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Final Capital Plan R1
Building Condition Assessment
West Richmond Education Centre
19 School Road, Evanston
Richmond County, Nova Scotia

September 2021
Project Number 2101072

Prepared for:

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Municipality of the County of Richmond
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1 Executive Summary

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 West Richmond Education Centre (School) located at 19 School Road in Evanston, Richmond County, Nova Scotia. To support the development of the capital plan a building condition assessment was completed.

The following Tables and Charts summarize the findings detailed in the body of this report.

Salient Information Table

Property Name	West Richmond Education Centre
Street Address	9 School Road
City, Province	Evanston, Nova Scotia
Primary Use	Junior High School
Number of Buildings on Site	One
Foundation	Concrete
Superstructure	Block and OWSJ
Cladding	Brick and Wood
Roof Membrane	Modified Bitumen
Reported Year Built	1978
Reported Building Area	25,810 ft^2
Evaluation Period	25 Years
Site Assessment Conducted By	Gerard Wttewaall

Current Condition

The West Richmond Education Centre has a year one anticipated requirement and infrastructure deficit totalling $1,647,493 and an additional anticipated five year capital investment requirement of $653,923 (totaling $2,301,417) to meet all anticipated renewal needs. The building condition is considered in the Fair condition with a current Facility Condition Index of 25.53%.

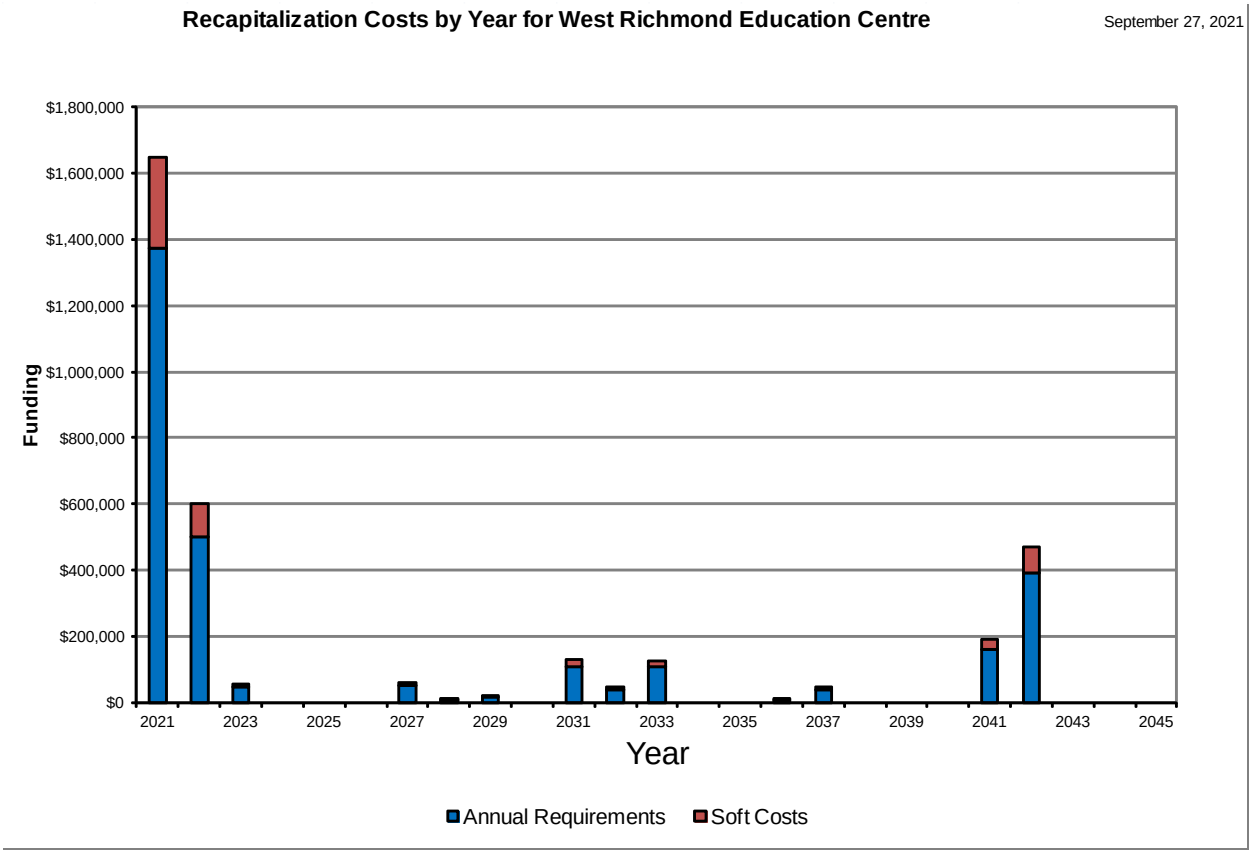
In CMEL's opinion, The West Richmond Education Centre is in fair to poor condition.

The building's interior finishes, domestic water, heating, and sprinkler systems have been negatively impacted by the unavailability of building heat in recent years due to mechanical failures and the substantial costs associated both with component repair of the heating system and fuel oil costs. In addition, the age of the building results in a substantial number of components and building systems that will or have reached their expected useful life and will require replacement. The replacement of systems and components as recommended in this report is not expected to create an operational school similar to its prior use, nor what would be expected from a newly constructed

school of today. To return the building to its prior use, in addition to the recommended replacements, school or program specific furniture and equipment would be required. Additionally, current standards have change and may require systems not previously provided by the building, such as a panic and/or lock down security systems.

The recommended replacements as outlined in this report would provide a usable facility, void of any specific systems or furniture utilised in the operation of a school. In the event that the usage of facility were to change substantially, additional changes may be required or recommended such as changes to plumbing systems, heating systems, ventilation, electrical layout, or interior partition walls. These changes are beyond the scope of this report.

Renewal Requirements Next 25 Years



Renewal Costs by System Group

	Renewal Requirements			
Component Category	**Year 1**	**Years 2-5**	**Years 6-10**	**Years 11-25**
Site Work	$ 11,560	$ 17,297	$ -	$ 76,450
Structure	$ -	$ -	$ -	$ -
Roof	$ 105,700	$ 370,320	$ -	$ 442,000
Exterior Envelope	$ 107,213	$ 37,515	$ 49,515	$ 112,545
Building Interior	$ 389,873	$ 56,756	$ 17,160	$ 98,713
Mechanical	$ 544,055	$ 63,049	$ 8,000	$ 11,540
Electrical	$ 93,850	$ -	$ -	$ 95,497
Life Safety / Fire Suppression	$ 120,661	$ -	$ -	$ 4,000
Specality Systems	$ -	$ -	$ -	$ -
West Richmond Education Centre	$ 1,372,911	$ 544,936	$ 74,675	$ 840,745
Soft Costs	$ 274,582	$ 108,987	$ 14,935	$ 168,149
TOTAL for West Richmond Education Centre	$ 1,647,493	$ 653,923	$ 89,610	$ 1,008,894

West Richmond Education Centre Project Output Sheet Sorted by Year and Risk

Component	Uniformat Code	Recapitalization Detail	Year of Replacement	Expected Useful Life (EUL)	Current Age	Decision Parameters Total	Total Cost
Mold Remediation	C1010 - Partitions	Allowance for mold cleaning and treatment	2021	10	43	12	$ 150,000
Ductwork Cleaning	D3040 - Distribution Systems	Allowance to clean all ductwork	2021	10	43	12	$ 20,600
Sprinkler System Piping	D4010 - Sprinklers	Allowance for replacement of sprinkler piping and heads	2021	40	43	12	$ 90,335
Fire Alarm Panel	D5030 - Communications and Security	Replace Edwards 6500 Custom fire alarm panel	2021	20	43	11	$ 4,000
Emergency Lighting	D5030 - Communications and Security	Replace emergency and exit lighting	2021	25	43	11	$ 26,326
Fire Extinguishers	D4090 - Other Fire Protection Systems	Reinstall fire extinguishers as part of O&M. No major recapitalization anticipated during the evaluation period	2021	20	43	10	$ -
Modified Bitumen Roofing - Lower Roof	B3010 - Roof Coverings	Replace modified bitumen roofing	2022	20	20	2	$ 354,960
Modified Bitumen Roofing - Gymnasium Roof	B3010 - Roof Coverings	Replace modified bitumen roofing	2021	20	20	2	$ 87,040
Domestic Water Supply	D2020 - Domestic Water Distribution	Allowances for replacement of domestic water supply lines	2021	40	43	2	$ 132,276
Sanitary System	D2030 - Sanitary Waste	Allowance for partial replacement and repair of sanitary piping	2022	40	43	2	$ 18,499
Domestic Water Boiler	D3020 - Heat Generating System	Replace New Yorker Boiler	2021	30	43	2	$ 36,500
Heating Boilers	D3020 - Heat Generating System	Replace heating boilers	2021	40	43	2	$ 73,000
Hot Water Baseboards and Cabinet Heaters	D3040 - Distribution Systems	Allowance for replacement for 50% of heating distribution and terminal units	2021	40	43	2	$ 118,081
Fuel Storage Tank	G3060 - Fuel Distribution	Replace 4,555L above ground fuel storage tank	2021	25	27	2	$ 15,300
Compressor and Air Dryer	D3060 - Controls and Instrumentation	Replace compressor and air dryer	2021	20	17	2	$ 5,500
Pneumatic Controls	D3060 - Controls and Instrumentation	Allowance for replacement of pneumatic building controls	2021	25	43	2	$ 26,842
Main Electrical Disconnect	D5010 - Electrical Service and Distribution	Replace Sylvania 400A 347/600V main disconnect and cabinet	2021	40	43	2	$ 8,000
Electrical Distribution	D5010 - Electrical Service and Distribution	Allowance for replacement of distribution panels	2021	40	43	2	$ 85,850
Concrete Walkway and Stairs	G2030 - Pedestrian Paving	Repair concrete walkways and spalling at stairs	2022	40	43	1	$ 3,300
Building Mounted Lighting	G4020 - Site Lighting	Replace building mounted lighting	2021	20	15	1	$ 5,400
Roof Drains - Repairs and Cleaning	D2040 - Rain Water Drainage	Clean roof drains, inspect and repair elbows and insulation	2021	40	43	1	$ 7,140
Skylights - Lower Roof	B3020 - Roof Openings	Replace skylights	2022	25	20	1	$ 15,360

Component	Uniformat Code	Recapitalization Detail	Year of Replacement	Expected Useful Life (EUL)	Current Age	Decision Parameters Total	Total Cost
Skylights - Gymnasium Roof	B3020 - Roof Openings	Replace skylights	2021	25	20	1	$ 11,520
Brick Masonry - Repointing	B2010 - Exterior Walls	Allowances for repointing of 10% repointing of brick cladding	2022	5	43	1	$ 37,515
Building Sealants	B2010 - Exterior Walls	Replace building sealants	2021	25	43	1	$ 7,920
Wood Cladding	B2010 - Exterior Walls	Replace wood cladding	2021	30	43	1	$ 16,440
Toilets	D2010 - Plumbing Fixtures	Replace washroom fixtures	2021	35	43	1	$ 15,000
Urinals	D2010 - Plumbing Fixtures	Replace washroom fixtures	2021	35	43	1	$ 2,112
Sinks	D2010 - Plumbing Fixtures	Replace washroom fixtures	2021	35	43	1	$ 15,000
Showers	D2010 - Plumbing Fixtures	Replace washroom fixtures	2021	35	43	1	$ 28,644
Lab and Kitchen Sinks	D2010 - Plumbing Fixtures	Replace lab and kitchen sinks	2021	35	43	1	$ 9,000
Air Handling Unit 1	D3040 - Distribution Systems	AHU1 servicing south portion of school. Replace AHU	2021	40	43	1	$ 14,200
Air Handling Unit 2	D3040 - Distribution Systems	AHU2 servicing north portion of school. Replace AHU	2021	40	43	1	$ 27,000
Air Handling Unit 3	D3040 - Distribution Systems	AHU3 servicing gymnasium. Replace AHU	2023	40	43	1	$ 44,550
Exhaust Fans	D3090 - Other HVAC Systems Equipment	Replace exhaust fans	2021	20	43	1	$ 5,000
Asphalt Paving - Repair	G2010 - Roadways	Allowance for repairs to 10% of asphalt paving	2021	20	21	0	$ 6,160
Concrete Curbing	G2040 - Site Development	Repair concrete curbing	2022	40	43	0	$ 3,105
Metal Handrails	G2040 - Site Development	Replace metal handrails	2022	40	43	0	$ 1,404
Gravel Paving	G2040 - Site Development	Fill and re-grade gravel driveway	2023	60	43	0	$ 1,073
Chain Link Fencing - Field	G2040 - Site Development	Replace chain link fencing at field	2022	35	27	0	$ 5,355
Chain Link Fencing - Fuel Tank	G2040 - Site Development	Replace chain link fencing at fuel tank	2022	35	27	0	$ 3,060
Brick Masonry - Chimney Repair	B2010 - Exterior Walls	Repair allowance for chimney	2021	25	43	0	$ 6,458
Aluminum Entrance Doors - West	B2030 - Exterior Doors	Replace west entrance doors	2021	30	43	0	$ 6,000
Metal Service Doors	B2030 - Exterior Doors	Replace metal service doors	2021	25	43	0	$ 5,520
Glazing	B2020 - Exterior Windows	Replace glazing and windows	2021	40	43	0	$ 64,875
VCT Flooring	C3020 - Floor Finishes	Replace VCT Flooring	2021	25	43	0	$ 89,250
Carpet Flooring	C3020 - Floor Finishes	Replace carpet flooring	2021	10	43	0	$ 1,200
Gymnasium Flooring	C3020 - Floor Finishes	Allowance for cleaning and repair of gymnasium rubber floor	2021	25	10	0	$ 22,016
Painted Concrete Floors	C3020 - Floor Finishes	Scrape existing paint and repaint floors	2021	10	43	0	$ 4,090
Block Walls	C3010 - Wall Finishes	Repaint block walls	2021	10	43	0	$ 35,052

Component	Uniformat Code	Recapitalization Detail	Year of Replacement	Expected Useful Life (EUL)	Current Age	Decision Parameters Total	Total Cost
Gypsum Board Finishes	C3010 - Wall Finishes	Repaint gypsum board finishes	2021	10	43	0	$ 4,265
Suspended Ceiling Tiles	C3030 - Ceiling Finishes	Replace suspended ceiling tiles	2021	25	43	0	$ 84,000
Classroom Millwork	E2010 - Fixed Furnishings	Replace classroom millwork	2022	25	43	0	$ 52,000
Stage Floor	C3020 - Floor Finishes	Refinished wood stage floor	2022	30	43	0	$ 4,756

2 Purpose

The Municipality owns and maintains the West Richmond Education Centre. The Municipality has initiated a comprehensive review of the condition of the former Education Centre in support of the Municipality's long term asset management plan as well to assess the facility for future use. 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.

- ***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 RSMeans 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-through, 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 violations[1] 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]

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

[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

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 – MOCR202107	RFP with History	The Municipality of the County of Richmond	16/06/2021
Phase 1 ESA	Report	CJ MacLellan & Associated Inc.	29/04/2013
Hazardous Materials Assessment	Report	Stantec Consulting Ltd.	19/04/2013
Building Drawings (Assorted)	Drawings	Sims & Gavel Architects	DD/09/1977

4 Building Condition Assessment & Capital Plan

4.1 Salient Property Information

Property Name	West Richmond Education Centre
Street Address	9 School Road
City, Province	Evanston, Nova Scotia
Primary Use	Junior High School
Number of Buildings on Site	One
Foundation	Concrete
Superstructure	Block and OWSJ
Cladding	Brick and Wood
Roof Membrane	Modified Bitumen
Reported Year Built	1978
Reported Building Area	25,810 ft^2
Evaluation Period	25 Years
Site Assessment Conducted By	Gerard Wttewaall

The subject property is located at 19 School Road in Evanston, Richmond County, Nova Scotia. The property is bordered by undeveloped land to the north, east, and south, and School road and a residential property to the west.

The building was originally constructed and utilized the by Straight Regional School Board as an elementary and junior high school. In 2013 the school was closed and turned over the Municipality of Richmond County. The building was heated for the first two years under its new ownership but has since been shuttered. Heating of the building has been unavailable due to the substantial costs for repairs to the heating system as well as fuel oil costs. As a result the building has deteriorated and has mould impacted materials throughout.

The building is founded on concrete strip footings and foundation walls. The foundations support a superstructure of concrete block walls with some steel columns. The roof structure consists of open web steel joists supporting metal roof decks.

The exterior of the building is clad with brick veneer with a wood clad band at the upper perimeter of the exterior walls and above windows. Exterior windows consist of aluminum double glazed windows with fixed and operable frames. The main entrance of the school located on the west elevation consists of an aluminum entrance system with glazed interior and exterior doors and glazed side lights. Secondary entrances on the east and south elevations consist of similar aluminum single entrance doors with glazing. Emergency and service exits on the north and east elevations consist of metal service doors in metal frames.

Heating for the building is provide by two Weil McLain oil fired boilers to hot water baseboard radiators and cabinet heaters throughout the building. Ventilation is provided by three air handling units and two building exhaust fans.

Electricity is fed underground from a utility owned transformer to a main disconnect rated for 400A 347/600V manufactured by Sylvania. Lighting within the building generally consists of T8 fluorescent fixtures with HID fixtures in the gymnasium.

The building is provided with a fire alarm panel and wet sprinkler system with electric fire pump and pump controller.

Mr. Gerard Wttewaall of CMEL conducted the site visit on August 17th, 2021. CMEL was accompanied by Mr. Daniel Bowen a maintenance worker for the Municipality during the site visit. All areas of the site and building were accessible during the site visit.

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

4.2 Site Work

Description

Vehicle access to the property is via School Road to the west of the property to an asphalt paved driveway and bus loop to the west of the building. A gravel access road to the north of the building provides access to an asphalt apron and basketball court to the east of the building. Concrete curbing and sidewalks are provided along east side of the drive and provide access concrete steps with metal handrails at the entrance of the school.

There is playground equipment provided on the east side of the building at an area of pea stone gravel. There is a graded area that was previously a field to the east of the building; this area was enclosed by chain link fencing, though all that remains currently are the uprights and crossbars of the fencing. Chain link fencing and a gate is provided around the above ground oil tank to the east of the building.

There is a flag pole located near the entrance to the west of the building.

Site lighting consists of building mounted metal halide lighting fixtures and a pole mounted fixture at the centre of the bus loop.

Landscaping consists of grassed areas with some small shrubs with the perimeter of the school yard surrounded by mature trees.

Observations/Comments

The asphalt paved entrance, driveway, and bus loop appeared to be in fair condition with minor cracking and uneven settling. This asphalt paving is estimated to be in excess of twenty years of age. Typically asphalt paving has an expected useful life of twenty years. Based on the observed condition the asphalt paving is anticipated to have an extended useful life. An allowance for replacement and repair of 10% of the asphalt paving has been included in the short term, with complete replacement anticipated

nearing the end of the long term of the evaluation period. The estimated costs for these repairs and replacements have been included in the Cost Table.

The concrete curbing adjacent to the asphalt paving appeared to be in fair condition with some damage assumed to have been caused by buses and snow clearing activities. Typically concrete curbing has an expected useful life of forty years or more. Based on the observed condition minor repairs are expected to be required during the short term of the evaluation period. The estimated costs for repairs have been included in the Cost Table.

The concrete walkway and stairs appeared to be in fair condition, with some differential settlement of the concrete walkway and damage at the nosing of several stairs. Typically concrete flatwork and stairs have an expected useful life of forty years or more. Based on the observed condition minor repairs are expected to be required during the short term of the evaluation period. Further replacements are not anticipated to be required during the evaluation period. Costs for these repairs have been included in the Cost Table.

The handrails at the entrance stairs appeared to be in fair condition with corrosion noted along the handrails. The handrails are assumed to be original to the construction of the building. Typically metal handrails have an expected useful life of forty years. Based on the observed condition and assumed age of the handrails, replacement is expected to be required during the short term of the evaluation period. The estimated costs and timing of replacement have been included in the Cost Table.

The gravel paving appeared to be in fair condition with some rutting and a low area with ponding water. Typically graving driveways have an indefinite useful life with cyclical grading and fill required. Based on the observed condition, gravel fill and re-grading is anticipated to be required during the short term of the evaluation period. The estimated costs have been included in the Cost Table.

The playground equipment to the east of the school appeared to be in generally good condition with the exception of plastic components that are fading in colour due to sun exposure. This playground equipment is estimated to be fifteen years in age and has seen very little use. Typically playground equipment has an expected useful life of thirty years. Based on the observed condition this equipment is anticipated to have an extended useful life. Replacement of the equipment is not expected to be required during the evaluation period. No costs have been included in the Cost Table.

The chain link fencing of the field is generally in poor condition with missing chain link. The chain link fencing at the oil storage tank appeared to be in fair condition with minor corrosion and is assumed to have been installed in 1994 at the time of the tank install. Typically chain link fencing has an expected useful life of twenty-five to thirty years. Based on the observed condition replacements are 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 flag pole appeared to be in fair condition and well founded. This flag pole is assumed to be original to the construction of the building. Typically flag poles have an expected useful life of thirty-five years. Based on the observed condition the flag pole is anticipated to have an extended useful life. Replacement is expected to be required during the extended term of the evaluation period. The estimated costs for replacement have been included in the Cost Table.

The building mounted lighting appeared to be in fair to poor condition with several fixtures having broken lenses. It was not reported if these fixtures continue to operate. The fixtures are assumed to be in excess of fifteen years in age. Typically exterior lighting fixtures have an expected useful life of twenty years. Based on the observed condition replacements are 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 landscaping around the property appeared to be in fair condition with heavily overgrown areas to the east of the building. Grassed areas immediately to the north, south, and west of the building are maintained throughout the summer months by municipal staff. Other than further maintenance no major recapitalization requirements are anticipated with regards to the landscaping. 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
Asphalt Paving - Repair	Allowance for repairs to 10% of asphalt paving	2000	20	**2021**	1,120	$5.50	**$6,160**
Asphalt Paving - Replace	Replace asphalt paving	1978	15	**2031**	11,180	$5.50	**$61,490**
Concrete Curbing	Repair concrete curbing	1978	40	**2022**	135	$23.00	**$3,105**
Concrete Walkway and Stairs	Repair concrete walkways and spalling at stairs	1978	40	**2022**	220	$15.00	**$3,300**
Metal Handrails	Replace metal handrails	1978	40	**2022**	27	$52.00	**$1,404**
Gravel Paving	Fill and re-grade gravel driveway	1978	60	**2023**	1,650	$0.65	**$1,073**
Playground Equipment	No major recapitalization anticipated during the evaluation period	2006	30	**2051**	1	-	**-**
Chain Link Fencing - Field	Replace chain link fencing at field	1994	35	**2022**	210	$25.50	**$5,355**
Chain Link Fencing - Fuel Tank	Replace chain link fencing at fuel tank	1994	35	**2022**	60	$51.00	**$3,060**
Flag Pole	Replace flag pole at end of extended useful life	1978	35	**2036**	1	$3,400.00	**$3,400**
Building Mounted Lighting	Replace building mounted lighting	2006	20	**2021**	12	$450.00	**$5,400**
Landscaping	Continue to maintain landscaping as part of operations and maintenance. No major recapitalization anticipated during the evaluation period	1978	75	**2053**	-	-	**-**

4.3 Structure

Description

The original School was constructed in 1978. The building is founded on concrete strip footings and frost walls. The main floor consists of concrete slab on grade. The superstructure of the building consists of a combination of concrete block walls and steel columns. The roof structures of the building consist of open web steel joists supporting corrugated metal roof decks. There are mezzanines located to the north and south of the gymnasium stage that consists of corrugated metal decks with concrete toppings.

Observations/Comments

No evidence of major structural faults was observed with the building. No significant cracking or heaving was observed in the finished floors that would suggest that the foundation is cracking or shifting. The concrete slabs appeared to be in good condition with no evidence of significant cracking or differential movement observed or reported. The roofs appeared to be level and stable; no significant signs of deflection or movement were observed. Typically, structural components have an expected useful life of sixty to seventy years or more. Based on the observed condition and expected useful life, we do not anticipate that any significant repairs or replacement will 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
Foundations	No major recapitalization anticipated during the evaluation period	1978	75	**2053**	25,810	$25.00	**$645,250**
Slab on Grade	No major recapitalization anticipated during the evaluation period	1978	75	**2053**	25,810	$1.35	**$34,844**
Superstructure	No major recapitalization anticipated during the evaluation period	1978	75	**2053**	25,810	$26.00	**$671,060**
Roof Structure	No major recapitalization anticipated during the evaluation period	1978	75	**2053**	25,810	$1.50	**$38,715**

4.4 Roofing

Description

Roofing for the school consists of modified bitumen roofing on two levels. There is a sloped section of roofing over the main west corridor that is covered in modified bitumen and is provided with three transparent domed skylights. The upper, roof covering the gymnasium, is provided with four translucent domed skylights. The perimeters of the roofs are provided with metal cap flashing. Rain water drainage consists of roof drains with interior rain water leaders that drain to the town sanitary system.

Observations/Comments

The modified bitumen roofing appeared to be in fair condition, with no obvious signs of major leaking at the interior of the building. The roof has signs of wind scour and several areas of organic growth. This roofing is estimated to be twenty years of age.

Typically modified bitumen roofing has an expected useful life of twenty 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 roof drains appeared to be in fair condition. One of the drains on the north side of the school has been highly impacted by granular materials and organic growth leading to a less efficient drain. Areas at the interior of school below several roof drains have staining, likely due to condensation. Typically roof drains and interior rainwater leaders have an expected useful life of forty years. Based on the observed condition cleaning of drains and replacement of insulation at the underside of drains and elbows have been anticipated in the short term of the evaluation period. The estimated costs for repairs and future replacement have been included in the Cost Table.

The domed skylights appeared to be in fair condition. One skylight was coated with a water sealant coating due to water ingress issues. All of the skylights have minor water damage at the framing at the interior of the building. Typically acrylic skylights have an expected useful life of twenty to twenty-five years. It is recommended that replacement of the skylights be undertaken at the same time as roof replacements. The estimated costs for 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
Modified Bitumen Roofing - Lower Roof	Replace modified bitumen roofing	2001	20	**2022**	22,185	$16.00	**$354,960**
Modified Bitumen Roofing - Gymnasium Roof	Replace modified bitumen roofing	2001	20	**2021**	5,440	$16.00	**$87,040**
Roof Drains - Repairs and Cleaning	Clean roof drains, inspect and repair elbows and insulation	1978	40	**2021**	7,000	$1.02	**$7,140**
Skylights - Lower Roof	Replace skylights	2001	25	**2022**	120	$128.00	**$15,360**
Skylights - Gymnasium Roof	Replace skylights	2001	25	**2021**	90	$128.00	**$11,520**

4.5 Architectural Exterior

Description

The exterior walls of the building are clad in a brick veneer. The there is a band at the upper perimeter of the building that is clad in wood siding with additional wood siding above windows.

The main entrance located on the west elevation of the building consist of a set of interior and exterior aluminum framed, glazed, entrance doors with side lights. There are similar single doors with glazed sidelights on the east and south elevations of the building. Secondary and service doors on the north and east elevations consist of metal service doors in metal frames.

Glazing for the school consists of double glazed windows with fixed and operable frames. Several windows on the east elevation have been broken and have been covered with plywood from the exterior.

Observations/Comments

The brick masonry of the building is in generally fair condition with several minor areas of deteriorating mortar. The chimney located in the northeast portion of the building has substantial deterioration and cracking at mortar joints. Typically brick masonry has an expected useful life in excess of sixty years with cyclical repointing completed at twenty-five year intervals. Based on the observed condition, repairs to the brick chimney are anticipated to be required during the short term of the evaluation period. An allowance for repointing of 15% of the exterior brick is also anticipated to be required during the short term of the evaluation period. The estimated costs and timing of this work have been included in the Cost Table.

The building sealants are openings and construction joints appeared to be in poor condition with cracking, debonding, and missing sealants. Typically building sealants have an expected useful life twenty-five years. Based on the observed condition replacement of the sealants 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 wood cladding at the top perimeter of the exterior walls and above windows appeared to be in fair to poor condition. This wood cladding is heavily weather with areas of cladding pulling out fasteners, and cracking and checking to wood. Areas at the interior of the building at wood cladding over the windows appeared to be impacted by water ingress in several areas. Typically wood cladding has an expected useful life of forty years if maintained. Based on the observed condition replacement of the wood cladding 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 main and secondary aluminum and glazing entrance door systems appeared to be in fair condition with no major corrosion. Gaps at the bases of the doors and where doors meet frames were observed during the site visit. The doors on the east elevation have had their glazing broken and are boarded up from the exterior. Typically aluminum doors have an expected useful life of thirty-five years. Based on the observed condition replacement of the east doors are expected to be required during the short term, with further replacements of the south and west entrance doors being anticipated to require replacement during the long term of the evaluation period. The estimated costs and timing of replacements have been included in the Cost Table.

The metal service doors on the north and east elevations of the building appeared to be in fair to poor condition. The majority of these doors have major corrosion at the base of the doors and frames. Typically metal service doors 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 windows of the building appeared to be in fair to poor condition with several windows on the east elevation of the building having been broken and have been boarded up from the exterior. The sealants at glazing units and frames of several windows were noted to be missing or heavily deteriorated, and some glazing unit's seals have begun to fail trapping condensation between the interior and exterior panes. The major of the glazing was observed to be original to the construction of the building with several glazing units dating from the early 1990s to early 2000s. Typically metal windows have an expected useful life of thirty-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.

Cost Estimate

Item	Action	Year of Install	Expected Useful Life	Anticipated Year of First Expenditure	Quantity	Unit Cost	Cost per Occurrence
Brick Masonry	No major recapitalization anticipated during the evaluation period	1978	60	**2049**	12,230	$55.00	**$672,650**
Brick Masonry - Repointing	Allowances for repointing of 10% repointing of brick cladding	1978	5	**2022**	1,220	$30.75	**$37,515**
Brick Masonry - Chimney Repair	Repair allowance for chimney	1978	25	**2021**	210	$30.75	**$6,458**
Building Sealants	Replace building sealants	1978	25	**2021**	960	$8.25	**$7,920**
Wood Cladding	Replace wood cladding	1978	30	**2021**	1,370	$12.00	**$16,440**
Aluminum Entrance Doors - West	Replace west entrance doors	1978	30	**2021**	1	$6,000.00	**$6,000**
Aluminum Entrance Doors - East	Replace east entrance doors at the end of extended useful life	1978	30	**2027**	1	$6,000.00	**$6,000**
Aluminum Entrance Door - South	Replace south entrance doors at the end of extended useful life	1978	30	**2027**	1	$6,000.00	**$6,000**
Metal Service Doors	Replace metal service doors	1978	25	**2021**	6	$920.00	**$5,520**
Glazing	Replace glazing and windows	1978	40	**2021**	865	$75.00	**$64,875**

4.6 Architecture, Interior

The interior of the school is generally finished with vinyl composite flooring, painted block walls, and suspended ceiling tiles. The main entrance and main corridor on the west side of the building are provided with hard tile flooring and brick veneer interior walls. This corridor is also provided with wood ceiling finishes. There is an office space in the northeast corner of the building that is provided with carpet flooring.

The gymnasium is finished with a rubber floor finish, painted block walls, and ceilings that are open to the structure and roof deck above. There is a wood floor stage on the east side of the gymnasium.

The student washrooms and changing rooms are generally finished with coated concrete floors, block walls, and painted gypsum board ceilings. The student

washrooms are also provided with metal toilet partitions. Staff washrooms are finished with VCT flooring, painted block walls and painted gypsum board ceilings.

Observations/Comments

The interior finishes of the school have been heavily impacted by the lack of heating and humidity control in the building. Organic growth was noted on many of the interior surfaces and components. A high amount of condensation was present at the underside of exposed roof decking in the gymnasium, interior side of windows, metal toilet partitions and many interior walls. Water was noted on the floors of the changing rooms.

A previously completed hazardous materials assessment from 2013 was provided by the Municipality. This report noted that friable asbestos containing materials were found and tested in drywall joint compound and vinyl composite floor tiles, while further presumed asbestos containing materials were noted as interior brick mortar, science lab bench tops, counter tops, and floor tile grout. It was also noted from this report that several areas of painted finished were found to have detectable levels of lead. Any work completed within the school should be completed in keeping with requirements and best practices for deal with these hazardous materials. Where costs for replacement are provided within this report that coincide with components found to be containing or are presumed to be containing hazardous materials, prices includes the premium to reflect the costs associated with removal and disposal.

Based on the observed condition of the building during the site visit major mold remediation and cleaning is anticipated to be required. A budgetary cost for such remediation has been included during the short term of the evaluation period. These costs include cleaning and remediation of block and gypsum board walls, floors, and gypsum board ceilings, and removal and disposal of suspended ceiling tiles. The estimated costs have been included in the Cost Table. It is possible that through inspection with a qualified remediation specialist that costs may be significantly lower or higher than this budget cost if the scope of remediation is found to be different than from what is described above.

The VCT flooring appeared to be in fair to poor condition. Several areas of the VCT flooring have lifted and are cracking or have delaminated from the floors. There are areas of water damaged tiles in multiple classrooms and in hallways. Staining was noted in the locations of previously placed furniture. Typically VCT flooring has an expected useful life of twenty-five years. A complete replacement of VCT flooring is anticipated to be required during short term of the evaluation period. The estimated costs for this replacement have been included in the Cost Table.

The hard tile flooring in the main entrance, west corridor, and special needs washroom appeared to be in good condition. The entrance and corridor finishes are original to the construction of the building, while the special needs washroom flooring was installed approximately fifteen years ago. Typically hard tile flooring has an expected useful life in excess of forty years. Limited usage in the past ten years has aided in this finishes' longevity. Based on the observed condition and estimated remaining useful life, the hard tile flooring finishes are anticipated to have an extended useful life. Partial

replacement of the entrance and corridor flooring is anticipated to be required during the long term of the evaluation period. The estimated costs have been included in the Cost Table.

The limited carpet flooring appeared to be in poor condition and was partially saturated with water. Typically carpet has an expected useful life of ten 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 gymnasium rubber floor appeared to be in fair to poor condition. Condensation has been dropping from the roof deck above and has caused staining at the floor level. The area of flooring on the west side of the gymnasium has begun to lift leading to large sub-membrane bubbles and unevenness. Typically rubber flooring has an expected useful life of twenty years. Based on the observed condition repairs and major cleaning would be required to be operational. The estimated cost of these repairs and cleaning has been included in the Cost Table.

The painted concrete floors in storage areas, boiler room, sprinkler room, and electrical room appeared to be in generally poor condition with peeling paint. Typically concrete floor paint has an expected useful life of ten years. Based on the observed condition repainting 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 block walls appeared to be in generally good condition with the exception of the previously noted organic growth and condensation. Typically block walls have an expected useful life in excess of sixty years, while painting is typically completed on a ten to fifteen year cycle and generally completed as part of ongoing operations and maintenance activities. Due to the required cleaning, and possible lead presence, an allowance for encapsulation painting has been included during the short term of the evaluation period. The estimated costs for this work have been included in the Cost Table.

The limited gypsum board walls and ceilings appeared to be in generally good condition with the exceptions of the previously noted organic growth and condensation. Typically gypsum board walls and ceilings have an expected useful life in excess of sixty years, while painting is typically completed on a ten to fifteen year cycle and generally completed as part of ongoing operations and maintenance activities. Due to the required cleaning, and possible lead presence, an allowance for encapsulation painting has been included during the short term of the evaluation period. The estimated costs for this work have been included in the Cost Table.

The suspended ceiling tiles throughout the building appeared to be in fair to poor condition. Large quantities of ceiling tiles have been impacted by water and in some cases have completely disintegrating in place. Based on the observed condition and the likely requirement for the current ceiling tiles to be removed and disposed of, a completed replacement has been anticipated to be required during the short term of the

evaluation period. The estimated cost for replacement has been included in the Cost Table.

The wood panel ceiling in the west corridor appeared to be in good condition. Typically wood ceiling finishes have an expected useful life forty years or more. Based on the observed condition major replacement is not expected to be required during the evaluation period. No costs have been included in the Cost Table.

The wood floor of the gymnasium stage appeared to be in fair condition with high amounts of wear. Typically wood floors have an expected useful life of forty years before requiring stripping and refinishing. Based on the observed condition, refinishing of the floor is anticipated to be required during the short term of the evaluation period. The estimated costs have been included in the Cost Table.

The metal toilet partitions in the school appeared to be in good to fair condition, with only minor corrosion at the base of several panels. Typically toilet partitions have an expected useful life of twenty years. Based on the observed condition, the toilet partitions are anticipated to have an extended useful life. Replacements are expected 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.

The millwork throughout the building appeared to be in generally fair condition, though it was noted that in several locations counters and various components have been removed from the millwork. Several areas of classroom millwork have been impacted by water damage or organic growth. Typically millwork has an expected useful life of twenty to twenty-five years. Based on the observed condition it is recommend that if the millwork is required, that it be replaced. An estimated cost for replacement 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
Mold Remediation	Allowance for mold cleaning and treatment	1978	10	**2021**	1	$150,000.00	**$150,000**
VCT Flooring	Replace VCT Flooring	1978	25	**2021**	17,000	$5.25	**$89,250**
Hard Tile Flooring	Allowance for replacement and repair of 10% of hard tile flooring at entrance and west corridor	1978	40	**2029**	1,430	$12.00	**$17,160**
Hard Tile Flooring - Special Needs Washroom	No major recapitalization anticipated during the evaluation period	2005	40	**2049**	120	$12.00	**$1,440**
Carpet Flooring	Replace carpet flooring	1978	10	**2021**	300	$4.00	**$1,200**
Gymnasium Flooring	Allowance for cleaning and repair of gymnasium rubber floor	2011	25	**2021**	4,300	$5.12	**$22,016**
Painted Concrete Floors	Scrape existing paint and repaint floors	1978	10	**2021**	2,880	$1.42	**$4,090**
Block Walls	Repaint block walls	1978	10	**2021**	37,690	$0.93	**$35,052**
Gypsum Board Finishes	Repaint gypsum board finishes	1978	10	**2021**	1,815	$2.35	**$4,265**

Item	Action	Year of Install	Expected Useful Life	Anticipated Year of First Expenditure	Quantity	Unit Cost	Cost per Occurrence
Suspended Ceiling Tiles	Replace suspended ceiling tiles	1978	25	**2021**	17,500	$4.80	**$84,000**
Wood Panel Ceiling	No major recapitalization anticipated during the evaluation period	1978	40	**2049**	1,645	$11.67	**$19,201**
Stage Floor	Refinished wood stage floor	1978	30	**2022**	580	$8.20	**$4,756**
Metal Toilet Partitions	Replace metal toilet partitions at end of useful life	1978	20	**2033**	10	$950.00	**$9,500**
Classroom Millwork	Replace classroom millwork	1978	25	**2022**	130	$400.00	**$52,000**

4.7 Mechanical Systems

4.7.1 Plumbing

Description

Domestic water is supplied and metered to the School by the municipality. The two inch incoming line and meter are located in the sprinkler room in the south portion of the school. Domestic hot water is by a New Yorker oil fired boiler and an indirect hot water storage tank. Domestic hot and cold water is transported by copper plumbing lines with the majority of hot lines appearing to have insulation.

Domestic water services the serving kitchen and home economics room, as well as science labs on the east side of the building and two classrooms on the south side of the building, two locker rooms, four student washrooms, three staff washrooms, two janitors rooms, the gym instructor's washroom and a special needs washroom. Washroom fixtures consist of vitreous china toilets, urinals, and sinks. Showers consist of hard tile surrounds.

The School is connected to the municipal sanitary system with piping assumed to be cast iron.

Observations/Comments

The domestic water and sanitary systems piping where observed appeared to be in generally fair condition. The main piping chases have been kept heated with portable electric heaters since the closure of the school. The majority of the piping is assumed to be original to the construction of the school. Due to the domestic water piping having been drained it is highly possible that areas of the piping have large amounts of corrosion or possibly damage that could cause leaks. Based on the observed condition and possible interior condition of the piping, replacement of domestic water supply lines are anticipated to be required. Sanitary systems have been provided with an allowance for repairs and minor replacement to 10% of the system during the short term of the evaluation period. These estimated costs have been included in the Cost Table.

The domestic hot water boiler has been shut off since the building was closed. The New Yorker boiler is assumed to be original to the construction of the building. Typically hot water boilers have an expected useful life of thirty to forty years depending on annual maintenance. Having been dormant for a number of years with no temperature or

humidity control it is likely that the viability of its continued use is limited. It is recommended that this boiler be replaced during the short term of the evaluation period. The estimated costs and timing of replacement have been included in the Cost Table.

The indirect water heater connected to the hot water boiler appeared to be in fair condition and is assumed to be original to the construction of the building. Typically these large tanks have an expected useful life of forty years or more. Based on the estimated remaining useful life replacement of the hot water tank is anticipated to be required during the long term of the evaluation period. The estimated cost and timing of replacement have been included in the Cost Table. The current hot water tank should be inspected, cleaned, and re-certified before it is put back into service.

The washroom fixtures appeared to be in fair condition. The majority of the fixtures appeared to be original to the construction of the building. It was noted that the large quantity of water on the floor of the changing rooms could be caused by a failed toilet seal. Typically washroom fixtures have an expected useful life of thirty-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.

4.7.2 Heating, Ventilation and Air Conditioning

Description

The school is heated by two Weil McLain oil fired hot water boilers. Heating hot water from the boilers is circulated to baseboard heaters at the perimeter of the building as well as cabinet heaters at the entrances and gymnasium. Oil for the three boilers is provided by a dual walled above ground storage tank with a capacity of 4,555L and is located to the east of the school.

Building controls consist of a pneumatic system with a 3/4 HP compressor and electric air dryer manufacture by DeVilBiss. The building is provided with a Digicon building control system.

Ventilation for the building is provided by three Trane air handling units; one unit services the gymnasium and is located in a mezzanine to the north of the stage; the second unit services the north side of the building and is located on the roof; and the third unit services the south portion of the building and is also located on the roof. Additionally the building is provided with two building exhaust fans.

Observations/Comments

A hazardous materials assessment reported completed in 2013 was provided by the Municipality. In the report its was found that sealants utilised in the ductwork as well as at piping insulation contained or possibly contained asbestos materials. Any work completed on these components should be completed in keeping with proper material handling and disposal.

One of the heating boilers was reported to have failed the last time they were operating. This boiler appeared to have damage to the boiler and boiler case. These boilers are original to the construction of the building. Having been dormant for a number of years

with no temperature or humidity control it is likely that the viability of their continued use is limited. It is recommended that these boilers be replaced during the short term of the evaluation period. The estimated costs and timing of replacement have been included in the Cost Table.

The perimeter hot water heaters in the school appeared to be in generally good to fair condition with limited damage or wear to the exterior cases. It was reported and observed that when the school was last heated that there were several leaks in the heating system. A number of replaced radiator valves and valve parts were noted around the school likely from previous repairs. As the system has been drained and left unheated for a number of years it is likely to become operational that major replacements and repairs would be required. An allowance for replacement of 50% of the heating radiators and distribution has been included during the short term of the evaluation period. It is possible that due to interior corrosion of the piping further replacements would be warranted. The estimated costs for 50% replacement have been included in the Cost Table.

The oil tank appeared to be in poor condition with paint flaking and areas of corrosion. The vacuum gauge could not be observed at the time of the site visit. The tank was manufactured in 1994. Typically exterior mounted dual walled above ground fuel storage tanks have an expected useful life of twenty-five years. Based on the observed condition and age of the tank, 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. It could not be verified if the tank had been drained; the status of any contents should be verified before replacement is completed.

The controls compressor and air dryer appeared to be in fair condition though it has not been operation since the heating system was shut down. This unit is estimated to be fifteen years in age. Typically compressors and air dryers have an expected useful life of twenty years. Any amount of condensation let within the tank could lead to premature failure of the tank. Replacement of the compressor is anticipated to be required during the short term of the evaluation period. The estimated cost of replacements has been included in the Cost Table.

The pneumatic system is original to the construction of the building and has been unpressurized and left susceptible to premature deterioration since the closure of the school. Typically pneumatic controls have an expected useful life of forty years with repairs to individual components completed as required as part of operations and maintenance activities. Due to the age and potential leakage of the system, 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. Though costing has been provided for a pneumatic controls systems as an as like – as kind replacement, a new direct digital control (DDC) system would likely be a better option to implement during the replacement of the heating system and controls.

The existing Digicon DDC controls appeared to be in good condition and are estimated to be ten years in age. It was not reported at the time of the site visit what the DDC controls service or are capable of. Typically DDC controls have an expected useful life

of twenty-five years. Based on the estimated remaining useful life replacement of the DDC controller is anticipated to be required during the extended term of the evaluation period. The estimated costs for replacement have been included in the Cost Table.

The air handling unit servicing the school appeared to be in fair condition with minor corrosion noted at the exterior cases of the roof top mounted units. The roof top mounted units have also been coated with what appeared to be a low emissivity paint or water resisting coating. The air handing units are original to the construction of the building. Typically air handling units have an expected useful life of twenty to thirty years. Based on the estimated age and 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.

Ductwork from the air handling units was observed where possible to be in fair condition. It was noted in the hazardous materials report provided that duct sealants may contain asbestos. Ductwork typically has an expected useful life of sixty years. It is likely, based on the condition of the building that organic growth is within at least portions of the ductwork. At a minimum cleaning of the ductwork is anticipated to be required for operation. A budgetary cost for interior duct cleaning has been included in the Cost Table. If design changes to the air handling units and heating system are to take place, major changes to the duct work may be required.

The two roof top mounted exhaust fans appeared to be in fair condition though they are estimated to be original to the construction of the building. Typically exhaust fans have an expected useful life of twenty years. Replacement of the exhaust fans 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.

4.7.3 Vertical Conveyance

Description

The building is not provided with any form of vertical conveyance.

Observations/Comments

Not applicable

Cost Estimate

Item	Action	Year of Install	Expected Useful Life	Anticipated Year of First Expenditure	Quantity	Unit Cost	Cost per Occurrence
Domestic Water Supply	Allowances for replacement of domestic water supply lines	1978	40	**2021**	12,905	$10.25	**$132,276**
Sanitary System	Allowance for partial replacement and repair of sanitary piping	1978	40	**2022**	2,580	$7.17	**$18,499**
Domestic Water Boiler	Replace New Yorker Boiler	1978	30	**2021**	1	$36,500.00	**$36,500**
Indirect Hot Water Tank	Replace at end of useful life. The tank should be inspected, cleaned and re-certified before usage	1978	50	**2028**	1	$8,000.00	**$8,000**
Toilets	Replace washroom fixtures	1978	35	**2021**	15	$1,000.00	**$15,000**

Urinals	Replace washroom fixtures	1978	35	**2021**	2	$1,056.00	**$2,112**
Sinks	Replace washroom fixtures	1978	35	**2021**	20	$750.00	**$15,000**
Showers	Replace washroom fixtures	1978	35	**2021**	14	$2,046.00	**$28,644**
Lab and Kitchen Sinks	Replace lab and kitchen sinks	1978	35	**2021**	12	$750.00	**$9,000**
Heating Boilers	Replace heating boilers	1978	40	**2021**	2	$36,500.00	**$73,000**
Hot Water Baseboards and Cabinet Heaters	Allowance for replacement for 50% of heating distribution and terminal units	1978	40	**2021**	12,905	$9.15	**$118,081**
Fuel Storage Tank	Replace 4,555L above ground fuel storage tank	1994	25	**2021**	1	$15,300.00	**$15,300**
Compressor and Air Dryer	Replace compressor and air dryer	2004	20	**2021**	1	$5,500.00	**$5,500**
Pneumatic Controls	Allowance for replacement of pneumatic building controls	1978	25	**2021**	25,810	$1.04	**$26,842**
DDC Controls	Replace DDC controls at end of useful life	2011	25	**2036**	1,000	$1.04	**$1,040**
Air Handling Unit 1	AHU1 servicing south portion of school. Replace AHU	1978	40	**2021**	1	$14,200.00	**$14,200**
Air Handling Unit 2	AHU2 servicing north portion of school. Replace AHU	1978	40	**2021**	1	$27,000.00	**$27,000**
Air Handling Unit 3	AHU3 servicing gymnasium. Replace AHU	1978	40	**2023**	1	$44,550.00	**$44,550**
Ductwork Cleaning	Allowance to clean all ductwork	1978	10	**2021**	1	$20,600.00	**$20,600**
Exhaust Fans	Replace exhaust fans	1978	20	**2021**	2	$2,500.00	**$5,000**

4.8 Electrical System

Description

Electricity is fed to the site from utility poles, then underground to a utility owned pad mounted transformer to the southwest of the building. From the exterior transformer, power is fed again underground to the main disconnect located in the electrical room in the south portion of the school. The main electrical disconnect is rated from 400A at 347/600V manufactured by Sylvania. Electricity is then fed to the main distribution panel and on to secondary distribution panels, transformers, and building equipment.

Lighting in the building generally consists of T8 fluorescent troffers style lighting fixtures with some incandescent fixtures and high intensity discharge (HID) fixtures in the gymnasium.

Observations/Comments

The electrical system and the majority of its components are original to the construction of the building. These components appeared to be in fair condition, with very limited corrosion to any of the electrical components cases. The majority of the disconnects and breakers where shut off throughout the school. Typically these electrical components will have an expected useful life of forty years or more. Based on the estimated remaining useful life the majority of the electrical components will require replacement during the evaluation period. The estimated costs and timing or replacement have been included in the Cost Table. It should be noted that if the current

systems are to be utilised, connections in panels should be inspected for corrosion before bringing circuits back online. No costs for such an inspection have been included in the Cost Table.

The lighting in the building was reported to have undergone a retrofit in 2008. These fixtures appeared to be in generally good condition, though their operation was not tested. Typically interior lighting fixtures have an expected useful life of twenty-five years. Based on the observed condition 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. Cleaning of the fixtures is anticipated to be required for operation; these costs have been included in the remediation costs included in the interior finishes section of this report.

Cost Estimate

Item	Action	Year of Install	Expected Useful Life	Anticipated Year of First Expenditure	Quantity	Unit Cost	Cost per Occurrence
Main Electrical Disconnect	Replace Sylvania 400A 347/600V main disconnect and cabinet	1978	40	**2021**	1	$8,000.00	**$8,000**
Electrical Distribution	Allowance for replacement of distribution panels	1978	40	**2021**	6,450	$13.31	**$85,850**
Interior Lighting	Replace interior lighting at end of useful life	2008	25	**2033**	25,810	$3.70	**$95,497**

4.9 Life Safety

Description

The school is provided with an Edwards Custom 6500 fire alarm panel connected to pull stations in corridors, a limited number of heat detectors, and the fire pump controller. The building is provided with a wet sprinkler system with 4” alarm valve and electric fire pump. The fire pump is 15 HP and is controlled by a TornaTech fire pump controller.

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 fair condition though it is assumed to be original to the construction of the building. The panel is did not appear to be energized at the time of the site visit and was last inspected in 2012. Typically, fire panels are will have an expected useful life of approximately 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 replacement have been included in the Cost Table.

The sprinkler system trunk and alarm valve appeared to be in good to fair condition. The sprinkler room has been heated since the closure of the building with portable electric heaters. The sprinkler system is assumed to have been completely drained to avoid freezing pipes. Typically sprinkler systems have an expected useful life of fifty years or more, with partial replacements to sprinkler heads based on cyclical inspections. Due to the sprinkler lines being drained there is a high likelihood that

corrosion has occurred in at least a portion of the lines will require replacement. A budgetary cost for complete sprinkler piping and head replacement has been included in the Cost Table.

Emergency lighting and exit signage were observed to be in fair condition with some signs having partial burnt out bulbs. Typically emergency and exit lighting have an expected useful life of twenty-five years. Based on the 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.

A very limited number of fire extinguishers were noted to be present in the building. Replacement of fire extinguishers should be completed before occupancy of the building. Costs for installing fire extinguishers are expected to be completed as part of operations and maintenance budgets of the building. 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
Fire Alarm Panel	Replace Edwards 6500 Custom fire alarm panel	1978	20	**2021**	1	$4,000.00	**$4,000**
Sprinkler System Piping	Allowance for replacement of sprinkler piping and heads	1978	40	**2021**	25,810	$3.50	**$90,335**
Emergency Lighting	Replace emergency and exit lighting	1978	25	**2021**	25,810	$1.02	**$26,326**
Fire Extinguishers	Reinstall fire extinguishers as part of O&M. No major recapitalization anticipated during the evaluation period	1978	20	**2021**	-	-	**-**

4.10 Specialty Systems

Description

The building is not provided with specialty systems.

Observations/Comments

Not applicable

5 Capital Plan – West Richmond Education Centre

The foregoing recommendations of the Building Condition Assessment have been integrated into a Capital Asset Management Plan for the West Richmond Education Centre. 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. Mould remediation has been identified as a priority repair.

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 August 19th, 2021. 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 West Richmond Education Centre was completed on August 19th, 2021. The site appeared to be in fair overall condition and the building appeared to require substantial remediation and recapitalization prior to be put into service. 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.

FCI GRAPH

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6 Conclusion

The West Richmond Education Centre has a year one anticipated requirement and infrastructure deficit totalling $1,647,493 and an anticipated five year capital investment requirement of $2,301,417 meet all anticipated renewal needs. The building condition is considered in the Fair condition with a current Facility Condition Index of 25.53%.

In CMEL's opinion, The West Richmond Education Centre is in fair to poor condition. The building's interior finishes, domestic water, heating, and sprinkler systems have been negatively impacted by the unavailability of building heat in recent years due to mechanical failures and the substantial costs associated both with component repairs of the heating system and fuel oil costs. In addition the age of the building results in a substantial number of components and building systems that will or has reached their expected useful life and will require replacement to fully utilise the facility. The replacement of systems and components as recommended in this report is not expected to create an operational school similar to what the building previously was, nor what would be expected from a newly constructed school of today. The building would, in addition to the recommended replacements, require school or program specific furniture and equipment. Additionally, standards have changed and may required system not previously provided by the building, such as a panic and/or lock down security systems.

The building provides many possible opportunities despite the systems requiring replacement or repair. The land clearing, foundations, and structural systems alone can represent up to 25% of the cost of new construction. By taking advantage of these systems that are already present and in serviceable condition, repurposing of the facility would be much less costly than the creation or development of a new facility. Similarly, the interior finishes, mechanical and electrical systems currently requiring replacement may not be fitting for the future usage of the facility and in any case, could require major replacement or augmentation.

The recommended replacements as outlined in this report would provide a usable facility, void of any specific systems or furniture utilised in the operation of a school. In the event that the usage of facility were to change, additional changes may be required or recommended such as changes to plumbing systems, heating systems, ventilation, electrical layout, or interior partition walls. These changes are beyond the scope of this report.

7 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.

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Appendix A - Capital Plan

Appendix B - Photo Log