



City of
Peterborough

To: **Members of the Committee of the Whole**

From: **Sandra Clancy, Director of Corporate Services**
Ken Doherty, Director of Community Services

Meeting Date: **February 27, 2017**

Subject: **Report CPPS17-008**
Budget Re-allocation, Creation of Peterborough Memorial
Centre Roof and HVAC Replacement Project in 2017 and
Information on Other Necessary Work in Future Years

Purpose

A report to recommend the creation of Peterborough Memorial Centre Roof and HVAC replacement project, a capital budget re-allocation and provide information on other necessary work in future years.

Recommendations

That Council approve the recommendations outlined in Report CPPS17-008, dated February 27, 2017 of the Director of Corporate Services and the Director of Community Services, as follows:

- a) That staff create a sub-capital project within the Corporate Services – Property – Community Services Capital Project (Project 3-1.02) for the Replacement of five Roof Sections of the Peterborough Memorial Centre and six HVAC Rooftop Units in the amount of \$1,423,000, due to recent failings of the roof;
- b) That, in addition to the \$353,000 re-allocated within the 2017 Capital Project 3-1.02, an amount of \$1,070,000 be transferred from the following sources to fund the required \$1,423,000:
 - i. 2016 Capital Project (Project 3-1.02) Corporate Services – Property – Community Services in the amount of \$375,000;

- ii. 2017 Capital Project (Project 3-1.01) Corporate Services – Property – Property in the amount of \$345,000;
 - iii. 2017 Capital Project (Project 3-1.03) Corporate Services – Property – Fire Services in the amount of \$350,000.
- c) That staff be directed to work with the Petes and the Lakers regarding the timing and impact of the proposed construction in 2018 and to assist with scheduling and/or securing off site venues.
- d) That By-law 16-141, By-law 16-146 and By-law 15-184, being By-laws to debenture certain capital works be repealed and replaced at a future date.

Budget and Financial Implications

The estimated cost of the roof and HVAC rooftop replacement for 2017 is \$1,423,000 and includes the budget required to provide consulting services to design, tender and administer the work and the actual construction itself. The cost, net of HST rebate, will be funded from deferring several projects as listed in Chart 1.

Chart 1

Proposed Funding for Roofing and HVAC Rooftop Replacement in 2017

Year	Budget Ref #	Description	Sub Project Budget	Project Budget
2016	3-1.02	Memorial Centre - Elevator Sump Pit Installation	\$150,000	
2016	3-1.02	Memorial Centre - Upgrade Shower Tiles and Ventilation System	\$75,000	
2016	3-1.02	Kinsmen Arena - Repairs to Structural Steel Columns and Beams	\$150,000	
2016	3-1.02	Corporate Services–Property–Community Services		\$375,000
2017	3-1.01	Peterborough Daycare - New HVAC, Life Safety and BAS	\$155,000	
2017	3-1.01	City Buildings - Property including City Hall Elevator (part of \$320,000 budget)	\$190,000	
2017	3-1.01	Corporate Services–Property–Property		\$345,000
2017	3-1.02	Memorial Centre - Replace Ice-Pad Lighting with LED and Low E Ceiling	\$225,000	
2017	3-1.02	Evinrude Centre - Replace ammonia gas detection system and HWT on 2nd floor	\$28,000	
2017	3-1.02	Kinsmen Arena - Repairs to Structural Steel Columns and Beams	\$100,000	
2017	3-1.02	Corporate Services–Property–Community Services		\$353,000
2017	3-1.03	Main Fire Hall - Asphalt and Sidewalk Replacement	\$325,000	

Year	Budget Ref #	Description	Sub Project Budget	Project Budget
2017	3-1.03	Fire Station 3 - Install new BAS	\$25,000	
2017	3-1.03	Corporate Services–Property–Fire Services		\$350,000
Total Project Funding				\$1,423,000

All projects whose funding would be utilized for this project would be included in future year's capital budgets.

Background

The City has agreed to undertake an OHL Study as a priority project in 2017. While part of the study will provide direction regarding the re-purposing or decommissioning of the Peterborough Memorial Centre, it could be a full year before the study is completed. For a capital construction project of this magnitude, it could take at least five years before a new facility is constructed and open for business.

In the meantime, the City remains responsible for maintaining all aspects of the Peterborough Memorial Centre's operations so that it meets the needs of the Petes as an OHL facility; the needs of the Lakers as part of Major Series Lacrosse; and the needs of the Community for entertainment and trade shows for much of the next decade.

Information has become known to staff, since the 2017 Capital Budget was approved, that has led to a recommendation to reallocate capital funds in 2017 for the Peterborough Memorial Centre and plan some additional work in the next two years.

Building Issues

In 2009, a Building Condition Audit (BCA) was undertaken on the Peterborough Memorial Centre. The BCA provided life cycle analysis of all major building components and provided life cycle costing for replacement based on industry standards, age of equipment and most importantly actual condition of equipment and components of the building. The roofing, which was last done in 2003, was scheduled for replacement in 2018 – 2020.

Seventeen of the eighteen HVAC rooftop units were also replaced in 2003 with a life expectancy of 15 years and with reliable maintenance could last 20 years. The HVAC units were scheduled to be replaced in 2020 as noted in the BCA. There have been maintenance issues with the rooftop units over the last several years and upon recent review they were deemed to be in poor condition and should all be replaced in the next 1 – 3 years.

There have been issues with the dasher boards at the south end of the Memorial Centre, which lead staff to perform a specific structural review of the floor slab and

serious issues were noted which have lead to the recommendations included in this report. As the floor slab also contains the refrigeration lines to make ice, any work on the floor slab would require replacement of the refrigeration lines. The floor and refrigeration lines were replaced in 1979 and usually can expect a life expectancy of 30 – 40 years with proper maintenance. The refrigeration equipment is of similar age and, with the findings of the structural review, replacement of the refrigeration equipment would be recommended at the same time as the floor.

Roofing Issues

In early January 2017, Arena staff noted roof leaks throughout the Memorial Centre (Suites 1, 2, 3, 7 and 8, Section 15 seating area and walkway and the Peterborough Petes Alumni Room. The City's Roofing Consultant (Accent Building Sciences) visited the site on January 12, 2017 to review the roof conditions throughout the facility, investigate the roof leaks and map out the areas of concern. Several roof areas are beyond their life expectancy and require replacement. Three of the roofs have had repair work performed in the past five years and the recommendation for 2017 is to perform minor repairs again and include for roof replacement in 2019.

Given the unknown future of the Memorial Centre, with a new OHL Arena study undertaking, staff reviewed two roofing options:

Option 1 – Full roof replacement: removal of all existing roofing material down to roof deck, installation of new vapour retarder, thermal insulation layers, high performance roofing membrane and flashings. New assembly to have a 20 year Platinum Privilege Warranty inclusive of materials and labour; and

Option 2 – Recovering of the existing roof assemblies, where possible. Removal of the existing roof membrane, leaving existing thermal insulation in-place (replace any damaged or wet sections), and installation of new coverboard and new 2-ply modified bituminous roofing membrane over existing thermal insulation. This option has a two year workmanship warranty by the contractor and standard ten year material warranty by the manufacturer.

The City can also purchase a 10-year Platinum Warranty from the manufacturer (through the contractor) for an additional cost of approximately \$0.15 to \$0.20 per square feet. A Platinum Warranty covers labour costs whereas the standard warranty is materials only.

Staff recommend Option 2 with the additional 10-year Platinum warranty.

HVAC Rooftop Issues

The Peterborough Memorial Centre has 18 HVAC units which typically have a life expectancy of 15 years. With 13 years of continuous service, all units with the exception of one had the potential for continued use for 1 - 3 years. However, during the inspection in early January 2017, some of the units have aged more quickly than others. Three units are custom rooftop air handlers that serve the rink bowl. Their various internal components have life expectancies ranging from 15 years to 25 years. Based

on their current condition, it is recommended that they be replaced within 1 – 3 years. Their physical size makes them more costly to remove and reinstall so it would be more practical to replace these units when the roof is replaced in their respective area. There are four other units that are also in poor condition and need to be replaced. Therefore it is recommended that units six units be replaced when they are removed for roofing. The balance of the rooftop units can be removed for roof work and reinstalled afterwards and potentially be replaced in 2019 with the remaining roof replacement work.

Chart 2 below provides detailed costs of the roof and HVAC rooftop for 2017.

Chart 2
Detailed Costs of Roof and HVAC Rooftop Unit Replacement in 2017

Description of Work	Budget
Replacement of 5 Roofs	\$359,600
Repairs to 3 Roofs	\$40,000
Replace Rooftop 6 HVAC Units	\$646,000
Remove and Re-install remaining Rooftop HVAC Units	\$13,500
Consulting Fees for design of all 3 projects (2017 – 2019)	\$232,700
Project Management Fee for 2017	\$25,400
Contingency	\$105,800
Total Project Cost	\$1,423,000

The work in 2017 can be done without disruption to the events in the building.

Expected 2018 Work

The original building was constructed in 1955 with an ice pad cast on a steel deck. The pad is supported by concrete block foundation walls with a crawl space below. In 1977, a new concrete pad was constructed over the existing pad complete with new refrigeration piping, headers and dasher boards. Recently, arena staff commissioned a structural review of the ice surface concrete slab looking into the options available to offer different types of events.

The floor slab and supporting walls were reviewed as part of the structural analysis. The analysis found an area at the south end of the slab along the edge at the dasher boards and around the perimeter edge of the rink slab where staff had performed numerous repairs around the southern dasher boards. The concrete foundation wall below the dasher boards at the south end was found to be in poor condition, with many large cracks, as well as evidence of severe water leakage and efflorescence. This wall is also delaminating with corrosion/rust and concrete spalls along the entire length of

the supporting wall. The structural engineer has recommended replacement in 1 -3 years.

The City's 20 year capital replacement plan included the replacement of the refrigeration compressors in 2019 and replacement of the concrete slab, brine piping, brine headers and all other refrigeration equipment in 2022.

Based on the condition of the south edge of the ice rink slab, rink concrete topping, supporting walls and associated dasher board support frame anchorage, staff is recommending that significant structural repairs and rehabilitation be done in 2018 to ensure its reliability for the next several years. The work is complicated by the issue that slab and foundation repairs would require work on the brine header and piping in the slab. Given the age of the brine header and slab piping, it has been recommended by our Refrigeration Preventive Maintenance Contractor not to perform any structural repairs to slab, unless staff is prepared to replace the entire slab and in floor piping inclusive of the brine headers and piping.

Impact on Major Tenants

By planning this work for 2018, staff will design the work and coordinate schedules with the Petes and Lakers for any disruptions in their 2018 schedules. Staff will recommend a premium work schedule of 24/7 to shorten the down time of the Peterborough Memorial Centre and affect on the Petes and Lakers schedule. The project is estimated to take approximately 3 to 3½ months with a start date of mid May and be completed by late August.

This will require the relocation of the Peterborough Lakers for the 2018 season, however the MANN cup could be held in September. It may affect some early season Petes events such as their Training Camp and Exhibition games but should not have an impact on their regularly scheduled games. Staff will work with the Petes and Lakers to find alternate facilities to accommodate their needs.

Chart 4 below provides detailed costs of the proposed ice pad, refrigeration plant; dasher boards/glass replacement and refrigeration room renovations for 2018.

Chart 4**Detailed Costs of Ice Slab, Dasher Board and Refrigeration Replacement in 2018**

Description of Work	Budget
Replacement of Floor Slab	\$1,358,000
Refrigeration Plant Equipment Replacement	\$660,000
Dasher Board and Glass Replacement	\$300,000
Refrigeration Room Code Upgrades	\$27,000
5% Inflation Cost for work performed in 2018	\$102,250
Project Management Fee for 2017	\$51,534
Contingency	\$250,000
Total Estimated Project Cost	\$2,747,784

Chart 5 provides the detailed estimated costs for the 2019 proposed roofing and HVAC rooftop unit replacement.

Chart 5**Detailed Costs of Roof and HVAC Rooftop Unit Replacement in 2019**

Description of Work	Budget
Replacement of the remainder of the Roofs	\$479,500
Replacement of remainder of Rooftop HVAC Units	\$572,500
5% /year Inflation Cost for work performed in 2019	\$105,200
Project Management Fee for 2019	\$27,800
Contingency	\$120,000
Total Project Cost	\$1,305,000

Summary

If Council accepts the recommendations, the Roof and HVAC Rooftop Unit Replacement will be created as a 2017 Capital project and the project would be tendered in late March with an anticipated start date of late May 2017.

Submitted by

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Appendices
Appendix A – Form 1s and 2s

**2017-2026 Capital Budget Justification
Tangible Capital Assets**

CAP Form 1 (TCA)

Department: Corporate Services

Division: Finance - Property

Project Name & Description

Corporate Services – Property - Property

Commitments Made

The building audits have been completed. The information contained in the audits shall be prioritized in a 20 year life cycle plan. The items identified shall then require repair and/or replacement and appropriate budgets shall be designated per facility.

Effects on Future Operating Budgets

The repairs and/or replacements will reduce future maintenance and operating costs.

Budget Reference #: 3-1.01

Project Detail, Justification & Reference Map

2017	Project Description	
1.	Peterborough Daycare - New HVAC, Life Safety & BAS	
2.	City Hall Generator Replacement	\$420,000
3.	City Hall Board Room & Women's Washroom Renovation	
4.	City Hall Replace Transformer and Switchgear	\$50,000
5.	Market Hall Lighting	\$268,000
6.	Market Hall Exterior Facade Repairs	\$75,000
7.	City Buildings - Property including City Hall Elevator	\$130,000
8.	City Hall North Wing Entrance Replacement	
9.	City Hall North Parking Lot Re-Paving	
		\$943,000

Tangible Capital Assets
Ten Year Capital Budget Estimates (000's)
2017-2026 & Subsequent Years

(1)		Project Total	Approved Pre-2017	R e q u e s t e d					2022 to 2026	2027 to 2041
				2017	2018	2019	2020	2021		
Department	Corporate Services									
Division/Activity	Finance - Property									
Project Description	Corporate Services - Property - Property									
Project#	3-1.01									
Expenditures										
Contractual Services		34,553.3	1,120.0	943.0	3,469.0	549.0	562.2	200.8	4,443.5	23,265.8
Direct Revenue										
Revenue - Canada Grant		88.0		88.0						
Total Direct Revenue		88.0		88.0						
Net Requirements		34,465.3	1,120.0	855.0	3,469.0	549.0	562.2	200.8	4,443.5	23,265.8
To be financed from										
Debentures										
Ctiy's Tax Supported		864.5	190.0	674.5						
Total Debenture Financing		864.5	190.0	674.5						
Reserves										
Reserves & Reserve Funds		-285.0	-285.0							
Court House Capital Reserve		285.0	285.0							
Market Hall Performing Arts		55.5		55.5						
Total Reserves		55.5		55.5						
Capital Levy		33,545.3	930.0	125.0	3,469.0	549.0	562.2	200.8	4,443.5	23,265.8

2017-2026 Capital Budget Justification Tangible Capital Assets

CAP Form 1 (TCA)

Department: Corporate Services

Division: Finance - Property

Budget Reference #:

3-1.02

Project Name & Description

Corporate Services – Property – Community Services

Commitments Made

The building audits have been completed. The information contained in the audits shall be prioritized in a 20 year life cycle plan. The items identified shall then require repair and/or replacement and appropriate budgets shall be designated per facility.

Effects on Future Operating Budgets

The repairs and/or replacements will reduce future maintenance and operating costs.

Project Detail, Justification & Reference Map

2017	Project Description	
0.	Museum - Main Office Renovations	
1.	Memorial Centre - Replace Ice-Pad Lighting with LED and Low E Ceiling	
2.	Evinrude Centre - Replace ammonia gas detection system & HWT on 2nd floor	
3.	Kinsmen Arena - Repairs to Structural Steel Columns and Beams	
4.	Kinsmen Arena - Refrigeration Room Equipment Upgrades	\$600,000
5.	PSWC Replace Interior Lighting	\$210,000
6.	Morrow Bldg - Replace HWT & electric force flow heaters	\$7,000
7.	PTBO Museum - Remove and dispose of the Fine Annex Portable	\$30,000
8.	PTBO Museum - Replace water service to main building	\$28,000
9.	Memorial Centre - Roof Repairs	\$1,423,000
		\$2,298,000

Tangible Capital Assets
Ten Year Capital Budget Estimates (000's)
2017-2026 & Subsequent Years

(1)		Project Total	Approved Pre-2017	R e q u e s t e d					2022 to 2026	2027 to 2041
				2017	2018	2019	2020	2021		
Department	Corporate Services									
Division/Activity	Finance - Property									
Project Description	Corporate Services - Property - Community Services									
Project#	3-1.02									
Expenditures										
Contractual Services		68,358.6	210.0	2,298.0	2,146.7	1,465.1	6,407.1	1,047.7	12,490.4	42,293.6
Direct Revenue										
Revenue - Canada Grant										
Total Direct Revenue										
Net Requirements		68,358.6	210.0	2,298.0	2,146.7	1,465.1	6,407.1	1,047.7	12,490.4	42,293.6
To be financed from										
Debentures										
Ctiy's Tax Supported		1,757.7	125.0	1,632.7						
Total Debenture Financing		1,757.7	125.0	1,632.7						
Reserves										
Museum Renovation Reserve		45.0			45.0					
PSWC Capital Reserve		75.0		75.0						
Federal Gas Tax		427.3		427.3						
Total Reserves		547.3		502.3	45.0					
Capital Levy		66,053.6	85.0	163.0	2,101.7	1,465.1	6,407.1	1,047.7	12,490.4	42,293.6

**2017-2026 Capital Budget Justification
Tangible Capital Assets**

CAP Form 1 (TCA)

Department: Corporate Services

Division: Finance - Property

Budget Reference #:

3-1.03

Project Name & Description

Corporate Services – Property – Fire Services

Commitments Made

The building audits have been completed. The information contained in the audits shall be prioritized in a 20 year life cycle plan. The items identified shall then require repair and/or replacement and appropriate budgets shall be designated per facility.

Effects on Future Operating Budgets

The repairs and/or replacements will reduce future maintenance and operating costs.

Project Detail, Justification & Reference Map

2017	Project Description	
1.	Fire Station 3 - Fleming Building - replace eavestrough	\$6,000
2.	Main Fire Hall - Asphalt and Sidewalk Replacement	
3.	Fire Station 3 - Install new BAS	
		\$6,000

Tangible Capital Assets
Ten Year Capital Budget Estimates (000's)
2017-2026 & Subsequent Years

		Project Total	Approved Pre-2017	R e q u e s t e d					2022 to 2026	2027 to 2041
				2017	2018	2019	2020	2021		
(1)										
Department	Corporate Services									
Division/Activity	Finance - Property									
Project Description	Corporate Services - Property - Fire Services									
Project#	3-1.03									
Expenditures										
Contractual Services		7,945.8		6.0	546.0	366.7	589.9	151.8	1,105.9	5,179.5
Direct Revenue										
Revenue - Canada Grant										
Total Direct Revenue										
Net Requirements		<u>7,945.8</u>		<u>6.0</u>	<u>546.0</u>	<u>366.7</u>	<u>589.9</u>	<u>151.8</u>	<u>1,105.9</u>	<u>5,179.5</u>
To be financed from										
Debentures										
Ctiy's Tax Supported										
Total Debenture Financing										
Capital Levy		<u>7,945.8</u>		<u>6.0</u>	<u>546.0</u>	<u>366.7</u>	<u>589.9</u>	<u>151.8</u>	<u>1,105.9</u>	<u>5,179.5</u>