Ceilings - Addition	C3030 - Ceiling Finishes	Replace suspended ceiling at end of useful life	1999	25	20	5	11	2030	No	No	No	Low	No	-1	Cyclical	ft²	3,560	\$ 5.63	\$ 20,043
Rubber Stair Finishes - Addition	C2020 - Stair Finishes	Replace stair finishes	1999	15	20	-5	2	2021	No	No	No	Normal	No	0	Cyclical	LS	1	\$ 2,800.00	\$ 2,800
Mechanical																			
Domestic Water	D2020 - Domestic Water Distribution	No major recapitalization anticipated	1977	60	42	18	26	2045	No	No	Yes	Normal	No	1	Cyclical			\$ -	
Sanitary System	D2030 - Sanitary Waste	No major recapitalization anticipated	1977	60	42	18	26	2045	No	No	Yes	Normal	No	1	Cyclical			\$ -	
Domestic Hot Water Tanks	D2020 - Domestic Water Distribution	Replace electric hot water tanks at end of useful life	2011	15	8	7	7	2026	No	Yes	Yes	Normal	No	2	Cyclical	Ea	3	\$ 1,500.00	\$ 4,500
Indirect Hot Water Tank	D2020 - Domestic Water Distribution	Replace indirect water heater in boiler room	1999	20	20	0	0	2019	No	No	Yes	Normal	No	1	Cyclical	Ea	1	\$ 2,000.00	\$ 2,000
Washroom Fixtures	D2010 - Plumbing Fixtures	Replace washroom fixtures as required as part of O&M	2010	35	9	26	26	2045	No	Yes	No	Normal	No	1	Cyclical			\$ -	
Propane Radiant Tube Heaters	D3020 - Heat Generating System	Remove heaters above ice surface and replace heaters at seating stands	1999	25	20	5	5	2024	No	Yes	No	Normal	No	1	Cyclical	Ea	6	\$ 3,200.00	\$ 19,200
Electric Heaters	D3020 - Heat Generating System	No major recapitalization anticipated	2010	40	9	31	31	2050	No	No	No	Normal	No	0	Cyclical			\$ -	
Oil Fired Boiler	D3020 - Heat Generating System	NY Thermal 265 MBH; Replace boiler at end of useful life	1999	25	20	5	3	2022	No	Yes	Yes	Normal	No	2	Cyclical	Ea	1	\$ 10,000.00	\$ 10,000
Oil Storage Tank	G3060 - Fuel Distribution	1136L; Replace at end of useful life	2013	30	6	24	24	2043	No	No	Yes	Normal	No	1	Cyclical	Ea	1	\$ 2,500.00	\$ 2,500
IPEX Piping	D3040 - Distribution Systems	Allowance for replacement of hydronic infloor system with baseboard radiators	1999	40	20	20	10	2029	No	Yes	Yes	Normal	No	2	Cyclical	LS	1	\$ 18,000.00	\$ 18,000
HRVs	D3050 - Terminal and Package Units	4x Vanee 6LC; Replace HRV's at end of useful life	2008	25	11	14	14	2033	No	Yes	No	Normal	No	1	Cyclical	Ea	4	\$ 7,500.00	\$ 30,000
Exhaust Fans	D3090 - Other HVAC Systems Equipment	Replace and repair exhaust fans as required as part of O&M	1999	20	20	0	0	2019	No	Yes	No	Normal	No	1	Cyclical			\$ -	
Dehumidification Unit - East	D3050 - Terminal and Package Units	Dectron DA2-035-8; Replace dehumidifier at end of useful life	2015	25	4	21	21	2040	No	Yes	Yes	Normal	No	2	Cyclical	Ea	1	\$ 30,000.00	\$ 30,000
Dehumidification Unit - West	D3050 - Terminal and Package Units	Dectron; Replace dehumidifier at end of useful life	2013	25	6	19	19	2038	No	Yes	Yes	Normal	No	2	Cyclical	Ea	1	\$ 30,000.00	\$ 30,000
Passenger Elevator	D1010 - Elevators and Lifts	No major recapitalization anticipated	2002	50	17	33	33	2052	No	No	No	Low	Yes	0	Cyclical			\$ -	

Building Component Summary Worksheet Richmond County Arena

Component	Unifomat Code	Recapitalization Detail	Year of Installation or Repair	Expected Useful Life (EUL)	Current Age	Theoretical Remaining Useful Life (RUL)	Useful Life Corrected For Observations	Year of Replacement	Decision Parameters					Total	Type of event (Cyclic/Single)	Unit	Quantity	Unit Cost	Total Cost
									Life Safety	O&M Impact	Impact to Business	Utility	Vision						
Electrical																			
Electrical Switch Gear	D5010 - Electrical Service and Distribution	No major recapitalization anticipated	2013	40	6	34	34	2053	No	No	Yes	Normal	No	1	Cyclical				\$ -
25 kVa Transformer	D5010 - Electrical Service and Distribution	Replace original 25kVa transformer	1977	40	42	-2	0	2019	No	No	Yes	Normal	No	1	Cyclical	Ea	1	\$ 2,500.00	\$ 2,500
Over Ice Lighting	D5020 - Lighting and Branch Wiring	Replace T8 over ice lighting at end of useful life	2008	25	11	14	14	2033	No	Yes	Yes	Normal	No	2	Cyclical	ft²	21,000	\$ 3.50	\$ 73,500
Common Area Lighting	D5020 - Lighting and Branch Wiring	Replace common area lighting at end of useful life	1999	25	20	5	5	2024	No	Yes	Yes	Normal	No	2	Cyclical	ft²	11,650	\$ 3.50	\$ 40,775
Changing Rooms Lighting	D5020 - Lighting and Branch Wiring	Replace lighting in changing rooms during cyclical renovations	1999	25	20	5	5	2024	No	Yes	Yes	Normal	No	2	Cyclical				\$ -
Life Safety / Fire Suppression																			
Fire Alarm Panel	D5030 - Communications and Security	Edwards Fire Shield Plus; Replace at end of useful life	2016	20	3	17	17	2036	Yes	No	Yes	High	No	3	Cyclical	Ea	1	\$ 4,000.00	\$ 4,000
Heat Detector	D5030 - Communications and Security	Relocate heat detector in ice resurfacers storage room	2016	20	3	17	0	2019	Yes	Yes	No	Normal	No	2	Cyclical				\$ -
Range Hood Fire Suppression System	D4030 - Fire Protection	No major recapitalization anticipated	1999	20	20	0	25	2044	Yes	No	No	Normal	No	1	Cyclical				\$ -
Emergency and Exit Lighting	D5030 - Communications and Security	Replace as part of O&M	2013	20	6	14	14	2033	Yes	Yes	Yes	Normal	No	3	Cyclical				\$ -
Fire Extinguishers	D4030 - Fire Protection	Replace as part of O&M	1999	20	20	0	25	2044	Yes	Yes	No	Normal	No	2	Cyclical				\$ -
Specialty Systems																			
In Slab and Piping	D3040 - Distribution Systems	Estimate for removal and replacement of ice slab, piping and headers	1977	40	42	-2	0	2019	No	Yes	Yes	Normal	No	2	Cyclical	LS	1	\$ 840,000.00	\$ 840,000
Compressors	D3030 - Cooling Generating Systems	Replace ice plant compressors	1977	30	42	-12	0	2019	No	Yes	Yes	Normal	No	2	Cyclical	Ea	2	\$ 45,000.00	\$ 90,000
Chiller	D3030 - Cooling Generating Systems	Replace ice plant chiller at end of useful life	1998	25	21	4	4	2023	No	Yes	Yes	Normal	No	2	Cyclical	Ea	1	\$ 50,000.00	\$ 50,000
Brine Circulator Pump	D3030 - Cooling Generating Systems	Replace brine pump at end of useful life	1998	25	21	4	2	2021	No	Yes	Yes	Normal	No	2	Cyclical	Ea	1	\$ 25,000.00	\$ 25,000
Condenser	D3030 - Cooling Generating Systems	Replace exterior condenser	1998	20	21	-1	0	2019	No	Yes	Yes	Normal	No	2	Cyclical	Ea	1	\$ 35,000.00	\$ 35,000
Condensate Pump	D3030 - Cooling Generating Systems	Replace condensate pump at end of useful life	1998	25	21	4	4	2023	No	Yes	Yes	Normal	No	2	Cyclical	Ea	1	\$ 3,500.00	\$ 3,500
Condensate Tank	D3030 - Cooling Generating Systems	Replace tank at end of useful life	1998	40	21	19	19	2038	No	Yes	Yes	Normal	No	2	Cyclical	Ea	1	\$ 1,500.00	\$ 1,500
Suction Accumulator	D3030 - Cooling Generating Systems	Replace at end of useful life	1998	40	21	19	19	2038	No	Yes	Yes	Normal	No	2	Cyclical	Ea	1	\$ 25,000.00	\$ 25,000
TechCold Controls	D3060 - Controls and Instrumentation	No major recapitalization anticipated	2017	30	2	28	28	2047	No	No	Yes	Normal	No	1	Cyclical				\$ -
LiteTec Control Panel	D3060 - Controls and Instrumentation	Replace control board at end of useful life	1998	25	21	4	4	2023	No	No	Yes	Normal	No	1	Cyclical	Ea	1	\$ 20,000.00	\$ 20,000
ThermaStore Heat Recovery System	D2020 - Domestic Water Distribution	Replace heat recovery system at end of useful life	2013	25	6	19	19	2038	No	No	No	Normal	Yes	1	Cyclical	Ea	2	\$ 3,000.00	\$ 6,000
Indirect Hot Water Tank	D2020 - Domestic Water Distribution	Replace Smart indirect tank at end of useful life	2013	25	6	19	19	2038	No	No	No	Normal	Yes	1	Cyclical	Ea	1	\$ 2,500.00	\$ 2,500
Jet Ice System	E1090 - Other Equipment	Replace at end of useful life	2013	25	6	19	19	2038	No	No	No	Normal	Yes	1	Cyclical	Ea	1	\$ 15,000.00	\$ 15,000
Rubber Flooring	C3020 - Floor Finishes	Allowance for cyclical partial replacement of rubber flooring	1999	3	20	-17	5	2024	No	Yes	No	Normal	Yes	2	Cyclical	LS	1	\$ 3,000.00	\$ 3,000
Dasher Boards and Player Benches	E1090 - Other Equipment	Replace dasher boards and benches at end of useful life	2012	30	7	23	23	2042	No	Yes	Yes	Normal	Yes	3	Cyclical	Ea	1	\$ 175,000.00	\$ 175,000
Ice Resurfacers Gate	E1090 - Other Equipment	Replace gate lift equipment at end of useful life	2012	20	7	13	13	2032	No	Yes	Yes	Normal	Yes	3	Cyclical	Ea	1	\$ 2,500.00	\$ 2,500
Protective Netting	E1090 - Other Equipment	Replace safety netting as part of O&M	2012	20	7	13	13	2032	Yes	No	No	Normal	No	1	Cyclical				\$ -
Incandescent Scoreboard	E1090 - Other Equipment	Replace scoreboard	1999	20	20	0	0	2019	No	Yes	Yes	Normal	No	2	Cyclical	Ea	1	\$ 10,000.00	\$ 10,000
LED Scoreboard	E1090 - Other Equipment	Replace scoreboard at end of useful life	2012	20	7	13	13	2032	No	Yes	Yes	Normal	No	2	Cyclical	Ea	1	\$ 15,000.00	\$ 15,000
Low-E Ceiling	C3030 - Ceiling Finishes	Replace low-E ceiling at end of useful life	2012	30	7	23	23	2042	No	No	No	Normal	Yes	1	Cyclical	LS	1	\$ 30,000.00	\$ 30,000
Ice Resurfacing Machine	E1030 - Vehicular Equipment	Allowance for replacement of ice resurfacers	2010	20	9	11	11	2030	No	Yes	Yes	High	Yes	4	Cyclical	Ea	1	\$ 125,000.00	\$ 125,000

**Richmond County Arena
Cash Flow Analysis Output Sheet**

Component	Uniformat Code	Recapitalization Detail	Type of event (cyclic/single)	Year of Installation or Repair	Expected Useful Life (EUL)	Useful Life Corrected For Observations	Year of Replacement	Unit Cost	Total Cost	Year 1 2019	Year 2 2020	Year 3 2021	Year 4 2022	Year 5 2023	Year 6 2024	Year 7 2025	Year 8 2026	Year 9 2027	Year 10 2028
Site Work																			
Gravel Parking	G2020 - Parking Lots	No major recapitalization anticipated	Cyclical	1976	75	32	2051	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Concrete Pads at North Entrances	G2040 - Site Development	No major recapitalization anticipated	Cyclical	1999	50	30	2049	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Concrete Pad for Ice Resurfacers	G2040 - Site Development	No major recapitalization anticipated	Cyclical	1999	50	30	2049	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Concrete Pad at West Entrance	G2040 - Site Development	Repair stair nosing as part of O&M	Cyclical	1999	50	30	2049	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Wood Exit Stairs	G2040 - Site Development	Replace wooden exit stairs	Cyclical	1999	18	0	2019	\$ 3,000	\$ 3,000	\$ 3,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Entrance Awnings	G2040 - Site Development	Replace wood constructed awnings and shelters at end of useful life	Cyclical	1999	40	20	2039	\$ 10,000	\$ 10,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Building Mounted Lighting	G4020 - Site Lighting	Replace building mounted lighting	Cyclical	1999	20	0	2019	\$ 840	\$ 11,760	\$ 11,760	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Pole Mounted Light	G4020 - Site Lighting	Replace pole mounted light at end of useful life	Cyclical	2016	20	17	2036	\$ 1,570	\$ 1,570	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Site Work Summary										\$ 14,760	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Structure																			
Original Arena - 1977	A1010 - Standard Foundations	Estimated cost to renovate structure to meet current snow loading codes	Cyclical	1977	60	0	2019	\$ 2,000,000	\$ 2,000,000	\$ 2,000,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Addition - 1999	A1010 - Standard Foundations	No major recapitalization anticipated	Cyclical	1999	60	40	2059	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Structure Summary										\$ 2,000,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Roof																			
Metal Standing Seam Roof - 1977	B3010 - Roof Coverings	Replace original roofing at end of useful life	Cyclical	1976	50	7	2026	\$ 11	\$ 306,900	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 306,900	\$ -	\$ -
Metal Standing Seam Roof - 1999	B3010 - Roof Coverings	No major recapitalization anticipated	Cyclical	1999	50	30	2049	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Snow Arrestors - 1977	B3010 - Roof Coverings	Replace at time of roofing replacement	Cyclical	2017	25	0	2019	\$ 26	\$ 5,850	\$ 5,850	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Roof Summary										\$ 5,850	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 306,900	\$ -	\$ -
Exterior Envelope																			
Metal Siding - 1977	B2010 - Exterior Walls	Replace original building siding	Cyclical	1977	40	0	2019	\$ 12	\$ 46,800	\$ 46,800	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Metal Siding - 1999	B2010 - Exterior Walls	Replace addition siding at end of useful life	Cyclical	1999	40	20	2039	\$ 12	\$ 103,200	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Metal Siding - New	B2010 - Exterior Walls	No major recapitalization anticipated	Cyclical	2011	40	32	2051	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Insulation	B2010 - Exterior Walls	Repair existing insulation	Cyclical	1977	60	0	2019	\$ 5,500	\$ 5,500	\$ 5,500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Aluminum Entrance Doors	B2030 - Exterior Doors	No major recapitalization anticipated	Cyclical	2011	35	27	2046	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Metal Service Door	B2030 - Exterior Doors	Replace metal service door at compressor room	Cyclical	1977	25	0	2019	\$ 1,450	\$ 1,450	\$ 1,450	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
South Overhead Door	B2030 - Exterior Doors	Replace overhead door at end of useful life	Cyclical	2011	20	12	2031	\$ 7,500	\$ 7,500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
West Overhead Door	B2030 - Exterior Doors	Replace overhead door at end of useful life	Cyclical	2011	20	12	2031	\$ 4,200	\$ 4,200	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Exterior Envelope Summary										\$ 53,750	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

**Richmond County Arena
Cash Flow Analysis Output Sheet**

Component	Uniformat Code	Recapitalization Detail	Type of event (cyclic/single)	Year of Installation or Repair	Expected Useful Life (EUL)	Useful Life Corrected For Observations	Year of Replacement	Unit Cost	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
									2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Site Work																		
Gravel Parking	G2020 - Parking Lots	No major recapitalization anticipated	Cyclical	1976	75	32	2051	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Concrete Pads at North Entrances	G2040 - Site Development	No major recapitalization anticipated	Cyclical	1999	50	30	2049	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Concrete Pad for Ice Resurfacers	G2040 - Site Development	No major recapitalization anticipated	Cyclical	1999	50	30	2049	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Concrete Pad at West Entrance	G2040 - Site Development	Repair stair nosing as part of O&M	Cyclical	1999	50	30	2049	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Wood Exit Stairs	G2040 - Site Development	Replace wooden exit stairs	Cyclical	1999	18	0	2019	\$ 3,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 3,000	\$ -
Entrance Awnings	G2040 - Site Development	Replace wood constructed awnings and shelters at end of useful life	Cyclical	1999	40	20	2039	\$ 10,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Building Mounted Lighting	G4020 - Site Lighting	Replace building mounted lighting	Cyclical	1999	20	0	2019	\$ 840	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Pole Mounted Light	G4020 - Site Lighting	Replace pole mounted light at end of useful life	Cyclical	2016	20	17	2036	\$ 1,570	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,570	\$ -	\$ -
Site Work Summary									\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,570	\$ 3,000	\$ -
Structure																		
Original Arena - 1977	A1010 - Standard Foundations	Estimated cost to renovate structure to meet current snow loading codes	Cyclical	1977	60	0	2019	\$ 2,000,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Addition - 1999	A1010 - Standard Foundations	No major recapitalization anticipated	Cyclical	1999	60	40	2059	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Structure Summary									\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Roof																		
Metal Standing Seam Roof - 1977	B3010 - Roof Coverings	Replace original roofing at end of useful life	Cyclical	1976	50	7	2026	\$ 11	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Metal Standing Seam Roof - 1999	B3010 - Roof Coverings	No major recapitalization anticipated	Cyclical	1999	50	30	2049	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Snow Arrestors - 1977	B3010 - Roof Coverings	Replace at time of roofing replacement	Cyclical	2017	25	0	2019	\$ 26	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Roof Summary									\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Exterior Envelope																		
Metal Siding - 1977	B2010 - Exterior Walls	Replace original building siding	Cyclical	1977	40	0	2019	\$ 12	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Metal Siding - 1999	B2010 - Exterior Walls	Replace addition siding at end of useful life	Cyclical	1999	40	20	2039	\$ 12	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Metal Siding - New	B2010 - Exterior Walls	No major recapitalization anticipated	Cyclical	2011	40	32	2051	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Insulation	B2010 - Exterior Walls	Repair existing insulation	Cyclical	1977	60	0	2019	\$ 5,500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Aluminum Entrance Doors	B2030 - Exterior Doors	No major recapitalization anticipated	Cyclical	2011	35	27	2046	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Metal Service Door	B2030 - Exterior Doors	Replace metal service door at compressor room	Cyclical	1977	25	0	2019	\$ 1,450	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
South Overhead Door	B2030 - Exterior Doors	Replace overhead door at end of useful life	Cyclical	2011	20	12	2031	\$ 7,500	\$ -	\$ -	\$ 7,500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
West Overhead Door	B2030 - Exterior Doors	Replace overhead door at end of useful life	Cyclical	2011	20	12	2031	\$ 4,200	\$ -	\$ -	\$ 4,200	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Exterior Envelope Summary									\$ -	\$ -	\$ 11,700	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

**Richmond County Arena
Cash Flow Analysis Output Sheet**

Component	Uniformat Code	Recapitalization Detail	Type of event (cyclic/single)	Year of Installation or Repair	Expected Useful Life (EUL)	Useful Life Corrected For Observations	Year of Replacement	Unit Cost	Year 21	Year 22	Year 23	Year 24	Year 25
									2039	2040	2041	2042	2043
Site Work													
Gravel Parking	G2020 - Parking Lots	No major recapitalization anticipated	Cyclical	1976	75	32	2051	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Concrete Pads at North Entrances	G2040 - Site Development	No major recapitalization anticipated	Cyclical	1999	50	30	2049	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Concrete Pad for Ice Resurfacers	G2040 - Site Development	No major recapitalization anticipated	Cyclical	1999	50	30	2049	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Concrete Pad at West Entrance	G2040 - Site Development	Repair stair nosing as part of O&M	Cyclical	1999	50	30	2049	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Wood Exit Stairs	G2040 - Site Development	Replace wooden exit stairs	Cyclical	1999	18	0	2019	\$ 3,000	\$ -	\$ -	\$ -	\$ -	\$ -
Entrance Awnings	G2040 - Site Development	Replace wood constructed awnings and shelters at end of useful life	Cyclical	1999	40	20	2039	\$ 10,000	\$ 10,000	\$ -	\$ -	\$ -	\$ -
Building Mounted Lighting	G4020 - Site Lighting	Replace building mounted lighting	Cyclical	1999	20	0	2019	\$ 840	\$ 11,760	\$ -	\$ -	\$ -	\$ -
Pole Mounted Light	G4020 - Site Lighting	Replace pole mounted light at end of useful life	Cyclical	2016	20	17	2036	\$ 1,570	\$ -	\$ -	\$ -	\$ -	\$ -
Site Work Summary									\$ 21,760	\$ -	\$ -	\$ -	\$ -
Structure													
Original Arena - 1977	A1010 - Standard Foundations	Estimated cost to renovate structure to meet current snow loading codes	Cyclical	1977	60	0	2019	\$ 2,000,000	\$ -	\$ -	\$ -	\$ -	\$ -
Addition - 1999	A1010 - Standard Foundations	No major recapitalization anticipated	Cyclical	1999	60	40	2059	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Structure Summary									\$ -	\$ -	\$ -	\$ -	\$ -
Roof													
Metal Standing Seam Roof - 1977	B3010 - Roof Coverings	Replace original roofing at end of useful life	Cyclical	1976	50	7	2026	\$ 11	\$ -	\$ -	\$ -	\$ -	\$ -
Metal Standing Seam Roof - 1999	B3010 - Roof Coverings	No major recapitalization anticipated	Cyclical	1999	50	30	2049	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Snow Arrestors - 1977	B3010 - Roof Coverings	Replace at time of roofing replacement	Cyclical	2017	25	0	2019	\$ 26	\$ -	\$ -	\$ -	\$ -	\$ -
Roof Summary									\$ -	\$ -	\$ -	\$ -	\$ -
Exterior Envelope													
Metal Siding - 1977	B2010 - Exterior Walls	Replace original building siding	Cyclical	1977	40	0	2019	\$ 12	\$ -	\$ -	\$ -	\$ -	\$ -
Metal Siding - 1999	B2010 - Exterior Walls	Replace addition siding at end of useful life	Cyclical	1999	40	20	2039	\$ 12	\$ 103,200	\$ -	\$ -	\$ -	\$ -
Metal Siding - New	B2010 - Exterior Walls	No major recapitalization anticipated	Cyclical	2011	40	32	2051	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Insulation	B2010 - Exterior Walls	Repair existing insulation	Cyclical	1977	60	0	2019	\$ 5,500	\$ -	\$ -	\$ -	\$ -	\$ -
Aluminum Entrance Doors	B2030 - Exterior Doors	No major recapitalization anticipated	Cyclical	2011	35	27	2046	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Metal Service Door	B2030 - Exterior Doors	Replace metal service door at compressor room	Cyclical	1977	25	0	2019	\$ 1,450	\$ -	\$ -	\$ -	\$ -	\$ -
South Overhead Door	B2030 - Exterior Doors	Replace overhead door at end of useful life	Cyclical	2011	20	12	2031	\$ 7,500	\$ -	\$ -	\$ -	\$ -	\$ -
West Overhead Door	B2030 - Exterior Doors	Replace overhead door at end of useful life	Cyclical	2011	20	12	2031	\$ 4,200	\$ -	\$ -	\$ -	\$ -	\$ -
Exterior Envelope Summary									\$ 103,200	\$ -	\$ -	\$ -	\$ -

**Richmond County Arena
Cash Flow Analysis Output Sheet**

Component	Uniformat Code	Recapitalization Detail	Type of event (cyclic/single)	Year of Installation or Repair	Expected Useful Life (EUL)	Useful Life Corrected For Observations	Year of Replacement	Unit Cost	Total Cost	Year 1 2019	Year 2 2020	Year 3 2021	Year 4 2022	Year 5 2023	Year 6 2024	Year 7 2025	Year 8 2026	Year 9 2027	Year 10 2028
Building Interior																			
Concrete Floors	C3020 - Floor Finishes	No major recapitalization anticipated	Cyclical	1977	50	26	2045	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Painted Block Walls	C3010 - Wall Finishes	No major recapitalization anticipated	Cyclical	1977	50	26	2045	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Gypsum Board Finishes	C3030 - Ceiling Finishes	No major recapitalization anticipated	Cyclical	1977	60	26	2045	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Changing Room Suspended Ceilings	C3030 - Ceiling Finishes	Replace ceilings as part of O&M	Cyclical	2010	25	16	2035	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Acrylic Wall Finishes	C3010 - Wall Finishes	Replace acrylic wall finishes as required as part of O&M	Cyclical	2010	30	21	2040	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Changing Room Fittings	C1030 - Fittings	Allowance for cyclical replacement of changing room finishes	Cyclical	1977	3	0	2019	\$ 9,650	\$ 9,650	\$ 9,650	\$ -	\$ -	\$ 9,650	\$ -	\$ -	\$ 9,650	\$ -	\$ -	\$ 9,650
Toilet Partitions	E2010 - Fixed Furnishings	Replace toilet partitions in washrooms at end of useful life	Cyclical	2010	20	11	2030	\$ 860	\$ 8,600	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Concrete Bleachers	B1010 - Floor Construction	Repair wood seats on bleachers as part of O&M	Cyclical	1977	60	26	2045	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Bleacher Railings	B1010 - Floor Construction	No major recapitalization anticipated	Cyclical	2012	50	43	2062	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Concrete Floors - Addition	C3020 - Floor Finishes	No major recapitalization anticipated	Cyclical	1999	50	30	2049	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Coated Flooring - Addition	C3020 - Floor Finishes	Replace coated floor at end of useful life	Cyclical	1999	20	6	2025	\$ 11	\$ 7,586	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 7,586	\$ -	\$ -	\$ -
Rubber Tile Flooring - Addition	C3020 - Floor Finishes	Replace at end of useful life	Cyclical	2008	20	9	2028	\$ 3,500	\$ 3,500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 3,500
VCT Flooring - Addition	C3020 - Floor Finishes	Replace VCT in addition at end of useful life	Cyclical	1999	25	11	2030	\$ 8	\$ 29,726	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Painted Block Walls - Addition	C3010 - Wall Finishes	No major recapitalization anticipated	Cyclical	1999	60	40	2059	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Gypsum Board Finishes - Addition	C3010 - Wall Finishes	No major recapitalization anticipated	Cyclical	1999	60	40	2059	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Suspended Ceilings - Addition	C3030 - Ceiling Finishes	Replace suspended ceiling at end of useful life	Cyclical	1999	25	11	2030	\$ 6	\$ 20,043	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Rubber Stair Finishes - Addition	C2020 - Stair Finishes	Replace stair finishes	Cyclical	1999	15	2	2021	\$ 2,800	\$ 2,800	\$ -	\$ -	\$ 2,800	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Building Interior Summary										\$ 9,650	\$ -	\$ 2,800	\$ 9,650	\$ -	\$ -	\$ 17,236	\$ -	\$ -	\$ 13,150
Mechanical																			
Domestic Water	D2020 - Domestic Water Distribution	No major recapitalization anticipated	Cyclical	1977	60	26	2045	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Sanitary System	D2030 - Sanitary Waste	No major recapitalization anticipated	Cyclical	1977	60	26	2045	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Domestic Hot Water Tanks	D2020 - Domestic Water Distribution	Replace electric hot water tanks at end of useful life	Cyclical	2011	15	7	2026	\$ 1,500	\$ 4,500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 4,500	\$ -	\$ -	\$ -
Indirect Hot Water Tank	D2020 - Domestic Water Distribution	Replace indirect water heater in boiler room	Cyclical	1999	20	0	2019	\$ 2,000	\$ 2,000	\$ 2,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Washroom Fixtures	D2010 - Plumbing Fixtures	Replace washroom fixtures as required as part of O&M	Cyclical	2010	35	26	2045	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Propane Radiant Tube Heaters	D3020 - Heat Generating System	Remove heaters above ice surface and replace heaters at seating stands	Cyclical	1999	25	5	2024	\$ 3,200	\$ 19,200	\$ -	\$ -	\$ -	\$ -	\$ 19,200	\$ -	\$ -	\$ -	\$ -	\$ -
Electric Heaters	D3020 - Heat Generating System	No major recapitalization anticipated	Cyclical	2010	40	31	2050	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Oil Fired Boiler	D3020 - Heat Generating System	NY Thermal 265 MBH; Replace boiler at end of useful life	Cyclical	1999	25	3	2022	\$ 10,000	\$ 10,000	\$ -	\$ -	\$ -	\$ 10,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Oil Storage Tank	G3060 - Fuel Distribution	1136L; Replace at end of useful life	Cyclical	2013	30	24	2043	\$ 2,500	\$ 2,500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
IPEX Piping	D3040 - Distribution Systems	Allowance for replacement of hydronic infloor system with baseboard radiators	Cyclical	1999	40	10	2029	\$ 18,000	\$ 18,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
HRVs	D3050 - Terminal and Package Units	4x Vanee 6LC; Replace HRV's at end of useful life	Cyclical	2008	25	14	2033	\$ 7,500	\$ 30,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Exhaust Fans	D3090 - Other HVAC Systems Equipment	Replace and repair exhaust fans as required as part of O&M	Cyclical	1999	20	0	2019	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Dehumidification Unit - East	D3050 - Terminal and Package Units	Dectron DA2-035-8; Replace dehumidifier at end of useful life	Cyclical	2015	25	21	2040	\$ 30,000	\$ 30,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Dehumidification Unit - West	D3050 - Terminal and Package Units	Dectron; Replace dehumidifier at end of useful life	Cyclical	2013	25	19	2038	\$ 30,000	\$ 30,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Passenger Elevator	D1010 - Elevators and Lifts	No major recapitalization anticipated	Cyclical	2002	50	33	2052	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Mechanical Summary										\$ 2,000	\$ -	\$ -	\$ 10,000	\$ -	\$ 19,200	\$ -	\$ 4,500	\$ -	\$ -
Electrical																			
Electrical Switch Gear	D5010 - Electrical Service and Distribution	No major recapitalization anticipated	Cyclical	2013	40	34	2053	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
25 kVa Transformer	D5010 - Electrical Service and Distribution	Replace original 25kVa transformer	Cyclical	1977	40	0	2019	\$ 2,500	\$ 2,500	\$ 2,500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Over Ice Lighting	D5020 - Lighting and Branch Wiring	Replace T8 over ice lighting at end of useful life	Cyclical	2008	25	14	2033	\$ 4	\$ 73,500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Common Area Lighting	D5020 - Lighting and Branch Wiring	Replace common area lighting at end of useful life	Cyclical	1999	25	5	2024	\$ 4	\$ 40,775	\$ -	\$ -	\$ -	\$ -	\$ 40,775	\$ -	\$ -	\$ -	\$ -	\$ -
Changing Rooms Lighting	D5020 - Lighting and Branch Wiring	Replace lighting in changing rooms during cyclical renovations	Cyclical	1999	25	5	2024	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Electrical Summary										\$ 2,500	\$ -	\$ -	\$ -	\$ -	\$ 40,775	\$ -	\$ -	\$ -	\$ -
Life Safety / Fire Suppression																			
Fire Alarm Panel	D5030 - Communications and Security	Edwards Fire Shield Plus; Replace at end of useful life	Cyclical	2016	20	17	2036	\$ 4,000	\$ 4,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Heat Detector	D5030 - Communications and Security	Relocate heat detector in ice resurfacer storage room	Cyclical	2016	20	0	2019	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Range Hood Fire Suppression System	D4030 - Fire Protection	No major recapitalization anticipated	Cyclical	1999	20	25	2044	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Emergency and Exit Lighting	D5030 - Communications and Security	Replace as part of O&M	Cyclical	2013	20	14	2033	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Fire Extinguishers	D4030 - Fire Protection	Replace as part of O&M	Cyclical	1999	20	25	2044	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Life Safety / Fire Suppression Summary										\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

**Richmond County Arena
Cash Flow Analysis Output Sheet**

Component	Uniformat Code	Recapitalization Detail	Type of event (cyclic/single)	Year of Installation or Repair	Expected Useful Life (EUL)	Useful Life Corrected For Observations	Year of Replacement	Unit Cost	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
									2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Building Interior																		
Concrete Floors	C3020 - Floor Finishes	No major recapitalization anticipated	Cyclical	1977	50	26	2045	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Painted Block Walls	C3010 - Wall Finishes	No major recapitalization anticipated	Cyclical	1977	50	26	2045	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Gypsum Board Finishes	C3030 - Ceiling Finishes	No major recapitalization anticipated	Cyclical	1977	60	26	2045	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Changing Room Suspended Ceilings	C3030 - Ceiling Finishes	Replace ceilings as part of O&M	Cyclical	2010	25	16	2035	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Acrylic Wall Finishes	C3010 - Wall Finishes	Replace acrylic wall finishes as required as part of O&M	Cyclical	2010	30	21	2040	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Changing Room Fittings	C1030 - Fittings	Allowance for cyclical replacement of changing room finishes	Cyclical	1977	3	0	2019	\$ 9,650	\$ -	\$ 9,650	\$ -	\$ -	\$ -	\$ 9,650	\$ -	\$ -	\$ 9,650	\$ -
Toilet Partitions	E2010 - Fixed Furnishings	Replace toilet partitions in washrooms at end of useful life	Cyclical	2010	20	11	2030	\$ 860	\$ -	\$ 8,600	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Concrete Bleachers	B1010 - Floor Construction	Repair wood seats on bleachers as part of O&M	Cyclical	1977	60	26	2045	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Bleacher Railings	B1010 - Floor Construction	No major recapitalization anticipated	Cyclical	2012	50	43	2062	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Concrete Floors - Addition	C3020 - Floor Finishes	No major recapitalization anticipated	Cyclical	1999	50	30	2049	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Coated Flooring - Addition	C3020 - Floor Finishes	Replace coated floor at end of useful life	Cyclical	1999	20	6	2025	\$ 11	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Rubber Tile Flooring - Addition	C3020 - Floor Finishes	Replace at end of useful life	Cyclical	2008	20	9	2028	\$ 3,500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
VCT Flooring - Addition	C3020 - Floor Finishes	Replace VCT in addition at end of useful life	Cyclical	1999	25	11	2030	\$ 8	\$ -	\$ 29,726	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Painted Block Walls - Addition	C3010 - Wall Finishes	No major recapitalization anticipated	Cyclical	1999	60	40	2059	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Gypsum Board Finishes - Addition	C3010 - Wall Finishes	No major recapitalization anticipated	Cyclical	1999	60	40	2059	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Suspended Ceilings - Addition	C3030 - Ceiling Finishes	Replace suspended ceiling at end of useful life	Cyclical	1999	25	11	2030	\$ 6	\$ -	\$ 20,043	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Rubber Stair Finishes - Addition	C2020 - Stair Finishes	Replace stair finishes	Cyclical	1999	15	2	2021	\$ 2,800	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,800	\$ -	\$ -
Building Interior Summary									\$ -	\$ 58,369	\$ 9,650	\$ -	\$ -	\$ 9,650	\$ -	\$ 2,800	\$ 9,650	\$ -
Mechanical																		
Domestic Water	D2020 - Domestic Water Distribution	No major recapitalization anticipated	Cyclical	1977	60	26	2045	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Sanitary System	D2030 - Sanitary Waste	No major recapitalization anticipated	Cyclical	1977	60	26	2045	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Domestic Hot Water Tanks	D2020 - Domestic Water Distribution	Replace electric hot water tanks at end of useful life	Cyclical	2011	15	7	2026	\$ 1,500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Indirect Hot Water Tank	D2020 - Domestic Water Distribution	Replace indirect water heater in boiler room	Cyclical	1999	20	0	2019	\$ 2,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Washroom Fixtures	D2010 - Plumbing Fixtures	Replace washroom fixtures as required as part of O&M	Cyclical	2010	35	26	2045	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Propane Radiant Tube Heaters	D3020 - Heat Generating System	Remove heaters above ice surface and replace heaters at seating stands	Cyclical	1999	25	5	2024	\$ 3,200	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Electric Heaters	D3020 - Heat Generating System	No major recapitalization anticipated	Cyclical	2010	40	31	2050	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Oil Fired Boiler	D3020 - Heat Generating System	NY Thermal 265 MBH; Replace boiler at end of useful life	Cyclical	1999	25	3	2022	\$ 10,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Oil Storage Tank	G3060 - Fuel Distribution	1136L; Replace at end of useful life	Cyclical	2013	30	24	2043	\$ 2,500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
IPEX Piping	D3040 - Distribution Systems	Allowance for replacement of hydronic in-floor system with baseboard radiators	Cyclical	1999	40	10	2029	\$ 18,000	\$ 18,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
HRVs	D3050 - Terminal and Package Units	4x Vanee 6LC; Replace HRV's at end of useful life	Cyclical	2008	25	14	2033	\$ 7,500	\$ -	\$ -	\$ -	\$ -	\$ 30,000	\$ -	\$ -	\$ -	\$ -	\$ -
Exhaust Fans	D3090 - Other HVAC Systems Equipment	Replace and repair exhaust fans as required as part of O&M	Cyclical	1999	20	0	2019	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Dehumidification Unit - East	D3050 - Terminal and Package Units	Dectron DA2-035-8; Replace dehumidifier at end of useful life	Cyclical	2015	25	21	2040	\$ 30,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Dehumidification Unit - West	D3050 - Terminal and Package Units	Dectron; Replace dehumidifier at end of useful life	Cyclical	2013	25	19	2038	\$ 30,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 30,000
Passenger Elevator	D1010 - Elevators and Lifts	No major recapitalization anticipated	Cyclical	2002	50	33	2052	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Mechanical Summary									\$ 18,000	\$ -	\$ -	\$ -	\$ -	\$ 30,000	\$ -	\$ -	\$ -	\$ 30,000
Electrical																		
Electrical Switch Gear	D5010 - Electrical Service and Distribution	No major recapitalization anticipated	Cyclical	2013	40	34	2053	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
25 kVa Transformer	D5010 - Electrical Service and Distribution	Replace original 25kVa transformer	Cyclical	1977	40	0	2019	\$ 2,500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Over Ice Lighting	D5020 - Lighting and Branch Wiring	Replace T8 over ice lighting at end of useful life	Cyclical	2008	25	14	2033	\$ 4	\$ -	\$ -	\$ -	\$ -	\$ 73,500	\$ -	\$ -	\$ -	\$ -	\$ -
Common Area Lighting	D5020 - Lighting and Branch Wiring	Replace common area lighting at end of useful life	Cyclical	1999	25	5	2024	\$ 4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Changing Rooms Lighting	D5020 - Lighting and Branch Wiring	Replace lighting in changing rooms during cyclical renovations	Cyclical	1999	25	5	2024	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Electrical Summary									\$ -	\$ -	\$ -	\$ -	\$ 73,500	\$ -	\$ -	\$ -	\$ -	
Life Safety / Fire Suppression																		
Fire Alarm Panel	D5030 - Communications and Security	Edwards Fire Shield Plus; Replace at end of useful life	Cyclical	2016	20	17	2036	\$ 4,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 4,000	\$ -	\$ -
Heat Detector	D5030 - Communications and Security	Relocate heat detector in ice resurfacers storage room	Cyclical	2016	20	0	2019	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Range Hood Fire Suppression System	D4030 - Fire Protection	No major recapitalization anticipated	Cyclical	1999	20	25	2044	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Emergency and Exit Lighting	D5030 - Communications and Security	Replace as part of O&M	Cyclical	2013	20	14	2033	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Fire Extinguishers	D4030 - Fire Protection	Replace as part of O&M	Cyclical	1999	20	25	2044	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Life Safety / Fire Suppression Summary									\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 4,000	\$ -	\$ -	

**Richmond County Arena
Cash Flow Analysis Output Sheet**

Component	Unformat Code	Recapitalization Detail	Type of event (cyclic/single)	Year of Installation or Repair	Expected Useful Life (EUL)	Useful Life Corrected For Observations	Year of Replacement	Unit Cost	Year 21	Year 22	Year 23	Year 24	Year 25
									2039	2040	2041	2042	2043
Building Interior													
Concrete Floors	C3020 - Floor Finishes	No major recapitalization anticipated	Cyclical	1977	50	26	2045	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Painted Block Walls	C3010 - Wall Finishes	No major recapitalization anticipated	Cyclical	1977	50	26	2045	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Gypsum Board Finishes	C3030 - Ceiling Finishes	No major recapitalization anticipated	Cyclical	1977	60	26	2045	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Changing Room Suspended Ceilings	C3030 - Ceiling Finishes	Replace ceilings as part of O&M	Cyclical	2010	25	16	2035	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Acrylic Wall Finishes	C3010 - Wall Finishes	Replace acrylic wall finishes as required as part of O&M	Cyclical	2010	30	21	2040	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Changing Room Fittings	C1030 - Fittings	Allowance for cyclical replacement of changing room finishes	Cyclical	1977	3	0	2019	\$ 9,650	\$ -	\$ 9,650	\$ -	\$ -	\$ 9,650
Toilet Partitions	E2010 - Fixed Furnishings	Replace toilet partitions in washrooms at end of useful life	Cyclical	2010	20	11	2030	\$ 860	\$ -	\$ -	\$ -	\$ -	\$ -
Concrete Bleachers	B1010 - Floor Construction	Repair wood seats on bleachers as part of O&M	Cyclical	1977	60	26	2045	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Bleacher Railings	B1010 - Floor Construction	No major recapitalization anticipated	Cyclical	2012	50	43	2062	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Concrete Floors - Addition	C3020 - Floor Finishes	No major recapitalization anticipated	Cyclical	1999	50	30	2049	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Coated Flooring - Addition	C3020 - Floor Finishes	Replace coated floor at end of useful life	Cyclical	1999	20	6	2025	\$ 11	\$ -	\$ -	\$ -	\$ -	\$ -
Rubber Tile Flooring - Addition	C3020 - Floor Finishes	Replace at end of useful life	Cyclical	2008	20	9	2028	\$ 3,500	\$ -	\$ -	\$ -	\$ -	\$ -
VCT Flooring - Addition	C3020 - Floor Finishes	Replace VCT in addition at end of useful life	Cyclical	1999	25	11	2030	\$ 8	\$ -	\$ -	\$ -	\$ -	\$ -
Painted Block Walls - Addition	C3010 - Wall Finishes	No major recapitalization anticipated	Cyclical	1999	60	40	2059	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Gypsum Board Finishes - Addition	C3010 - Wall Finishes	No major recapitalization anticipated	Cyclical	1999	60	40	2059	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Suspended Ceilings - Addition	C3030 - Ceiling Finishes	Replace suspended ceiling at end of useful life	Cyclical	1999	25	11	2030	\$ 6	\$ -	\$ -	\$ -	\$ -	\$ -
Rubber Stair Finishes - Addition	C2020 - Stair Finishes	Replace stair finishes	Cyclical	1999	15	2	2021	\$ 2,800	\$ -	\$ -	\$ -	\$ -	\$ -
Building Interior Summary									\$ -	\$ 9,650	\$ -	\$ -	\$ 9,650
Mechanical													
Domestic Water	D2020 - Domestic Water Distribution	No major recapitalization anticipated	Cyclical	1977	60	26	2045	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Sanitary System	D2030 - Sanitary Waste	No major recapitalization anticipated	Cyclical	1977	60	26	2045	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Domestic Hot Water Tanks	D2020 - Domestic Water Distribution	Replace electric hot water tanks at end of useful life	Cyclical	2011	15	7	2026	\$ 1,500	\$ -	\$ -	\$ 4,500	\$ -	\$ -
Indirect Hot Water Tank	D2020 - Domestic Water Distribution	Replace indirect water heater in boiler room	Cyclical	1999	20	0	2019	\$ 2,000	\$ 2,000	\$ -	\$ -	\$ -	\$ -
Washroom Fixtures	D2010 - Plumbing Fixtures	Replace washroom fixtures as required as part of O&M	Cyclical	2010	35	26	2045	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Propane Radiant Tube Heaters	D3020 - Heat Generating System	Remove heaters above ice surface and replace heaters at seating stands	Cyclical	1999	25	5	2024	\$ 3,200	\$ -	\$ -	\$ -	\$ -	\$ -
Electric Heaters	D3020 - Heat Generating System	No major recapitalization anticipated	Cyclical	2010	40	31	2050	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Oil Fired Boiler	D3020 - Heat Generating System	NY Thermal 265 MBH; Replace boiler at end of useful life	Cyclical	1999	25	3	2022	\$ 10,000	\$ -	\$ -	\$ -	\$ -	\$ -
Oil Storage Tank	G3060 - Fuel Distribution	1136L; Replace at end of useful life	Cyclical	2013	30	24	2043	\$ 2,500	\$ -	\$ -	\$ -	\$ -	\$ 2,500
IPEX Piping	D3040 - Distribution Systems	Allowance for replacement of hydronic infloor system with baseboard radiators	Cyclical	1999	40	10	2029	\$ 18,000	\$ -	\$ -	\$ -	\$ -	\$ -
HRVs	D3050 - Terminal and Package Units	4x Vanee 6LC; Replace HRVs at end of useful life	Cyclical	2008	25	14	2033	\$ 7,500	\$ -	\$ -	\$ -	\$ -	\$ -
Exhaust Fans	D3090 - Other HVAC Systems Equipment	Replace and repair exhaust fans as required as part of O&M	Cyclical	1999	20	0	2019	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Dehumidification Unit - East	D3050 - Terminal and Package Units	Dectron DA2-035-8; Replace dehumidifier at end of useful life	Cyclical	2015	25	21	2040	\$ 30,000	\$ -	\$ 30,000	\$ -	\$ -	\$ -
Dehumidification Unit - West	D3050 - Terminal and Package Units	Dectron; Replace dehumidifier at end of useful life	Cyclical	2013	25	19	2038	\$ 30,000	\$ -	\$ -	\$ -	\$ -	\$ -
Passenger Elevator	D1010 - Elevators and Lifts	No major recapitalization anticipated	Cyclical	2002	50	33	2052	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Mechanical Summary									\$ 2,000	\$ 30,000	\$ 4,500	\$ -	\$ 2,500
Electrical													
Electrical Switch Gear	D5010 - Electrical Service and Distribution	No major recapitalization anticipated	Cyclical	2013	40	34	2053	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
25 kVa Transformer	D5010 - Electrical Service and Distribution	Replace original 25kVa transformer	Cyclical	1977	40	0	2019	\$ 2,500	\$ -	\$ -	\$ -	\$ -	\$ -
Over Ice Lighting	D5020 - Lighting and Branch Wiring	Replace T8 over ice lighting at end of useful life	Cyclical	2008	25	14	2033	\$ 4	\$ -	\$ -	\$ -	\$ -	\$ -
Common Area Lighting	D5020 - Lighting and Branch Wiring	Replace common area lighting at end of useful life	Cyclical	1999	25	5	2024	\$ 4	\$ -	\$ -	\$ -	\$ -	\$ -
Changing Rooms Lighting	D5020 - Lighting and Branch Wiring	Replace lighting in changing rooms during cyclical renovations	Cyclical	1999	25	5	2024	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Electrical Summary									\$ -	\$ -	\$ -	\$ -	\$ -
Life Safety / Fire Suppression													
Fire Alarm Panel	D5030 - Communications and Security	Edwards Fire Shield Plus; Replace at end of useful life	Cyclical	2016	20	17	2036	\$ 4,000	\$ -	\$ -	\$ -	\$ -	\$ -
Heat Detector	D5030 - Communications and Security	Relocate heat detector in ice resurfacer storage room	Cyclical	2016	20	0	2019	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Range Hood Fire Suppression System	D4030 - Fire Protection	No major recapitalization anticipated	Cyclical	1999	20	25	2044	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Emergency and Exit Lighting	D5030 - Communications and Security	Replace as part of O&M	Cyclical	2013	20	14	2033	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Fire Extinguishers	D4030 - Fire Protection	Replace as part of O&M	Cyclical	1999	20	25	2044	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Life Safety / Fire Suppression Summary									\$ -	\$ -	\$ -	\$ -	\$ -

**Richmond County Arena
Cash Flow Analysis Output Sheet**

Component	Uniformat Code	Recapitalization Detail	Type of event (cyclic/single)	Year of Installation or Repair	Expected Useful Life (EUL)	Useful Life Corrected For Observations	Year of Replacement	Unit Cost	Total Cost	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
										2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Speciality Systems																			
In Slab and Piping	D3040 - Distribution Systems	Estimate for removal and replacement of ice slab, piping and headers	Cyclical	1977	40	0	2019	\$ 840,000	\$ 840,000	\$ 840,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Compressors	D3030 - Cooling Generating Systems	Replace ice plant compressors	Cyclical	1977	30	0	2019	\$ 45,000	\$ 90,000	\$ 90,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Chiller	D3030 - Cooling Generating Systems	Replace ice plant chiller at end of useful life	Cyclical	1998	25	4	2023	\$ 50,000	\$ 50,000	\$ -	\$ -	\$ -	\$ -	\$ 50,000	\$ -	\$ -	\$ -	\$ -	\$ -
Brine Circulator Pump	D3030 - Cooling Generating Systems	Replace brine pump at end of useful life	Cyclical	1998	25	2	2021	\$ 25,000	\$ 25,000	\$ -	\$ -	\$ 25,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Condenser	D3030 - Cooling Generating Systems	Replace exterior condenser	Cyclical	1998	20	0	2019	\$ 35,000	\$ 35,000	\$ 35,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Condensate Pump	D3030 - Cooling Generating Systems	Replace condensate pump at end of useful life	Cyclical	1998	25	4	2023	\$ 3,500	\$ 3,500	\$ -	\$ -	\$ -	\$ -	\$ 3,500	\$ -	\$ -	\$ -	\$ -	\$ -
Condensate Tank	D3030 - Cooling Generating Systems	Replace tank at end of useful life	Cyclical	1998	40	19	2038	\$ 1,500	\$ 1,500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Suction Accumulator	D3030 - Cooling Generating Systems	Replace at end of useful life	Cyclical	1998	40	19	2038	\$ 25,000	\$ 25,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
TechCold Controls	D3060 - Controls and Instrumentation	No major recapitalization anticipated	Cyclical	2017	30	28	2047	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
LiteTec Control Panel	D3060 - Controls and Instrumentation	Replace control board at end of useful life	Cyclical	1998	25	4	2023	\$ 20,000	\$ 20,000	\$ -	\$ -	\$ -	\$ -	\$ 20,000	\$ -	\$ -	\$ -	\$ -	\$ -
ThermaStore Heat Recovery System	D2020 - Domestic Water Distribution	Replace heat recovery system at end of useful life	Cyclical	2013	25	19	2038	\$ 3,000	\$ 6,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Indirect Hot Water Tank	D2020 - Domestic Water Distribution	Replace Smart indirect tank at end of useful life	Cyclical	2013	25	19	2038	\$ 2,500	\$ 2,500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Jet Ice System	E1090 - Other Equipment	Replace at end of useful life	Cyclical	2013	25	19	2038	\$ 15,000	\$ 15,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Rubber Flooring	C3020 - Floor Finishes	Allowance for cyclical partial replacement of rubber flooring	Cyclical	1999	3	5	2024	\$ 3,000	\$ 3,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 3,000	\$ -	\$ -	\$ 3,000	\$ -
Dasher Boards and Player Benches	E1090 - Other Equipment	Replace dasher boards and benches at end of useful life	Cyclical	2012	30	23	2042	\$ 175,000	\$ 175,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Ice Resurfacer Gate	E1090 - Other Equipment	Replace gate lift equipment at end of useful life	Cyclical	2012	20	13	2032	\$ 2,500	\$ 2,500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Protective Netting	E1090 - Other Equipment	Replace safety netting as part of O&M	Cyclical	2012	20	13	2032	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Incandescent Scoreboard	E1090 - Other Equipment	Replace scoreboard	Cyclical	1999	20	0	2019	\$ 10,000	\$ 10,000	\$ 10,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
LED Scoreboard	E1090 - Other Equipment	Replace scoreboard at end of useful life	Cyclical	2012	20	13	2032	\$ 15,000	\$ 15,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Low-E Ceiling	C3030 - Ceiling Finishes	Replace low-E ceiling at end of useful life	Cyclical	2012	30	23	2042	\$ 30,000	\$ 30,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Ice Resurfacing Machine	E1030 - Vehicular Equipment	Allowance for replacement of ice resurfacer	Cyclical	2010	20	11	2030	\$ 125,000	\$ 125,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Speciality Systems Summary										\$ 975,000	\$ -	\$ 25,000	\$ -	\$ 73,500	\$ 3,000	\$ -	\$ -	\$ 3,000	\$ -

**Richmond County Arena
Cash Flow Analysis Output Sheet**

Component	Uniformat Code	Recapitalization Detail	Type of event (cyclic/single)	Year of Installation or Repair	Expected Useful Life (EUL)	Useful Life Corrected For Observations	Year of Replacement	Unit Cost	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
									2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Speciality Systems																		
In Slab and Piping	D3040 - Distribution Systems	Estimate for removal and replacement of ice slab, piping and headers	Cyclical	1977	40	0	2019	\$ 840,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Compressors	D3030 - Cooling Generating Systems	Replace ice plant compressors	Cyclical	1977	30	0	2019	\$ 45,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Chiller	D3030 - Cooling Generating Systems	Replace ice plant chiller at end of useful life	Cyclical	1998	25	4	2023	\$ 50,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Brine Circulator Pump	D3030 - Cooling Generating Systems	Replace brine pump at end of useful life	Cyclical	1998	25	2	2021	\$ 25,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Condenser	D3030 - Cooling Generating Systems	Replace exterior condenser	Cyclical	1998	20	0	2019	\$ 35,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Condensate Pump	D3030 - Cooling Generating Systems	Replace condensate pump at end of useful life	Cyclical	1998	25	4	2023	\$ 3,500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Condensate Tank	D3030 - Cooling Generating Systems	Replace tank at end of useful life	Cyclical	1998	40	19	2038	\$ 1,500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,500
Suction Accumulator	D3030 - Cooling Generating Systems	Replace at end of useful life	Cyclical	1998	40	19	2038	\$ 25,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 25,000
TechCold Controls	D3060 - Controls and Instrumentation	No major recapitalization anticipated	Cyclical	2017	30	28	2047	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
LiteTec Control Panel	D3060 - Controls and Instrumentation	Replace control board at end of useful life	Cyclical	1998	25	4	2023	\$ 20,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
ThermaStore Heat Recovery System	D2020 - Domestic Water Distribution	Replace heat recovery system at end of useful life	Cyclical	2013	25	19	2038	\$ 3,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 6,000
Indirect Hot Water Tank	D2020 - Domestic Water Distribution	Replace Smart indirect tank at end of useful life	Cyclical	2013	25	19	2038	\$ 2,500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,500
Jet Ice System	E1090 - Other Equipment	Replace at end of useful life	Cyclical	2013	25	19	2038	\$ 15,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 15,000
Rubber Flooring	C3020 - Floor Finishes	Allowance for cyclical partial replacement of rubber flooring	Cyclical	1999	3	5	2024	\$ 3,000	\$ -	\$ 3,000	\$ -	\$ -	\$ 3,000	\$ -	\$ -	\$ 3,000	\$ -	\$ -
Dasher Boards and Player Benches	E1090 - Other Equipment	Replace dasher boards and benches at end of useful life	Cyclical	2012	30	23	2042	\$ 175,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Ice Resurfacer Gate	E1090 - Other Equipment	Replace gate lift equipment at end of useful life	Cyclical	2012	20	13	2032	\$ 2,500	\$ -	\$ -	\$ -	\$ 2,500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Protective Netting	E1090 - Other Equipment	Replace safety netting as part of O&M	Cyclical	2012	20	13	2032	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Incandescent Scoreboard	E1090 - Other Equipment	Replace scoreboard	Cyclical	1999	20	0	2019	\$ 10,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
LED Scoreboard	E1090 - Other Equipment	Replace scoreboard at end of useful life	Cyclical	2012	20	13	2032	\$ 15,000	\$ -	\$ -	\$ -	\$ 15,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Low-E Ceiling	C3030 - Ceiling Finishes	Replace low-E ceiling at end of useful life	Cyclical	2012	30	23	2042	\$ 30,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Ice Resurfacing Machine	E1030 - Vehicular Equipment	Allowance for replacement of ice resurfacer	Cyclical	2010	20	11	2030	\$ 125,000	\$ -	\$ 125,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Speciality Systems Summary									\$ -	\$ 128,000	\$ -	\$ 17,500	\$ 3,000	\$ -	\$ -	\$ 3,000	\$ -	\$ 50,000

**Richmond County Arena
Cash Flow Analysis Output Sheet**

Component	Uniformat Code	Recapitalization Detail	Type of event (cyclic/single)	Year of Installation or Repair	Expected Useful Life (EUL)	Useful Life Corrected For Observations	Year of Replacement	Unit Cost	Year 21	Year 22	Year 23	Year 24	Year 25
									2039	2040	2041	2042	2043
Speciality Systems													
In Slab and Piping	D3040 - Distribution Systems	Estimate for removal and replacement of ice slab, piping and headers	Cyclical	1977	40	0	2019	\$ 840,000	\$ -	\$ -	\$ -	\$ -	\$ -
Compressors	D3030 - Cooling Generating Systems	Replace ice plant compressors	Cyclical	1977	30	0	2019	\$ 45,000	\$ -	\$ -	\$ -	\$ -	\$ -
Chiller	D3030 - Cooling Generating Systems	Replace ice plant chiller at end of useful life	Cyclical	1998	25	4	2023	\$ 50,000	\$ -	\$ -	\$ -	\$ -	\$ -
Brine Circulator Pump	D3030 - Cooling Generating Systems	Replace brine pump at end of useful life	Cyclical	1998	25	2	2021	\$ 25,000	\$ -	\$ -	\$ -	\$ -	\$ -
Condenser	D3030 - Cooling Generating Systems	Replace exterior condenser	Cyclical	1998	20	0	2019	\$ 35,000	\$ 35,000	\$ -	\$ -	\$ -	\$ -
Condensate Pump	D3030 - Cooling Generating Systems	Replace condensate pump at end of useful life	Cyclical	1998	25	4	2023	\$ 3,500	\$ -	\$ -	\$ -	\$ -	\$ -
Condensate Tank	D3030 - Cooling Generating Systems	Replace tank at end of useful life	Cyclical	1998	40	19	2038	\$ 1,500	\$ -	\$ -	\$ -	\$ -	\$ -
Suction Accumulator	D3030 - Cooling Generating Systems	Replace at end of useful life	Cyclical	1998	40	19	2038	\$ 25,000	\$ -	\$ -	\$ -	\$ -	\$ -
TechCold Controls	D3060 - Controls and Instrumentation	No major recapitalization anticipated	Cyclical	2017	30	28	2047	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
LiteTec Control Panel	D3060 - Controls and Instrumentation	Replace control board at end of useful life	Cyclical	1998	25	4	2023	\$ 20,000	\$ -	\$ -	\$ -	\$ -	\$ -
ThermaStore Heat Recovery System	D2020 - Domestic Water Distribution	Replace heat recovery system at end of useful life	Cyclical	2013	25	19	2038	\$ 3,000	\$ -	\$ -	\$ -	\$ -	\$ -
Indirect Hot Water Tank	D2020 - Domestic Water Distribution	Replace Smart indirect tank at end of useful life	Cyclical	2013	25	19	2038	\$ 2,500	\$ -	\$ -	\$ -	\$ -	\$ -
Jet Ice System	E1090 - Other Equipment	Replace at end of useful life	Cyclical	2013	25	19	2038	\$ 15,000	\$ -	\$ -	\$ -	\$ -	\$ -
Rubber Flooring	C3020 - Floor Finishes	Allowance for cyclical partial replacement of rubber flooring	Cyclical	1999	3	5	2024	\$ 3,000	\$ 3,000	\$ -	\$ -	\$ 3,000	\$ -
Dasher Boards and Player Benches	E1090 - Other Equipment	Replace dasher boards and benches at end of useful life	Cyclical	2012	30	23	2042	\$ 175,000	\$ -	\$ -	\$ -	\$ 175,000	\$ -
Ice Resurfacers Gate	E1090 - Other Equipment	Replace gate lift equipment at end of useful life	Cyclical	2012	20	13	2032	\$ 2,500	\$ -	\$ -	\$ -	\$ -	\$ -
Protective Netting	E1090 - Other Equipment	Replace safety netting as part of O&M	Cyclical	2012	20	13	2032	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Incandescent Scoreboard	E1090 - Other Equipment	Replace scoreboard	Cyclical	1999	20	0	2019	\$ 10,000	\$ 10,000	\$ -	\$ -	\$ -	\$ -
LED Scoreboard	E1090 - Other Equipment	Replace scoreboard at end of useful life	Cyclical	2012	20	13	2032	\$ 15,000	\$ -	\$ -	\$ -	\$ -	\$ -
Low-E Ceiling	C3030 - Ceiling Finishes	Replace low-E ceiling at end of useful life	Cyclical	2012	30	23	2042	\$ 30,000	\$ -	\$ -	\$ -	\$ 30,000	\$ -
Ice Resurfacing Machine	E1030 - Vehicular Equipment	Allowance for replacement of ice resurfacers	Cyclical	2010	20	11	2030	\$ 125,000	\$ -	\$ -	\$ -	\$ -	\$ -
Speciality Systems Summary									\$ 48,000	\$ -	\$ -	\$ 208,000	\$ -

Richmond County Arena Cash Flow Summary Output Sheet

Richmond County Arena	Year 1 2019	Year 2 2020	Year 3 2021	Year 4 2022	Year 5 2023	Year 6 2024	Year 7 2025	Year 8 2026	Year 9 2027	Year 10 2028
Site Work	\$ 14,760	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Structure	\$ 2,000,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Roof	\$ 5,850	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 306,900	\$ -	\$ -
Exterior Envelope	\$ 53,750	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Building Interior	\$ 9,650	\$ -	\$ 2,800	\$ 9,650	\$ -	\$ -	\$ 17,236	\$ -	\$ -	\$ 13,150
Mechanical	\$ 2,000	\$ -	\$ -	\$ 10,000	\$ -	\$ 19,200	\$ -	\$ 4,500	\$ -	\$ -
Electrical	\$ 2,500	\$ -	\$ -	\$ -	\$ -	\$ 40,775	\$ -	\$ -	\$ -	\$ -
Life Safety / Fire Suppression	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Specialty Systems	\$ 975,000	\$ -	\$ 25,000	\$ -	\$ 73,500	\$ 3,000	\$ -	\$ -	\$ 3,000	\$ -
TOTAL for Richmond County Arena	\$ 3,063,510	\$ -	\$ 27,800	\$ 19,650	\$ 73,500	\$ 62,975	\$ 17,236	\$ 311,400	\$ 3,000	\$ 13,150

Facility Condition Calculation Output Sheet

Richmond County Arena	Year 1 2019	Year 2 2020	Year 3 2021	Year 4 2022	Year 5 2023	Year 6 2024	Year 7 2025	Year 8 2026	Year 9 2027	Year 10 2028
Balance Carried from Previous Year	\$ -	\$ 3,676,212	\$ 3,676,212	\$ 3,709,572	\$ 3,733,152	\$ 3,821,352	\$ 3,896,922	\$ 3,917,605	\$ 4,291,285	\$ 4,294,885
Anticipated Annual Recap Requirement	\$ 3,063,510	\$ -	\$ 27,800	\$ 19,650	\$ 73,500	\$ 62,975	\$ 17,236	\$ 311,400	\$ 3,000	\$ 13,150
Soft Costs	\$ 612,702	\$ -	\$ 5,560	\$ 3,930	\$ 14,700	\$ 12,595	\$ 3,447	\$ 62,280	\$ 600	\$ 2,630
Total Anticipated Requirements	\$ 3,676,212	\$ 3,676,212	\$ 3,709,572	\$ 3,733,152	\$ 3,821,352	\$ 3,896,922	\$ 3,917,605	\$ 4,291,285	\$ 4,294,885	\$ 4,310,665
Capital Funding	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Operational Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Maintenance Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Loan Payments	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Building Replacement Value	\$ 5,591,250	\$ 5,591,250	\$ 5,591,250	\$ 5,591,250	\$ 5,591,250	\$ 5,591,250	\$ 5,591,250	\$ 5,591,250	\$ 5,591,250	\$ 5,591,250
Amount of Deferred Maintenance	\$ 3,676,212	\$ 3,676,212	\$ 3,709,572	\$ 3,733,152	\$ 3,821,352	\$ 3,896,922	\$ 3,917,605	\$ 4,291,285	\$ 4,294,885	\$ 4,310,665
Annual Cost of Ownership	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
FCI	65.75%	65.75%	66.35%	66.77%	68.35%	69.70%	70.07%	76.75%	76.81%	77.10%

Richmond County Arena Cash Flow Summary Output Sheet

Richmond County Arena	Year 11 2029	Year 12 2030	Year 13 2031	Year 14 2032	Year 15 2033	Year 16 2034	Year 17 2035	Year 18 2036	Year 19 2037	Year 20 2038	Year 21 2039	Year 22 2040	Year 23 2041	Year 24 2042	Year 25 2043
Site Work	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,570	\$ 3,000	\$ -	\$ 21,760	\$ -	\$ -	\$ -	\$ -
Structure	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Roof	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Exterior Envelope	\$ -	\$ -	\$ 11,700	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 103,200	\$ -	\$ -	\$ -	\$ -
Building Interior	\$ -	\$ 58,369	\$ 9,650	\$ -	\$ -	\$ 9,650	\$ -	\$ 2,800	\$ 9,650	\$ -	\$ -	\$ 9,650	\$ -	\$ -	\$ 9,650
Mechanical	\$ 18,000	\$ -	\$ -	\$ -	\$ 30,000	\$ -	\$ -	\$ -	\$ -	\$ 30,000	\$ 2,000	\$ 30,000	\$ 4,500	\$ -	\$ 2,500
Electrical	\$ -	\$ -	\$ -	\$ -	\$ 73,500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Life Safety / Fire Suppression	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 4,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Specality Systems	\$ -	\$ 128,000	\$ -	\$ 17,500	\$ 3,000	\$ -	\$ -	\$ 3,000	\$ -	\$ 50,000	\$ 48,000	\$ -	\$ -	\$ 208,000	\$ -
TOTAL for Richmond County Arena	\$ 18,000	\$ 186,369	\$ 21,350	\$ 17,500	\$ 106,500	\$ 9,650	\$ -	\$ 11,370	\$ 12,650	\$ 80,000	\$ 174,960	\$ 39,650	\$ 4,500	\$ 208,000	\$ 12,150

Facility Condition Calculation Output Sheet

Richmond County Arena	Year 11 2029	Year 12 2030	Year 13 2031	Year 14 2032	Year 15 2033	Year 16 2034	Year 17 2035	Year 18 2036	Year 19 2037	Year 20 2038	Year 21 2039	Year 22 2040	Year 23 2041	Year 24 2042	Year 25 2043
Balance Carried from Previous Year	\$ 4,310,665	\$ 4,332,265	\$ 4,555,908	\$ 4,581,528	\$ 4,602,528	\$ 4,730,328	\$ 4,741,908	\$ 4,741,908	\$ 4,755,552	\$ 4,770,732	\$ 4,866,732	\$ 5,076,684	\$ 5,124,264	\$ 5,129,664	\$ 5,379,264
Anticipated Annual Recap Requirement	\$ 18,000	\$ 186,369	\$ 21,350	\$ 17,500	\$ 106,500	\$ 9,650	\$ -	\$ 11,370	\$ 12,650	\$ 80,000	\$ 174,960	\$ 39,650	\$ 4,500	\$ 208,000	\$ 12,150
Soft Costs	\$ 3,600	\$ 37,274	\$ 4,270	\$ 3,500	\$ 21,300	\$ 1,930	\$ -	\$ 2,274	\$ 2,530	\$ 16,000	\$ 34,992	\$ 7,930	\$ 900	\$ 41,600	\$ 2,430
Total Anticipated Requirements	\$ 4,332,265	\$ 4,555,908	\$ 4,581,528	\$ 4,602,528	\$ 4,730,328	\$ 4,741,908	\$ 4,741,908	\$ 4,755,552	\$ 4,770,732	\$ 4,866,732	\$ 5,076,684	\$ 5,124,264	\$ 5,129,664	\$ 5,379,264	\$ 5,393,844
Capital Funding	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Operational Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Maintenance Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Loan Payments	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Building Replacement Value	\$ 5,591,250	\$ 5,591,250	\$ 5,591,250	\$ 5,591,250	\$ 5,591,250	\$ 5,591,250	\$ 5,591,250	\$ 5,591,250	\$ 5,591,250	\$ 5,591,250	\$ 5,591,250	\$ 5,591,250	\$ 5,591,250	\$ 5,591,250	\$ 5,591,250
Amount of Deferred Maintenance	\$ 4,332,265	\$ 4,555,908	\$ 4,581,528	\$ 4,602,528	\$ 4,730,328	\$ 4,741,908	\$ 4,741,908	\$ 4,755,552	\$ 4,770,732	\$ 4,866,732	\$ 5,076,684	\$ 5,124,264	\$ 5,129,664	\$ 5,379,264	\$ 5,393,844
Annual Cost of Ownership	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
FCI	77.48%	81.48%	81.94%	82.32%	84.60%	84.81%	84.81%	85.05%	85.32%	87.04%	90.80%	91.65%	91.74%	96.21%	96.47%

Appendix B - Photo Log



Photo 1: North Entrances to Richmond Arena



Photo 2: Partial North Elevation



Photo 3: East Elevation



Photo 4: Partial South Elevation



Photo 5: South Elevation



Photo 6: West Elevation



Photo 7: Building Roof and Surrounding Area



Photo 8: Damage to Original Siding on South Elevation



Photo 9: Corrosion at Base of Siding on North Elevation



Photo 10: Cracking to Wood Stair Rim Joist



Photo 11: Deterioration to Wood Stair Stringers



Photo 12: Arena Area, Dasher Boards, Lighting, Protective Nets, and Low-E Ceiling

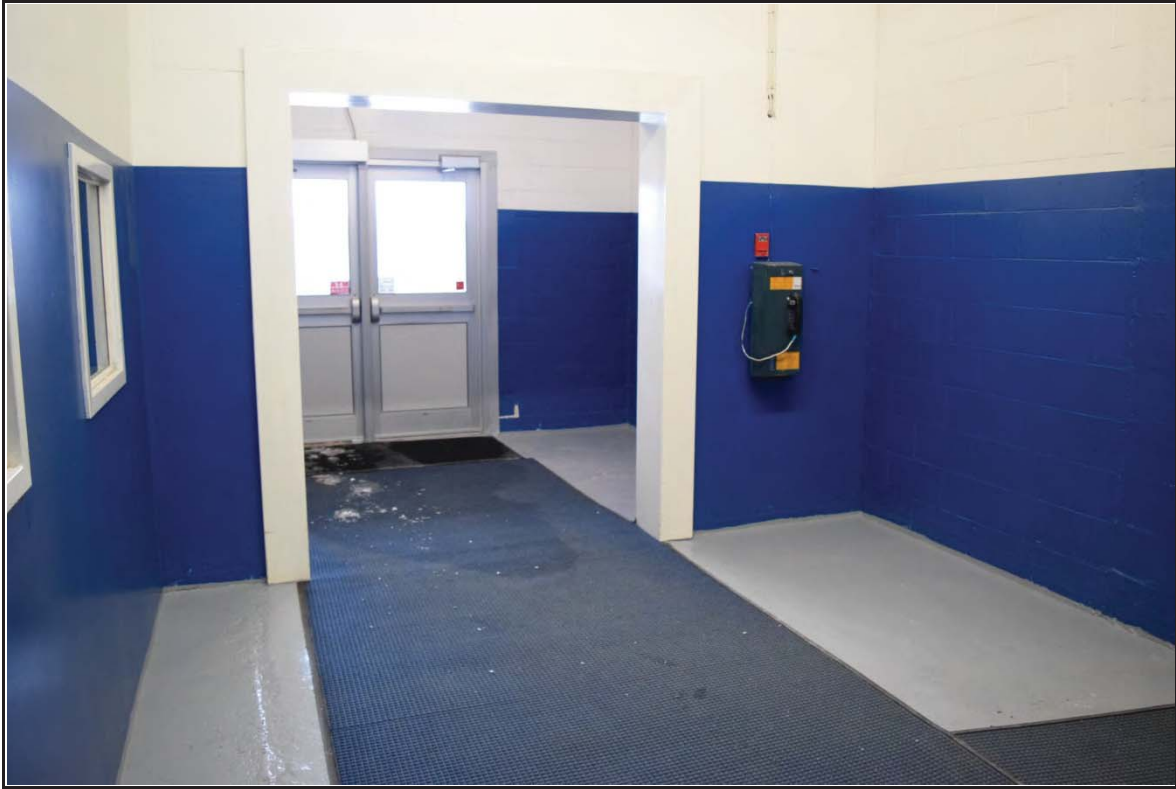


Photo 13: Common Area Entrance Finishes



Photo 14: Typical Bleacher and Rink Area Finishes



Photo 15: Changing Room #1 Finishes



Photo 16: Changing Room #2 Finishes

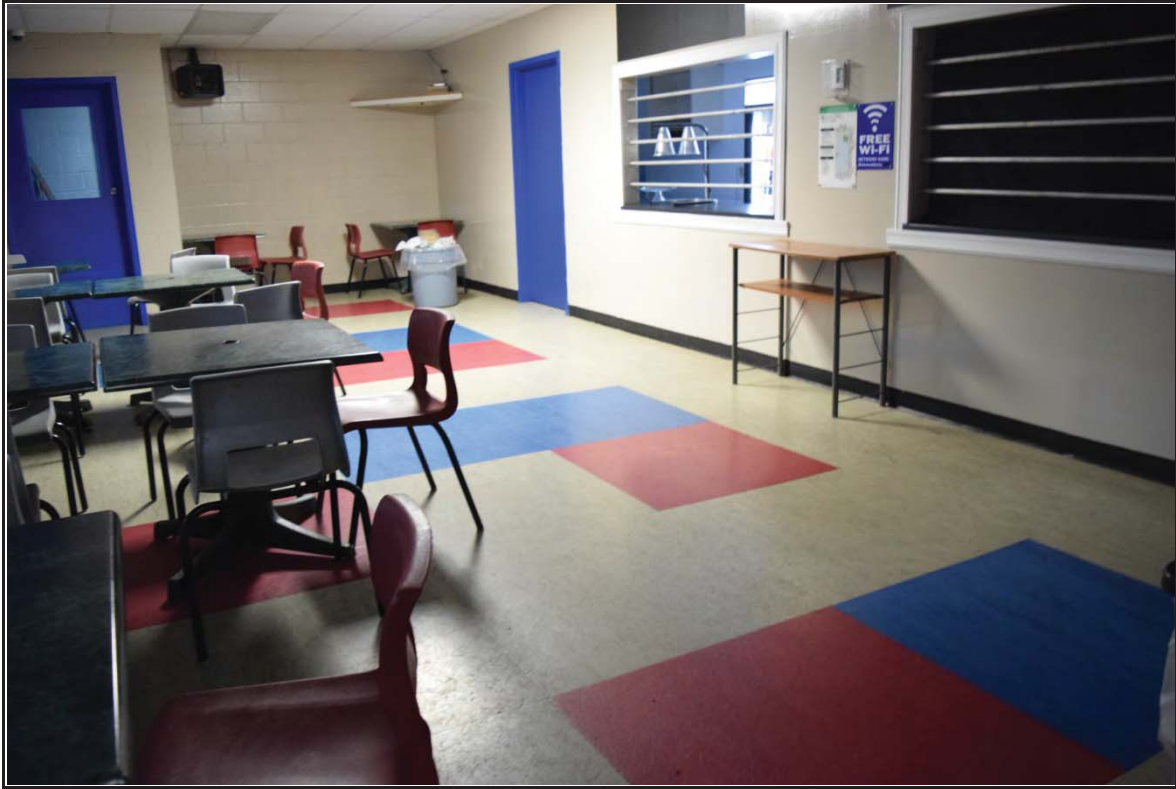


Photo 17: Canteen Finishes and Rubber Floor Tiles

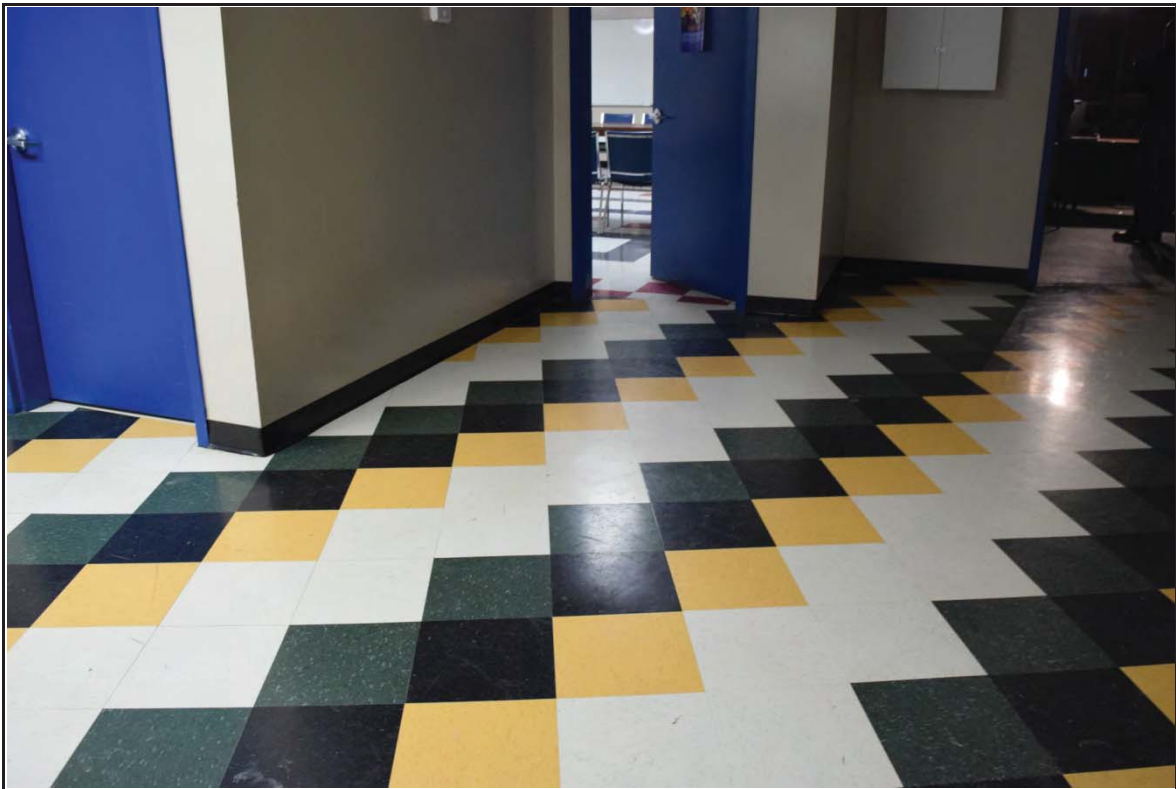


Photo 18: Upper Level Addition Typical Finishes

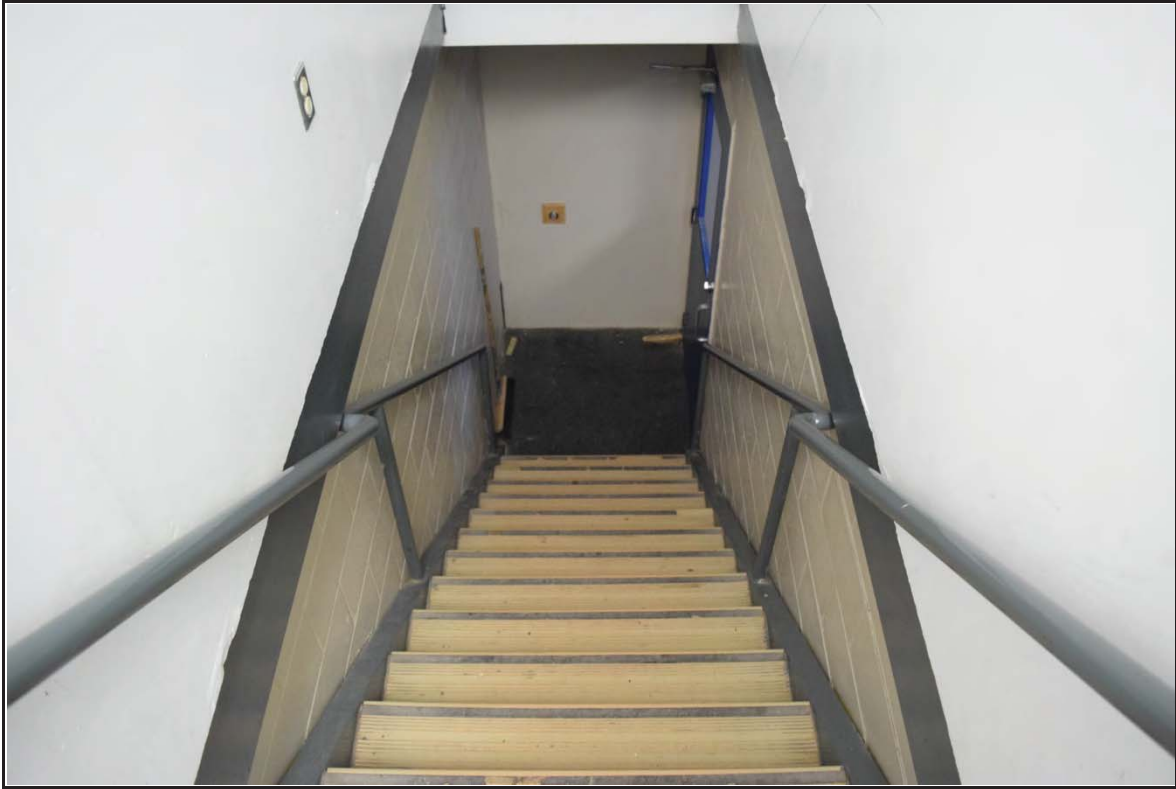


Photo 19: Typical Stair Finishes

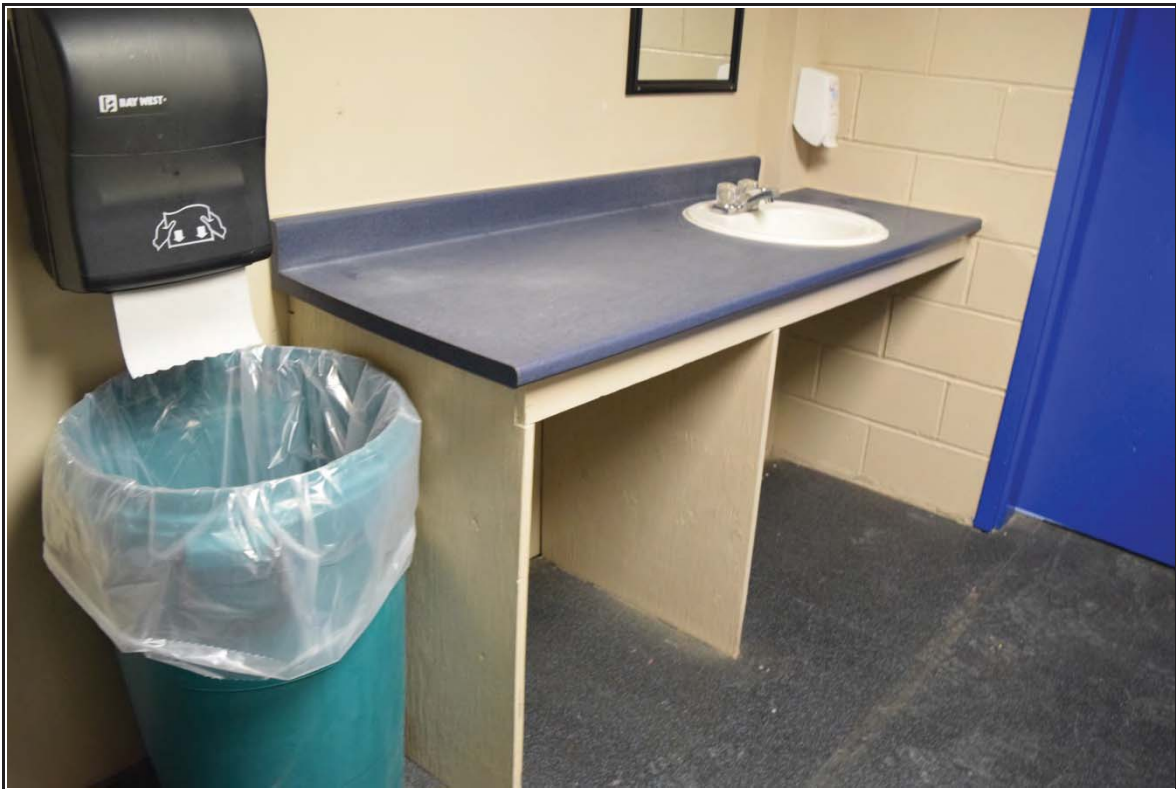


Photo 20: Typical Washroom Finishes



Photo 21: Typical Washroom Partitions



Photo 22: Typical Tear in Roof Insulation Membrane



Photo 23: Damage Insulation at Upper Wall

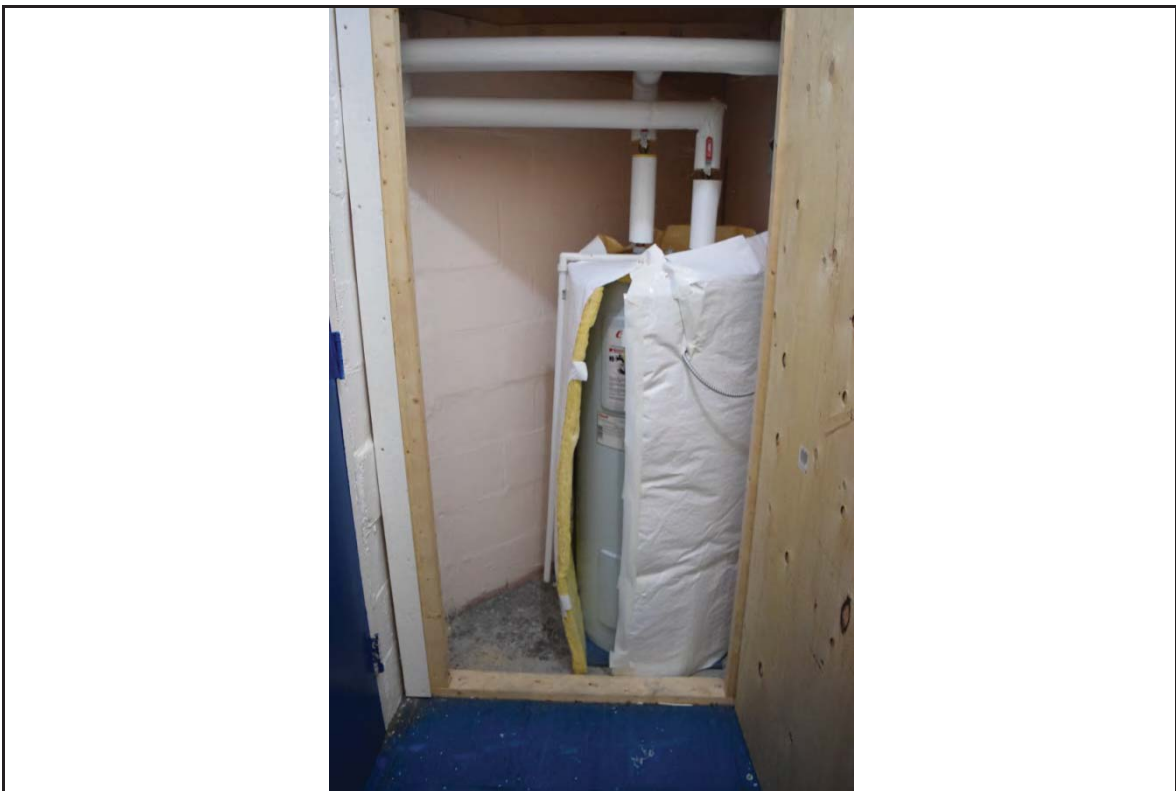


Photo 24: Typical Electric Domestic Water Heater



Photo 25: Typical Radiant Tube Propane Heater



Photo 26: NY Thermal Boiler

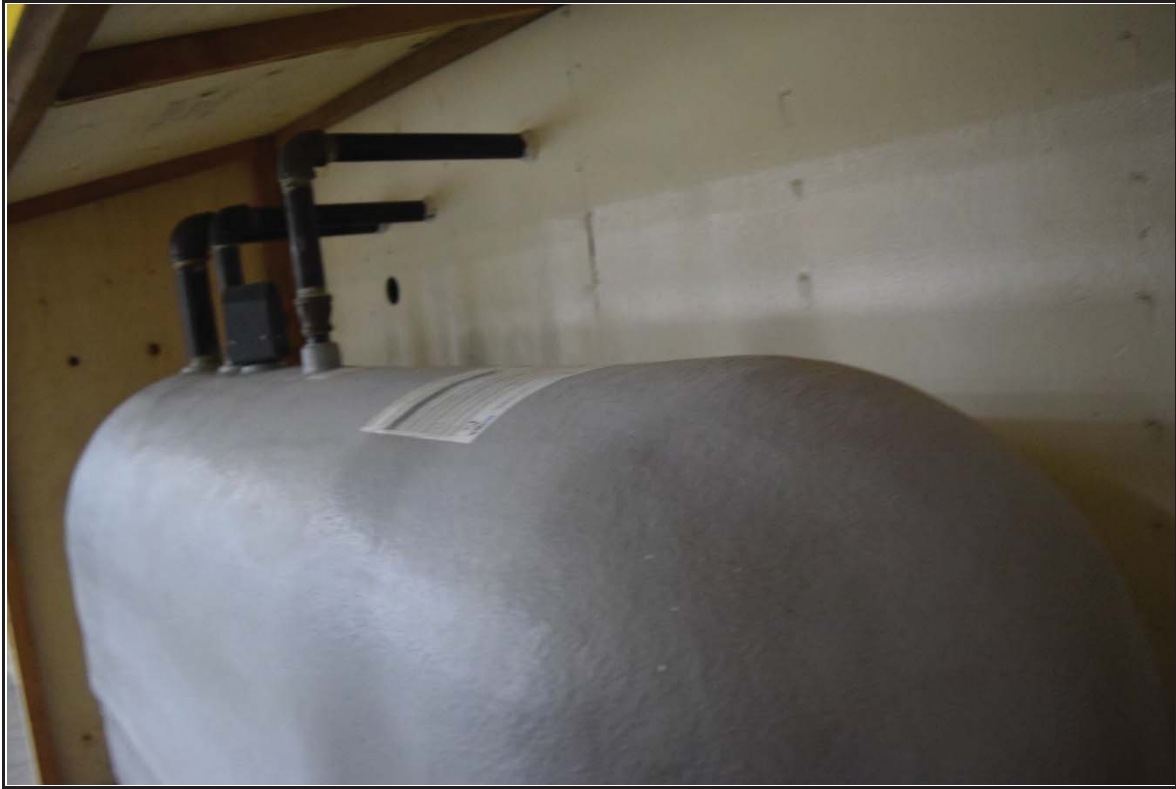


Photo 27: Fiberglass Fuel Oil Storage Tank

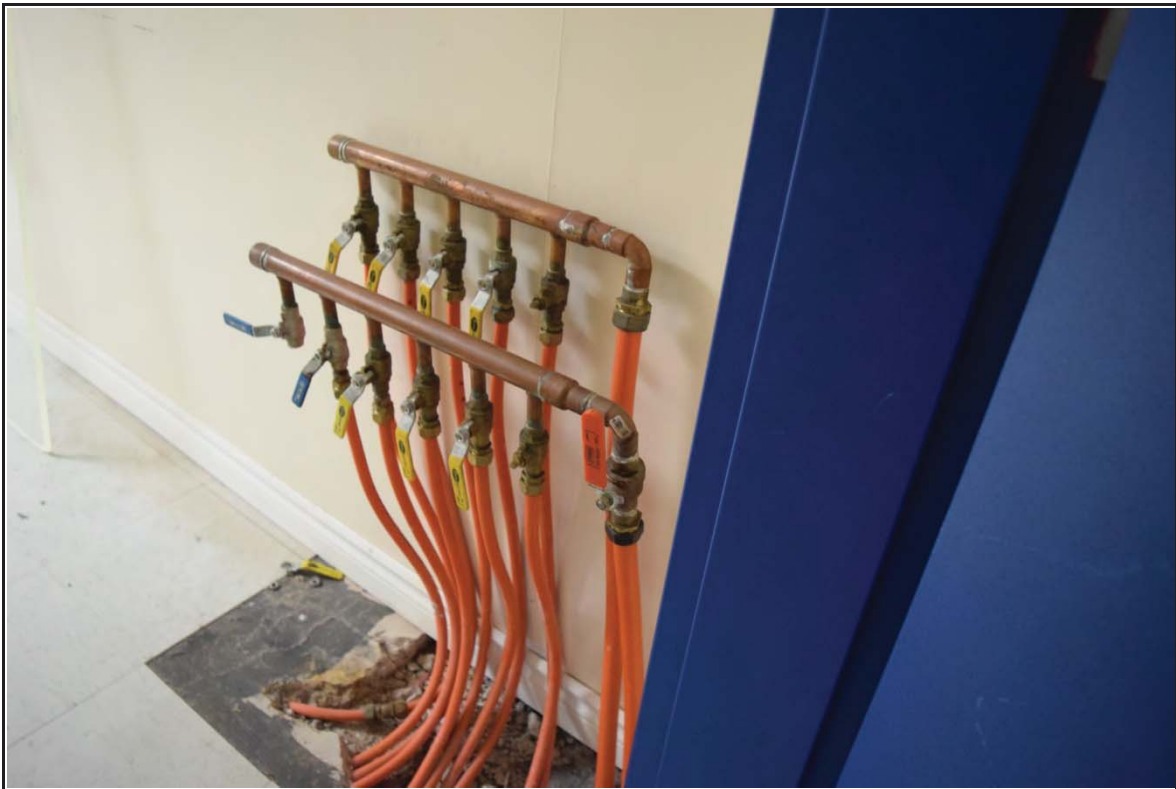


Photo 28: Manifold for Infloor Heating with Kitec Piping



Photo 29: Typical Vaneer 6LC HRV



Photo 30: Eastern Dectron Dehumidifier



Photo 31: Main 800A 347/600 Disconnect, Distribution, and Transformers



Photo 32: Edwards FireShield Plus Fire Alarm Panel, and Cimco Refrigerant Leak Alarm



Photo 33: Typical Fire Extinguisher



Photo 34: Typical Emergency Lighting



Photo 35: Skid Mounted Chiller, Vacuum Accumulator, and Brine Pump



Photo 36: ThermoStor Heat Recovery Tanks

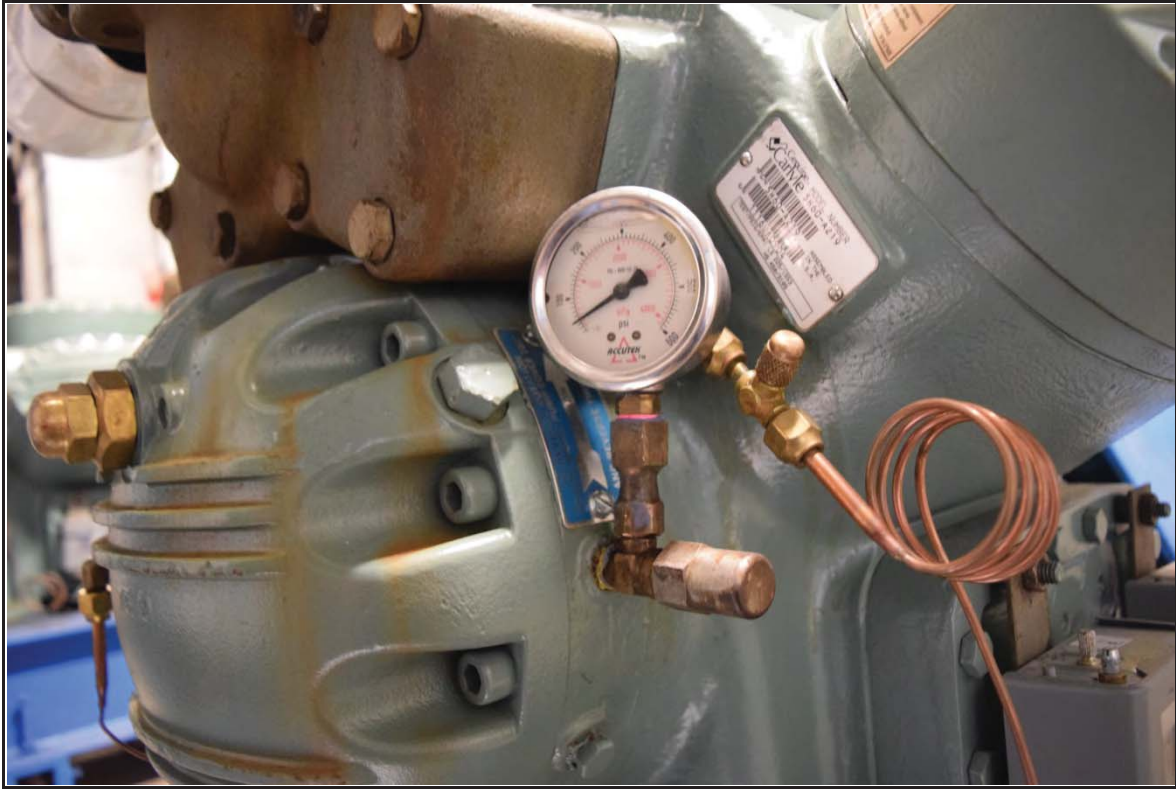


Photo 37: Ice Plant Compressor



Photo 38: Ice Plant Condenser

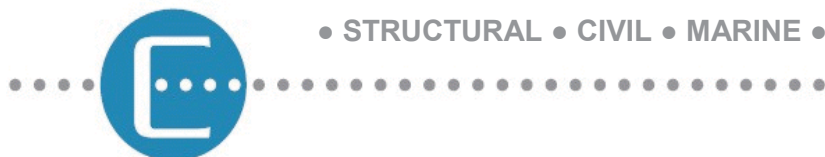


Photo 39: Ice Plant LiteTec Control Board



Photo 40: Eastern Scoreboard

Appendix C – Structural Analysis Summary



January 10, 2018

Mr. Gerard Wttewaall
Capital Management Engineering Limited
5531 Cornwallis Street
Halifax, NS B3K 1B3

Dear Gerard:

RE: ***Richmond Arena***
3122 Whiteside Road
Louisdale, NS

Campbell Comeau Engineering Limited has carried out a structural engineering review of the roof at the above-named address. The review has focused upon the structural capacity of the purlins that support the steel roof deck and the main rigid frames.

The roof of this 44 year old steel building is framed with rigid frames spaced at 24 feet on center. Steel purlins span between these frames and support the roof deck. An analysis of the purlins indicates that the purlins do not have sufficient capacity to satisfy the current NBCC 2015 requirements for snow loading. There is a theoretical overload in the purlins in the order of 62%.

The main rigid frames span approximately 120 feet. An analysis of the main rigid frames indicates that the main rigid frames do not have sufficient capacity to satisfy the current NBCC 2015 requirements for snow loading. The current design loading is approximately double the capacity of the existing rigid frames.

Further to our analysis we have carried out a limited visual review of the roof purlins and rigid frames at the site. Only a small portion of the purlins and rigid frames are visible at the sides of the arena. Our visual review indicates that these purlins remain in good condition. We did not observe buckled or bent purlins. The visible portions of the rigid frames also remain in good condition.

Our analysis is based upon the roof snow load under a non-windswept condition. The NBCC permits reduction in snow loading where a roof is fully exposed to wind. Due to the proximity of

Mr. Wttewaall
Page 2
January 10, 2019

the trees on the east side of the arena, it was determined that this roof does not meet the requirements for windswept snow loading.

We trust that this is the information that you require at this time. If you should have any questions regarding the above, please do not hesitate to contact us.

Yours very truly,

CAMPBELL COMEAU ENGINEERING LIMITED

James Miller, P. Eng.

JMM/emc
29318

