The Corporation of the Township of Brock
Committee of the Whole Agenda

Monday, January 30, 2023, 10:00 a.m.
Virtual Meeting

Pages

1. Zoom Link

   1.1 https://us06web.zoom.us/j/86468596108?pwd=N08wbIduUTJXNys2OHNlcVpKUnlDZz09

2. Call to Order & Moment of Silence - 10:00 a.m.

3. Land Acknowledgement

   It is important to begin each public gathering with a Land and Territorial Acknowledgement, to recognize the Indigenous people for being good stewards of the land and environment, here where we are meeting today. The Township of Brock has traditionally been a hunting and fishing ground for First Nations people. We reside on and benefit from the Williams Treaty Territories, on the land of the Mississaugas and Chippewas. May we share the land as long as the sun rises, the grass grows and river flows.

4. Disclosure of Pecuniary Interest and Nature thereof

5. Presentations

6. Delegations / Petitions

7. Sub-Committees

   7.1 2023 Draft Capital Budget - Continuation of the January 16, 2023 Capital Budget Meeting

      7.1.1 Report 2023-PS-002 - Fire Department Portable Radio's 4
      Fire Chief

      Recommendation:
      BE IT RESOLVED THAT Report 2023-PS-02, Fire Department Portable Radio's be received.

      7.1.2 Report 2023-PS-003 - Fire Rescue Boat 8
      Fire Chief

Recommendation:
BE IT RESOLVED THAT Report 2023-PS-03, Fire Rescue Boat Replacement be received..

7.1.3 Report 2023-PS-004 - 2023 Fire Station Maintenance Plan 12
Fire Chief

Recommendation:
BE RESOLVED THAT Report 2023-PS-004 2023, Fire Station Maintenance Plan be received.

7.1.4 Report 2023-OP-001 - Road Rehabilitation and Forecast 15
Director of Public Works

Recommendation:
BE IT RESOLVED THAT staff report 2023-OP-001, Road Rehabilitation and Forecast be received; and
THAT Road Rationalization and Forecast be referred to the 2023 budget discussions; and
THAT Council approve a four-year Road Rehabilitation program; and
THAT Council approve a funding source strategy for the Road Rehabilitation program.

7.1.5 Report 2023-PRF-001 - Arena Engineering Reports 24
Manager of IT and Facilities

Recommendation:
BE IT RESOLVED THAT Report 2023-PRF-001, Arena Engineering Reports be received; and
THAT, an Arena Rehabilitation project be approved to be used for the purposes of completing repairs including, where necessary, hiring of engineers and contractors such as masons and other trades; and
THAT, the project be established at $200,000 to be funded equally from the three Arena Capital Reserve Funds; and
THAT Committee approve this at the Council meeting of January 30, 2023.

7.1.6 2023 Capital Budget Overview - Continued from January 16, 2023 109
Director of Finance and Treasurer

8. **Closed Session**
9. **Rise from Closed Session**
10. **Other Business**
11. **Public Questions and Clarification**

12. Adjournment

Recommendation:

BE IT RESOLVED THAT the Committee of the Whole meeting adjourn at ___p.m.

Corporation of the Township of Brock

Staff Report to the Mayor and Members of Council

From: Rick Harrison
Position: Fire Chief
Title / Subject: Fire Department Portable Radio's
Date of Report: January 19, 2023
Date of Meeting: January 30, 2023
Report No: 2023-PS-002

1.0 Issue / Origin

Fire Department portable radio replacement program.

2.0 Background

During budget discussions on January 16, 2023 the Finance Committee requested further information from the Fire Chief regarding the replacement of Fire Department portable radios.

3.0 Analysis

NextGen Radio System

In 2014, Brock Township Fire Department along with Durham Regional Police Services (DRPS) and all other Durham Fire Services within the Region moved to a new Harris P25 Next Gen radio system.

The shared system and network are managed by DRPS and municipal users are responsible for their share of network/infrastructure costs based on the number of radios they have on the system. Additionally, each user/municipality is responsible for the purchase and maintenance of their own hardware (radios).

The shared network/infrastructure annual cost is based on the total number of portable radios, fixed radios, mobile radios, and vehicular repeaters. Presently we have 45 portable radios, 3 fixed radios (1 at each station), 12 mobile radios (1 in each truck/car) and 4 vehicular repeaters. This calculates an annual sharing of 2% (approximately $40,000) for Brock Township Fire Department to operate on the Durham Region Harris P25 Next Gen radio system.

Currently, the Harris XG-75 model portable radios are nearing the end of their performance lifecycle, parts availability, furthermore, replacement batteries for the XG-75 are no longer available.

Recently, a few of the Fire Services in south portion of Durham Region have experienced several instances where radio batteries have lost their charge prematurely, resulting in a loss of effective radio communication.

Spare batteries are available for our portable radios and to date we have not experienced any battery failures; however, if we begin to experience battery failure it may not take very long before our stock will decrease to a low supply and as previously indicated, replacement batteries for the XG-75 are no longer available.

Sudden battery failure may result in a Health and Safety concern, as it poses a fire ground safety concern regarding critical radio communications at an emergency scene.

The batteries for fire department portable radios must be intrinsically safe, meaning they are designed to be incapable of generating the heat or a spark sufficient to cause explosions or ignite flammable atmosphere. Intrinsically safe batteries are particularly important for fire department personnel and those working in mines, oil refineries, or similar industries.

Presently, the fire department batteries are CSA rated, it is highly recommended the batteries obtain a ULC rating. The XL-185P batteries meet the requirements of a ULC rating and intrinsically safe.

Portable Radio/Batteries

Currently, the fire department operates several Harris XG-75 portable radios and spare batteries as outlined in the following charts:

Station 81 (Sunderland)

Station/Truck	Number of Portable Radios	Number of Spare Batteries
Station 81	0	12
Pump 81	6	0
Rescue 81	5	0
Tank 81	2	0
Car 81	1	0
Car 82	1	0
81 Spare	2	0
Station Total	**17**	**12**

Station 82 (Cannington)

Station/Truck	Number of Portable Radios	Number of Spare Batteries
Station 82	0	9
Pump 82	5	0
Rescue 82	5	0
Tank 82	2	0
Station Total	**12**	**9**

Station 83 (Beaverton)

Station/Truck	Number of Portable Radios	Number of Spare Batteries
Station 83	0	9
Pump 83	6	0
Rescue 83	5	6
Tank 83	2	0
Marine 83	2	0
Ramara Fire Service	1	1
Station Total	**16**	**16**
Fire Department Total	**45**	**37**

Cost

In 2014 the cost to purchase a portable radio was approximately $3,500 per radio, including all operational requirements for the fire department.

In 2023, as per a received quote, the cost to purchase a portable radio is approximately $4,000 per radio, including all operational requirements of the fire department.

Proposed 3-year Portable Radio Replacement Program

The Fire Chief is recommending a 3-year portable radio/battery replacement program as outlined in the chart below.

2023	**2024**	**2025**
Aerial 83 – 6 Radios	Pump 82 – 5 Radios	Pump 81 – 6 Radios
Rescue 83 – 5 Radios	Rescue 82 – 5 Radios	Rescue 81 – 5 Radios
Tank 83 – 1 Radio	Tank 82 – 1 Radio	Tank 81 – 1 Radio
Station – 12 Batteries	Station – 12 Batteries	Station – 12 Batteries
2 Charging Units	2 Charging Units	2 Charging Units
Total Radios – 12	**Total Radios – 11**	**Total Radios -- 12**
Total Batteries -- 12	**Total Batteries -- 12**	**Total Batteries -- 12**
Total Cost -- $49,994 + tax (As per quote)	**Total Cost -- $46,120 + tax (Approximate)**	**Total Cost -- $49,994 + tax (Approximate)**

Total Cost of 3-year replacement program = $146,108 before taxes or 148,680 including the Township's HST impact (approximate)

Presently, we have 45 portable radios and 37 spare batteries, after careful evaluation the need for the number of portable radios can be decreased to 35 and still meet the operational requirements of the fire department. Each portable radio would have one spare battery; therefore, we would require it least 35 spare batteries.

Disposal of Existing Portable Radios/Batteries

Our existing portable radios and batteries shall be sold upon receiving the replacement portable radio and battery.

4.0 Related Policies / Procedures

Durham Region Next Gen Radio Agreement

5.0 Financial / Budget Assessment

The draft 2023 Capital Budget requested $60,000 of funding from the Capital Reserve Fund – Fire Equipment. The radio replacement was updated to be included in this year's Ten-Year Capital Forecast for three years, starting in 2023.

6.0 Climate Change Impacts

None

7.0 Communications

None

8.0 Conclusion

Budget approval for this purchase will assist in reducing the associated risk of potential failures of the current portable radios due to battery failure. The proposed replacement for the Harris XG-75 is the Harris XL-185P which has an improved battery life, charge hold, ULC rating and intrinsically safe.

The Fire Chief obtained a quote from a representative at Williams Communication Services located in Oshawa, the number 1 provider for Durham Region Harris Next Gen radio products for Durham Regional Police Services and Fire Services within Durham Region. The representative indicated that the XL-185P will meet the requirements of the fire department and the batteries for the XL-185P is a ULC rated battery, therefore Williams Communication do not anticipate a battery issue/shortage in the far-off future as many fire service portable radios require ULC batteries.

9.0 Recommendation

BE IT RESOLVED THAT Report 2023-PS-02 "Fire Department Portable Radio's" be received for information.

Corporation of the Township of Brock

Staff Report to the Mayor and Members of Council

From: Rick Harrison
Position: Fire Chief
Title / Subject: Fire Rescue Boat
Date of Report: January 23, 2023
Date of Meeting: January 30, 2023
Report No: 2023-PS-003

1.0 Issue / Origin

Fire/Rescue Boat Replacement

2.0 Background

During budget discussions on January 16, 2023 the Finance Committee requested further information from the Fire Chief regarding the replacement of Fire Department Fire/Rescue boat.

3.0 Analysis

Presently, the fire department utilizes a 1982 Bost Whaler fire/rescue boat with a 175HP Evinrude outboard motor for emergency and non-emergency assistance on Lake Simcoe and Thorah Island.

The fire/rescue boat was purchased via a donation in 2013 for approximately $5,000 which included the boat, a 1980 200HP Mercury outboard motor and trailer.

In 2015 the 1980 200HP Mercury outboard motor was causing some operational and mechanical concerns; therefore, the motor was traded in for a 2005 150HP Evinrude outboard motor for an additional cost of approximately $5,500.

The boat has achieved the operational requirements of the fire department in many emergency and non-emergency incidents; however, the boat is limited to the number of personnel and the amount of equipment permitted in the boat during such task. Also, the fire/rescue boat is not very operationally friendly and/or safe for maneuvering a person into the boat during a water rescue.

The boat has in the past transported Township workers, MPAC staff and Region staff members to Thorah Island to complete operational task.

Statistically information indicates that in 2022 the fire/rescue boat responded to 7 emergency incidents on Lake Simcoe.

Budget Deliberations

During 2023 budget deliberations dated January 16, 2023 the Committee of Whole requested further information regarding the purchasing of a new fire/rescue boat and instructed the Fire Chief to investigate the options of a used boat at a purchase cost of no more than $100,000.

The Fire Chief could not find a used boat that would meet the operational requirements of the fire department but did locate an in-stock boat that would most certainly meet the operational requirements of the fire department.

The Fire Chief in discussion with a representative from Hurst Marina located in Minotick, Ontario (Rural South Ottawa), obtained a quote of $125,793 + tax, for an in stock 2023 24' Stanley Pulsecraft, fully enclosed cab boat, a 250HP outboard motor and trailer included.

Quote Outline

- 2023 New Stanley Pulsecraft 24' Closed $74,297
- 2023 New Venture (Trailer) $ 6,899
- 2023 New Yamaha Motor 250HP $41,227
- Fees & Licenses $ 3,370
- Total + tax $125,793 ($128,000 including HST impact)

Further discussion with the representative from Hurst Marina there is potential to lower the purchasing price by eliminating the boat trailer and lowering the HP of the outboard motor. A lower HP outboard motor would be based on motor availability.

Boat features Included:

- 1/4" Hull and 3/16" Sides
- 3/16" Non-slip self bailing cargo deck
- 25" Transom
- Welded Gunwales, Lifting Strakes
- Keel guard, heavy duty framing
- Side rails
- 60" front drop ramp with hand winch
- Weld on motor bracket
- 48" closed cabin
- Built in 50-gallon fuel tank
- Hydraulic steering
- Navigation lights
- HD windshield wiper

There is also a potential to sell the existing fire/rescue boat for an approximate value of $10,000 - $15,000 to assist in the cost of the new fire/rescue boat.

Also, the selling of the existing 2001 Freightliner spare pumper truck for an approximate value of $20,000 - $ 25,000 to assist in the cost of the new fire/rescue boat.

4.0 Related Policies / Procedures

Establishing & Regulating Bylaw

Brock Township Fire Department Policy 2013-69 “Fire Rescue Watercraft (Marine 83)

5.0 Financial / Budget Assessment

Including the proceeds from the sale of the existing boat and spare pumper, the net impact to the Capital Reserve Fund – Fire Equipment will be:

Quotation:	$128,000
Boat – proceeds	(12,500)
Spare pumper – proceeds	(22,500)
Funding required:	**$93,000**

6.0 Climate Change Impacts

None

7.0 Communications

None

8.0 Conclusion

The purchase of a 2023 24’ Stanley Fire/Rescue boat would bring forward a very safe, efficient/effective watercraft that would meet the requirements of the Brock Township Fire Department for many years.

9.0 Recommendation

BE IT RESOLVED THAT Report 2023-PS-03 “Fire Rescue Boat Replacement” be received for information.

Corporation of the Township of Brock

Staff Report to the Mayor and Members of Council

From: Rick Harrison
Position: Fire Chief
Title / Subject: 2023 Fire Station Maintenance Plan
Date of Report: January 23, 2023
Date of Meeting: January 30, 2023
Report No: 2023-PS-004

1.0 Issue / Origin

To outline 2023 operational and capital projects for Fire Station(s).

2.0 Background

During budget discussions on January 16, 2023 the Finance Committee requested further information from the Fire Chief regarding the 2023 work maintenance required at the fire stations and outline if they are operational or capital projects.

3.0 Analysis

During budget discussions the Fire Chief proposed several 2023 work projects for the three fire stations. Some of the proposed projects were eliminated from the budget and the Committee of Whole requested further information and costing of the remaining proposed projects and direction if they would be operational or capital projects.

The following is an outline and approximate cost

Station 81 (Sunderland)

- CAPITAL BUDGET - Replacement of the office section of the Sunderland fire station @ a cost of $5,800 + tax
- OPERATIONAL PROJECT - Painting of the bay area walls @ a cost of approximately $2,000 + tax

Station 82 (Cannington)

- CAPITAL PROJECT – Replacement of bay area heaters @ a cost of approximately $6,000 + tax
- OPERATIONAL PROJECT – Repair/paint exterior doors @ a cost of approximately $500 + tax
- OPERATIONAL PROJECT – Paint/repair storage room @ a cost of approximately $3,000 + tax

Station 83 (Beaverton)

- CAPITAL PROJECT – Replace PPE storage racking system @ a cost of approximately $13,000 + tax
- CAPITAL PROJECT – Replace station windows @ a cost of approximately $19,500 + tax
- CAPITAL PROJECT – Insulate apparatus area roof & install appropriate vents @ a cost of approximately $9,200 + tax

4.0 Related Policies / Procedures

None

5.0 Financial / Budget Assessment

The 2023 Capital Budget request presented to Council was $60,000 for Station 81 and $36,000 for Station 83. The following replaces the original request, with the capital portion eligible for funding from the Canada Community Building Fund:

Description	**Capital**	**Operating**
Station 81 (Sunderland)		
Replacement of the office section of the Sunderland fire station	5,900.00	-
Painting of the bay area walls	-	2,000.00
	5,900.00	2,000.00
Station 82 (Cannington)		
Replacement of bay area heaters	6,100.00	-
Repair/paint exterior doors	-	500.00
Paint/repair storage room	-	3,100.00
	6,100.00	3,600.00
Station 83 (Beaverton)		
Replace PPE storage racking system	13,200.00	-
Replace station windows	19,800.00	-
Insulate apparatus area roof & install appropriate vents	9,400.00	-
	42,400.00	-
Total	**$54,400.00**	**$5,600.00**

6.0 Climate Change Impacts

None

7.0 Communications

None

8.0 Conclusion

The report details the 2023 fire station projects into the two requested categories, Operational and Capital as per the request of the Committee of Whole.

9.0 Recommendation

BE RESOLVED THAT Report 2023-PS-004 “2023 Fire Station Maintenance Plan” be received for information.

Corporation of the Township of Brock

Staff Report to the Mayor and Members of Council

From: **Paul Lagrandeur**
Position: **Director of Public Works**
Title / Subject: Road Rehabilitation and Forecast
Date of Report: January 23, 2023
Date of Meeting: January 30, 2023
Report No: 2023-OP-001

1.0 Issue / Origin

Brock Township's Double Surface Treated Roads have in many areas began to fail and are in need of repair. A plan has been created to rehabilitate the identified sections of road. Each plan will have a financial element associated with it and budgetary impact.

2.0 Background

Roads Need Study

The Corporation of the Township of Brock's last Roads Need Study was performed in 2018. Chisholm, Fleming and Associates were the Consultants selected to perform the study. Brock will be requesting this task every five years. The completed Road Needs Study allows the Township to:

- Maintain an updated inventory of all the road sections making up the road system;
- Identify maintenance, drainage, repair and rehabilitation needs;
- Protect and maintain the life of the Township's roads and determine the ideal planning and funding for road improvements;
- Identify deficiencies and estimate the cost of proposed practical improvements to eliminate the deficiencies; and
- Provide an overview from programming and financial perspectives.

To compare the condition of each road section, the inventory manual provides scorings in the form of point ratings. The point ratings are then used to determine the Condition Ratings for each section which will prioritize the needs for each road section and classify each one as a "Now", or "1-5 year". For the purpose of this report, we will only use this time frame to accommodate our five-year plan.

The Priority Rating is used to determine the importance and benefit of improving one section over another. Consideration will include Average Annual Daily Traffic (AADT) and Condition rating as determined by staff in the 2022 year.

Over the past ten years Brock has made an aggressive attempt to hard top rural backroads with a Double Surface Treatment application. Success of the application has been inconsistent to Brock's desired outcome. Repair is needed on many sections of the treated rural roads. Below will be a five-year plan to correct and repair areas of DST.

The main purpose for this plan is to create a method of repair for affected areas identified on road sections with Double Surface Treatment. It will provide a cost estimate for Repair/Rehabilitation. It will also provide a prioritized list of affected sections. The rating will be as mentioned above.

Method of Repair – To maintain a stable surface on our rural roads our actions will include:

1) Excavation of top layer (granular A) and stockpile
2) Excavation of unsuitable material below granular
3) Place filter fabric and geo textile layer
4) Replace stockpiled granular. Grade and compact
5) Add new granular, grade and compact.

Estimated Repair Costs – An early conservative estimate for the method of repair mentioned above is approximately $80,000/KM.

List of Roads for Repair

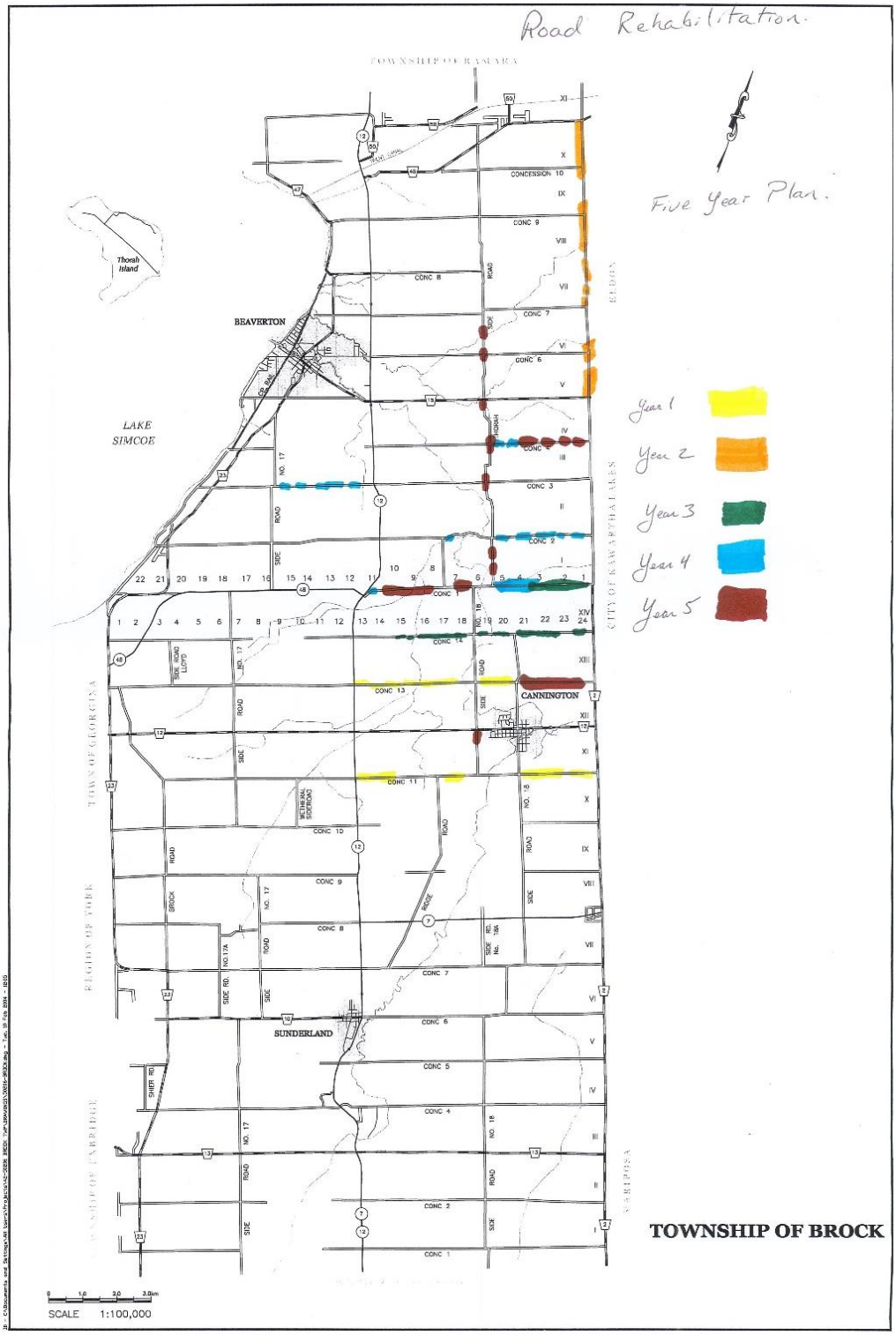
The total length of roads for rehabilitation is approximately 26,940 m or 26.94 km.

Road	Section	Length	Surface	Plan 1 (5yr)	Plan 2 (4yr)	Plan 3 (3yr)	AADT
Conc. 11(B)	Hwy 12 East to 750m E	750 m	DST	1	1	1	212
	1.2 km E of #12 to 1.85 km E	650 m	DST	1	1	1	212
	2.7 km E of #12 to 2.75 km E	50 m	DST	1	1	1	225
	4.7 km E of #12 to 6.05 km E	1350 m	DST	1	1	1	245
	6.75 km E of #12 to 6.85 km E	100 m	DST	1	1	1	126
Conc 13(B)	Hwy 12 East to 200 m E	200 m	DST	1	1	1	258
	500 m E of #12 to 800 m E	300 m	DST	1	1	1	258
	1 km E of #12 to 1.5 km E	500 m	DST	1	1	1	258
	1.72 km E of #12 to 1.92 km E	200 m	DST	1	1	1	258
	2.1 km E of #12 to 2.55 km E	450 m	DST	1	1	1	106
	2.8 km E of #12 to 2.9 km E	100 m	DST	1	1	1	106
	3.3km E of #12 to 3.36 km E	60 m	DST	1	1	1	86
	3.65 km E of #12 to 4.5 km E	850 m	DST	1	1	1	86
	4.75 km E of #12 to 6.6 km E	1,850 m	Gravel	5	4	1	86

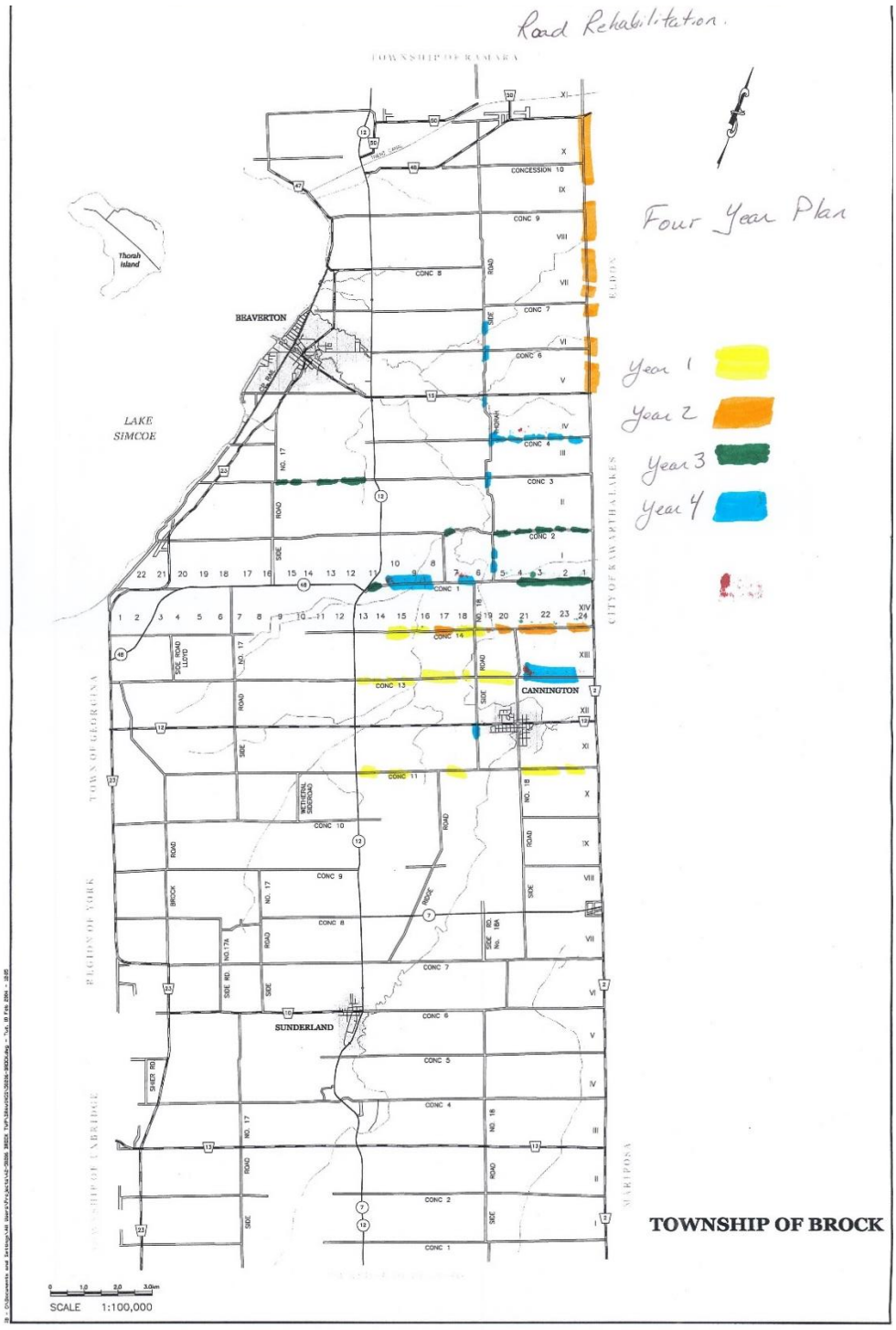
Road	Section	Length	Surface	Plan 1 (5yr)	Plan 2 (4yr)	Plan 3 (3yr)	AADT
Conc 14(B)	1.3 km E of #12 to 1.6 km E	300 m	DST	3	1	1	99
	East and West bridge approach	60 m	DST	3	1	1	99
	1.95 km E of #12 TO 2.3 km E	350 m	DST	3	2	1	99
	2.4 km E of #12 to 3.4 km E	1,000 m	DST	3	1	2	99
	3.8 km E of #12 to 3.9 km E	100 m	DST	3	2	1	119
	4.0 km E of #12 to 4.5 km E	500 m	DST	3	2	1	119
	4.75 km E of #12 to 6.1 km E	350 m	DST	3	2	2	119
	6.6 km E of #12 to 6.75 km E	150 m	DST	3	2	2	119
Conc 1(T)	600 m E of #12 to 700 m E	100 m	DST	4	3	2	258
	700 m E of #12 to 2.4 km E	1,700 m	Gravel	5	4	3	258
	3.3 km E of #12 3.5 km E	200 m	Gravel	5	4	3	258
	3.6 km E of #12 to 5.1 km E	1,500 m	DST	4	3	2	258
	5.1 km E of #12 to 6.7 km E	1,600 m	DST	3	3	3	238
Conc 2(T)	1.9 km E of #12 to 2 km E	100 m	DST	4	3	3	47
	3.5 km E of #12 to 3.65 km E	150 m	DST	4	3	3	73
	3.8 km E of #12 to 4.4 km E	600 m	DST	4	3	3	73
	4.6 km E of #12 to 5.0 km E	400 m	DST	4	3	3	73
	5.25 km E of #12 to 5.45 km E	200 m	DST	4	3	3	73
	5.9 km E of #12 to 6.0 km E	100 m	DST	4	3	3	73
Conc 3(T)	300 m W of #12 to 800 m W	500 m	DST	4	3	3	119
	900 m W of #12 to 1.7 km W	800 m	DST	4	3	3	119
	2.1 km W of #12 to 2.2 km W	100 m	DST	4	3	3	119
	2.4 km W of #12 to 2.9 km W	500 m	DST	4	3	3	119
Conc 4(T)	100 m E of #12 to 400 m E	300 m	DST	4	4	3	225
	680 m E of #12 to 850 m E	170 m	DST	4	4	3	225
	1.15 km E of #12 to 1.2 km E	50 m	DST	5	4	3	225
	1.5 km E of #12 to 1.55 km E	50 m	DST	5	4	3	225
	1.8 km E of #12 to 2.0 km E	200 m	DST	5	4	3	225
	2.15 km E of #12 to 2.25 km E	100 m	DST	5	4	3	212
	2.4 km E of #12 to 2.55 km E	150 m	DST	5	4	3	212

Road	Section	Length	Surface	Plan 1 (5yr)	Plan 2 (4yr)	Plan 3 (3yr)	AADT
Thorah SRD	5.68 km S of #48 to 5.73 km S	50 m	DST	5	4	3	106
	Conc 6(T) and Thorah Srd	40 m	DST	5	4	3	106
	Regional Rd 15 S to 40 m	40 m	Gravel	5	4	3	99
	Conc 4(T) and Thorah Srd	40 m	DST	5	4	3	146
	Conc 3 (T) and Thorah Srd	40 m	DST	5	4	3	80
	4.45 km S of #15 to 4.5 km S	50 m	DST	5	4	3	40
	4.75 km S of #15 to 5.05 km S	350 m	DST	5	4	3	40
Srd 18 A	Regional Road 12 to 75 m S	75 m	DST	5	4	3	245
Simcoe T/L	Regional Rd 15 to 875 m N	875 m	DST	2	2	2	383
	1.2 km N of #15 to 1.5 km N	300 m	DST	2	2	2	238
	2.3 km N of #15 to 2.6 km N	300 m	DST	2	2	2	225
	3.0 km N of #15 to 3.05 km N	50 m	DST	2	2	2	225
	3.2 km N of #15 to 4.0 km N	800 m	DST	2	2	2	225
	4.5 km N of # 15 to 5.8 km N	1,300 m	DST	2	2	2	225
	6.4 km N of #15 to 8.2 km N	1,800 m	DST	2	2	2	225

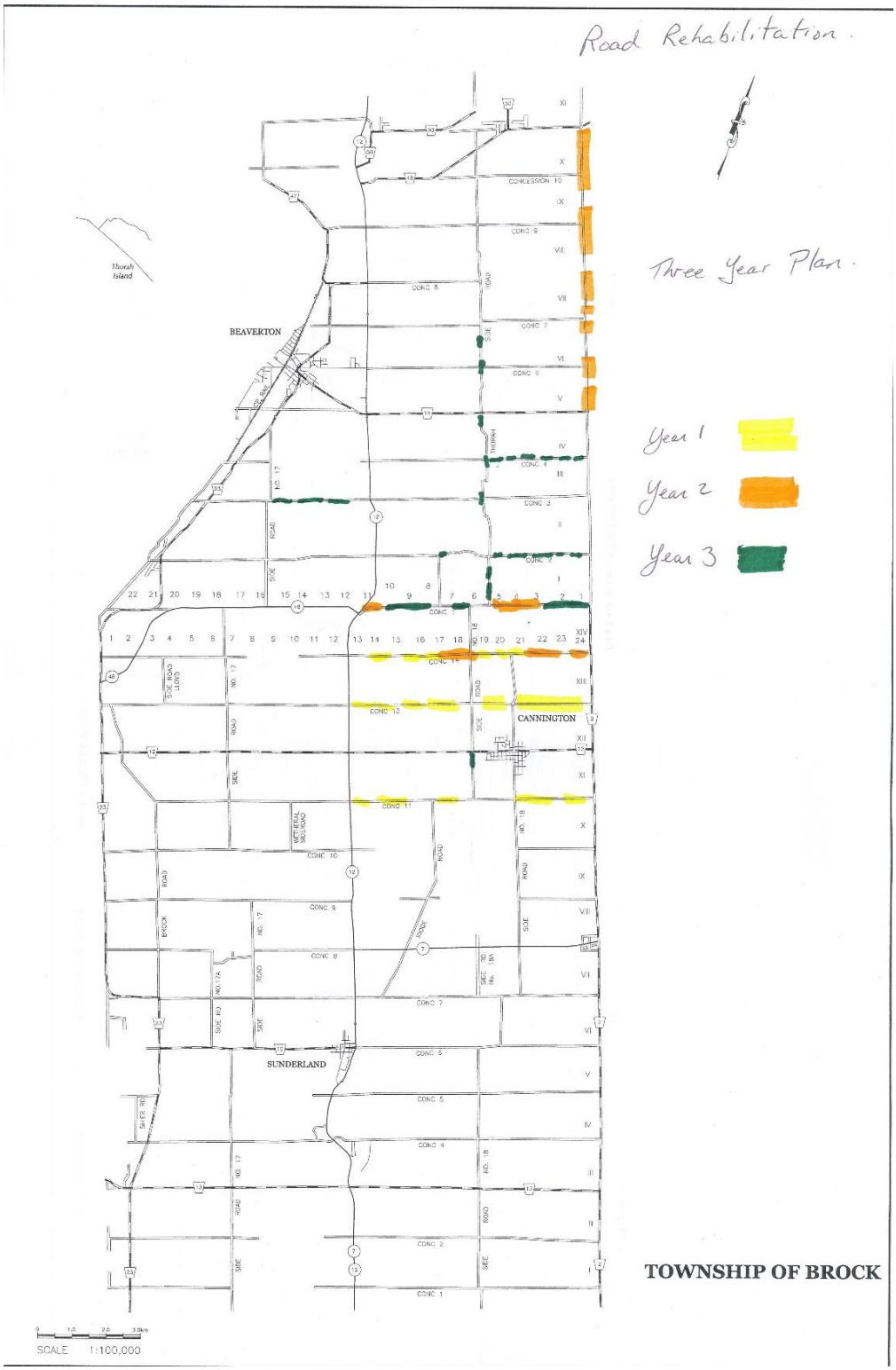
Five-Year Plan Option: A five-year plan would have 5,388 m of road repair per year. At approximately $80,000 per km that would be $431,040.00 per year.



Four-Year Plan Option: A four-year plan would have 6,735 m of road repair per year. At approximately $80,000 per km that would be $538,800.00 per year (staff recommendation).



Three-Year Plan Option: A three-year plan would have 8,980 m of road repair per year. At approximately $80,000 per km that would be $718,400.00 per year.



The section on Simcoe Street/Townline is a shared boundary with The City of Kawartha Lakes (CKL). As per our boundary agreement a one-year notice is to be given about the project for budgetary consideration. CKL is in favour of our method and eager to complete in one season. There is approximately 5,425 m of road section for repair on Simcoe Street and is included in 2024 in all three plans. The agreement has a cost share of 50%, therefore Simcoe Street Townline will work out to approximately $217,000.00 per municipality.

In our operating budget under Maintenance Patching Materials, staff have spent $50,978.35. This is our purchasing of cold mix for the purpose of patching potholes on asphalt and DST surfaces. We will continue to have the line item for patching but anticipate that costs will decrease upon completion of our road rehabilitation.

3.0 Analysis

As mentioned in Background, the method of repair has shown signs of success with our neighbouring municipality that has similar conditions to what Brock Township endures. Whichever plan is implemented, the condition of the roadways will benefit and will cut on complaints and maintenance operations.

Moving forward, staff have a better understanding of the DST program and product in relation to applying and resurfacing and sealing road sections. The successful roads in the Municipality have been applied with a more reasonable application in timing of the Slurry Seal for sealing the DST.

Staff are recommending the four-year option.

4.0 Related Policies / Procedures

5.0 Financial / Budget Assessment

The financial impact for consideration during budget discussions are laid out in the background information. Depending on the plan chosen, the budget will be more aggressive with a fewer year plan but overall, the financial impact will be $2,155,200:

1. A five-year plan would have 5,388 m of road repair per year at approximately $431,040.00 per year for five years.
2. A four-year plan would have 6,735 m of road repair per year at approximately $538,800.00 per year for four years.
3. A three-year plan would have 8,980 m of road repair per year at approximately $718,400.00 per year for three years.

Staff will also have a more accurate understanding of costs after the first year. The rough estimated costs may differ for the following years.

Funding Strategy

During previous discussions on the 2021 Year End Results, there was a desire to accelerate the roads rehabilitation program, and possibly funding it from the Tax Rate Stabilization Reserve. The current balance is approximately $1.8 million prior to 2022 year-end adjustments. Including estimated 2022 year-end surplus, the balance is $2.6 million.

Alternative funding sources are a combination of the Tax Rate Stabilization Reserve, future Ontario Community Infrastructure Funds (OCIF), Canada Community Building Fund (CCBF) and Capital Reserve Funds – Roads. This project does meet the criteria for the OCIF and CCBF funding.

- The annual OCIF allocations are approximately $726,000. This is available to fund bridges, culverts and roads projects.
- The annual CCBF allocations are approximately $385,000. This is available to fund variety of other infrastructure projects including sports, recreation, culture, fire services and energy capital projects
- The Capital Reserve Funds – Roads balance is estimated at $1.3 million including the 2023 budget requests.

Staff seeks Council's direction on funding the Roads Rehabilitation Program for the recommended four-year plan.

6.0 Climate Change Impacts

With a healthier road system in relation to maintenance time, less vehicle and equipment use as well as materials will be used.

7.0 Communications

8.0 Conclusion

On the basis of the foregoing review staff recommend Road Rehabilitation/Repair method to be completed. Staff are confident in our ability to deliver any of the recommended plans for completion of the method. Three-, four- or five-year plans can be administered and managed by Township staff. Work to be tendered.

9.0 Recommendation

On the basis of the foregoing review, it is recommended:

BE IT RESOLVED THAT staff report 2023-OP-001, Road Rehabilitation and Forecast be received:

THAT Road Rationalization and Forecast be referred to the 2023 budget discussions;

THAT Council approve a four-year Road Rehabilitation program; and

THAT Council approve a funding source strategy for the Road Rehabilitation program.

Corporation of the Township of Brock

Staff Report to the Mayor and Members of Council

From: **Wayne Ward**
Position: **Manager Facilities and IT**
Title / Subject: Arena Engineering Reports
Date of Report: January 19, 2023
Date of Meeting: January 30, 2023
Report No: 2023-PRF-001

1.0 Issue / Origin

Brock Township has a rich heritage with three distinct towns which includes one arena facility per town. These facilities are aging and are showing their wear and tear from many seasons of youth and adult usage.

2.0 Background

This report is one in a series of reports which have been provided to Council on the topic of the three arenas. As the newest person to assume the role of Manager of Facilities for the Township the topic of arenas has been forefront as a topic of discussion at many meetings. These reports are specific to the arena area, ice surface area and supporting areas. They do not include the lobby areas, washrooms, dressing rooms, auxiliary rooms or auditorium areas of these buildings.

The reports included were completed by Barry Bryan Associates, Architects, Engineers, Project Managers between October 2021 and July 2022.

3.0 Analysis

Each arena is of a different era and structure type. A quick overview of the date of construction and type of structure follows:

- Foster Hewitt Memorial Community Centre, Beaverton.
  - Year of Construction: 1972
  - Type of Construction: Concrete Block, Pre-engineered rigid steel frame, concrete slab-on-grade
- Rick MacLeish Memorial Community Centre, Cannington.
  - Year of Construction: 1964

        - Renovations: 1990 and 2004
    - Type of Construction: Tiber Bowstring Truss supported on Glulam columns, wood roof decking with pre-finished metal roofing. Metal clad exterior walls, concrete slab-on-grade.
- Sunderland Brock Memorial Arena, Sunderland
    - Year of Construction: 1977
    - Type of Construction: Concrete Block, Pre-engineered rigid steel frame, concrete slab-on-grade, cast-in-place foundation with concrete block pilasters.

Each report outlines in detail the observations of specific components of the facility. Photos of areas noted are included in the reports for reference.

Recommendations, both short and longer term, were provided to address the areas of concern.

- Foster Hewitt Memorial Community Centre:
    - The efflorescence and algae accumulation on the exterior walls should be cleaned from the structural systems and an adequate protective coating applied
    - All deteriorated/open/cracked mortar joints should be routed and infilled with a suitable repair mortar to restore the integrity of the existing building envelope
    - Patch any locations of spalled concreate masonry block with a suitable repair mortar to restore the integrity of the existing building envelope. Replace any damaged/cracked concrete masonry block with new block to match existing as required
    - Any corroded areas should be wire brushed to bare metal and epoxy painted to prevent further deterioration of the structural framing
    - Any peeled/flaked paint areas to be removed and repainted with a new coat of epoxy paint
    - Any areas of moisture staining on structural framing should be cleaned and a protective coating should be applied
- Rick MacLeish Memorial Community Centre:
    - Complete and analysis of the figure skating support hoist system and support framing, if not previously complete
    - Repair concrete at bleacher stairs
    - Extend short erection bolts at roof framing connections
    - Provide proper support of exterior stair posts
    - Repair or replace concrete slab-on-grad at ice resurfacer room
    - Repair or replace concrete housekeeping pads
    - Repair cracks in rink slab
    - Rout out and repoint deteriorated/open/cracked mortar joints
    - Repair damage to landscaping concrete retaining stair structures
    - Clean staining/efflorescence from concrete block walls
- Sunderland Brock Memorial Arena:
    - Complete repairs to wood canopy at south entrance including replacement of any damaged wood columns, reinstating shifted/damaged connections, confirming extent of column checking and potentially installing bollards to protect against further impact

- Complete repairs to exterior exit stairs and associated foundations on the east and west sides of the arena
- Reinstate damaged or missing lateral support braces at the pre-engineered frames
- Replace missing bolts on pre-engineered frames
- Extend short anchor bolt threads at bases of pre-engineered columns
- Complete an analysis of figure skating support hoist system and supporting framing
- Repair concrete stairs at bleachers
- Rout out and repoint deteriorated/open/cracked mortar joints
- Repair cracks in rink slab or consider full replacement
- Clean corrosion and repaint pre-engineered framing
- Repair damage to concreate foundation wall on east elevation
- Replace sealant at external expansion joints
- Replace guards on west wall louvres

Not included in all of the engineer reports was a notation regarding the skating club lift units what are currently installed in each facility. Engineer reports for these installations are not on file and should be completed to ensure the structures are able to properly support the intended use of these items and that the units themselves are properly installed and being maintained.

Included in this report is also a spreadsheet comprised of some items not included in these reports such as the refrigeration system components. The spreadsheet included projected dates for replacement. These dates are based on the typical lifespan of the components.

4.0 Related Policies / Procedures

Not applicable

5.0 Financial / Budget Assessment

The amount of work including engineering is still to be determined. Work that can be completed in house by staff will be based on time and materials. Some work will require outside contractors to complete. Materials to match existing will need to be sourced to maintain the esthetics of the buildings. Additional staff may be necessary to complete this work and continue to maintain all other areas of responsibility of arena staff. Most of this work will need to be completed during the off season when the arena staff are also responsible for maintenance of fairgrounds, parks, harbours, splash pad, playgrounds, along with maintaining the buildings for user groups and summer camps.

The reports identify a large number of overdue repairs and replacements. Staff recommend a one-time funding of $200,000 be approved to address the backlog. Although $200,000 will not address all maintenance, repair or replacement items, it will allow staff to prioritize their efforts on safety and emergency items based on the state of the infrastructure. If repairs are required at the Sunderland Brock Memorial Arena, care will be exercised to focus on items that do not interfere or duplicate the scope of the larger construction project.

6.0 Climate Change Impacts

Maintaining a better building envelope and structure provides for more efficient operations. Efficiency in operations can reduce natural gas, water and electrical consumption. These reductions can reduce green house gas emissions.

We are currently working with the Elexicon Group to monitor the electrical, water and natural gas consumption at the Foster Hewitt Memorial Community Centre to better understand our inefficiencies

7.0 Communications

Attached reports from Barry Bryan Associates

8.0 Conclusion

This report is to provide information on the state of the three arena facilities to allow Council to be fully aware of the condition of the infrastructure as it ages.

Overall, the facilities have been determined to be in fair to good condition as per the reports provided.

There are a significant number of items to be addressed to satisfy the observations within the reports. Refrigeration items such as the condenser unit at Rick MacLeish Memorial Community Centre are not included in these reports but have been identified by the refrigeration contractor as being at end of life.

By conducting the noted repairs these facilities may be upgraded to a more favourable condition.

9.0 Recommendation

BE IT RESOLVED THAT Committee receive this report, and

THAT, an Arena Rehabilitation project be approved to be used for the purposes of completing repairs including, where necessary, hiring of engineers and contractors such as masons and other trades.

THAT, the project be established at $200,000 to be funded equally from the three Arena Capital Reserve Funds; and

THAT Committee approve this at the Council meeting of January 30, 2023.

Structural Condition Investigation, Report and Review for

Rick MacLeish Memorial Community Centre

91 Elliot Street, Cannington, ON

The Corporation of the Township of Brock

BBA PROJECT NO. 22124

SEPTEMBER 14, 2022

BARRY BRYAN ASSOCIATES
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TABLE OF CONTENTS

PART 1 – INTRODUCTION

1.1 AUTHORIZATION

This structural condition assessment has been undertaken by Barry Bryan Associates, Architects, Engineers, and Project Managers (BBA), for the existing arena at the Rick MacLeish Memorial Community Centre located at 91 Elliot Street, Cannington, on behalf of The Corporation of the Township of Brock. Authorization to undertake this study was received from Ingrid Svelnis, Chief Administrative Officer from The Corporation of the Township of Brock.

1.2 OBJECTIVES

The objective of the structural assessment of the Rick MacLeish Memorial Community Centre arena, as outlined in the BBA Proposal for Structural Engineering Services for Structural Condition Audits and Reports dated June 15, 2022, are as follows:

1. Perform a visual review of all accessible areas of the building structure and note the condition and status of the items observed.
2. Identify any items of structural concern.
3. Prepare a summary report outlining the structural condition of the building based on the visual review.

1.3 REVIEW METHODOLOGY

BBA completed a non-intrusive, non-destructive, visual review of the building structure on July 28, 2022. During the investigation, the structural and non-structural elements were investigated for evidence of varying levels of deterioration, distress, and/or corrosion and any areas of concern were documented. Vertical access to the existing arena roof framing was achieved vis scissor lift operated by Township of Brock personnel.

In brief, the structural assessment included review of the following:

- Surface deterioration and/or corrosion of structural framing.
- Deterioration of structural components including, but not limited to concrete, wood and engineered wood products, bearing walls, and slabs.
- Deterioration/cracking of external wall systems.
- Excessively deflected structural elements.

Reference drawings of the existing structure were not available at the time of review. After completion of the review, BBA obtained a drawing package issued as final print, dated 1964, that was used as reference during the completion of this report.

Where reference is made in this report to a Code or other standard, the most recent edition of that reference material was used.

1.4 STATEMENT OF LIMITATION

All comments and observations in this report are based on visual observations made during the inspection on July 28, 2022.

No intrusive or destructive testing or opening of the building system was completed during the inspection. Further, a detailed structural review of the steel connections was not completed.

There are no comments on the components that were not exposed to view.

Any design and/or construction deficiencies not recorded were not evident at the time of the inspection.

PART 2 – BUILDING DESCRIPTION

The Rick MacLeish Memorial Community Centre arena is located at 91 Elliot Street in Cannington, Ontario. We understand that the original structure was constructed in 1964, with renovations to the rink slab and refrigeration systems completed in 1990. In 2004, accessibility renovations were completed, which included the addition of and elevator and accessible washroom. Most recently, insect damage required isolated replacement of the timber roof decking.

The facility includes a single pad arena with an ice resurfacing vehicle room, ground level viewing area, kitchen, change rooms, storage and maintenance rooms, and second floor gathering/viewing area.

The arena roof structure generally consists of pre-finished metal roof deck on 1” thick wood decking on 2x12 purlins at 16” c/c. The purlins are supported by timber bowstring trusses that span 95’-0” and bear on 7”x11-3/8” glulam columns.

The roof structure of the viewing area consists of 2x12 joists at 16” c/c, supported by 7”x30-7/8” glulam beams. The glulam beams frame into 7”x13” glulam columns and 10” concrete masonry block piers. The floor framing consists of 2x12 joists and multi-ply wood beams and columns. The ice-resurfacer room consists of concrete slab-on-grade, concrete masonry block walls, and wood framed roof.

PART 3 – OBSERVATIONS

BBA attended the Rick MacLeish Memorial Community Centre arena on July 28, 2022, to visually review the condition of the structural building components and exterior façade. A summary of findings is itemized as follows:

3.1 BUILDING INTERIOR

3.1.1 ROOF FRAMING

The existing roof framing system within the arena consists of pre-finished metal roof deck on 1" thick wood decking on 2x12 wood purlins spaced at 16" centres. These purlins are supported by timber bowstring trusses at 20'-0" centres (Photo 01). The existing roof framing system in the viewing area consists of 2x12 joists supported by 7"x30-7/8" glulam beams. The glulam beams frame into 7"x13" glulam columns (Photo 02).

Observations of the interior roof framing are as follows:

- We understand that previously completed banding repairs to the bowstring trusses, purlins, girts, and columns were completed at various locations (Photo 03). It appears that the repairs included the caulking and banding of truss elements with severe checking. Previously repaired elements to not appear to be further deteriorated. At some locations, banding showed signs of surface corrosion. Banding corrosion should be monitored to maintain the structural integrity of previously completed repairs.

- Checking, delamination, and damage was observed at additional, unaddressed, bowstring truss elements, girts, and columns (Photo 04, 05). We recommend these areas be repaired to maintain the structural integrity of these elements.

- Localized evidence of moisture was observed on the purlins, truss elements and on the underside of the wood decking (Photo 06, 07). Moisture penetration should continue to be monitored. Further investigation into the source may be required.

- Surficial corrosion was observed on most bracing rods (Photo 08). The corrosion levels appear minor at this time, however they should continue to be monitored for continued degradation.

- Short thread extensions were observed at various truss and column connections (Photo 09), as well as at column connections. Short threads should be extended to achieve the required design capacities. Further investigation is required to determine the specific requirements and potential methods of executing this repair.

- It appears that a figure skating support hoist has been installed along one of the frames near the South end of the arena. It is unclear whether the hoist connections or supporting framing have been engineered or analyzed for the required loading conditions. Further review is required to determine whether the existing system is sufficient, or if previous analysis has been completing verifying the capacity.

Generally, the arena roof framing appeared to be in fair condition.

3.1.2 CONCRETE RINK SLAB

The concrete rink slab was exposed at the time of visit. We understand that renovations to the rink slab and refrigeration system were completed in 1990. Observations are as follows:

- Hairline surface cracks were observed throughout the rink slab. These are not a structural concern at this time however should continue to be monitored for further propagation.

- More significant cracking was observed at the south end of the rink slab (Photo 10). These cracks should be repaired to protect against continued deterioration.

The concrete rink slab generally appeared to be in fair condition.

3.1.3 BLEACHER SEATING AREA

The existing concrete bleachers are located along the west side of the ice surface (Photo 11). Observations of the existing bleacher seating are as follows:

- Minor cracks were observed throughout the concrete bleachers, however these are not structural concerns at this time (Photo 12).

- Spalling and delaminating concrete were observed at a single location on the southernmost stair (Photo 13). This area requires to be repaired.

The bleacher seating area generally appeared to be in fair condition.

3.1.4 CONCRETE APRON SLAB

The reinforced concrete apron slab-on-grade extends around the perimeter of the rink. Most areas were concealed below rubber tread coverings and other visual obstructions. Existing conditions could not be verified at these locations. Where visible, apron slab observations are as follows:

- Minor hairline/shrinkage cracks were observed on the surface of the apron slab (Photo 14). This surface cracking is typical of slab-on-grade and is not currently a structural concern. These should continue to be monitored for further deterioration.

- Concrete ramps around the apron slab appeared to be in good condition with no notable deterioration or damage.

Generally, the concrete apron slab is in fair condition.

3.1.5 CONCRETE SLAB-ON-GRADE

The concrete slab-on-grade was only able to be observed in the mechanical rooms, including the ice-resurfacer and ice-making plant. Observations are as follows:

- Significant damage, deterioration and rutting was observed in the ice-resurfacer room (Photo 15). Localized areas of settlement may have also occurred around trench drains. Given the current condition, we recommend that the ice-resurfacer room slab be repaired or replaced.

- In the ice-making plant, the slab-on-grade appeared to be in good condition, with only minor hairline cracks observed. These cracks are not a structural concern at this time.

- Damage to the housekeeping pads within the ice-making plant was observed (Photo 16). We recommend these areas to be repaired.

Generally, the areas with exposed slab-on-grade appeared to be in fair condition however the ice-resurfacer room slab is in poor condition.

3.1.6 CONCRETE BLOCK MASONRY WALLS

The concrete block masonry walls consist of 8” thick masonry units. Observations are as follows:

- Staining and efflorescence were observed on the interior face of the concrete block masonry walls in the ice-making plant, indicating the presence of moisture (Photo 17, 18). These areas should be cleaned and monitored for worsening conditions.

- Minor cracking, deteriorated mortar joints and other damage were observed in the ice-resurfacer and mechanical rooms (Photo 19, 20, 21). These areas should be cleaned and monitored for worsening conditions.

- Deteriorated mortar joints were observed at some locations throughout the partition walls at the ground floor (Photo 22). It is recommended that these be routed and repointed with appropriate repair mortar.

The concrete block masonry walls generally appear to be in fair condition.

3.1.7 SECOND FLOOR & ROOF FRAMING

The second floor framing was not fully observable at the time of visit due to the floor finish and fixed ceiling. Further intrusive investigation is required to confirm the existing conditions.

The roof framing consists of steel deck on 2x12 joists at 16” c/c, supported by 7”x30-7/8” glulam beams that bear on 7”x13” glulam columns and masonry piers (Photo 23, 24). Observations are as follows:

- Staining on suspended ceiling tiles indicate presence of moisture (Photo 25, 26, 27). Further investigation is required to determine the source and severity of moisture infiltration.
- Glulam beams and columns appeared to be in good condition with no notable damage or deterioration.

Generally, the observable structural elements on the second floor were in good condition.

3.2 BUILDING EXTERIOR

3.2.1 NORTH ELEVATION

The north elevation generally consists of concrete block masonry (Photo 28). Located on the north elevation are two building entrances with cantilevered canopies, as well as the more recent addition of the elevator shaft. The addition consists of split-face concrete block masonry walls. The canopy framing was concealed from view during our investigation. Observations are as follows:

- Minor deterioration and staining were observed on the split-face block at the elevator room roof down spout location; it appears that the downspout has been removed (Photo 29).

- Deteriorated mortar joints, damage and staining were observed below the windows (Photo 30). It is recommended that cracked joints be routed and repointed with appropriate repair mortar.

- Significant cracking was observed in the concrete landscaping retaining walls and stairs (Photo 31). Repair is recommended as to avoid further damage and deterioration from water penetration and freeze-thaw action.

The north elevation was generally in fair condition.

3.2.2 EAST ELEVATION

The exterior east elevation generally consists of full height pre-finished metal cladding (Photo 32). Observations are as follows:

- Minor corrosion was observed on the metal cladding below windows (Photo 33). These areas should continue to be monitored for further degradation.

- Damaged and deformed metal cladding observed at various locations (Photo 34, 35).

The east elevation generally appeared to be in fair condition.

3.2.3 SOUTH ELEVATION

The south elevation generally consists of concrete masonry block walls with pre-finished metal cladding above (Photo 36). Located on the south elevation is the ice-resurfacer and ice-making plant extensions, as well as a mechanical unit support structure (Photo 37). Observations are as follows:

- Paint peeling and deterioration were observed along timber roof framing at the ice-resurfacer and mechanical rooms. Any areas of rot should be removed and replaced. Other areas should be re-painted.

- Concrete block masonry walls appear to be in fair condition (Photo 38).

- Minor surface corrosion was observed throughout original metal cladding (Photo 39). Corrosion should continue to be monitored.

The exterior south elevation generally appeared to be in fair condition.

3.2.4 WEST ELEVATION

The exterior west elevation generally consists of full height metal cladding (Photo 40). Also located on the east elevation are two external steel stairs. Observations are as follows:

- Minor surface corrosion was observed throughout original metal cladding (Photo 41). Corrosion should continue to be monitored.

- Surface corrosion and paint peeling was observed on the steel stair. Corroded steel and peeling paint should be cleaned and the framing re-coated.

- The north-most steel stair column is not bearing on proper foundation and is missing anchor bolts (Photo 42). A suitable foundation should be installed below support posts. Further analysis would be required to confirm the adequacy of the stair framing for support of current dead and live loading.

The west elevation generally appeared to be in fair condition.

PART 4 – CONCLUSIONS AND RECOMMENDATIONS

BBA has completed our structural condition investigation at the Rick MacLeish Memorial Community Centre arena on July 28, 2022. The existing building framing, external façade, and other structural elements were visually reviewed where possible.

The general review of the interior and exterior of the building identified several areas of concern which should be addressed to improve the long-term serviceability of the structure. A summary of remedial recommendations is as follows:

RECOMMENDED IMMEDIATE REPAIRS (Repairs to be completed within next 6 – 12 months):

1. Complete an analysis of the figure skating support hoist system and support framing, if not previously complete.
2. Repair concrete at bleacher stairs.
3. Extend short erection bolts at roof framing connections.
4. Provide proper support of exterior stair posts.

RECOMMENDED REPAIRS (Recommended to be completed within next 2-5 years):

1. Repair or replace concrete slab-on-grade at ice-resurfacer room.
2. Repair or replace concrete housekeeping pads.
3. Repair cracks in rink slab.
4. Rout out and repoint deteriorated/open/cracked mortar joints.
5. Repair damage to landscaping concrete retaining/stair structures.
6. Clean staining/efflorescence from concrete block walls.

The structural framing and exterior walls are generally in fair condition, however remedial repair work is required to preserve the integrity of the exiting building structure and restore the building envelope to original conditions.

We trust the above information meets your requirements. Should you have any further questions, please do not hesitate to contact our office.

Yours very truly,

BARRY BRYAN ASSOCIATES

Architects, Engineers, Project Managers

Matthew Ficara, EIT

Doug McLaughlin, P.Eng.

APPENDIX

PHOTOGRAPHS

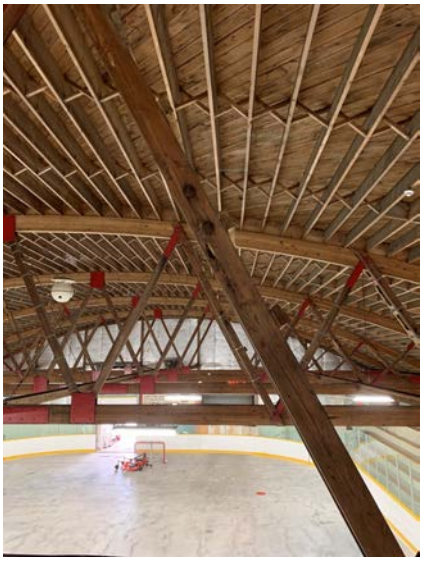
	
Photo 01	Photo 02
	
Photo 03	Photo 04

Photo 05

Photo 06

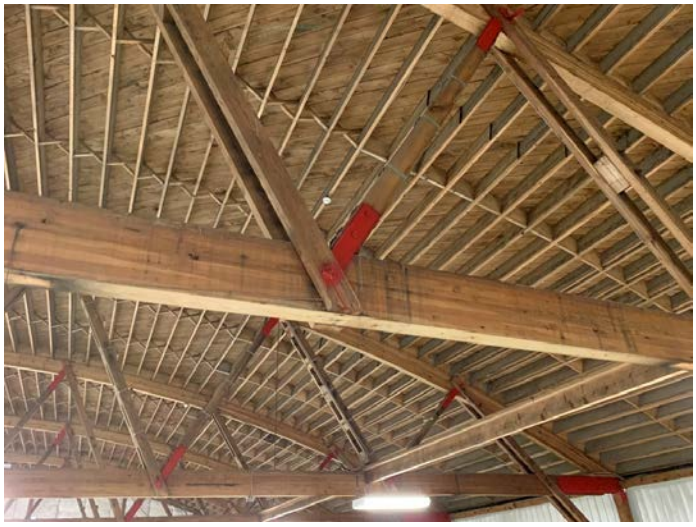


Photo 07

Photo 08

Photo 09

Photo 10

Photo 11

Photo 12

	
Photo 13	Photo 14
	
Photo 15	Photo 16

	
Photo 17	Photo 18
	
Photo 19	Photo 20

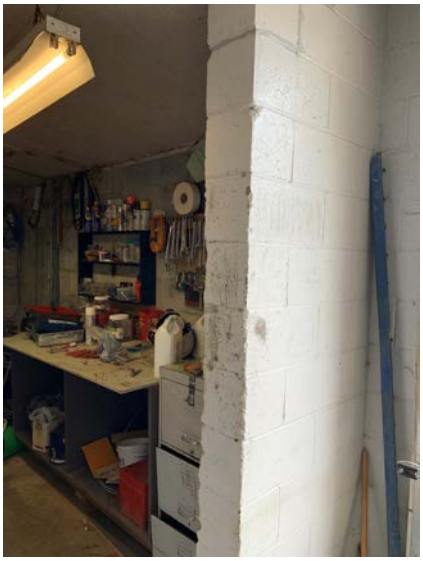


Photo 21

Photo 22

Photo 23

Photo 24

Photo 25

Photo 26

Photo 27

Photo 28

Photo 29

Photo 30

Photo 31

Photo 32

	
Photo 33	Photo 34
	
Photo 35	Photo 36

Photo 37

Photo 38

Photo 39

Photo 40

	
Photo 41	Photo 42

Structural Condition Investigation, Report and Review for

Sunderland Brock Memorial Arena

20 Park Street, Sunderland, ON

The Corporation of the Township of Brock

BBA PROJECT NO. 22124

SEPTEMBER 9, 2022

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TABLE OF CONTENTS

PART 1 – INTRODUCTION

1.1 AUTHORIZATION

This structural condition assessment has been undertaken by Barry Bryan Associates, Architects, Engineers, and Project Managers (BBA), for the existing Sunderland Brock Memorial Arena located at 20 Park Street in Sunderland, ON, on behalf of The Corporation of the Township of Brock. Authorization to undertake this study was received from Ingrid Svelnis, Chief Administrative Officer from The Corporation of the Township of Brock.

1.2 OBJECTIVES

The objective of the structural assessment of the Sunderland Brock Memorial Arena, as outlined in the BBA Proposal for Structural Engineering Services for Structural Condition Audits and Reports dated June 15, 2022, are as follows:

1. Perform a visual review of all accessible areas of the building structure and note the condition and status of the items observed.
2. Identify any items of structural concern.
3. Prepare a summary report outlining the structural condition of the building based on the visual review.

1.3 REVIEW METHODOLOGY

BBA completed a non-intrusive, non-destructive, visual review of the building structure on July 26, 2022. During the investigation, the structural and non-structural elements were investigated for evidence of varying levels of deterioration, distress, and/or corrosion and any areas of concern were documented. Vertical access to the existing arena roof framing was achieved vis scissor lift operated by Township of Brock personnel.

In brief, the structural assessment included review of the following:

- Surface deterioration and/or corrosion of structural framing.
- Deterioration of structural components including, but not limited to concrete, timber, bearing walls, and slabs.
- Deterioration/cracking of external wall systems.
- Excessively deflected structural elements.

Reference drawings of the existing structure were not available at the time of review. After completion of the review, BBA obtained a drawing package that was issued for approval and dated November 19, 1976, that was used as reference during the completion of this report.

Where reference is made in this report to a Code or other standard, the most recent edition of that reference material was used.

1.4 STATEMENT OF LIMITATION

All comments and observations in this report are based on visual observations made during the inspection on July 26, 2022.

No intrusive or destructive testing or opening of the building system was completed during the inspection. Further, a detailed structural review of the steel connections was not completed.

There are no comments on the components that were not exposed to view.

Any design and/or construction deficiencies not recorded were not evident at the time of the inspection.

PART 2 – BUILDING DESCRIPTION

The Sunderland Brock Memorial Arena is located at 20 Park Street in Sunderland, Ontario. We understand that the original two storey structure was constructed in 1971, with the pre-engineered arena structure being constructed over the existing ice surface in 1977.

The facility includes a single pad arena with an ice resurfacing vehicle room, ground level viewing area, kitchen, change rooms, storage and maintenance rooms, second floor gathering area, and partial basement.

The building roof structure generally consists of pre-finished metal roof deck on cold-form Z-purlins spanning between pre-engineered steel frames above the ice surface. The ground floor consists of composite deck supported by structural steel beams and columns above the basement and a concrete slab-on-grade, and metal roof deck on open-web steel joists (OWSJ) spanning between interior steel beams and exterior load-bearing concrete block masonry.

Where visible, the existing foundation consisted of concrete block masonry pilasters and cast-in-place concrete walls and footings.

PART 3 – OBSERVATIONS

BBA attended the Sunderland Brock Memorial Arena on July 26, 2022, to visually review the condition of the structural building components and exterior façade. A summary of findings is itemized as follows:

3.1 BUILDING INTERIOR

3.1.1 ROOF FRAMING

The existing roof framing system consists of pre-finished metal roof deck on cold formed Z-purlins spanning between pre-engineered steel frames spaced at approximately 20'-0" in the arena (Photo 001). Throughout the remainder of the building, the roof framing is metal roof deck on regularly spaced open-web steel joists (OWSJ) supported on 10" concrete block masonry walls (Photo 002). Observations of the roof framing are as follows:

- Due to the presence of the condition of existing liner system within the arena, the existing pre-finished metal roof deck and cold formed Z-purlins could not be confirmed in this area. Further investigation is required to confirm the structural composition and assess the existing condition of the roof deck/purlins throughout the arena.

- Minor surface corrosion and peeling paint was observed throughout the pre-engineered frames, most notably on the bottom flange members and at connections/bolts (Photos 003). These areas should be cleaned to bare metal and prime painted to prolong the service life of the steel framework.

- Missing and/or damaged lateral support braces and bolts were observed at several locations throughout the pre-engineered steel frames. (Photos 004, 005, 006, 007). These must be replaced to reinstate the structural integrity of the frame.

- Short thread extensions were observed on several of the column baseplate anchor bolts and should be extended (Photo 008, 009, 010). Further review is required to determine the specific requirements and options for repair.

- Lateral support bracing has been removed to accommodate platform at the column in the northeast corner of the arena (Photo 011). Missing bracing components must be replaced to reinstate the structural integrity of the frame.

- It appears that a figure skating support hoist has been installed along one of the frames near the south end of the arena. It is unclear whether the hoist connections or supporting framing have been engineered (Photo 012, 013). Further review is required to determine whether the existing system is sufficient to support the necessary loading conditions.

- Localized staining at suspended ceiling tiles was observed within the second floor community room, indicating potential areas of roof leaks (Photo 014). Further investigation is required to determine the source and severity of any moisture infiltration.

- The OWSJ and metal roof deck appear in good condition with no signs of damage or deterioration (Photo 015).

Generally, the existing roof framing appeared in fair condition with localized areas of repair being required.

3.1.2 BLEACHER SEATING AREA

The existing bleachers are located along the west side of the ice surface and consists of concrete slabs on concrete block masonry units along the lowest level and at each end (Photo 016). Observations of the existing bleacher seating are as follows:

- Concrete damage was observed through the northmost stairs (Photo 017, 018). It is recommended that this damage be repaired to prohibit further structural degradation and eliminate the potential tripping hazard that currently exists.

- Minor cracking and damage was observed throughout (Photo 019, 020). These cracks are not currently a structural concern however, they should continue to be monitored for further deterioration.

- On the underside of the bleachers, minor honeycombing was observed. As the honeycombing is not significant, and no spalling or delamination was observed, no structural action is required. It is recommended that these areas continue to be monitored.

The bleacher seating area generally appeared to be in fair condition.

3.1.3 CONCRETE BLOCK MASONRY WALLS

The existing concrete block masonry walls generally consisted of 8” thick units which acted as the perimeter wind-bearing structure, localized interior load-bearing sections and partition walls. Observations of the existing concrete block walls are as follows:

- Step cracking, peeling paint, staining, evidence of moisture and deteriorated mortar and control joints were observed along each of the perimeter concrete block walls, including at the ice-resurfacer room (Photo 021, 022, 023, 024). In many areas the block wall is unprotected from the elements and is uninsulated.

  Continued exposure to the elements and freeze-thaw cycles will lead to more significant structural deterioration in time. Deteriorated mortar joints should be routed and repointed while areas of minor staining, peeling paint, etc. should continue to be monitored for further deterioration. Consideration should be given to painting/sealing the exterior block to add further protection should installation of a proper rainscreen not be viable.

- Significant staining and evidence of moisture was observed on the interior side of the base of the north concrete block wall (Photo 025). The exterior grade in this area appears to be higher than the apron slab, which is likely contributing to the higher moisture levels.

  Continued exposure to moisture and freeze-thaw cycles could result in significant damage to the exterior wall. Damaged block should be repaired or replaced and consideration given to improving exterior drainage or adjusting the grade to suit.

- Concrete block partition walls in the viewing area, changerooms and washrooms appear to be in good condition.

- The south block wall was not observable due to obstructions.

The concrete block masonry walls throughout the facility generally appear to be in fair condition. The structural damage observed to date is relatively minor, however given the nature of the exterior wall system, continued monitoring and repairs should be completed to prevent further degradation due to moisture infiltration and freeze-thaw action.

3.1.4 CONCRETE RINK SLAB

The concrete rink slab was exposed at the time of visit. Observations are as follows:

- Cracks were observed throughout the rink slab (Photo 026). These should be repaired to prevent further degradation.

- Previous repairs have been completed to other more substantial areas of cracking (Photo 027). Some areas of repair appear to have performed while others appear to have worsened. Worsening slab conditions may indicate a larger issue at hand. Further investigation and review should be completed to determine a reasonable timeframe for replacement.

- Various areas of damage around concrete inserts were observed (Photo 028). These areas should be repaired.

The concrete rink slab generally appeared to be in fair condition but should continue to be monitored for further degradation which could require full replacement.

3.1.5 MECHANICAL PLATFORMS

Three (3) mechanical unit platforms have been constructed at the northeast, southeast and southwest corners of the arena, respectively. None of the platforms appear to have been engineered and are in various states of deterioration. We recommend that further investigation and analysis be conducted to confirm whether the structures are suitable to support the imposed loading.

3.1.6 CONCRETE APRON SLAB

The reinforced concrete apron slab-on-grade extends around the perimeter of the rink, with some areas not visible due to the presence of rubber floor finish. Existing conditions could not be verified at these locations. Where visible, observations of the existing concrete apron slab are as follows:

- Cracks were observed throughout the apron slab (Photo 029). While not a structural concern at this time, we recommend that these areas continue to be monitored and eventually repaired.

- Minor surface wear and damage were observed at some locations (Photo 030, 031). These areas should continue to be monitored for further deterioration.

Generally, the concrete apron slab is in fair condition.

3.1.7 CONCRETE SLAB-ON-GRADE

The concrete slab-on-grade was only observable in the mechanical rooms, janitor's closet, and basement. Observations of the existing concrete slab on grade are as follows:

- Minor to moderate staining and damage were observed at the slab on grade and housekeeping pads within the mechanical pump room and janitor's closet (Photo 032).

- Minor cracking was observed throughout the basement slab on grade.

Generally, the exposed concrete slab-on-grade areas appeared to be in fair condition. Areas of cracking, staining or damage should continue to be monitored for worsening conditions and repaired if necessary.

3.1.8 SECOND FLOOR FRAMING

Based on our review of the building reference drawings we understand that the second floor framing consists of 2x12 joists at 12" c/c supported on steel beams that frame into steel columns or 10" masonry walls. However, due to the presence of the second floor finish and fixed ceiling below, these areas were not visible for review. Further intrusive investigation is required to confirm the existing conditions.

3.1.9 ROOF FRAMING

Generally, the existing roof framing appears in good condition, where visible.

3.2 BUILDING EXTERIOR

3.2.1 SOUTH ELEVATION

The exterior south elevation generally consists of full height, concrete block masonry walls and a wood framed canopy (Photo 033). We understand that both the wood framed canopy and elevator shaft portion of this area were additions to the original two-storey structure. Observations are as follows:

- Significant checking was observed in most timber columns (Photo 034, 035). Further investigation is required to determine the severity of the checking and to confirm whether there has been any reduction in column capacity.

- It appears that one (1) wood column has been impacted, likely from a vehicle, is damaged/skewed and has shifted off the supporting foundation (Photo 036, 037). This column and associated connections must be replaced or repaired to replaced.

- Various columns appear to have shifted and are no longer centered along the main canopy support beam (Photo 038, 039). Repairs to this area are required to ensure proper connection between the beam and columns.

- Evidence of moisture and staining was observed at the underside of the plywood liner below the canopy framing (Photo 040). Further intrusive investigation is required to confirm the condition of the canopy framing system and whether moisture has adversely affected the structural system.

- Concrete spalling was observed at various locations on the exterior concrete sidewalk (Photo 041, 042). While not a structural concern, loose concrete and void in the slab should be removed and repaired to prevent further degradation and to eliminate potential tripping hazards.

- Various damage was observed at the entryway thresholds (Photo 043, 044). These areas should continue to be monitored for further deterioration.

- Deteriorated mortar joints were observed at some locations along the south elevation. These should be routed and repointed.

The existing structures along the south elevation generally appeared to be in fair condition. However, the wood canopy framing requires to be repaired as various structural components are damaged and have shifted, presumably from vehicular impact loading. Consideration should be given to construction of new exterior bollards to protect against future impacts once the repairs are made.

3.2.2 EAST ELEVATION

The exterior east elevation generally consists of full height, concrete masonry block wall at the original two-storey structure, and concrete masonry block wall with a partial height metal cladding system around the arena (Photo 045). Additionally, an external steel stair provides access to the second level. Observations are as follows:

- Minor surface corrosion and paint peeling was observed on the steel stair (Photo 046). This condition should be monitored, and the stair eventually repainted to protect against more significant corrosion.

- The existing stair acts as an exit from the second floor community room however does not appear to be structurally stable to support the required loading currently prescribed by the Ontario Building Code. While this is an existing condition and may not require upgrade by code, we recommend that this stair be further reviewed for potential upgrades to landing grating and support connections.

- Various areas of damage were observed at the base of the concrete masonry block wall throughout the wall, particularly at downspout discharge locations (Photos 047, 048, 049). Block wall damage and staining should be repaired and consideration given to modifying the downspouts to direct water away from the building structure.

- Caulking at expansion joints was cracked, damaged, or missing in several locations (Photo 050). It is recommended that the caulking be replaced to avoid further damage from water penetration and freeze-thaw action.

- Deteriorated mortar joints were observed at some location along the east elevation, including at the arena plant (Photo 051, 052, 053). It is recommended that cracked joints be routed and repointed with appropriate repair mortar.

The east elevation generally appeared to be in fair condition.

3.2.3 NORTH ELEVATION

The north elevation generally consists of concrete masonry block walls with a partial height metal cladding system above (Photo 054). Located on the north elevation is the ice resurfacer extension, as well as a mechanical unit support structure adjacent to the arena plant. Observations are as follows:

- Surficial corrosion was observed on the mechanical unit support structure (Photo 055). This structure should continue to be monitored.

- Minor deterioration and staining were observed at various locations along the base of the concrete masonry block wall on the north elevation (Photo 056, 057). Recommendations regarding exterior concrete block walls are discussed previously.

- Deteriorated mortar joints were observed at some locations along the block wall (Photos 058, 059, 060). It is recommended that cracked joints be routed and repointed with appropriate repair mortar.

- Damage to the metal roof flashing was observed at the northwest corner of the ice-resurfacer room (Photo 061). This damage should be repaired to protect against further moisture infiltration.

The north elevation is generally in fair condition, however the ice resurfacer concrete masonry block walls appeared to be in poor condition and require to be repaired.

3.2.4 WEST ELEVATION

The exterior west elevation generally consists of concrete masonry block wall with a partial height metal cladding system above (Photo 062). Additionally, an external steel stair provides access to the second level. Observations are as follows:

- Various areas of damage were observed at the base of the concrete masonry block wall throughout the wall, particularly at downspout discharge locations. Block wall damage and staining should be repaired, and consideration given to modifying the downspouts to direct water away from the building structure.

- Deteriorated mortar joints were observed at some locations (Photos 063, 064, 065). It is recommended that cracked joints be routed and repointed with appropriate repair mortar.

- Louver grates/screens are missing at a few locations (Photo 066).

- Minor surface corrosion and paint peeling was observed on the steel stair (Photo 067). This condition should be monitored, and the stair eventually repainted to protect against more significant corrosion.

- The posts for the steel stair are not properly connected to the supporting concrete block structure (Photo 068). Further, the concrete block is not an acceptable foundation. New base connections and foundation structures are required for support of this stair.

- The existing stair acts as an exit from the second floor however does not appear to be structurally stable to support the required loading currently prescribed by the Ontario Building Code. While this is an existing condition and may not require upgrade by code, we recommend that this stair be further reviewed for potential upgrades to landing grating and support connections.

The west elevation generally appeared to be in fair condition. However, the existing second floor exit stair requires to be upgraded or replaced.

PART 4 – CONCLUSIONS AND RECOMMENDATIONS

BBA has completed our structural condition investigation at the Sunderland Brock Memorial Arena on July 26, 2022. The existing building framing, external façade, and other structural elements were visually reviewed, where possible.

The general review of the interior and exterior of the building identified several areas of varying levels of concern which should be addressed to improve the long-term serviceability of the structure. A summary of remedial recommendations is as follows:

RECOMMENDED IMMEDIATE REPAIRS (Repairs to be completed within next 6 – 12 months):

1. Complete repairs to wood canopy at south entrance including replacement of any damaged wood columns, reinstating shifted/damaged connections, confirming extent of column checking and potentially installing bollards to protect against further impact.
2. Complete repairs to exterior exit stairs and associated foundations on the east and west sides of the arena.
3. Reinstate damaged or missing lateral support braces at the pre-engineered frames.
4. Replace missing bolts on pre-engineered frames.
5. Extend short anchor bolt threads at bases of pre-engineered columns.
6. Complete an analysis of figure skating support hoist system and supporting framing.
7. Repair concrete stairs at bleachers.

RECOMMENDED REPAIRS (Recommended to be completed within next 2-5 years):

1. Rout out and repoint deteriorated/open/cracked mortar joints.
2. Repair cracks in rink slab or consider full replacement.
3. Clean corrosion and repaint pre-engineered framing.
4. Repair damage to concrete foundation wall on east elevation.
5. Replace sealant at external expansion joints.
6. Replace guards on west wall louvres.

All masonry repaired noted above must be completed using techniques which best match the original construction of the existing building

We trust the above information meets your requirements. Should you have any further questions, please do not hesitate to contact our office.

Yours very truly,

BARRY BRYAN ASSOCIATES

Architects, Engineers, Project Managers

Matthew Ficara, EIT

Doug McLaughlin, P.Eng.

APPENDIX

PHOTOGRAPHS

Photo 01

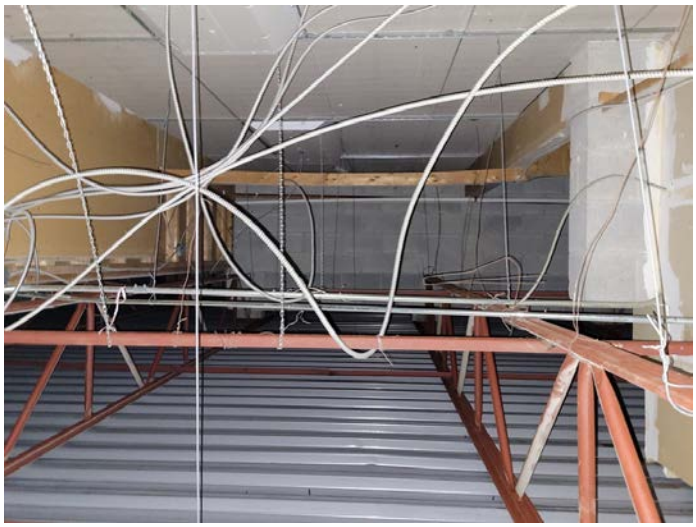

Photo 02

Photo 03

Photo 04

Photo 05

Photo 06

Photo 07

Photo 08

Photo 09

Photo 10

Photo 11

Photo 12

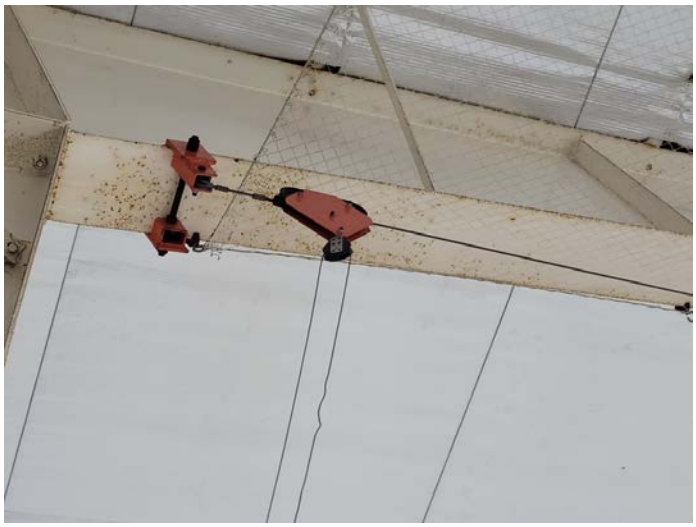

Photo 13

Photo 14

Photo 15

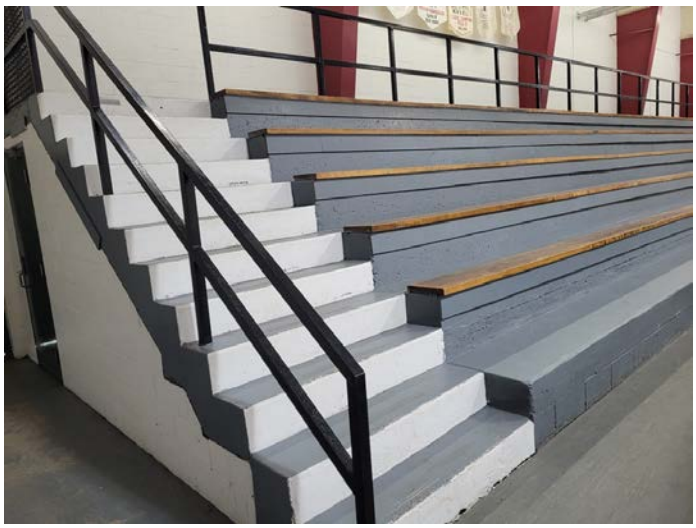

Photo 16

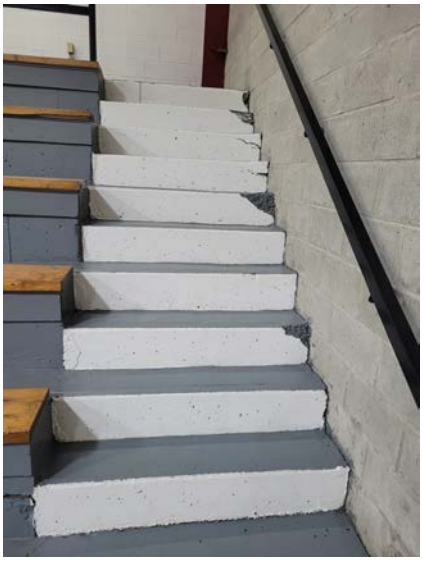

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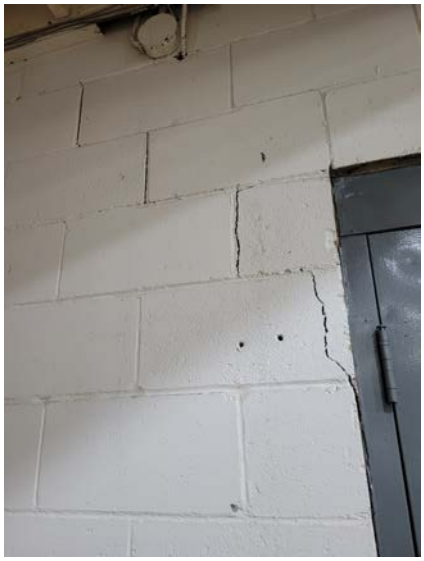
Photo 21



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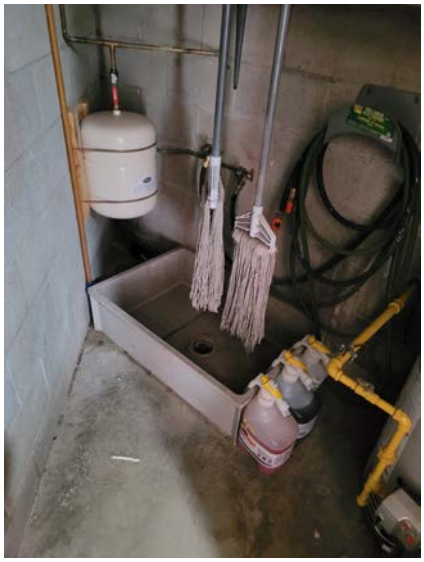

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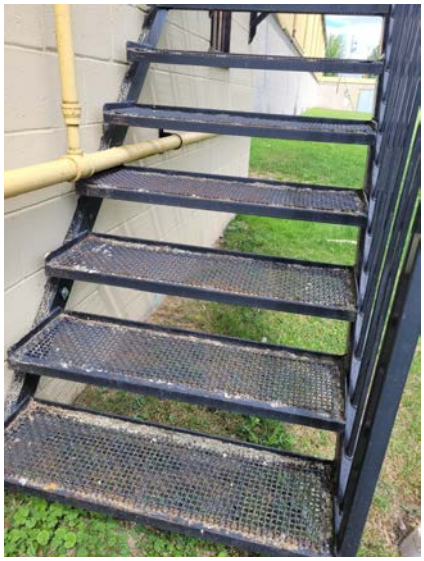

Photo 46

Photo 47

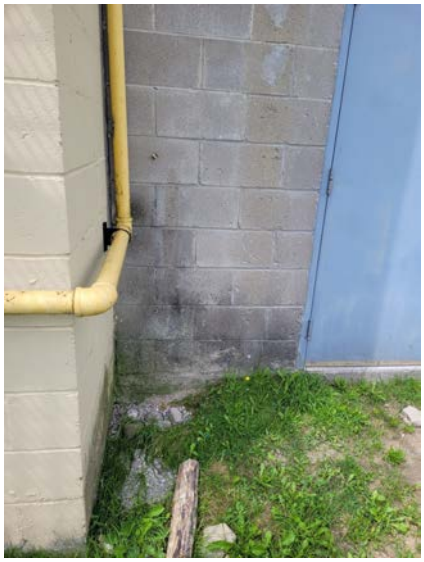

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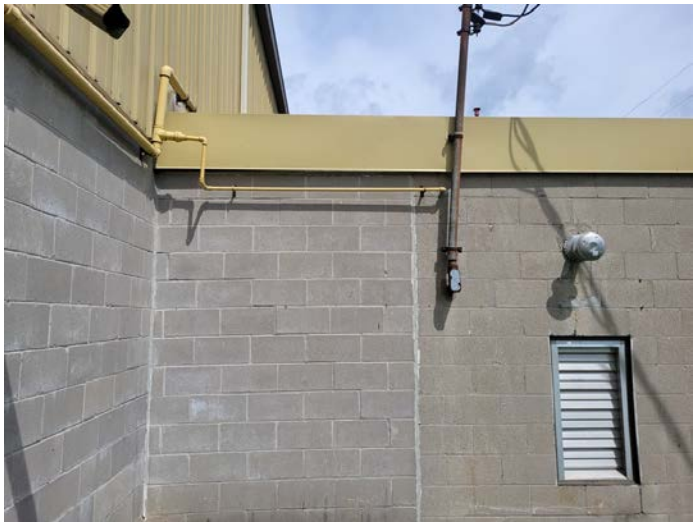
Photo 49

Photo 50



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Structural Investigation and Report

BEAVERTON-THORAH COMMUNITY CENTRE

Township of Brock

BBA PROJECT NO. 17176
NOVEMBER 23, 2021

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PART 1 – INTRODUCTION

1.1 AUTHORIZATION

This structural condition audit has been undertaken by Barry Bryan Associates, Architects, Engineers, and Project Managers, for the Beaverton-Thorah Community Centre Arena, on behalf of the Township of Brock. Authorization to undertake this study was received from Ms. Ingrid Svelnis, Chief Administrative Officer, for the Township of Brock.

1.2 OBJECTIVES

The objective of the structural review, as outlined in Barry Bryan Associates proposal for Structural Investigation and Report, dated November 25, 2021 are as follows:

1. Gather and review all previous structural audit reports and existing building plans for Beaverton-Thorah Community Centre Arena
2. Visit the building and perform a visual survey of the building structure and note the condition and status of applicable items exposed to view. The review will be done in accordance with the "Guidelines for the Investigation and Repair of Arena Structures" published by the Association of Professional Engineers of Ontario in cooperation with the Safety and Technical Services division of the Ministry of Labour. We will be assisted during our inspections by a member of staff of the Township. In order to complete a thorough review, we will require that the Township provide us with safe access to the building structure. This will require the rental of lifting equipment and the provision of qualified operators to assist in our review. We have not included the costs for equipment rental in our proposal.
3. Note any items of concern that may be observed during our review.
4. Prepare a summary report on the structural conditions as observed on site. The report will include high level recommendations for alterations or repairs if required.

1.3 REVIEW METHODOLOGY

Barry Bryan Associates completed a visual inspection of the building on October 28, 2021. During our inspection we undertook a detailed visual review of the various building structural components, and photographed areas reviewed including any areas of concern.

During the review we checked for evidence of deterioration and/or distress within the pre-engineered frame. In general, the structural review included looking for evidence of the following signs of distress:

- Surface deterioration on the pre-engineered steel frame
- Deterioration/cracking of concrete
- Deterioration/cracking of concrete masonry block walls
- Excessively deflected pre-engineered steel frame

Where reference is made in this report to a Code or other standard, the most recent edition of that referenced material was used.

1.4 STATEMENT OF LIMITATION

All comments and observations contained in this report are based on visual observations made during the inspection on October 28, 2021.

No destructive testing or opening of the building systems was completed during the inspection. Further we did not review the structural steel connections.

We are unable to comment or access structure which is not exposed to view.

Any design and/or construction deficiencies not recorded herein were not evident at the time of the inspection.

PART 2 – BUILDING DESCRIPTION

The Beaverton-Thorah Community Centre Arena consists of a single pad arena with a Zamboni room, condenser/electrical room, ammonia room, change rooms, storage rooms, and bleacher seating. The Beaverton-Thorah Community Centre Arena was constructed and opened for operation in 1972.

The building structure at the ice pad generally consists of steel roof decking, cold formed steel z-purlins, pre-engineered rigid steel frames, concrete masonry block walls, metal siding and concrete slab-on-grades.

PART 3 - OBSERVATIONS

BBA attended a site visit on October 28, 2021 to visually review the condition of the structural building components and exterior building façade. We did not complete any intrusive/destructive testing to expose any concealed structural elements and our observations are based on structural elements that were visually accessible where safe access was provided.

We have summarized our observations below:

3.1 BUILDING INTERIOR

3.1.1 Rink Roof Deck and Purlins

The roof framing above the ice pad consists of steel roof deck spanning across cold formed steel z-purlins. We were unable to complete a detailed review of the steel roof deck or purlins directly above the ice rink as this framing was concealed by the existing low "E" ceiling insulation system throughout the arena.

3.1.2 Pre-Engineered Frames

The main structure of the arena consists of a pre-engineered structural frame system with tapered steel girders supporting the steel purlins. The steel frames span approximately 100'-0" and are spaced at approximately 25'-0" centre to centre. We were unable to complete a detailed review of the entire extents of the tapered girders as this framing was enclosed by the existing insulation system (Photo 001). Our observations are as follows:

- Minor localized surface corrosion and peeled paint was observed on the bottom flange of the frames at several locations (Photos 002-004). This is likely due to condensation and high humidity during occupancy. We recommend for the corroded areas to be wire brushed clean to bare metal and an epoxy protective coating is applied.
- The bolted connection of the pre-engineered frame web appeared to be experiencing localized minor corrosion (Photos 005-007). This is likely due to condensation and high humidity during occupancy. We recommend for the corroded areas to be wire brushed clean to bare metal and an epoxy protective coating is applied.
- The pre-engineered steel frame at the south wall elevation appeared to have moisture staining along the bottom flange (Photo 008 & 009). This is likely due to condensation and high humidity during occupancy. We recommend for the corroded areas to be wire brushed clean to bare metal and an epoxy protective coating is applied.
- The base of several frames appeared to not consist of a protective epoxy coating and appears to have experienced minor surface rusting (Photo 010 & 011). We recommend for the rusted areas to be wire brushed clean to bare metal and a protective coating is applied.
- The bridging of several pre-engineered frames appeared to be peeling (Photo 012). This is likely due to condensation and high humidity during occupancy. We recommend for the peeled paint areas to be removed and repainted with a suitable coating for the high humidity environment.
- The pre-engineered frame bracing located along the east and west perimeter walls and the

bracing at roof level appeared to be experiencing localized minor corrosion (Photo 013-015). We recommend for the corroded areas to be wire brushed clean to bare metal and an epoxy protective coating is applied.

Generally, the pre-engineered frames appeared to be in fair to good condition. The minor observations noted above are recommended to be addressed to maintain the original condition of the building structure.

3.1.3 Bleacher Seating Area

There are two (2) bleacher seating areas, within the ice pad area along the east side and west side of the arena complete with six (6) rows and three (3) rows of seating. The bleacher seating is constructed of precast concrete slabs supported on concrete walls. Our observations are as follows:

- There appeared to be localized honeycombing at the exposed sides of the bleacher seating (Photo 016). This appears to be an existing condition and is not a structural concern at this time.
- Minor cracking was observed on the vertical face of the bleachers (Photo 017). These cracks are not a structural concern at this time however we recommend that they be monitored over a five (5) year period for continued propagation.
- Minor cracking was observed at the base of the pre-engineered frames (Photo 018 & 019). These cracks are not a structural concern at this time however we recommend that they be monitored over a five (5) year period for continued propagation.
- Minor deterioration was observed along the bleacher seating (Photo 020). We recommend that this area be cleaned, and a non-slip industrial coating be applied.

The concrete bleacher seating generally observed to be in fair to good condition.

3.1.4 Masonry Block Walls

The perimeter walls of the arena are constructed of concrete masonry block walls with metal siding above at each elevation. Our observations are as follows:

- Efflorescence accumulation was observed along the base of the concrete block walls in the Zamboni room (Photo 021 & 022). The efflorescence accumulation is likely due to moisture absorption through the wall system. We recommend for the area to be cleaned and coated with a protective coating.
- Efflorescence accumulation was observed along the concrete block walls in the Ammonia room and Mechanical room (Photo 023 & 024). The efflorescence accumulation is likely due to high humidity in the room with poor ventilation. We recommend for the area to be cleaned and coated with a protective coating.
- Minor deterioration of the paint on the concrete masonry block wall was observed within the ammonia room (Photo 025). This is likely a result of condensation within the room due to the high humidity. We recommend for the peeled paint areas to be removed and repainted with a suitable coating for the high humidity environment.

- Water staining on the masonry block walls was observed beneath the condensing unit in the northeast corner of the arena (Photo 026). This is likely a result of moisture from the condensing unit causing water staining on the walls. We recommend the walls be cleaned and a new protective coating applied.
- Minor localized cracking was observed in the mortar joints (Photo 027). We recommend this crack be repaired with a suitable repair mortar.

Generally, the masonry block walls generally appeared to be in fair to good condition with localized areas requiring minor remedial repairs to restore to original conditions.

3.1.5 Concrete Rink Slab

The reinforced concrete rink slab was not exposed at the time of our site visit, and we were unable complete our structural review due to ice being present on the rink.

3.1.6 Concrete Apron Slab

The reinforced concrete apron slab extends around the concrete rink slab at the perimeter of the arena. The north side of the slab, at the Zamboni entrance, the players bench and penalty box locations was concealed and not accessible for our review. Our observations include:

- Localized cracking at the apron slab surface was observed at the corner of the floor drain location extending towards the rink slab (Photo 028). The cracking is likely a result of concrete shrinkage and is not a structural concern.
- Efflorescence accumulation was observed at multiple areas on the exposed concrete apron slab (Photo 029 & 030). The efflorescence accumulation is likely due to high moisture content due to the nearby ice. We recommend for the area to be cleaned and coated with a protective coating.
- Larger cracking at the apron slab surface was observed in the southeast corner of the arena Photo 031). This crack should be epoxy injected to try and extend the long-term serviceability of the pad.
- Surface deterioration was observed along the bleacher seating (Photo 032 & 033). We recommend that this area be cleaned, and a non-slip industrial coating be applied.

The concrete apron slab generally observed to be in fair to good condition.

3.1.7 Partial Roof Framing

The partial second floor area is located along the South side of the arena above the main lobby and consists of a storage room, community gathering room, kitchen, viewing area, and washrooms. The majority of the roof structure consists of steel decking spanning across steel Z girts supported by the pre-engineered frames (Photo 034). We were unable to complete a detailed review of the steel roof deck as this was concealed by the existing low “E” ceiling insulation system throughout the arena. We completed our review of localized areas of the underside of the roof structure within the suspended ceiling. Our observations are as follows:

- There appeared to be some water staining on the underside of the Z girts (Photo 035). We recommend these stains be removed and a protective coating be applied.

The Z girts and pre-engineered frame reviewed generally appeared to be in fair to good condition.

3.2 BUILDING EXTERIOR

3.2.1 SOUTH ELEVATION

The exterior South wall elevation generally consists of pre-finished metal cladding wall. Our observations are as follows:

- There appears to be an opening beneath the metal cladding at ground level (Photo 036). This opening will allow moisture to enter the building and should be repaired by a suitable repair mortar the exposed portion.
- The block wall was observed to be corroded around a mechanical unit (Photo 037). This is most likely due to leaks from the mechanical unit. We recommend for the corroded areas to be cleaned and an epoxy protective coating is applied.
- Vegetation growth on the concrete masonry block wall was observed behind a gutter (Photo 038). This is likely due to the moisture from gutter. We recommend this area be cleaned and a protective coating be applied.
- Efflorescence accumulation was observed along the block wall (Photo 039). We recommend for the area to be cleaned and coated with a protective coating.
- Parging at the base of the block wall appeared to be deteriorating (Photo 040). This is likely due to de-icing salts and snow accumulation against the wall. We recommend a protective coating be applied and this area be re-parged to prevent further deterioration.

Generally, the exterior metal cladding and architectural concrete masonry block wall along the South elevation appeared to be in fair to good condition.

3.2.2 EAST ELEVATION

The exterior East wall elevation generally consists of prefinished metal cladding above an architectural concrete masonry block wall (Photo 045). Our observations are as follows:

- Vegetation growth on the concrete masonry block wall was observed at the base of the wall (Photos 041 & 042). The walls should be cleaned and coated with a suitable protective coating.
- The metal cladding was observed to be corroded around a mechanical unit (Photo 043). This is most likely due to leaks from the mechanical unit. We recommend for the corroded areas to be wire brushed clean to bare metal and an epoxy protective coating is applied.
- Efflorescence accumulation was observed along the block wall (Photo 044). We recommend for the area to be cleaned and coated with a protective coating.

Generally, the exterior metal cladding and architectural concrete masonry block wall along the East elevation appeared to be in fair to good condition.

3.2.3 NORTH ELEVATION

The exterior North wall elevation generally consists of prefinished metal cladding above an architectural concrete masonry block wall (Photo 046). Our observations are as follows:

- The metal cladding was observed to be corroded around a mechanical unit (Photo 047). This is most likely due to leaks from the mechanical unit. We recommend for the corroded areas to be wire brushed clean to bare metal and an epoxy protective coating is applied.
- Parging at the base of the block wall appeared to be deteriorating and in return the block wall was observed to be deteriorating (Photo 048 & 049). This is likely due to de-icing salts and snow accumulation against the wall. We recommend a protective coating be applied and this area be re-parged to prevent further deterioration.
- Vegetation growth on the concrete masonry block wall was observed at the base of the wall below a water supply (Photos 050). This is likely due to the moisture from the water supply. We recommend this area be cleaned, a protective coating be applied and this area be re-parged to prevent further deterioration.
- Localized deterioration of the block was observed (Photo 051 & 052). We recommend for the deteriorated concrete to be repaired with a suitable repair mortar and protective coating to prevent further deterioration of the exterior wall.

Generally, the exterior metal cladding and architectural concrete masonry block wall along the North elevation appeared to be in fair to good condition.

3.2.4 WEST ELEVATION

The exterior West wall elevation generally consists of prefinished metal cladding above an architectural concrete masonry block wall. Our observations are as follows:

- The base of the exterior column supporting the partial second floor appeared to be experiencing localized minor corrosion (Photos 053 & 054). This is likely due to condensation and high humidity during occupancy. We recommend for the corroded areas to be wire brushed clean to bare metal and an epoxy protective coating is applied.
- Vegetation growth and efflorescence on the concrete foundation wall was observed at the base of the wall (Photos 055 & 056). We recommend this area be cleaned and a protective coating be applied.
- Minor cracking was observed on the concrete foundation wall (Photo 057). We recommend the wall be repaired with a suitable repair mortar.

Generally, the exterior metal cladding and architectural concrete masonry block wall along the West elevation appeared to be in fair to good condition.

PART 4 – CONCLUSION AND RECOMMENDATIONS

We completed a structural condition review of the existing building framing and exterior building façade where safe access was available for our review. The building structure generally appeared in fair to good condition. We observed several areas of deterioration that should be addressed to ensure the long term serviceable life of the building structure. We have summarized our recommendations with appropriate time frames below.

RECOMMENDED REPAIRS: (Recommended to be completed within next 2 – 5 years)

1. The efflorescence and algae accumulation on the exterior walls should be cleaned from the structural systems and an adequate protective coating applied.
2. All deteriorated/open/cracked mortar joints should be routed and infilled with a suitable repair mortar to restore the integrity of the existing building envelop.
3. Patch any locations of spalled concrete masonry block with a suitable repair mortar to restore the integrity of the existing building envelop. Replace any damaged/cracked concrete masonry block with new block to match existing as required.
4. Any corroded areas should be wire brushed to bare metal and epoxy painted to prevent further deterioration of the structural framing.
5. Any peeled/flaked paint areas to be removed and repainted with a new coat of epoxy paint.
6. Any areas of moisture staining on structural framing should be cleaned and a protective coating should be applied.

We trust the above information meets your requirements. Should you have any further questions, please do not hesitate to contact our office.

Yours very truly,

BARRY BRYAN ASSOCIATES
Architects, Engineers, Project Managers

Doug McLaughlin, P. Eng.

DM/do

APPENDIX

PHOTOGRAPHS

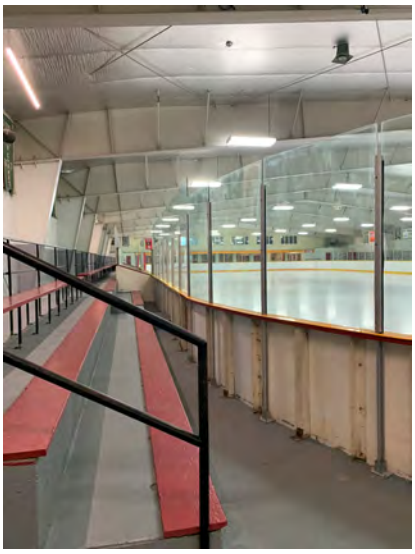
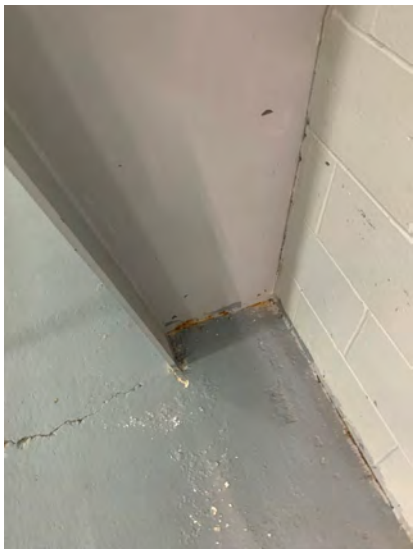


Photo 01 - Pre Engineered Frames	Photo 02 - Pre Engineered Frame Bottom Flange Corrosion
	
Photo 03 - Pre Engineered Frame Bottom Flange Corrosion	Photo 04 - Pre Engineered Frame Bottom Flange Corrosion

	
Photo 05 - Pre Engineered Frame Bolted Connection Corrosion	Photo 06 - Pre Engineered Frame Bolted Connection Corrosion
	
Photo 07 - Pre Engineered Frame Bolted Connection Corrosion	Photo 08 - Pre Engineered Frame Moisture Staining

	
Photo 09 - Pre Engineered Frame Moisture Staining	Photo 10 - Pre Engineered Frame Base Corrosion
	
Photo 11 - Pre Engineered Frame Base Corrosion	Photo 12 - Pre Engineered Frame Bridging Peeling

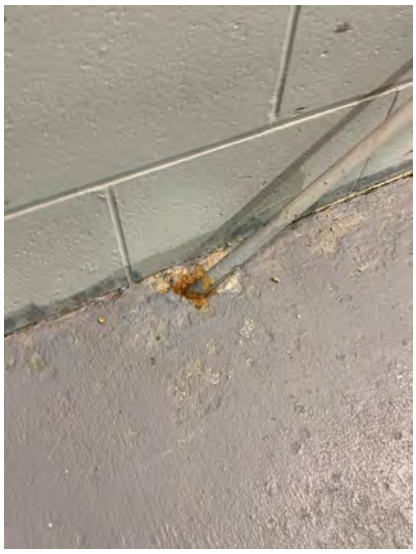


Photo 13 - Pre Engineered Frame Bracing Corrosion	Photo 14 - Pre Engineered Frame Bracing Corrosion
	
Photo 15 - Pre Engineered Frame Bracing Corrosion	Photo 16 - Bleacher Seating Honeycombing

Photo 17 - Bleacher Seating Minor Cracking

Photo 18 - Bleacher Seating Cracking

Photo 19 - Bleacher Seating Cracking

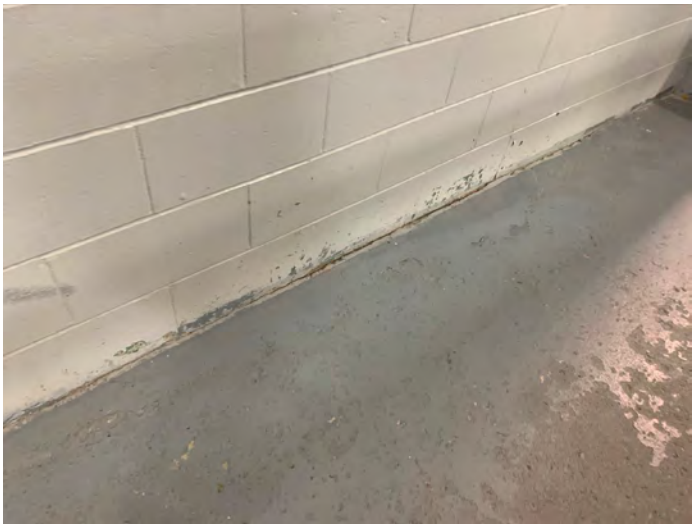


Photo 20 - Bleacher Seating Deterioration

Photo 21 - Masonry Block Wall Efflorescence

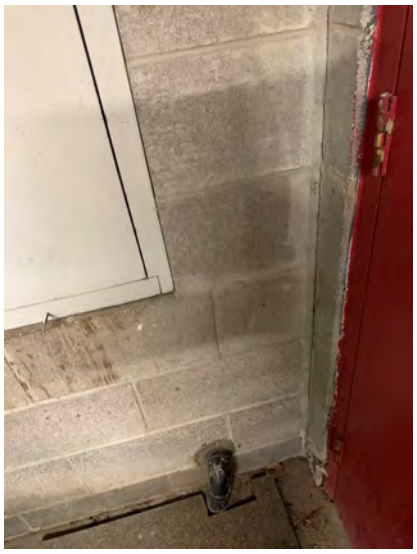


Photo 22 - Masonry Block Wall Efflorescence

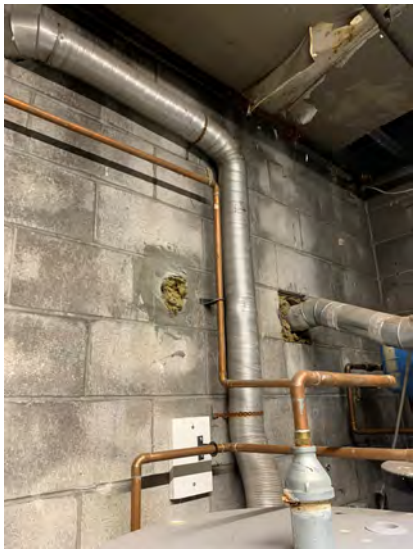


Photo 23 - Masonry Block Wall Efflorescence

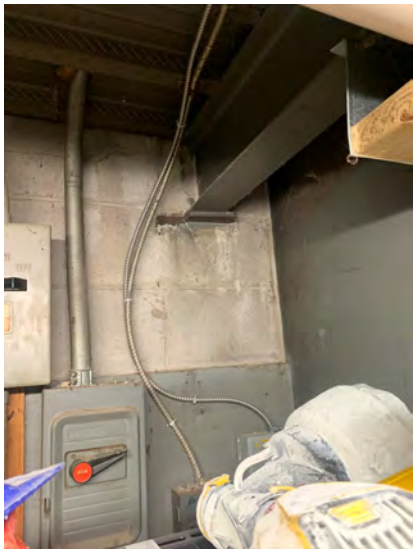


Photo 24 - Masonry Block Wall Efflorescence

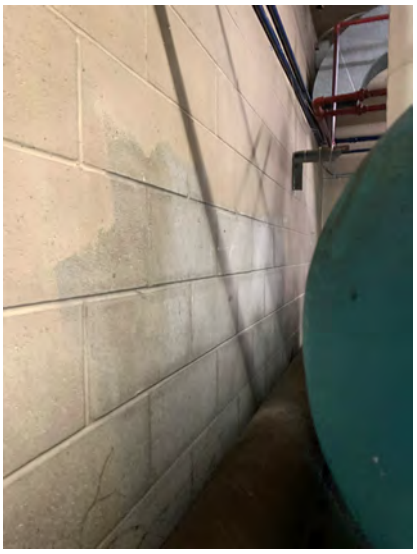


Photo 25 - Masonry Block Wall Deterioration	Photo 26 - Masonry Block Wall Staining

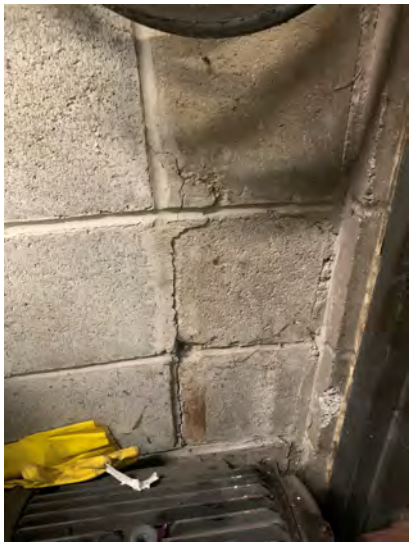



Photo 27 - Masonry Block Wall Cracking	Photo 28 - Concrete Apron Slab Cracking

	
Photo 29 - Concrete Apron Slab Efflorscence	Photo 30 - Concrete Apron Slab Efflorscence

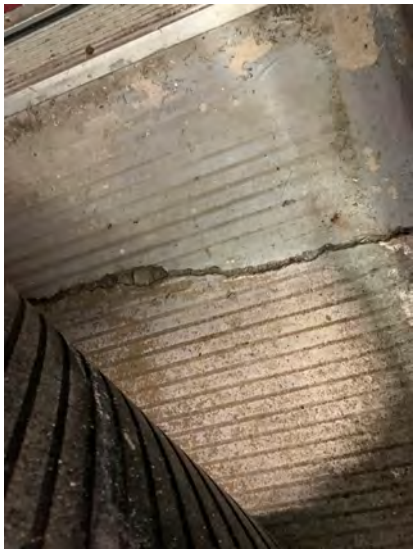
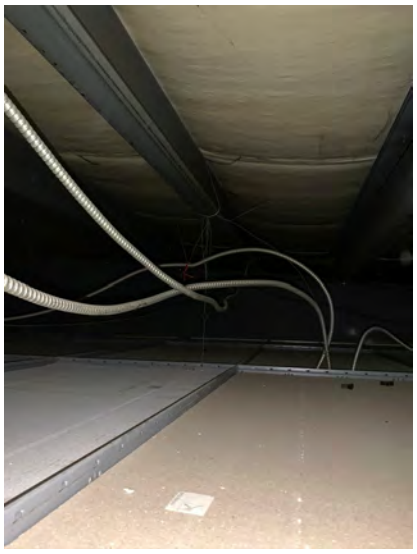



Photo 31 - Concrete Apron Slab Bigger Cracking	Photo 32 - Concrete Apron Slab Deterioration

	
Photo 33 - Concrete Apron Slab Deterioration	Photo 34 - Partial Second Floor Framing
	
Photo 35 - Partial Second Floor Z Girt Water Staining	Photo 36 - South Elevation Opening

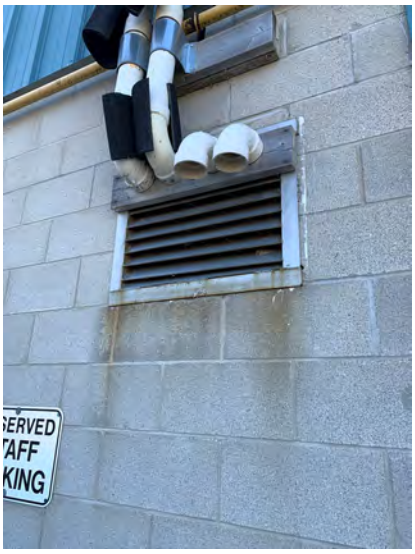


Photo 37 - South Elevation Block Wall Corrosion

Photo 38 - South Elevation Block Wall Vegetation

Photo 39 - South Elevation Block Wall Efflorescence

Photo 040 - South Elevation Block Wall Parging

Photo 41 - East Elevation Vegetation

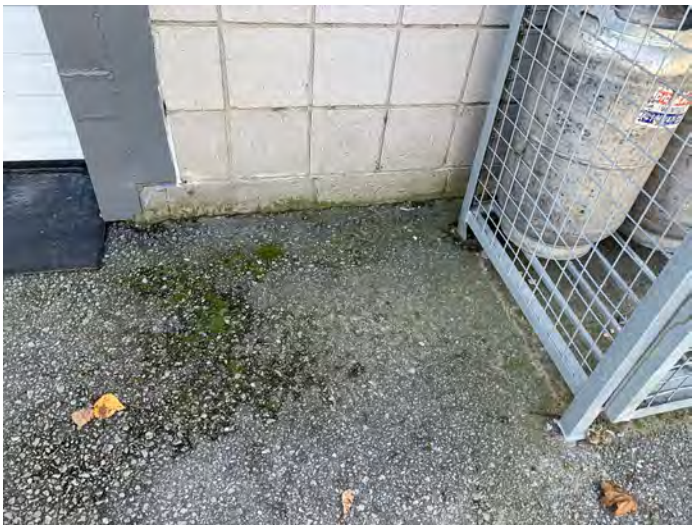


Photo 42 - East Elevation Vegetation 2

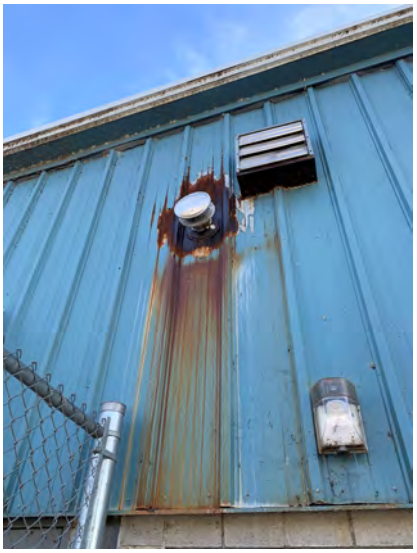


Photo 43 - East Elevation Corroded Cladding

Photo 44 - East Elevation Block Wall Efflorescence

	
Photo 45 - East Elevation	Photo 46 - North Elevation

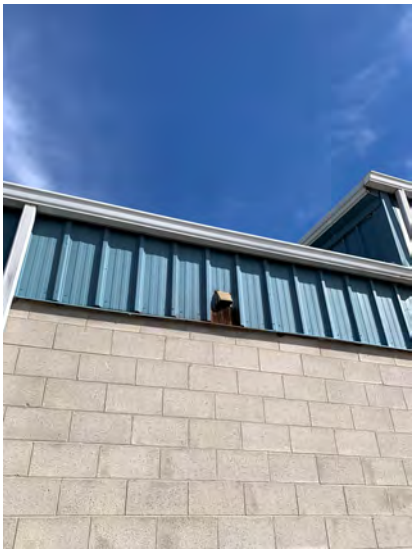



Photo 47 - North Elevation Corroded Cladding	Photo 48 - North Elevation Parging

Photo 49 - North Elevation Parging2

Photo 50 - North Elevation Vegetation and Deteriorated Parging

Photo 51 - North Elevation Deterioration

Photo 52 - North Elevation Deterioration 2

Photo 53 - West Elevation Exterior Column Bolted Connection Corrosion

Photo 54 - West Elevation Exterior Column Base Corrosion

Photo 55 - West Elevation Foundation Wall Vegetation and Efflorescence

Photo 56 - West Elevation Block Wall Efflorescence

Photo 57 - West Elevation Foundation Wall Minor Cracking

Facility		Equipment		Year		Cost	
Beaverton		chiller		2027		$ 120,000.00	shell & tube chiller
		brine pump		2027		$ 20,000.00	
		dehumidifier		2024		$ 45,000.00	electric desiccant
		dehumidifier		2028		$ 45,000.00	electric desiccant
		Floor (incl. in floor piping		2028		$ 1,200,000.00	
		compressors (2)		2031	two comp	$ 200,000.00	complete compressor packages; c/w steel base, compressor, new motor, new safeties, oil separator, 11LD, etc
		condensor		2038		$ 150,000.00	reuse the existing steel stand- its in good condition
		headers		2024		$ 100,000.00	
		Glycol loop		2045		$ 70,000.00	
		Control System Panel		2023		$ 55,000.00	Controls for ice surface including soft start system to ease load on compressors
		HVAC		2034		$ 125,000.00	
		Boilers		2023		$ 45,000.00	
		Concrete Repairs		2023		TBD	Repairs to bleachers and stairs and concrete slab on grade (interior)
		Block repairs		2023		TBD	Ice resurfacer room walls (interior and exterior) and all exterior block walls require repinting, reparging, surface cleaning and protective coating application.
		Dressing Rooms		2023		TBD	Shower / washroom fixture replacement, doors to shower/washroom area, flooring replacement, bench improvements
		Skating lifts		2023		TBD	Engineer to confirm equipment and installation is appropriate and safe for use
					Total	**$ 2,175,000.00**	
Sunderland		dehumidifier		2021		$ 45,000.00	electric desiccant
		dehumidifier		2025		$ 45,000.00	electric desiccant
		chiller		2022		$ 110,000.00	shell & tube chiller
		condensor		2025		$ 125,000.00	
		headers		2025		$ 90,000.00	
		Floor (incl. in floor piping		2023		$ 1,200,000.00	
		brine pump		2032		$ 25,000.00	
		compressors (2)		2031	two comp	$ 200,000.00	complete compressor packages; c/w steel base, compressor, new motor, new safeties, oil separator, 11LD, etc
		Ice Plant structures		2023		TBD	Repairs to machinery supports including interior components and support structure for exterior condensor unit
		Roof (auditorium)		2022		$ 125,000.00	
		HVAC (auditorium)		2023		$ 10,000.00	Heat exchangers replacement
		Dressing rooms		2021		$ 10,000.00	Shower / washroom fixture replacement, doors to shower/washroom area, flooring replacement, bench improvements
		Roof (ice surface)		2023		TBD	Engineered fixes to address lateral supports, brackets, bracing and bolts missing broken and thread extensions to support columns. Surface scraping and cleaning then painting of steel structure.
		Concrete repairs		2023		TBD	Repairs to bleachers and stairs, outdoor sidewalks, concrete slab on grade (interior)
		Block repairs		2023		TBD	Ice resurfacer room walls (interior and exterior) and all exterior block walls require repinting, reparging, surface cleaning, protective coating application, some areas require block replacement.
		South walkway canopy		2023		TBD	Removal of underside plywood, confirmation of condition of upper structure and associated repairs, replacement/repairs to support columns at walkway, replacement of underside covering
		Main Entrance Doors		2023		TBD	Replacement of door threshold and possibly door frame and doors, if necessary along with threshold.

		Exterior Exit Stairs		2023		TBD	Engineered supports and attachments to the building. Review existing stairs condition and ensure correct stair geometry and surfaces as per Ontario Building Code requirements. Confirm correct sizing of stairs for exit capacity requirements.
		Roof (ice plant, workshop and ice resurfacer room)		2023		TBD	Repairs or replacement of roof for ice plant room, workshop and ice resurfacer room.
		Metal flashings and downspouts		2023		TBD	Repairs/replacement of metal flashings and downspouts on entire building
		Skating Lifts		2023		TBD	Engineer to confirm equipment and installation is appropriate and safe for use
					Total	**$ 1,985,000.00**	
Cannington		condensor		2021		$ 100,000.00	
	NEW	chiller	NEW	2042		$ 150,000.00	
		brine pump		2021		$ 20,000.00	
		headers		2030		$ 100,000.00	
		Floor (incl. in floor piping		2031		$ 1,500,000.00	
		compressors (2)		2023	two comp	$ 200,000.00	
		Roof covering		2021		$ 600,000.00	Partial repair completed 2022
		Roof (ice surface)		2023		TBD	Engineered fixes to address checking and delamination of truss elements, corrosion on bracing rods and short thread extensions,
		Roof (auditorium)		2023		TBD	Replacement of flat roof on auditorium
		Concrete Repairs		2023		TBD	Replacement of floor for ice resurfacer. Repairs to bleachers
		Metal Cladding and downspouts		2023		TBD	Repairs/replacement of metal cladding and downspouts on entire building
		Exterior Exit Stairs		2023		TBD	Engineered supports and attachments to the building. Review existing stairs condition and ensure correct stair geometry and surfaces as per Ontario Building Code requirements. Confirm correct sizing of stairs for exit capacity requirements.
		Dressing Rooms		2023		TBD	Shower / washroom fixture replacement, doors to shower/washroom area, flooring replacement, bench improvements
		Washrooms		2021		$ 30,000.00	
		HVAC		2023		$ 20,000.00	Replacement of existing furnaces
		Skating Lifts		2023		TBD	Engineer to confirm equipment and installation is appropriate and safe for use
					Total	**$ 2,720,000.00**	

2023 Budget

2023 Capital Budget and Ten-Year Forecast (2023 – 2032)

Committee of the Whole
January 16, 2023

Agenda

- Budget Process
- 2023 Capital Budget Priorities
- 2022 Capital Projects Status Report
- Ten-Year Capital Forecast
- 2023 Capital Infrastructure Levy
- Asset Management Regulations
- 2023 Capital Budget
- Budget Engagement
- Next Steps and Discussion

Budget Process

2021 / Prior - Pay as You Go and Reserve Funds

Budget	Capital	Operating
Priorities – Strategic Plan	Recreation Master Plan, DC Studies	Direct requests to Council, Union Agreements, Investment Policy
Long-Term Planning (static or rolling forecast)	Public Works and Fire Fleet	5 year averages used for operating budgets
Annual Expenditures	Capital Projects based on needs and available funding, Reserve Fund Contributions forecasted for some assets, Service Levels increased or deferred depending on available revenues	
Annual Revenues	Reserve Funds, and User Fees were relatively stable, Grants and Property Taxes funded Operating and Capital Budget requirements	

Feedback, Review and Approve Budget

Monitor, Measure Progress, Report, Re-evaluate, Repeat

Budget Process

Path Forward - Capital Reserve Fund

Budget	Capital	Operating
Priorities – Core Services Review and Strategic Plan	Asset Management, Master Plans, DC Studies, IT Strategy, Grant Policies	Service Standards, User Fee Policy, Union Agreements, Capital Financing Strategy
Long-Term Planning (static or rolling forecast)	5, 10, 25 Years	2, 3, 4 Years
Annual Expenditures	Repair and Replacement, Growth Infrastructure, Demolition, New Programs	Service Levels, Growth, Economic Factors, Legislation, Reserve Fund Contributions
Annual Revenues	Development Charges, Capital Grants, Reserve Funds, Partnerships / Donations	Property Tax, User Fees, Reserves, Operating Grants, Sponsorships / Donations

Feedback, Review and Approve Budget

Monitor, Measure Progress, Report, Re-evaluate, Repeat

Budget Process
Pay as You Go vs. Reserve Funds

Pay as You Go	2018	2019	2020	2021	2022
Tax Levy Budget					
Operating Expenditures	5,455,008	5,816,830	6,300,762	7,044,432	7,396,591
Contributions to RF	1,833,722	1,634,174	1,580,174	1,653,228	2,326,600
Capital funded from Levy	839,776	921,232	815,927	586,000	-
Total Operating Budget	**8,128,506**	**8,372,236**	**8,696,863**	**9,283,660**	**9,723,191**
Capital from RF	6,024,479	4,744,592	10,756,636	5,129,000	2,908,500
Total Capital Budget	**6,864,255**	**5,665,824**	**11,572,563**	**5,715,000**	**2,908,500**

Reserve Fund Contributior	2018	2019	2020	2021	2022
Tax Levy Budget					
Contributions to RF	2,673,498	2,555,406	2,396,101	2,239,228	2,326,600
Operating Expenditures	5,455,008	5,816,830	6,300,762	7,044,432	7,396,591
Total Operating Budget	**8,128,506**	**8,372,236**	**8,696,863**	**9,283,660**	**9,723,191**
Capital from RF	6,864,255	5,665,824	11,572,563	5,715,000	2,908,500
Total Capital Budget	**6,864,255**	**5,665,824**	**11,572,563**	**5,715,000**	**2,908,500**

2023 Capital Budget Priorities

Define Township Priorities

- Core Services Review
- Asset Management Plan
- Continue with repair and rehabilitation programs
- Establish capital budget policies and grant funding allocation policy to support capital funding strategy
- Funding is still a challenge – funding strategy to consider Capital Levy in the Operating Budget an/or debt financing

2023 Capital Budget Approval Process

- Council feedback on Capital Forecast and Capital Budget
- Compare to funding source availability, prioritize projects
- Refer all projects except those that require further information for January 30, 2023 Council approval (better pricing, lead times)
- Approve remainder together with Operating Budget on February 27, 2023, or earlier.

2023 Capital Budget Priorities

Projects can be approved mid-year

- Projects have been deferred from the proposed 2023 Capital Budget for the following reasons:
- Non-routine projects dependent on upcoming study outcome
- Projects that are pending additional information
- Capacity limits
- Clarification on Bill 23 impacts
- Sunderland Arena Expansion – two reports

Revisit 2024 Budget Process

- Mid-year review

2022 Capital Projects Status Report

Description	Amount
2022 Approved Capital Budget	$ 2,858,500.00
2021 and Prior Projects	4,958,112.23
Sunderland Arena Expansion	7,750,000.00
Thorah Public Works Depot - Garage Additions	2,682,529.90
Total Capital Program	**$ 18,249,142.13**
Expenditures incurred in 2021 or Prior	5,491,328.46
Available Capital Budget Carried Forward to 2022	**12,757,813.67**
Expenditures incurred in 2022	2,539,549.86
Net surplus budget returned to source	430,563.38
Available Capital Budget Carried Forward to 2023	**$ 9,787,700.43**

Ten-Year Capital Forecast
(2023 – 2032)

2021 and Prior Capital Forecasts

- Staff prepared ten-year forecasts of some replacements assets (public works and fire equipment)
- 2019 AMP consolidated all assets

2023

- 2019 AMP – unattainable
- Staff's best estimate, referring to studies if available
- Adjustments in outer years to reach AMP forecasts
- Placeholders

2024

- AMP Update will refresh the Ten-Year Forecast
- Incorporate Growth, Core Services Review and Strategic Plan projects

Ten-Year Capital Forecast
(2023 – 2032) Expenditures

	2023 Budget	2024	2025	2026	2027	2028 - 2032	Total
IT Strategy	$ 150,000	$ 75,000	$ 75,000	$ 75,000	$ 75,000	375,000	**$ 825,000**
Asset Management	75,000	50,000	50,000	50,000	50,000	250,000	**525,000**
Accessibility Initiatives	-	25,000	25,000	25,000	25,000	125,000	**225,000**
Green Initiatives	50,000	25,000	25,000	25,000	25,000	125,000	**275,000**
Studies	180,000	50,000	50,000	50,000	50,000	250,000	**630,000**
						-	
Parks	80,000	215,000	215,000	215,000	215,000	1,075,000	**2,015,000**
						-	
Road and Streets	1,665,000	1,457,000	1,734,000	1,956,000	1,956,000	7,110,000	**15,878,000**
Structures	731,500	633,400	670,200	954,600	245,000	2,925,000	**6,159,700**
Public Works Fleet	1,045,000	345,000	990,000	330,000	416,500	2,643,600	**5,770,100**
						-	**-**
Fire Services	639,000	60,000	1,260,000	-	100,000	700,000	**2,759,000**
Buildings	775,000	600,000	900,000	1,200,000	1,500,000	12,000,000	**16,975,000**
Total Forecast	**$ 5,390,500**	**$ 3,535,400**	**$ 5,994,200**	**$ 4,880,600**	**$ 4,657,500**	**$ 27,578,600**	**$ 52,036,800**

Amended from original agenda package:
1. 2023 column now reflects 2023 Capital Budget
2. Public Works Fleet – Sunderland Ice Re-surfacer added to 2024
3. Fire Services – Boat added to 2023 Capital Budget

Ten-Year Capital Forecast
(2023 – 2032)

Forecast Fluctuations

- Economic factors
- Timing
  - Updated information as replacement year approaches
  - Deferrals due to funding shortages
- Legislation
- Scope changes

Ten-Year Capital Forecast Perspectives

- Expenditures
- Funding

Ten-Year Capital Forecast
(2023 – 2032)

Capital Forecast Complexity Increases

- Equipment
- Roads
- Storm water management ponds, bridges, culverts
- Parks, Harbour Front and Trails
- Buildings – multiple components, different lifespans, different sizes and uses, costly to perform accurate assessment
- Information Technology, Climate Change, Accessibility driven by all other assets

- July 1, 2025 – AMPS regulated – 10 Year Forecast, **Financial Strategy**, Service Levels, updated every 5 years

Ten-Year Capital Forecast
(2023 – 2032) Funding

- Reserves
- Reserve Funds
  - Discretionary – internally restricted
  - Obligatory – externally restricted
    - Development Charges
    - Conditional Grants
    - Legislated Reserve Funds
    - Endowments
- Grants
- Third Parties
  - Developer contributions
  - Partnerships / Donations
- User Fees, Tax Levy and Debt

Ten-Year Capital Forecast
(2023 – 2032) Funding

	2022 Ending Balance	From Committed Projects	Outflows	Inflows	2023 Ending Balance
Reserves					
Tax Rate Stabilization Reserve	1,866,301		(73,000)	(800,000)	993,301
Working Capital Reserve	500,000				500,000
	2,366,301	**-**	**(73,000)**	**(800,000)**	**1,493,301**
Reserve Funds - Externally Restricted					
Modernization Funds	273,000		(150,000)		123,000
Canada Community Building Fund	1,241,700		(521,000)	385,000	1,105,700
DC - General Government	64,961			4,187	69,149
DC - Fire	104,240		(8,500)	28,865	124,606
DC -Fleet	570,817		(520,000)	32,132	82,949
DC -Roads	1,906,308		(350,000)	97,456	1,653,764
DC - Recreation and Library	3,132,495		(75,000)	124,618	3,182,114
	7,293,522	**-**	**(1,624,500)**	**672,258**	**6,341,280**
Reserve Funds - Internally Restricted					
Committed Projects Reserve	726,066		(30,000)		696,066
Brock Hydro R/F - Sund	600,991	21,000	(100,000)	100,000	621,991
Brock Hydro R/F - Cann	913,243	13,500	(8,000)	100,000	1,018,743
Brock Hydro R/F - Beav	1,374,494	35,783	(33,000)	100,000	1,477,277
Beaverton Harbour RF	60,000	63,363		90,000	213,363

Ten-Year Capital Forecast
(2023 – 2032) Funding

	2022 Ending Balance	From Committed Projects	Outflows	Inflows	2023 Ending Balance
Reserve Funds - Internally Restricted (continued)					
Capital R/F - Parks (new)	-	64,185			64,185
Capital R/F - Roads Dept./OCIF	2,350,582	173,465	(2,356,500)	1,212,600	1,380,147
Capital R/F - Snow/Dust	246,773			-	246,773
Capital R/F - Sidewalks	13,263		(150,000)	140,000	3,263
Main St Drainage Res Fund	28,847				28,847
Capital R/F - Public Building	1,247,630	62,360	(370,000)	165,000	1,104,990
Capital R/F - Admin Equip Replac	397,007			19,000	416,007
Capital R/F - CTH	258			-	258
Capital R/F - Fire Dept.	358,430		(430,500)	320,000	247,930
Capital R/F - Building	33,723		(15,000)	-	18,723
Capital R/F - Canine Ctrl	26,888			-	26,888
Capital R/F - Arenas	1,796,487			-	1,796,487
Capital R/F - St Lights	52,557			50,000	102,557
Capital R/F - Harbour	352,406			-	352,406
Capital R/F- Parking Lots	(31,908)	51,500		-	19,592
Wilfrid Hall Reserve Fund	4,226			-	4,226
Manilla Hall Reserve Fund	41,918			-	41,918
	10,593,882	**485,156**	**(3,493,000)**	**2,296,600**	**9,882,638**
	$ 20,253,705	**$ 485,156**	**$ (5,190,500)**	**$ 2,168,858**	**$ 17,717,219**

Ten-Year Capital Forecast
2022 Asset Repair / Replacement Value

Asset Category	Brock	Uxbridge	Scugog
Roads	$ 285,260,000	$ 361,624,000	$ 389,200,000
Buildings	78,984,000	63,510,000	81,900,000
Bridges & Culverts	57,654,000	49,261,158	35,300,000
Vehicles & Machinery	11,492,000	23,360,000	17,000,000
Land Improvements	9,195,000	12,848,000	17,200,000
Stormwater Infrastructure	4,790,000	40,500,000	19,600,000
Equipment & Furnishings	3,095,000	648,240	1,500,000
Sidewalks & Pathways	604,000	4,022,661	12,500,000
2022 Asset Replacement Value	**$ 451,074,000**	**$ 555,774,059**	**$ 574,200,000**

Capital / Infrastructure Levy

- Cumulative Tax Levy increases to build up reserve fund balances - common

- 2022 Budget
  - Scugog approved 6.31% tax rate increase
    - 3% road works, 1% vehicles and buildings ($587,900 increase)
    - 10th year
  - 2023 Scugog Budget Survey – 57% asked to continue 3% capital levy for road works, 23% asked to increase, 16% asked to decreased, 4% asked to be removed
  - 2% Uxbridge – Asset Preservation Reserve ($300,000 increase)

Asset Management Regulations

Regulations come into affect July 1, 2024

Capital Budget focuses on Asset Management Plan

- Study
- System Applications
- Configure AMPs reports for annual updates
- Energy Demand Conservation
- Recreation Master Plan

Development Charges – Bill 23 impacts

- 2024 By-Law Study – mid-year capital request pending further clarification on Bill 23
- Official Plan Update
- Allocate 60% of Roads Development Charges

2023 Capital Budget

Corporate	Project Description	2023 Draft Budget
Studies	Core Services Review (pre-approved)	$50,000
	Recreation Master Plan	75,000
	Energy Conservation Demand Management (CDM) Plan	50,000
	Strategic Plan	10,000
	Asset Management Plan Strategy and Update	75,000
		260,000
IT and Finance	Asset Management and Work Order Management System	100,000
	Payroll / HRIS System Electronic Time Clocks	50,000
		150,000
	Total Corporate	**$410,000**

2023 Capital Budget

Development Services	Project Description	2023 Draft Budget
Planning	Update Downtown CIP	$30,000
Building	Building By-Law and Fee Review	15,000
	Total Development Services	**$45,000**

2023 Capital Budget

Fire Services	Project Description	2023 Draft Budget
Equipment	Self-Contained Breathing Apparatus Replacement (pre-approved)	$345,500
	Fit Testing Machine	25,000
	Portable Radios (replacement program)	60,000
	Boat (amendment)	200,000
	Pagers (for new recruits)	8,500
		639,000
Sunderland Fire Station 81	Building Upgrades	60,000
Beaverton Fire Station 83	Building Upgrades	36,000
	Total Fire Services	**$735,000**

2023 Capital Budget

Parks and Recreation	Project Description	2023 Draft Budget
Parks	Playground Equipment Replacement	$80,000
Recreation	Foster Hewitt Memorial Community Centre	133,000
	Rick MacLeish Memorial Community Centre	23,000
	Sunderland Memorial Arena	110,000
	Manilla Community Hall	10,000
	Gamebridge Hall	3,000
	Total Parks and Recreation	**$359,000**

2023 Capital Budget

Public Buildings	Project Description	2023 Draft Budget
Municipal Office	Roof Replacement, LED Lighting Upgrades, Fire Alarm Panel and Device Replacement	$220,000
Beaverton Town Hall	Fire Alarm Panel Replacement and Accessible Upgrades	40,000
Cannington Town Hall	Fire Alarm Panel Replacement	15,000
Sunderland Town Hall	Fire Alarm panel replacement	25,000
Sunderland Historical Society Building	Replacement of Air Conditioning unit	5,000
Dench Animal Shelter	Roof Replacement	45,000
Various	Building Assessments and Cost Studies	25,000
	Total Public Buildings	**$375,000**

Health Services	Project Description	2023 Draft Budget
Beaverton-Thorah Health Centre	Flat Roof Replacement	$25,000

2023 Capital Budget

Public Works	Project Description	2023 Draft Budget
Roads, Streets and Sidewalks	HL2 Ultra Thin Resurfacing	$250,000
	Slurry Seal	200,000
	Gravel Placement	375,000
	Road Rehabilitation and Repair Program	450,000
	Uxbridge Town Line / Kydd Lane (Brock share)	50,000
	Roads Needs Assessment	40,000
	Sidewalks - Replacement	200,000
	Sidewalks - New	100,000
Total Public Works - Roads, Streets and Sidewalks		**$1,665,000**

2023 Capital Budget

Public Works	Project Description	2023 Draft Budget
Structures	Bridges and Culverts Design and Management	$64,000
	Bridges and Culverts Needs Assessment	25,000
	Culvert 319 - Brock Road south of Conc. 13 (B) Replacement	262,500
	Blackwater Bridge 01 Conc 4 (B)	380,000
	Total Public Works - Structures	**$731,500**

2023 Capital Budget

Public Works	Project Description	2023 Draft Budget
Fleet	Three Quarter Ton - 4wd/Extended Cab Replacement	$65,000
	One Ton Dump with Plow/Sander Replacement	120,000
	Tandem with Plow Replacement	300,000
	Wheel Excavator - New	520,000
	Poly Water Tank Replacement	40,000
	Total Public Works - Fleet	**$1,045,000**

2023 Capital Budget
Fire Services - Amendment

Department:	Fire Services	
Project name:	Boat and Fire Services Equipment	
Capital Cost:		$ 200,000
Funding Source:	Capital Reserve Fund - Fire Equipment	$ 200,000
		$ 200,000
Description:	Fire Rescue Boat with a length range of 22 to 26 feet, aluminum hull landing craft to replace existing 1980 Boston Whaler and $50,000 for Fire Services equipment.	
Expected In-Service Date:		May-24

2023 Capital Budget

Other 2023 Initiatives Related to the Capital Budget

- Complete Cores Services Review to identify future budget priorities
- Focus on Asset Management regulation activities
- Grant allocation policy for CCBF and OCIF
- Policy for reserve fund contribution allocations from the operating budget
- Capital Infrastructure Levy
- Capital Budget Policy
- Post 2023 Budget review and preparation for 2024 Budget

2023 Capital Budget

- Recommendations to refer to Council
- Further information required
- Items to bring forward to next budget meeting on February 2, 2023.

Budget Engagement

- Discussion and direction
- With Core Services Review underway, prioritize repair and rehabilitation programs
- Input versus Inform
- Recommend inform until Core Services Review underway
- Virtual Open House
- Email / online forms / surveys
- Ongoing update of webpage – 2023 Budget details after Council receives

Next Steps and Discussion

- Recommendations for January 30, 2023
- Budget Engagement
- Next Budget Meeting is February 2, 2023
  - Capital Infrastructure Levy considerations
  - Continuation of Capital (if required)
  - Operating Budget