Town of Bon Accord
AGENDA
Regular Council Meeting
October 5, 2021 7:00 p.m.
Virtual Meeting
Live streamed on Bon Accord YouTube Channel

1. CALL TO ORDER

2. ADOPTION OF AGENDA

3. ADOPTION OF MINUTES
3.1. Regular Meeting of Council; September 21, 2021 (enclosure)

4. ACTION ITEM LIST
4.1. Action Item List to September 21, 2021 (enclosure)

5. UNFINISHED BUSINESS – NONE

6. NEW BUSINESS
6.1. Edmonton Global Shareholder Withdrawal (enclosure)
6.2. AUMA Municipal Environmental Award (enclosure)
6.3. Fortis Alberta Franchise Fee 2022 (enclosure)
6.4. Solar Farm Visit: Sturgeon County Mayor (enclosure)
6.5. Sturgeon County Letter – Bulk Water Station (enclosure)
6.6. Arena Engineering Inspection Report and Ice Refrigeration Engineering Study (enclosure)
6.7. Bon Accord Arena: Restriction Exemption Program (enclosure)
6.8. 54th Avenue Road Maintenance Update (enclosure)

7. BYLAWS/POLICIES/AGREEMENTS - NONE

8. WORKSHOPS/MEETINGS/CONFERENCES – NONE

9. COUNCIL REPORTS
9.1. Mayor Greg Mosychuk (enclosure)
9.2. Deputy Mayor May (enclosure)
9.3. Councillor Laing (enclosure)
9.4. Councillor Holden (enclosure)
9.5. Councillor Bidney (enclosure)

10. CORRESPONDENCE – NONE

11. NOTICE OF MOTION
11.1. Hosting Munis 101 (enclosure)

12. CLOSED SESSION – NONE

13. ADJOURNMENT

Town of Bon Accord
Regular Meeting of Council Minutes
September 21, 2021 8:30 a.m.
Virtual Meeting
Live streamed on Bon Accord YouTube Channel

PRESENT

COUNCIL
Mayor Greg Mosychuk
Deputy Mayor Tanya May
Councillor Brian Holden
Councillor Lynn Bidney

ADMINISTRATION
Jodi Brown – Chief Administrative Officer
Falon Fayant – Corporate Finance Officer
Dianne Allen – Planning and Development Manager
Ash Rajput - Operations Manager
Jessica Caines – Executive Assistant

ABSENT

Councillor Lacey Laing

CALL TO ORDER

Mayor Mosychuk called the meeting to order at 8:30 a.m.

ADOPTION OF AGENDA

MAYOR MOSYCHUK MOVED THAT item 13.1 Hosting Munis 101 be removed from the agenda.
CARRIED UNANIMOUSLY RESOLUTION 21-292

COUNCILLOR HOLDEN MOVED THAT Council adopt the agenda for the September 21, 2021 Regular Meeting of Council as amended.
CARRIED UNANIMOUSLY RESOLUTION 21-293

ADOPTION OF MINUTES

Regular Meeting of Council Minutes – September 7, 2021
DEPUTY MAYOR MAY MOVED THAT the minutes of the September 7, 2021 Regular Meeting of Council be accepted as presented.
CARRIED UNANIMOUSLY RESOLUTION 21-294

DELEGATION

Jeff Olson - Service Line Warranties of Canada
COUNCILLOR HOLDEN MOVED THAT Council accept the delegation as information.
CARRIED UNANIMOUSLY RESOLUTION 21-295

DEPARTMENT REPORTS

COUNCILLOR HOLDEN MOVED THAT the Department reports be accepted as information.
CARRIED UNANIMOUSLY RESOLUTION 21-296

Town of Bon Accord
Regular Meeting of Council Minutes
September 21, 2021 8:30 a.m.
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ACTION ITEM LIST

COUNCILLOR BIDNEY MOVED THAT Council accept the Action Item List as presented.
CARRIED UNANIMOUSLY RESOLUTION 21-297

UNFINISHED BUSINESS

Addition of Treaty Six and Metis Flags

COUNCILLOR BIDNEY MOVED THAT Council direct administration to purchase internal flags for Council Chambers as per Option 5 in the amount of $562.00.
CARRIED UNANIMOUSLY RESOLUTION 21-298

COUNCILLOR BIDNEY MOVED THAT the purchase of Metis and Treaty Six flags for the Veteran's Park and the Town Office be added to the 2022 budget for consideration.
CARRIED UNANIMOUSLY RESOLUTION 21-299

NEW BUSINESS

ATCO Gas & Pipelines Ltd. Franchise Fee 2022

DEPUTY MAYOR MAY MOVED THAT Council decreases the percentage in franchise fees to 23% for 2022.
IN FAVOUR: Mayor Mosychuk, Deputy Mayor May, Councillor Holden OPPOSED: Councillor Bidney
CARRIED RESOLUTION 21-300

Skateboard Park Upgrades Phase II

COUNCILLOR BIDNEY MOVED THAT Council approve application to the Alberta Blue Cross Healthy Communities Grant Program for up to $50,000 in funding to replace the "center set" equipment in the Skateboard Park.
CARRIED UNANIMOUSLY RESOLUTION 21-301

Memorandum of Understanding – Bon Accord & District Veteran's Memorial Society

COUNCILLOR HOLDEN MOVED THAT Council accept the enclosed MOU as information and direct administration to develop a new agreement that reflects the Town's current relationship with the Gibbons Legion.
CARRIED UNANIMOUSLY RESOLUTION 21-302

Arena Ice Rental Refund Policy

COUNCILLOR HOLDEN MOVED THAT Council approves the refund of ice rental fees in the event of an arena closure due to extenuating circumstances, such as the Covid-19 pandemic.
CARRIED UNANIMOUSLY RESOLUTION 21-303

Mayor Mosychuk called a short recess at 11:13 a.m.
Mayor Mosychuk called the meeting back to order at 11:18 a.m.

COUNCILLOR BIDNEY MOVED THAT Council extend the meeting past 12 o'clock, if necessary.
CARRIED UNANIMOUSLY RESOLUTION 21-304

Town of Bon Accord
Regular Meeting of Council Minutes
September 21, 2021 8:30 a.m.
Virtual Meeting
Live streamed on Bon Accord YouTube Channel

BYLAWS | POLICIES | AGREEMENTS

POLICIES

Temporary Permit Policy

COUNCILLOR HOLDEN MOVED THAT Council approve the Temporary Permit Policy as presented.

IN FAVOUR: Mayor Mosychuck, Councillor Holden, Councillor Bidney OPPOSED: Deputy Mayor May
CARRIED RESOLUTION 21-305

Town Hours Policy Amendment

COUNCILLOR HOLDEN MOVED THAT Council decline the amendment to the Town Hours Policy at this time.
CARRIED UNANIMOUSLY RESOLUTION 21-306

COUNCIL REPORTS

COUCNILLOR BIDNEY MOVED THAT Council accepts the Council reports as presented.
CARRIED UNANIMOUSLY RESOLUTION 21-307

ADJOURNMENT

COUNCILLOR HOLDEN MOVED THAT the September 21, 2021 Regular Meeting of Council adjourn at 11:48 a.m.
CARRIED RESOLUTION 21-308

Mayor Greg Mosychuk

Jodi Brown, CAO

Resolution	Resolution #	Assigned to	Status
21-Sep-21			
Addition of Treaty Six and Metis Flags COUNCILLOR BIDNEY MOVED THAT Council direct administration to purchase internal flags for Council Chambers as per Option 5 in the amount of $562.00.	21-298	Administration	Complete
Addition of Treaty Six and Metis Flags COUNCILLOR BIDNEY MOVED THAT the purchase of Metis and Treaty Six flags for the Veteran's Park and the Town Office be added to the 2022 budget for consideration.	21-299	Administration	Ongoing
ATCO Gas & Pipelines Ltd. Franchise Fee 2022 DEPUTY MAYOR MAY MOVED THAT Council decreases the percentage in franchise fees to 23% for 2022. IN FAVOUR: Mayor Mosychuk, Deputy Mayor May, Councillor Holden OPPOSED: Councillor Bidney	21-300	Administration	Complete
Skateboard Park Upgrades Phase II COUNCILLOR BIDNEY MOVED THAT Council approve application to the Alberta Blue Cross Healthy Communities Grant Program for up to $50,000 in funding to replace the "center set" equipment in the Skateboard Park.	21-301	Administration	Complete
Memorandum of Understanding – Bon Accord & District Veteran's Memorial Society COUNCILLOR HOLDEN MOVED THAT Council accept the enclosed MOU as information and direct administration to develop a new agreement that reflects the Town's current relationship with the Gibbons Legion.	21-302	Administration	Ongoing
Arena Ice Rental Refund Policy COUNCILLOR HOLDEN MOVED THAT Council approves the refund of ice rental fees in the event of an arena closure due to extenuating circumstances, such as the Covid-19 pandemic.	21-303	Administration	Complete

Resolution	Resolution #	Assigned to	Status
Temporary Permit Policy COUNCILLOR HOLDEN MOVED THAT Council approve the Temporary Permit Policy as presented. IN FAVOUR: Mayor Mosychuck, Councillor Holden, Councillor Bidney OPPOSED: Deputy Mayor May	21-305	Administration	Complete
07-Sep-21			
Addition of Treaty Six Flag in Council Chambers COUNCILLOR HOLDEN MOVED THAT Council accept the RFD for information and for discussion purposes and further direct administration to research and gather information from the flag companies as well as the Gibbons Legion.	21-279	Administration	Complete
Service Line Warranties of Canada COUNCILLOR HOLDEN MOVED THAT Council accept the RFD for information and discussion purposes and further directs admin to contact Jeff Olson at Service Line Warranties of Canada to request a presentation for the September 21, 2021 Regular Meeting of Council.	21-281	Administration	Complete
Bylaw Enforcement Bylaw #2021-09 COUNCILLOR HOLDEN MOVED THAT Council give Bylaw Enforcement Officer Bylaw #2021-09 first reading and directs administration to amend, bringing back for second and third readings.	21-287	Administration	Ongoing
Town Hours Policy Amendment DEPUTY MAYOR MAY MOVED THAT Council table the Town Hours Policy Amendment until September 21, 2021.	21-288	Administration	Complete
Notice of Motion COUNCILLOR LAING MOVED THAT administration research the possibility and financial implications of hosting “Munis 101”, following the election, in Bon Accord Chambers and bring forward findings at the next Regular Meeting of Council September 21, 2021.	21-290	Administration	Oct 5 RMC

Resolution	Resolution #	Assigned to	Status
17-Aug-21			
Advance Vote Date COUNCILLOR BIDNEY MOVED THAT Council approve October 7, 2021 from 4:30 – 7:30 pm in Council Chambers, as the date, time and location of the advance vote for the 2021 Election.	21-263	Administration	Complete
Temporary Permit Policy COUNCILLOR HOLDEN MOVED THAT Council set aside the Temporary Permit Policy and direct Administration to bring back to the next Regular Meeting of Council with additional information.	21-265	Planning and Economic Development	Complete
Capital Road Plan COUNCILLOR BIDNEY MOVED THAT Council give approval to proceed with the FDR of 51 Avenue and mill and overlay of 47 street and award the contract to Lafarge Canada.	21-237	Public Works	Ongoing
CORRESPONDENCE DEPUTY MAYOR MAY MOVED THAT council accept correspondence as information and further, Council have Mayor Mosychuk respond to the letter regarding COVID-19 financial support for rural small businesses to the Town of Ponoka, Premier Jason Kenny, MLA Dale Nally and MP Dane Lloyd.	21-248	Mayor	Ongoing
June 1, 2021			
FCSSAA Annual Conference COUNCILLOR BIDNEY MOVED THAT Council accepts the information on the 2021 Annual FCSSAA Conference as presented and direct administration to provide Council with further details on the conference program, registration deadlines and conference fees once available.	**21-206**	Administration	After Election
February 16, 2021 Regular Meeting of Council			

Resolution	Resolution #	Assigned to	Status
Asset Management Grant Application COUNCILLOR HOLDEN MOVED THAT Be it resolved that Council directs administration to apply for a grant opportunity from the Federation of Canadian Municipalities' Municipal Asset Management Program for the Town of Bon Accord, Asset Management Roadmap Project. Be it therefore resolved that the Town commits to conducting the following activities in its proposed project submitted to the Federation of Canadian Municipalities Municipal Asset Management Program to advance our asset management program with the following three activities: · Development of an Asset Management Roadmap · Improved sharing of asset management information internally and publicly · Asset management awareness training for all staff Be it further resolved that the Municipality commits $10,300 from its budget towards the cost of this initiative.	21-054	Public Works	All info and forms submitted, Awaiting Response from FCM

TOWN OF BON ACCORD
Request for Decision (RFD)

MEETING: Regular Council Meeting

MEETING DATE: October 5, 2021

AGENDA ITEM: **Edmonton Global Shareholder Withdrawal**

RECOMMENDATION:

THAT…. Council approves the following as information.

BACKGROUND:

Edmonton Global is the first regional economic development corporation in the region, working to create local, regional, provincial, national, and global partnerships. Edmonton Global collaborates with all levels of government and economic development agencies including their 15 municipalities, Invest Alberta, Alberta's Industrial Heartland Association, the Edmonton International Airport, Edmonton Health City, the Alberta Machine Intelligence Institute, and Invest in Canada.

Bon Accord was one of the 15 municipalities identified as a shareholder. Initially, cost sharing for 2017 was based on the municipality with the lowest operating expenses which was identified as Bon Accord. The core fee for 2017 reflected 1% of Bon Accord's operating budget which calculated at $949 for all municipalities, plus cost allocations by population and cost allocations by equalized assessment. Bon Accord's contribution for 2017 calculated at $1,362.68.

August 10, 2017 the shareholders of Edmonton Metropolitan Regional Economic Development (EMRED) approved to update the core fee to $10,000, thus reflecting the 2018 Shareholder contribution for Bon Accord to be $10,719.54.

At the RMC May 1, 2018:

> COUNCILLOR BIDNEY MOVED THAT Council withdraws Shareholder support, with increased visibility of the Town in other regional initiatives, publications, networking and marketing opportunities. **CARRIED RESOLUTION # 18-100**

At a Special Meeting of Council June 11, 2018:

> COUNCILLOR BIDNEY MOVED to accept the Edmonton Global discussion as information. **CARRIED RESOLUTION # 18-140**

At the RMC June 19, 2018:

> COUNCILLOR BIDNEY MOVED THAT Council approve continued Shareholder support in Edmonton Global. **CARRIED RESOLUTION # 18-153**

At the RMC June 4, 2019:

> DEPUTY MAYOR HOLDEN MOVED THAT the Edmonton Global presentation be accepted, as information. **CARRIED RESOLUTION # 19-148**

At the RMC October 1, 2019:

> COUNCILLOR BIDNEY MOVED THAT Council directs Administration to withdrawal Shareholder support for the Edmonton Global membership. **CARRIED RESOLUTION # 19-276**

At the RMC November 5, 2019:

> DEPUTY MAYOR BIDNEY MOVED to direct administration to decline a meeting with Edmonton Global, at this time. **CARRIED RESOLUTION #19-344**

At the RMC December 3, 2019:

> MOVED by Deputy Mayor Bidney that Council approves "Removal Shareholder state", claiming financial hardship, acknowledging terms and conditions of being removed, with a letter addressed to Edmonton Global of the Towns position. **CARRIED RESOLUTION # 19-389**

At the RMC June 16, 2020:

> DEPUTY MAYOR BIDNEY MOVED THAT Council accepts the Edmonton Global Withdrawal, as information. **CARRIED RESOLUTION # 20-213**

At the RMC October 20, 2020:

> COUNICLLOR HOLDEN MOVED THAT Council direct administration to send payment to Edmonton Global for the outstanding 2020 contribution per the agreement, and to add the shareholder contribution for 2021 to the 2021 budget. **CARRIED RESOLUTION # 20-319**

Administration has received the attached letter from Edmonton Global regarding the termination of the Town of Bon Accord as shareholder effective October 2, 2021. The Town of Bon Accord has no further obligation financially.

FINANCIAL IMPLICATIONS: N/A

LEGAL IMPLICATIONS: N/A

LEGISLATIVE HISTORY: N/A

ALTERNATIVES: N/A

Prepared and submitted by: Jessica Caines/Dianne Allen **Reviewed by:** Jodi Brown, CAO
Date: September 29, 2021

September 27, 2021

His Worship Greg Mosychuk

Town of Bon Accord
PO Box 779, 5025 50 Avenue
Bon Accord, AB T0A 0K0

Dear Mayor Mosychuk:

Re: Town of Bon Accord – Shareholder withdrawal

This letter is to formally acknowledge the withdrawal of the Town of Bon Accord from its role as a Shareholder of Edmonton Global effective October 2, 2021. On behalf of the Edmonton Global Shareholders, please extend our sincere thanks your entire Council and community for Bon Accord's important and formative role in the creation of this initiative to transform and grow the economy of our region. We are deeply saddened to see your community leave this unique partnership and respect your decision.

Article 42 of Edmonton Global's Articles of Association (2019) outlines the process of a Shareholder withdrawal including formal notice and a two-year Notice Period. After our initial letter accepting Council's notice to withdraw, Edmonton Global management followed up with an outline of the formal withdrawal process to then CAO, Joyce Gavan. Bon Accord's decision was accepted by the Edmonton Global's Shareholders during the Annual General Meeting of 2020.

October 1, 2021, marks the Town of Bon Accord's last day as an Edmonton Global Shareholder. At that time, the Articles of Association will be finalized to remove the Town from active Shareholder status. This includes, but is not limited to, amendment to "Schedule C" Edmonton Metropolitan Region Economic Development Boundaries and Participating Municipalities and removal of the municipality from "Schedule D" funding Formula.

The Town of Bon Accord and Edmonton Global have followed this process and I confirm that the Notice Period will end on October 2 and termination of the Town of Bon Accord's role as a Shareholder will come into effect that day.

42. WITHDRAWAL OF SHAREHOLDER

A Shareholder may withdraw from the Company by providing written notice to the Company at least two years in advance of termination and such termination (the "Notice Period"). The Shareholder shall continue to make an annual contribution to the Company during each year of the Notice Period that is fixed at the rate of the current year's Annual Contribution Fee applicable during the given year of the Notice Period. Notwithstanding the foregoing, if a Shareholder withdraws during the first three years of the Company's existence, the Notice Period shall last until the end of the Shareholder's initial three year financial commitment, or for two years, whichever is longer.

43. REMOVAL OF SHAREHOLDERS

A Shareholder shall be deemed to have been removed as a shareholder and such Shareholders shares shall transfer back to the Company on the occurrence of any of the following events:

Suite 100
10020 100 St. NW
Edmonton, AB. T5J 0N5
Canada
1.800.264.4952
edmontonglobal.ca

a) *The expiry of the termination notice period when the Shareholder voluntarily withdraws under article 42; or*
b) *The Shareholder is no longer a municipality within the boundaries of the Edmonton Metropolitan Region; or*
c) *the Shareholder fails to pay any Annual Contribution Fee that the Shareholders approve by special resolution; or*
d) *the Shareholder is removed from membership by special resolution of the Shareholders.*

Notwithstanding that a Shareholder may be removed from membership pursuant to article 43(c), the Shareholder shall continue to be bound by any three year funding commitment in place between the Shareholder and the Company, unless the Shareholders by special resolution have determined otherwise.

A Shareholder who is removed from the membership pursuant to this article 43 shall not be permitted to rejoin the Company for a period of at least five (5) years from the date of termination. Notwithstanding the foregoing, a Shareholder who is removed from the membership according to article 43(b) shall be permitted to rejoin the Company if and when the boundaries of the Edmonton Metropolitan Region are amended to include the municipality.

Per article 43, should Bon Accord wish to rejoin Edmonton Global in the future, the municipality will become eligible as of October 2, 2026.

The Town of Bon Accord will continue to play an important role in regional collaboration and advancing the prosperity of our citizens. We look forward to working alongside you in other ways. Please direct any follow up questions regarding the withdrawal process or finalization, please be direct to our CEO, Malcolm Bruce.

Sincerely,

Mayor Gale Katchur
Chair, Edmonton Global Shareholder Group

Cc: Bon Accord Town Council Members
Bon Accord CAO
Edmonton Global Shareholders
Edmonton Global Board of Directors
Edmonton Global CEO

Suite 100
10020 100 St. NW
Edmonton, AB. T5J 0N5
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TOWN OF BON ACCORD
Request for Decision (RFD)

MEETING: Regular Council Meeting

MEETING DATE: October 5, 2021

AGENDA ITEM: **AUMA Municipal Environmental Award**

RECOMMENDATION:

THAT…. Council accept the RFD as information and for discussion purposes.

BACKGROUND:

In 2021, Alberta Urban Municipalities Association (AUMA) launched the Municipal Environmental Award. The award recognizes Alberta municipalities that have demonstrated excellence in environmental practices. The award is presented to three AUMA Regular Members based on their populations (2,500 or less, 2,500 to 10,000, 10,000 and above). Eligible nominees must be from a current or past regular member municipality.

Administration applied for the Municipal Environmental Award this summer and recently received the attached letter, confirming that the AUMA has awarded the Town of Bon Accord the Municipal Environmental Award for municipalities with populations of under 2,500 for our Solar Farm.

The AUMA plans to host in-person Awards Reception during their annual AUMA Convention on November 18 at 4:30 p.m. Administration is awaiting a response from AUMA as to the number of seats allotted for Council. More details will be forthcoming closer to the Convention date.

FINANCIAL IMPLICATIONS: N/A

LEGAL IMPLICATIONS: N/A

LEGISLATIVE HISTORY: N/A

ALTERNATIVES:

1. Council accept the RFD as information and for discussion purposes.
2. Council directs administration to…

Prepared and submitted by: Jessica Caines

Reviewed by: Jodi Brown, CAO
Date: September 29, 2021

WE ARE economies OF SCALE | WE ARE THE support YOU NEED | WE ARE THE experts IN MUNICIPALITIES | WE ARE YOUR advocate

September 28, 2021

His Worship Mayor Greg Mosychuck
P.O. Box 779
Bon Accord, AB T0A 0K0

Dear Mayor Mosychuck:

Re: AUMA Municipal Environmental Award – Municipalities with populations of under 2,500

Congratulations on behalf of the AUMA Board of Directors! I am pleased to advise that the Town of Bon Accord has been chosen to receive the prestigious AUMA Environmental Award in the category of municipalities with populations of under 2,500.

The Town of Bon Accord was selected for recognition of their success of the Bon Accord Solar Farm project which incorporated a host of unique environmental practices and worked with nearby municipalities to find less desirable land for the solar farm ensuring a win-win for everyone.

We invite you to join us for an Awards Reception during our AUMA Convention, taking place on Thursday, November 18 starting at 4:30 p.m. Join your fellow award recipients on stage as the AUMA President, Board of Directors, and Convention attendees raise a glass to celebrate your achievements. More details on the awards celebration will be sent to award winners closer to the event date.

At this time, we are planning for an in-person Convention. Should that change, you will be contacted with more information on how you can join our virtual celebration.

If you have any questions, please contact Anita Sookar at asookar@auma.ca or by telephone at 780-989-7406.

Sincerely,

Deputy Mayor Angela Duncan
AUMA Interim President

cc: Jodi Brown, Chief Administrative Officer

TOWN OF BON ACCORD

Request for Decision (RFD)

MEETING: Regular Council Meeting

MEETING DATE: October 5, 2021

AGENDA ITEM: **Fortis Alberta Franchise Fee 2022**

RECOMMENDATION:
THAT …Council directs administration to….

BACKGROUND:
Fortis Alberta Franchise Fee Agreements allow a year over year re-consideration of franchise fees. The Town of Bon Accord is required to set its franchise fees by November 1st of the year prior to a change taking effect. The 2021 rate is currently set at 20% providing an estimated revenue of $141,224.
The franchise fee cap is 20%. To change the rate currently set, the resulting impact to the residents annual billing must be advertised within the local newspaper with the widest circulation for two consecutive weeks. Since the Town currently has the rate set at the cap of 20%, Council can decide to either maintain this rate, or decrease the rate.
Also attached are the municipal franchise fee riders for Council's review.

FINANCIAL IMPLICATIONS:
Maintaining the current 20% franchise rate would provide an estimated revenue of $148,346 for 2022. (Variance of $7,121 from 2021). The impact to an average residential annual billing of the franchise fee is an increase of $8.03 from $162.83 to $170.86.

Decreasing the franchise rate to 19% would provide an estimated revenue of $140,929 for 2022. (Variance of $(296) from 2021). The impact to an average residential annual billing of the franchise fee is a decrease of $0.51 from $162.83 to $162.32.

Decreasing the franchise rate to 18% would provide an estimated revenue of $133,511 for 2022. (Variance of $(7,713) from 2021). The impact to an average residential annual billing of the franchise fee is a decrease of $9.05 from $162.83 to $153.78.

LEGAL IMPLICATIONS:
Article 5 of the Electric Distribution System Franchise Agreement allows the option to adjust the fee percentage annually.
Any changes to the current percentage (up or down) require advertisement. The Town of Bon Accord is currently capped at 20%.

LEGISLATIVE HISTORY: N/A

ALTERNATIVES:
1. Council directs administration to maintain the Fortis Franchise Fee for the year 2022 at 20%.
2. Council directs administration to decrease the Fortis Franchise Fee for the year 2022 to …

Prepared and Submitted By: Falon Fayant **Reviewed By:** Jodi Brown, CAO

Date: September 28, 2021

MUNICIPAL FRANCHISE FEE RIDERS

Availability Effective for all consumption, estimated or actual, on and after the first of the month following Commission approval, the following franchise fee riders apply to each rate class.

Price Adjustment A percentage surcharge per the table below will be added to the total distribution tariff, (the sum of the transmission component and the distribution component), excluding any Riders calculated for every Point of Service within each municipality and will be billed to the applicable retailer.

FortisAlberta will pay to each municipality each month, in accordance with the franchise agreements between FortisAlberta and the municipalities, the franchise fee revenue collected from the retailers.

Muni Code	Municipality	Rider	Effective	Muni Code	Municipality	Rider	Effective
03-0002	Acme	3%	2013/07/01	02-0040	Bowden	15%	2017/01/01
01-0003	Airdrie	20%	2021/04/01	03-0041	Boyle	20%	2021/01/01
03-0005	Alix	8.50%	2019/01/01	03-0042	Breton	20%	2015/01/01
03-0004	Alberta Beach	8%	2021/01/01	01-0043	Brooks	14%	2021/01/01
03-0007	Amisk	0%	2014/01/01	02-0044	Bruderheim	0%	2013/07/01
02-0011	Athabasca	12%	2021/01/01	02-0047	Calmar	20%	2013/07/01
04-0009	Argentia Beach	0%	2017/01/01	01-0048	Camrose	14%	2021/04/01
03-0010	Arrowwood	12%	2015/07/01	02-0050	Canmore	12%	2021/01/01
02-0387	Banff	6%	2020/01/01	03-0054	Carmangay	15%	2021/01/01
07-0164	Banff Park	4%	2019/10/01	03-0055	Caroline	12%	2021/01/01
03-0363	Barnwell	5%	2013/07/01	02-0056	Carstairs	10%	2015/01/01
03-0013	Barons	5%	2015/04/01	03-0061	Champion	15%	2015/04/01
02-0014	Barrhead	12%	2016/04/01	03-0062	Chauvin	11%	2016/01/01
02-0016	Bashaw	2%	2021/01/01	01-0356	Chestermere	11.50%	2014/01/01
02-0017	Bassano	14.40%	2019/01/01	03-0064	Chipman	0%	2016/01/01
03-0018	Bawlf	6%	2016/01/01	02-0065	Claresholm	4%	2017/01/01
01-0019	Beaumont	17.25%	2020/01/01	03-0066	Clive	10%	2020/01/01
03-0022	Beiseker	3.50%	2019/01/01	03-0068	Clyde	15%	2017/01/01
02-0024	Bentley	10%	2019/01/01	02-0069	Coaldale	11%	2015/01/01
04-0026	Betula Beach	0%	2017/01/01	02-0360	Coalhurst	4%	2021/01/01
03-0029	Bittern Lake	7%	2016/01/01	02-0070	Cochrane	17%	2020/01/01
02-0030	Black Diamond	10%	2017/01/01	03-0076	Coutts	3%	2017/01/01
02-0031	Blackfalds	20%	2013/10/01	03-0077	Cowley	5%	2016/01/01
02-0034	Bon Accord	20%	2013/07/01	03-0078	Cremona	10%	2016/01/01
02-0039	Bow Island	8.50%	2018/01/01	02-0079	Crossfield	0%	2015/01/01

MUNICIPAL FRANCHISE FEE RIDERS

Effective: the first of the month following Commission approval for consumption from the first of the month following Commission approval

Muni Code	Municipality	Rider	Effective
09-0361	Crowsnest Pass	16%	2016/01/01
04-0080	Crystal Springs	0%	2016/01/01
03-0081	Czar	5%	2013/10/01
02-0082	Daysland	7%	2018/01/01
02-0086	Devon	13%	2018/01/01
02-0088	Didsbury	17%	2016/01/01
02-0091	Drayton Valley	10%	2016/01/01
03-0093	Duchess	15%	2018/01/01
02-0095	Eckville	10%	2015/01/01
03-0096	Edberg	13%	2021/01/01
03-0097	Edgerton	16%	2015/01/01
02-0100	Edson	4.75%	2020/01/01
03-0109	Ferintosh	11%	2016/01/01
03-0112	Foremost	7%	2016/01/01
02-0115	Fort Macleod	15%	2018/10/01
01-0117	Fort Saskatchewan	0%	2013/10/01
02-0124	Gibbons	10%	2013/01/01
03-0128	Glenwood	0%	2016/02/11
04-0129	Golden Days	0%	2017/01/01
02-0135	Granum	5.50%	2013/07/01
04-0134	Grandview	0%	2016/01/01
04-0138	Gull Lake	0%	2016/01/01
04-0358	Half Moon Bay	0%	2021/01/01
02-0143	Hardisty	9.50%	2021/01/01
03-0144	Hay Lakes	9%	2021/01/01
02-0148	High River	20%	2015/07/01
03-0149	Hill Spring	5%	2015/09/01
02-0151	Hinton	12.70%	2019/01/01
03-0152	Holden	4%	2016/01/01
03-0153	Hughenden	5%	2016/01/01
03-0154	Hussar	12.50%	2017/01/01
02-0180	Innisfail	15%	2021/04/01
03-0182	Irma	20%	2015/01/01
02-0183	Irricana	0%	2013/10/01
04-0185	Island Lake	0%	2016/01/01
04-0186	Itaska Beach	0%	2017/10/01
04-0379	Jarvis Bay	0%	2015/10/08
04-0187	Kapasiwin	0%	2018/04/01
02-0188	Killam	9%	2021/01/01
01-0194	Lacombe	17.00%	2021/01/01
04-0196	Lakeview	2%	2016/01/01
02-0197	Lamont	7.50%	2020/01/01
04-0378	Larkspur	3%	2020/04/01
01-0200	Leduc	16%	2014/01/01
02-0202	Legal	15%	2021/01/01
03-0207	Lomond	15%	2017/01/01
03-0208	Longview	17%	2017/01/01
03-0209	Lougheed	5%	2016/01/01
02-0211	Magrath	10%	2021/01/01
04-0210	Ma-Me-O Beach	0%	2016/01/01
02-0215	Mayerthorpe	10%	2020/01/01
04-0359	Mewatha Beach	2%	2016/10/01
02-0218	Milk River	12%	2017/01/01
02-0219	Millet	16%	2019/01/01
03-0220	Milo	20%	2017/01/01
02-0224	Morinville	20%	2013/07/01
04-0230	Nakamun Park	0%	2013/10/01
02-0232	Nanton	9%	2019/01/01
02-0236	Nobleford	0%	2013/10/01
03-0233	New Norway	6%	2009/01/01
04-0237	Norglenwold	5%	2015/01/01
04-0385	Norris Beach	0%	2016/01/01
02-0238	Okotoks	20%	2021/01/01
02-0239	Olds	15%	2019/01/01
02-0240	Onoway	9.50%	2021/01/01
04-0374	Parkland Beach	0%	2015/01/01
02-0248	Penhold	19%	2014/01/01
02-0249	Picture Butte	10%	2016/01/01
02-0250	Pincher Creek	13%	2017/01/01
04-0253	Point Alison	0%	2017/01/23
04-0256	Poplar Bay	0%	2016/01/01
02-0257	Provost	20%	2015/01/01
02-0261	Raymond	12%	2016/01/01
02-0265	Redwater	5%	2020/01/01
02-0266	Rimbey	16%	2019/01/01
02-0268	Rocky Mtn House	12%	2017/01/01
03-0270	Rockyford	5%	2015/04/01
03-0272	Rosemary	14.50%	2020/01/01

MUNICIPAL FRANCHISE FEE RIDERS

Effective: the first of the month following Commission approval for consumption from the first of the month following Commission approval

Muni Code	Municipality	Rider	Effective
04-0273	Ross Haven	0%	2016/01/01
03-0276	Ryley	3%	2016/01/01
04-0279	Seba Beach	4%	2014/01/01
02-0280	Sedgewick	9%	2020/01/01
04-0283	Silver Sands	3%	2018/01/01
04-0369	South Baptiste	0%	2005/05/01
04-0288	South View	3%	2019/01/01
01-0291	Spruce Grove	20%	2016/01/01
01-0292	St. Albert	10%	2021/01/01
03-0295	Standard	0%	2015/01/01
02-0297	Stavely	6%	2021/01/01
03-0300	Stirling	12%	2019/01/01
02-0301	Stony Plain	20%	2015/01/01
09-0302	Strathcona County	0%	TBD
02-0303	Strathmore	20%	2020/07/01
03-0304	Strome	8%	2016/01/01
02-0307	Sundre	10%	2020/01/01
04-0386	Sunrise Beach	0%	2018/01/01
04-0308	Sunset Point	10%	2017/01/01
02-0310	Sylvan Lake	15%	2019/01/01
02-0311	Taber	18%	2020/07/01
02-0315	Thorsby	20%	2015/01/01
02-0318	Tofield	5%	2015/01/01
02-0321	Turner Valley	10%	2017/01/01
04-0324	Val Quentin	0%	2016/01/01
02-0326	Vauxhall	6%	2020/01/01
02-0331	Viking	8%	2013/07/01
02-0333	Vulcan	20%	2013/10/01
03-0364	Wabamun	10%	2017/01/01
02-0335	Wainwright	11%	2020/04/01
07-0159	Waterton Park	8%	2018/10/01
03-0338	Warburg	10%	2015/01/01
03-0339	Warner	5%	2021/01/01
04-0344	West Cove	0%	2018/01/01
02-0345	Westlock	12.75%	2020/01/01
01-0347	Wetaskiwin	13.80%	2020/01/01
04-0371	Whispering Hills	5%	2016/10/01
02-0350	Whitecourt	3.32%	2021/01/01
04-0354	Yellowstone	3%	2016/01/01

TOWN OF BON ACCORD

Request for Decision (RFD)

MEETING: *Regular Council Meeting*

MEETING DATE: **October 05th, 2021**

AGENDA ITEM: **Solar Farm Visit: Sturgeon County Mayor**

RECOMMENDATION:

THAT Council ….

BACKGROUND:

The Mayor of Sturgeon County, Alanna Hnatiw has expressed an interest in touring our solar farm as an "informal visit" to Bon Accord.

Administration has confirmed that Mayor Hnatiw is available on any of the following dates: Oct 6, 14, 15, or 16th, 2021.

Administration is therefore seeking confirmation of attendance by Mayor Mosychuk and/or any members of Council that may wish to attend the solar farm tour and which of the above dates to schedule the tour with Mayor Hnatiw.

FINANCIAL IMPLICATIONS: N/A

LEGAL IMPLICATIONS: N/A

LEGISLATIVE HISTORY: N/A

ALTERNATIVES: N/A

Prepared and Submitted By: Jodi Brown, CAO

Reviewed By: Jodi Brown, CAO

Date: September 30th, 2021

TOWN OF BON ACCORD

Request for Decision (RFD)

MEETING: Regular Council Meeting

MEETING DATE: October 5, 2021

AGENDA ITEM: Sturgeon County Letter – Bulk Water Station

RECOMMENDATION:
THAT Council accepts Sturgeon County's Letter regarding Bulk Water rates as information and directs administration to…

BACKGROUND:
Sturgeon County has sent a letter requesting the Town of Bon Accord reduce its bulk water rates to $3.95 per cubic meter and provide water access limitations in an equitable manner for residents across communities. The letter has been attached for Council's review.

For the 2020 budget year, Council approved an increase to the bulk water rates more in line with surrounding communities. Within the 2020 budget, the rate was set at $5.75/m3 for offline customers and $5.17/m3 for online customers (providing a 10% rate discount for customers who conducted their transaction through their online payment account). This set-up was in line with Gibbons. For the 2021 budget, the rate increased to $5.84/m3 for offline customers and $5.26/m3 for online customers, to reflect the flow-through rate from Capital Region Northeast Water Services Commission. Prior to this increase, rates were set at $3.80/m3 in 2019.
Town of Gibbons current rates are $5.82/m3 for offline customers and $5.29/m3 for online customers.
Town of Legal is $4.25/m3.
Town of Redwater is $3.95/m3 and is facilitated through Sturgeon County.

FINANCIAL IMPLICATIONS:
The current bulk water rates are $5.84m3 for offline purchases and $5.26m3 for online purchases. The 2021 bulk water budget is $160,000 and administration is projecting a final year end actual of $155,345 based on current actual consumption and forecasted consumption for the last quarter of 2021.

If Council decided to implement Sturgeon County's request and lower the bulk water rate to $3.95/m3 for all consumers for the remainder of 2021, the projected bulk water revenue would be $146,207, which is $9,138 lower than the current year end forecast.

Should Council decide to implement Sturgeon County's request for the 2022 budget, preliminary forecasted revenue would be $115,600 based on consumption values from 2021. Other factors to consider would be the potential rate increases from Capital Region Northeast Water Services Commission, which have not yet been released for the next year. The calculated cost to provide bulk water is approximately $3.98/m3 prior to reserve transfer allocations for future infrastructure repairs.

A portion of the water budget revenues is generally allocated to water reserves in a strategy to address future costs of aging infrastructure.

Consumption forecast for 2021 is approximately 29,000 m3. Average consumption from 2017 to 2019 was 34,685 m3. Consumption in 2020 when the rate increase was implemented was 31,163 m3.

LEGAL IMPLICATIONS:NA

LEGISLATIVE HISTORY:

2020-25 Water Bylaw

ALTERNATIVES:

1. THAT Council accepts Sturgeon County's letter regarding Bulk Water Rates as information and directs administration to further research the implications to the Town, and how neighboring towns are managing their bulk water stations.
2. THAT Council accepts Sturgeon County's letter regarding Bulk Water Rates as information and directs administration to review the Bulk Water Rates for the 2022 budget.
3. THAT Council accepts Sturgeon County's letter regarding Bulk Water Rates as information and directs administration to…

Prepared and Submitted By: Falon Fayant **Reviewed By:** Jodi Brown, CAO

Date: September 30, 2021

Sturgeon County

Mayor Alanna Hnatiw
Sturgeon County

Sturgeon County Centre
9613-100 Street
Morinville, AB, Canada T8R 1L9
T: 780-939-8327
E: ahnatiw@sturgeoncounty.ca

September 29, 2021

Mayor Greg Mosychuk
Town of Bon Accord
PO Box 779, 5025 – 50th Avenue
Bon Accord, AB T0A 0K0

Delivered via email: gmosychuk@bonaccord.ca

Dear Mayor Mosychuk,

The County has undertaken a review regarding water services where a large number of our residents rely on cisterns that require ongoing filling and access to potable water. For these residents, truck fill stations represent their primary source of drinking water.

Sturgeon County currently provides water through County-owned Bulk Water Stations located at Riviere Qui Barre, Villeneuve, Summerbrook, Allin Ridge, Cardiff, and Sturgeon Industrial Park. We also manage Redwater Truck Fill billing on behalf of the Town of Redwater. As you know, many County residents also access the Bulk Water Stations owned by the Towns of Bon Accord, Gibbons, and Legal.

Sturgeon County bulk water rates are $3.95/m^3, whereas Bon Accord's rates are $5.24/m^3. County residents have also experienced times of limited access due to the implementation of demand measure restrictions. Ensuring County residents have ongoing access to water at an economical rate is one of the fundamental purposes of a municipality.

Under the 'Sturgeon County and Town of Bon Accord Intermunicipal Collaboration Framework' (ICF) discussions, we agreed to work collaboratively with neighbouring municipalities to plan and deliver additional services. Subsequently, the County is formally requesting the Town:

- reduce its bulk water rates to $3.95 per cubic meter in line with rates across the region; and
- Provide water access limitations in an equitable manner for all residents across our communities.

During the County's review of water service accessed by our residents, we have identified several options, including constructing a County-owned Bulk Water Station. As we are all finalizing our 2022 budgets over the next few months, we ask that the Town respond no later than November 5, 2021.

If you have any questions, please contact me directly or have your administration contact our CAO, Reegan McCullough at: rmccullough@sturgeoncounty.ca

Sincerely,

Alanna Hnatiw
Mayor, Sturgeon County

C: Council, Sturgeon County
Reegan McCullough, Chief Administrative Officer, Sturgeon County

TOWN OF BON ACCORD

Request for Decision (RFD)

MEETING: *Regular Council Meeting*

MEETING DATE: **October 05th, 2021**

AGENDA ITEM: **Arena Engineering Inspection Report and Ice Refrigeration Engineering Study**

RECOMMENDATION:

THAT Council accept the Arena Engineering Inspection Report and the Ice Refrigeration Engineering Study as information.

BACKGROUND:

Arena Engineering Inspection Report:

During the July 06th, 2021 RCM, Council directed administration as follows:

Engineering Inspection
COUNCILLOR HOLDEN MOVED THAT Council directs administration to proceed with an engineering inspection of the arena to a maximum cost of $30,000.
CARRIED RESOLUTION 21-242

Associated Engineering completed the inspection of the Arena on August 09th, 2021.

At the August 17th RCM, Andrew Christopher and Carma Holmes of Associated Engineering attended as a delegation and provided preliminary information on the findings of the Arena inspection to Council as per the motion below:

CARMA Holmes – Associated Engineering (Arena Inspection)
DEPUTY MAYOR MAY MOVED THAT Council accept the delegation presentations as information and discussion.
CARRIED UNANIMOUSLY RESOLUTION 21-254

The Arena Engineering Inspection Report subsequently completed by Associated Engineering has been received by Administration and is enclosed for review.

The purpose of conducting this inspection was to develop a strong asset management plan for the arena to extend the life of this facility and to apply for grant funding needed to complete necessary facility upgrade projects.

This report provides detailed information on low to high and immediate priority repairs or upgrades needed that could be incorporated into capital plans. This includes identifying any immediate safety or operational issues that must be addressed.

As noted in the report, significant upgrades are needed given the age of the facility.

Administration is working with Associated Engineering to use this report to develop grant applications for federal grant funding through the Green and Inclusive Community Buildings grant program.

Additionally, Associated Engineering has advised that this grant program does allow for “stacking” of grants or in other words, allows for application to other grant programs to assist in funding the necessary upgrades.

Ice Refrigeration Engineering Study:

The previous Administration engaged 3D Energy to conduct an Ice Refrigeration Engineering Study to apply for grant funding through the Municipal Climate Change Action Centre, Clean Energy Improvement Program to replace the ice refrigeration plant at the arena. The cost of this study was approved in the 2021 capital budget for $20,000. The Town is eligible for reimbursement for this cost through the Municipal Climate Change Action Centre and Administration is working on finalizing the payment request process.

Additionally, through this grant program, Alberta municipalities may qualify for up to $750,000 to upgrade facilities with energy efficiency retrofits which includes arena ice plant replacement projects. The enclosed study has been submitted to this grant program for review to determine if the energy savings will meet the required thresholds and if the $750,000 in funding is available for the purchase and install of the new ice plant.

The ice refrigeration plant at the arena was identified in the Engineering Inspection Report (Associated Engineering as an immediate priority, the highest-level priority upgrade.

Therefore, Administration is working on final project costs for the ice refrigeration plant and approval for the $750,000 of grant funding for replacement of the ice refrigeration plant hopefully in the spring/summer of 2022.

Note, $750,000 may not be enough to fully fund the new ice plant. Hence, once project costs are finalized and the grant funding approved, Council approval will be needed to proceed with replacement of the ice plant under this grant program.

Secondly, the ice plant equipment and design, would need to align with the arena upgrades recommended by Associated Engineering if application is made to the federal the Green and Inclusive Community Buildings grant program for the remaining arena upgrades.

The outcome of the provincial Municipal Climate Change Action Centre grant program will impact our application to the federal Green and Inclusive Community Buildings grant program.

Hence, Administration will also bring additional information and recommendations forward including final project plans and costs relative to both grant applications during the 2022 budget deliberations.

FINANCIAL IMPLICATIONS: Financial costs are yet to be fully determined.

LEGAL IMPLICATIONS: N/A

LEGISLATIVE HISTORY: N/A

ALTERNATIVES: N/A

Prepared and Submitted By: Jodi Brown, CAO

Reviewed By: Jodi Brown, CAO

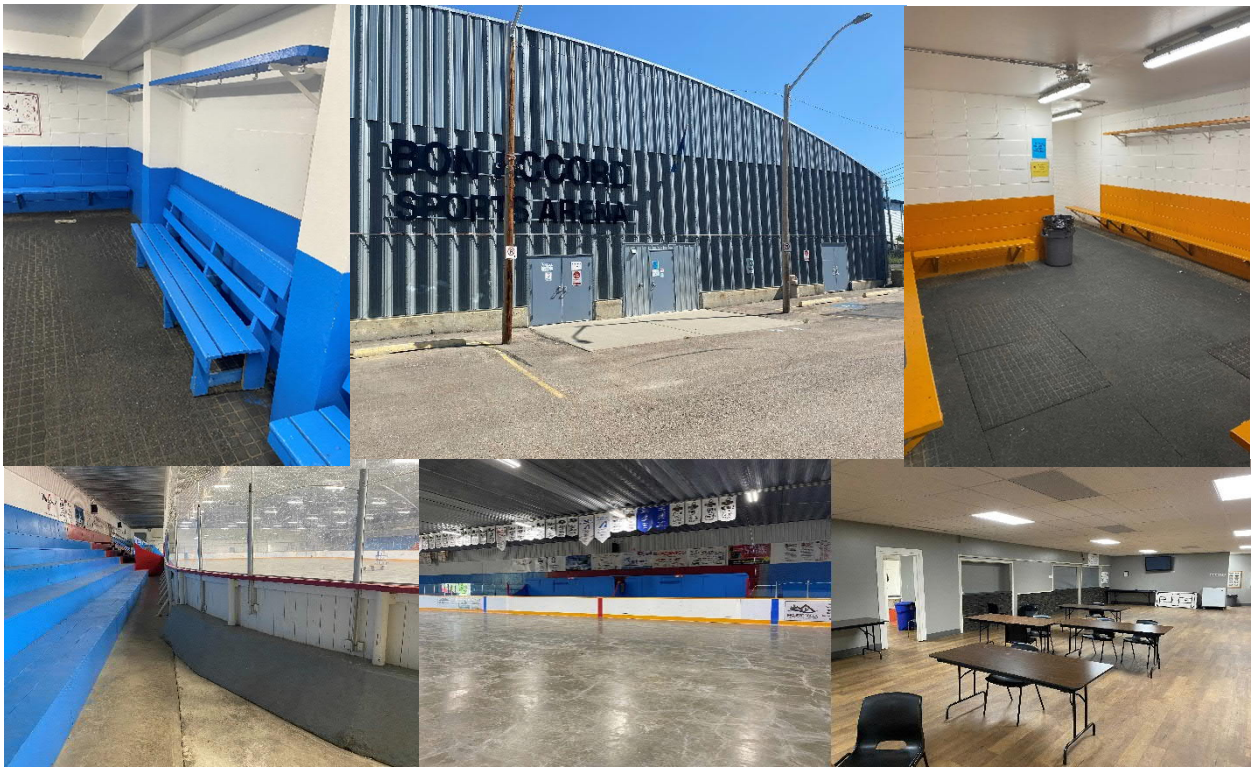
Date: September 30th, 2021.

Associated Engineering | 75 YEARS

REPORT

Town of Bon Accord

Bon Accord Sports Arena Assessment



SEPTEMBER 2021

EXECUTIVE SUMMARY

Associated Engineering Alberta Ltd. (AE) along with Solis Architecture Ltd. carried out a visual review and condition assessment of the Bon Accord Arena at 4812 52 Street in Bon Accord, Alberta on August 9, 2021. The Town of Bon Accord is considering renovating the Arena and wishes to obtain a summary of the condition of the facility and the budget required to perform the upgrades.

The objectives of this report are as follows:

- Evaluate the condition of the structural building components.
- Evaluate the condition of the electrical systems and components.
- Evaluate the condition of the building mechanical systems and components.
- Review the condition of the building envelope, windows and doors, and architectural finishes.
- Provide comments and observations regarding Alberta Building Code conformance of the observed building components including accessibility.
- Provide comments on what is required by the Alberta Building Code for upgrades and/or major renovations.
- Provide recommendations and/or requirements for additional investigation or studies.
- Compile site observations and provide a prioritized list of repairs or replacements with probable costs.

Based on the review, there are a number of recommendations the Town should undertake. The recommendations are noted and ranked in order of priority as follows:

Table ES-1
Recommendation Ranking Chart

Rank	Urgency
Immediate Priority	Considered to be a risk to the public's safety or are considered urgent for the building's integrity
High Priority	Within 1 to 5 years
Medium Priority	Within 6 to 10 years
Low Priority	Within 11 to 20 years

The summary cost presented in this report are based on a Class D cost estimate, which has an accuracy of ±30%. The Class D estimate of probable costs for addressing the deficient items is summarized in the following table and broken down by discipline and ranking priority:

Table ES-2
Recommendation Summary

Rank	Discipline				Totals
	Arch.	Struc.	Mech.	Elec.	
Immediate	$837,000	$110,000	$675,000	$13,000	**$1,635,000**
High	$947,000	$19,500	$261,000	$202,000	**$1,429,500**
Medium	$0	$40,000	$20,500	$213,000	$273,500
Low	$10,000	$18,000	$41,000	$4,000	**$73,000**
Totals	**$1,794,000**	**$187,500**	**$997,500**	**$432,000**	**$3,411,000**

The estimates exclude GST. It is recommended the Town budget Consulting Fees and Professional Services to be 12% of the cost of construction, in addition to the Class D estimates.

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1 INTRODUCTION

1.1 Background

The Bon Accord Arena is located at 4812 - 52 Street, in Bon Accord, Alberta. It was originally constructed in 1971 and has had a few minor renovations over the years. The building consists of a single ice-surface arena area, complete with bleachers, Zamboni Room, and Ice Plant Room. An attached two-story building contains a Lobby area, public washrooms, single office, and change rooms for players (four rooms) and officials (two rooms) on the Main Floor. The second storey contains a small commercial kitchen, additional washrooms, and a public seating/viewing area.

Although a major revitalization project reached conceptual design in 1990, none of the proposed renovation options were completed. The following is a list of known projects that have occurred in the building:

Date	Modification
1971	Original Bon Accord Arena was built.
2002 (estimated)	New Zamboni Room was Built
Early 2000's	Mezzanine Level Washrooms were renovated
2009	Ice plant installed. (Ice plant was in used condition and was manufactured in early 1980s)

1.2 Scope of Work

Associated Engineering Alberta Ltd. (AE) along with Solis Architecture Ltd. carried out a visual review and condition assessment of the Bon Accord Arena on August 9, 2021.

The objectives of this report are as follows:

- Evaluate the condition of the structural building components.
- Evaluate the condition of the electrical systems and components.
- Evaluate the condition of the building mechanical systems and components.
- Review the condition of the building envelope, windows and doors, and architectural finishes.
- Provide comments and observations regarding Alberta Building Code conformance of the observed building components including accessibility.
- Provide comments on what is required by the Alberta Building Code for upgrades and/or major renovations.
- Provide recommendations and/or requirements for additional investigation or studies.
- Compile site observations and provide a prioritized list of repairs or replacements with probable costs.

Site photos and field notes have been compiled into this assessment report. The report also contains conceptual estimates of probable costs for the repair of deficiencies found within the facility, along with a priority ranking. The summary cost presented in this report are based on a Class D cost estimate, which has an accuracy of ± 30%.

The recommendations are noted and ranked in order of priority as follows:

Table 1-1
Recommendation Ranking Chart

Rank	Urgency
Immediate Priority	Considered to be a risk to the public's safety or are considered urgent for the building's integrity.
High Priority	Within 1 to 5 years
Medium Priority	Within 6 to 10 years
Low Priority	Within 11 to 20 years

2 ARCHITECTURAL BUILDING ASSESSMENT

Based upon a review of the National Building Code - 2019 Alberta Edition, the building meets the requirements of 3.2.2.30 and is in conformance with the current code. Any modifications and or additions to the building will need to keep the overall square footage under 4,000m^2, so it does not change the building classification, which would require the installation of a sprinkler system. Additions to the Mezzanine would need to be kept under 10% of the total square footage.

- Review of the National Building Code - 2019 Alberta Edition
  - 3.2.2.30 Group A, Division 3, up to 2 Storeys
- **Building Area**: Maximum Allowable Area 4,000 m^2
  - Ground Floor = 2740.5 m^2
  - Mezzanine = 468.2 m^2
  - Total Building Area = 3028.7 m^2
  - Non-Sprinklered
  - Combustible and non-combustible construction
  - Roof Assembly over the rink is steel, Mezzanine floor structure wood
  - Load Bearing walls, columns are metal
- **Streets:** Facing 1 street
- **Building Height:** 1 Storey

Currently the building faces 1 street. The total square footage could be revised to 5,000m^2 or 6,000m^2 without requiring the installation of a sprinkler system if the building faces additional streets. This can be accomplished by improving site access with a road not less than 9 m wide that is dedicated for public use and is accessible to fire department vehicles and equipment.

The current site configuration and building location appears to allow for a wide range of options for improved access and building renovations. A fire access route can be added on the south and/or the north side of the building, which will provide increased flexibility for future renovations. A survey will be required to confirm the potential options.

2.1.1 Limiting Distances and Fire Ratings

No site plan or legal survey has been provided for review of limiting distances. Based upon google maps the distance from the face of the building to the center of the road on the east is 22m, far side of the parking lot on the south is 21.7m, midpoint of the parking lot on the west is 32m, and the centerline of the road access on the north is 30m. All the distances are over 12m, which is the minimum distance required for 100% unprotected openings, and thus it can be concluded that no fire ratings are required for any exterior walls.

2.1.2 Code Violations

2.1.2.1 Rated Doors

Fire rated doors have labels on the door and the frame indicating the fire rating. There are several doors that have the ratings removed from the door. It is important to note that once a label is removed, it can't be reattached by facility personnel. The assembly will have to go through the field labeling process described in NFPA 80. The ratings labels must be kept on the door and be visible.

Figure 2-1: Door into Mechanical Room – Rating Missing

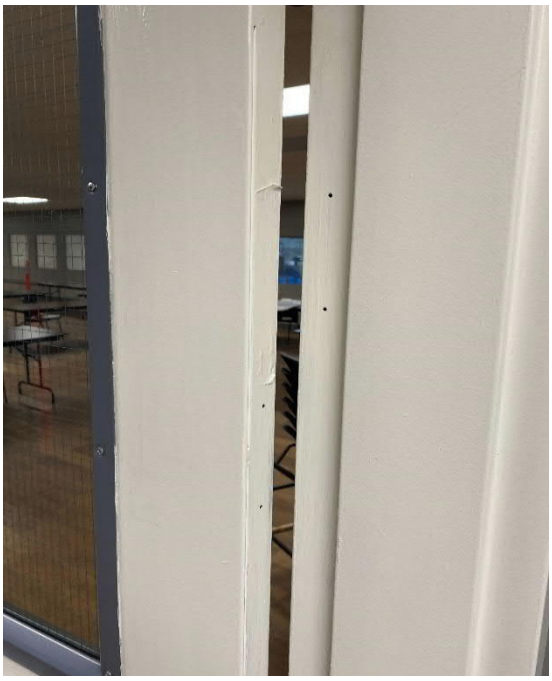

Figure 2-2: Door into Mezzanine from Elevator - Rating Missing

Figure 2-3: Door into Arena - East Side - Rating Covered

Figure 2-4: Door into Janitor's Room – Rating Covered

2.2 Other Code Related Items

2.2.1 Fire Separations

The following codes apply:

- 3.3.1.21 Janitors Room - Required to be separated from the remainder of the building by a 1hr F.R.R. There are several penetrations from the Janitor's Room into the Mechanical Room and into other rooms.
- 3.3.2.2.(3) The usable space under the tiers of seats and its supporting structure needs to be constructed as a fire separation with a fire-resistance rating not less than 45min.
- 3.6.2.1.(1) Service Rooms are required to be separated from the remainder of the building by a 1hr F.R.R.
- Electrical room has penetrations in the wall that need to be sealed with fire-rated caulking/sealant.
- The wall between the Lobby and the rink is a 2hr fire separation. Electrical conduits penetrate the wall on the south east corner adjacent to the ice plant creating a gap in the wall that needs to be filled with fire rated material.

CSA B52 – 6.4.1 Class T Machine Room – The building ice plant uses ammonia, and the room does not meet the requirements of a Class T machine room.

Recommendations

- Fire caulking required at the top of janitor's room, and service room walls.
- Replace existing bleachers with new as part of the renovation and address any fire rating required at that time.
- Patch and repair penetrations through rated wall assemblies.
- Repair hole on the south east corner of the wall between the Lobby and ice rink.
- Add fire damper at duct between the Janitor's Room and the Mechanical Room.
- Install fire ratings on doors as per NFPA 80.
- Install a new ice plant separated from the building and accessible from outside so the ice plant does not need to have costly renovations to meet the requirements of CSA B52. The existing ice plant space can be converted to storage.

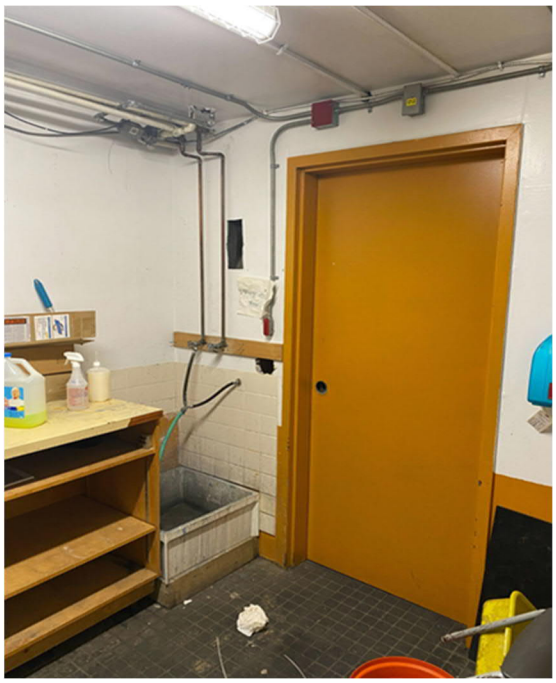

Figure 2-5: Mechanical Room Door – No Hardware
Duct Penetration in Wall – No Damper

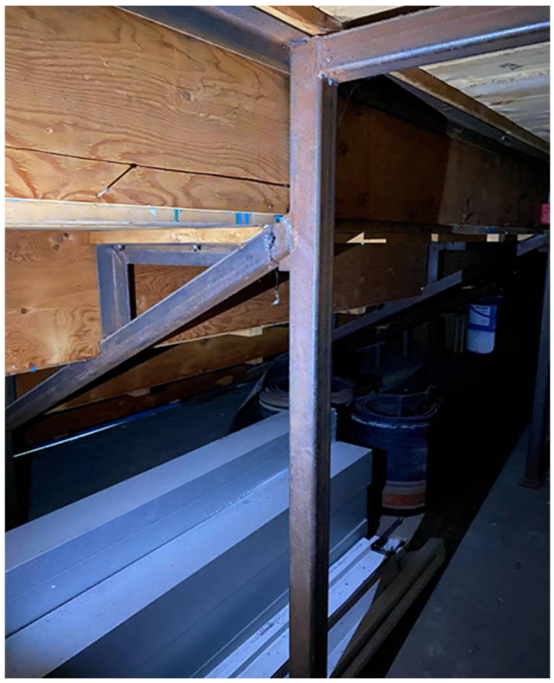

Figure 2-6: Underside of Bleachers – No Fire Rating

Figure 2-7: Wood Bleachers

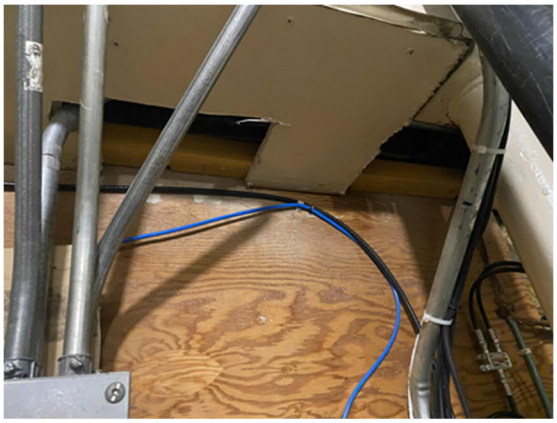

Figure 2-8: Electrical Room Penetrations

2.2.2 Accessibility

The building is barrier-free compliant with only a few deficiencies:

- Change Rooms shower stalls do not meet barrier-free compliance.
- Mezzanine level washrooms' handicapped stalls require coat hooks.

Recommendations

When renovating the building, update the washroom shower stalls to be barrier-free. This would make the building more accessible allowing for increased diversity of uses, including sledge hockey.

2.2.3 National Energy Code for Buildings (NECB)

The NECB incorporation into the ABC 2019 requires buildings to have specific building envelope thermal performance based upon its geographical location and heating degree days. The Bon Accord Arena sits within the zone 7A with heating degree days of 5000 – 5999. As a baseline, the exterior building envelope requires the walls to have an effective R-value of R-27, and the ceiling/roof to be R41. These R-values can be reduced with trade-offs or energy modeling. It also requires a vestibule at the main entry to limit the loss of heat and improve thermal comfort of a space.

Recommendations

As part of the overall building renovation create an energy model to determine the required effective R-value. Perform a deep energy building retrofit study as part of the design process to optimize the mechanical and electrical systems, in conjunction with the installation of a vestibule internal to the existing building envelope and reconfigure the handicapped access ramp at the doors.

2.3 Building Envelope/Exterior Walls

The exterior wall assembly in the Bon Accord ice rink is as follows:

- Approximately 2″-6″ blown on applied cellulose fibre.
- Ribbed corrugated metal cladding/structure.

The existing structural corrugated metal cladding is in satisfactory condition. The following deficiencies are noted:

- Sealant around penetrations is dry and cracked and need to be replaced.
- Gaskets between corrugated metal cladding are dry and exposed areas are cracking.
- Interior blown applied cellulose insulation is peeling away from the structural metal cladding.
- There is no vapour barrier present in the walls. The corrugated structural metal cladding is performing as the vapour barrier and is on the wrong side of the thermal layer.
- There is no insulation around the concrete foundation.
- Water staining visible on the west side cladding at the radiant tube heater exhausts.
- Rusting is present at the air grills into the ceiling space on the North and South facades.
- Penetrations from the unit heater in the northeast corner are not sealed properly and sunlight can be seen from the inside.

The ribbed corrugated metal cladding is mechanically fastened together with bolts and a gasket to create an airtight seal. The metal appears to be in good condition, with a typical lifespan of 100 years, the remaining lifespan of the metal cladding is approximately 50 years. The seals between the metal panels' bolted connections are at the end of their lifespan. They are hard, and segments that are exposed have become brittle. Unfortunately, replacing the seals would be a costly process because of the structural integration of the panels. The process would require deconstructing the walls section by section and replacing the seals.

The structure of the building is the corrugated metal cladding and is outbound from the insulation/thermal layer. In northern climates, it is recommended that the metal structure be inside the building envelope to keep the structure warm, thereby reducing the risk of condensation from forming on the cold surfaces leading to moisture and mold issues. This is of special concern because of the relatively high humidity found in ice rinks.

As noted in A-9.25.5.1 of the ABC it states:

> *"Any moisture for the indoor air that diffuses through the inner layers of the assembly or is carried by air leakage through those layers may be prevented from diffusing or being transferred through the assembly by a low air and vapour permeance material. This moisture transfer will usually not cause a problem if the material is located where the temperature is above the dew point of the indoor air, the water vapour will remain as vapour, the humidity level in the assembly will come to equilibrium with that of the indoor air, further accumulation of moisture will cease or stabilize at a low rate, and no harm will be done.*
>
> *But if the low air and vapour permeance material is located where the temperature is below the dew point of the air at that location, water vapour will condense and accumulate as water or ice, which will reduce the humidity level and encourage the movement of more water vapour into the assembly. If the temperature remains below the dew point for any length of time, significant moisture could accumulate. When warmer weather returns, the presence of a material with low water vapour permanence can retard drying of the accumulated moisture. Moisture that remains into warmer weather can support the growth of decay organisms" (mold)*

It is imperative that the location of the vapour barrier be considered wisely and should be on the inside face of the insulation layer to prevent vapour condensing into the wall assembly.

The inside face of corrugated structural metal cladding has blown applied cellulose fibre. The cellulose insulation is most likely original to the building. It can be seen extending behind the bleachers on the east side without any overspray onto the bleacher metal structure, which is assumed are original to the building. The blown applied cellulose fibre is pulling away from the wall at locations that are exposed. It cannot be determined if the cellulose fibre is pulling away from the wall behind the interior metal cladding but given the age of the material it is expected that the cellulose fibres behind the interior cladding are in a similar condition. Typical cellulose fiber insulation has a lifespan of 20-30 years, before it starts to degrade, which means that it is well beyond its current lifespan.

It is understood that cellulose insulation provides an R 3.7 per inch. Since the metal is corrugated the depth of the insulation varies from approximately 50mm on the high point to 150mm in the recess, providing an average of 100mm over the entire surface, and an average R-value for the exterior walls of 14.8. The NECB 2017 and the Alberta Building code requires the R-value of the walls be R-27, and the ceiling/roof to be R41 as a baseline but can be reduced with trade-offs, and/or energy modeling.

Recommendations

Due to the age of the insulation, and the integrity of the structure, the building is suitable for a deep energy retrofit as part of a major renovation that would include keeping the existing structure and applying a liquid membrane air/vapour barrier on the exterior face with semi-rigid batt insulation and thermally broken clips and new metal cladding outbound of the insulation in a standard rainscreen system.

This renovation would revise the location of the vapor barrier to inside the insulation layer aligning with current building envelope detailing and will provide a thermally superior building with less chance of moisture build-up on the inside surface of the metal which will extend the buildings lifespan.

This modification would extend up over the roof to encase the entire building envelope protecting the existing structure and improving the thermal performance and reducing air leakage through the building envelope. The exterior metal cladding would be attached via thermally broken clips to prevent any thermal bridging through the insulation.

Figure 2-9: Insulation Extending Behind Bleachers

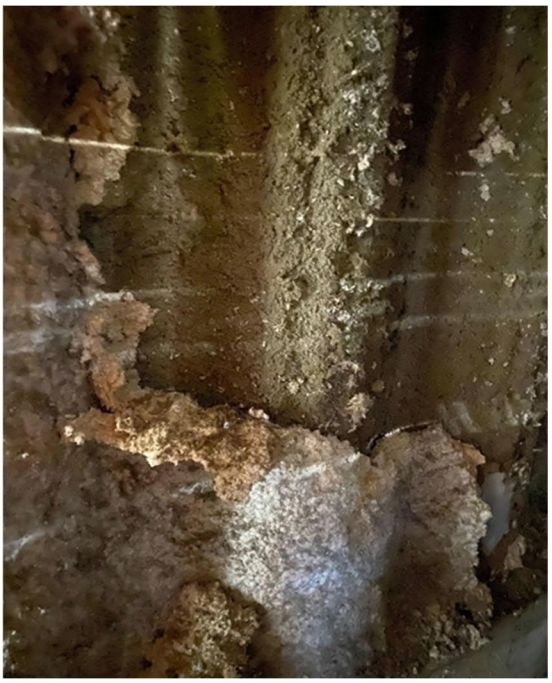

Figure 2-10: Delamination of Insulation Behind Bleachers

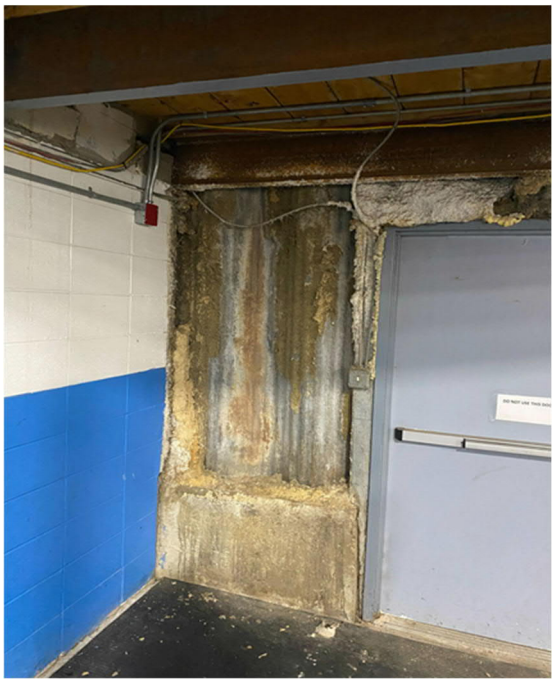

Figure 2-11: Delamination of Insulation at Door

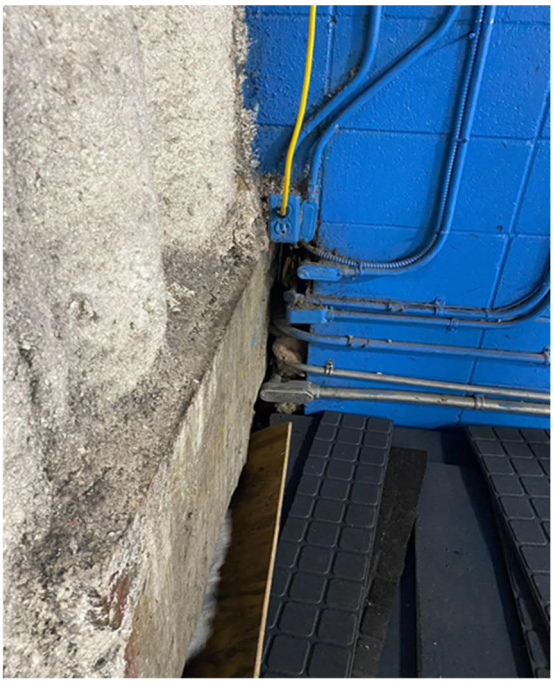

Figure 2-12: Rated Wall Penetration – Seal Penetrations

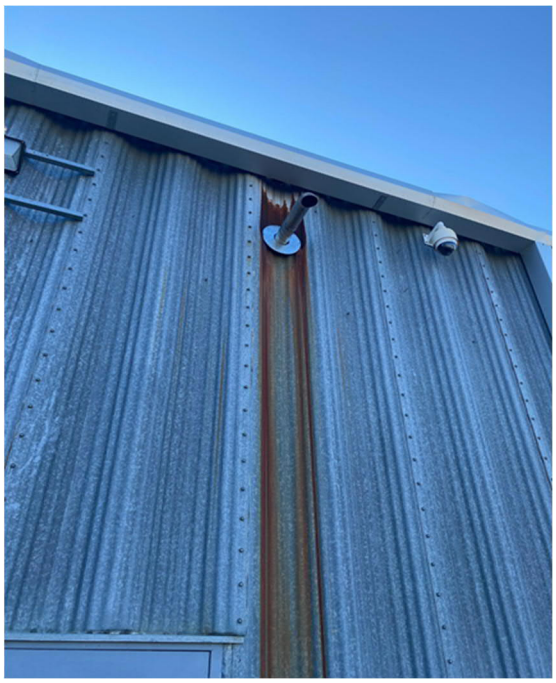

Figure 2-13: Rusting & Water Staining under the Exhaust

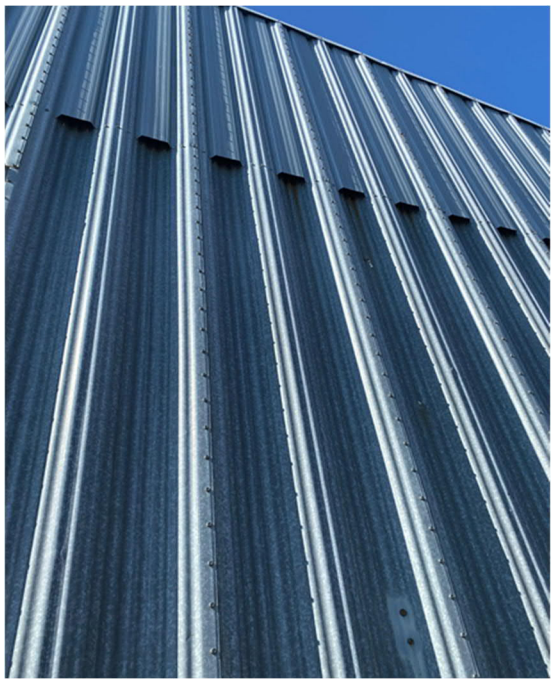

Figure 2-14: Venting Above the Ceiling/Insulation on the North Side

Figure 2-15: Caulking at Base of Metal Panel on West Facade

Figure 2-16: Sealant on South Side Air Duct

2.4 Roof

2.4.1 Corrugated Metal Curved

The existing roof consists of the following

- Corrugated metal roof matching the walls.
- Steel Structure.
- 100 mm blown cellulose insulation.
- Corrugated metal ceiling matching the walls.

The metal roof condition is acceptable with a few locations that have some rust and water staining. There is also some minor rusting at the ends of the metal roof where it connects to the gutters. Refer to Structural **Section 3.2.2 and 3.2.3** for additional information.

The gutters appear to be in good condition, but the downspouts do not extend very far beyond the face of the building. Water runoff from the roof in the winter melt causes the parking lot on the west side of the building to become icy and slippery.

The metal ceiling on the underside of the steel structure acts as a vapour barrier. Inside the vented ceiling space there is approximately 100 mm of blown cellulose insulation. The location of the insulation in the ceiling space provides a difficult transition between the inbound insulation in the walls and the outbound insulation in the ceiling space without a good vapour barrier tie in. This assembly creates a continuous thermal bridge along the edge of the corrugated metal cladding.

The metal surface under the 100 mm of insulation was dry with some rusting. Refer to Structural **Section 3.2.1.** for additional information.

Recommendations

In conjunction with the upgrades noted in the building envelope it is recommended that the insulation extend up over the roof and a new metal roof be installed over the insulation. This will provide a continuous air/vapour barrier on the warm side. The existing cellulose insulation should be removed, and the venting would be covered as it's not required with the relocation of the vapour barrier and insulation.

Figure 2-17: South Side – Rusting at the End of the Panels

2.5 Floors – Rink Slab (Cold)

The rink slab assembly is as follows:

- Ice surface
- 150 mm concrete c/w glycol cooling lines
- Vapour barrier
- 100 mm insulation
- 100 mm sand c/w glycol heating lines
- Compacted ground

The concrete rink slab appears to be in good shape; however, it is approximately 50 years old and there are a few hairline cracks starting to appear. It is currently operating beyond its life expectancy. The rink slab has the potential to fail at any time but could have upwards of 5 years left in the system depending on the condition of the ice plant.

The rink slab is filled with low density piping that over the lifespan of the building wears down. It is hard to determine the point of failure within the piping because it's all encased in the concrete slab or below where access is almost impossible without compromising the integrity of the current system. Since the rink slab has started to crack this is a sign that failure has started, and the ice surface should be replaced.

The existing piping casing is hard and brittle on the north side, and with the rebuilding of the ice plant the existing lines on the south side of the rink have been cut and new piping has been added. This makes any future modification to the rink slab harder as the existing lines have already been modified once.

The current slab has the dasher boards on the cold slab, which is optimal for the ice surface because the dasher boards and support system will expand and contract at the same rate creating ideal ice surface conditions around the perimeter of the ice rink.

A new rink slab uses HDPE piping or stainless steel depending on the mechanical system selected. A fusion welded system allows the building to operate without the need for mechanical connections and the need for trenches. This eliminates maintenance issues and risk management for accessing the trenches. The new rink slab is also more efficient and can provide energy savings over the lifespan of the project. It is estimated that the lifespan for new ice rink slabs are around 60-80years which would outlive the lifespan of the building enclosure.

Recommendations

Due to the age of the rink, and the modification already completed to extend the lifespan of the slab, a new concrete slab is recommended. It is not recommended to try to extend the lifespan of the current system as the system has already been retrofitted once and the piping is beyond its lifespan. The installation of a new slab and ice plant is the optimal time to perform a deep energy retrofit for the overall building because a new ice plant can help with the overall heating and cooling of the building with high grade heat recovery and other energy efficiencies optimizing the entire heating and cooling system for the building.

Figure 2-18: Ice Rink Tubes In Slab at North End of Rink

Figure 2-19: Ice Rink Tubes in Slab by Cracked Slab at Door

Figure 2-20: Caulking at Base of Metal Panel on West Facade

Figure 2-21: Sealant on South Side Air Duct

2.5.1 Dasher Boards

The existing dasher boards are a combination of wood and galvanized metal. The newer metal boards are in good condition, with the existing wood boards in poor condition, about one third of the existing boards have been replaced. The existing wood dasher board systems are generally hard to modify and are less forgiving in general; thus, the transition to metal boards has started.

The corners of the dasher boards have a poured concrete base, and the wood boards all have metal supports, many of which are rusting. The boards are extremely hard with almost no forgiveness in the system. This can lead to injuries especially in higher caliber hockey games.

Recommendation

It is recommended that new dasher boards be installed with the installation of a new concrete rink slab. It is not advisable to reuse the existing boards with a new slab.

Figure 2-22: Reinforcement at Corners of the Wood Boards

Figure 2-23: Wood Dasher Board System

2.6 Floors – Ice Rink (Warm Slab)

The ice rink floor assembly is as follows:

- 5” concrete slab.
- 6 mil poly vapour barrier.
- 6” compacted granular fill.
- Existing soil.

In general, the flooring in the rink is in poor condition. The following deficiencies are noted:

- Large cracks and heaving in the flooring on the east and west side of the rink.
- Cracking on the concrete floor underneath the east bleachers.
- Cracking at the base of the north double door.
- Cracking at the base of the overhead door.

Recommendations

It is recommended that the warm slab be replaced at the same time as the rink slab. This would also remove the existing bleachers, which can be replaced or reinstalled.

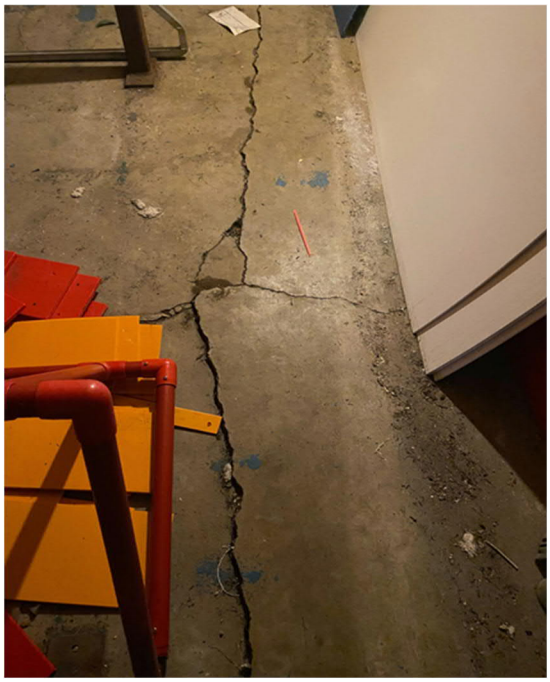

Figure 2-24: Crack in Slab on East Side of Rink under Bleachers

Figure 2-25: Crack in Slab on West Side of Rink

2.7 Doors

2.7.1 Overhead Doors

The overhead door on the ice rink was recently replaced with an insulated overhead metal door. It is in good condition.

2.7.2 Exterior Doors

In general, the exterior doors are insulated metal doors and are in poor condition, with the seals damaged or missing entirely. In many locations daylight can be seen at multiple locations around the door and is leaky causing increased pressure on the mechanical heating system.

The exterior double door on the east side of the north wall has the grade beam cracked and needs to be patched and repaired to allow the threshold to sit properly on the grade beam and prevent air leakage.

The front entry door into the stairwell has an issue with the threshold. There are no seals and the door is very close to the ground. The door will need new sweeps at the base of the door to account for its location in relationship to the threshold.

The front entry door enters directly into the Lobby area without a vestibule. Current code requires the installation of a vestibule to help reduce heat loss.

2.7.3 Interior Doors

All interior doors are painted hollow metal doors and are in good condition, except the following:

- The two sets of double doors between the rink and the 2nd Floor Mezzanine have the closures removed. They need to be replaced to meet code and for safety because the door closes quickly without them and it's a hazard for people operating the doors.
- The Main Floor Mechanical Room door is missing hardware. The hardware needs to be compliant with the rating required for the door.
- Several rated doors have the rating labels removed or painted over.

The interior door between the rink and Lobby on the Main Floor has the closer interfering with the gypsum board ceiling. The closure should be repositioned to prevent the rubbing with the ceiling.

Recommendations

- Replace the seals on all the exterior doors in the front Lobby area.
- Replace all the exterior doors in the ice rink.
- Install a vestibule at major entry and exit points within the building.
- Repair the doors and add the fire rating labels to the doors. (Refer to **Section 2.2** Code Violation.)

Figure 2-26: Door in East Side beside Bleachers

Figure 2-27: Door on West Side

2.8 Interiors

2.8.1 Interior Partitions

All interior partitions are painted concrete block walls or gypsum board. All the walls are in generally good condition, except the existing tiled walls that were painted in the Dressing Rooms as part of the washroom renovations.

2.8.2 Interior Windows

The interior windows are from 1990, with an expected life span of 30 years; the windows are at the end of their functional lifecycle. They can continue to be used because the seals still appear to be in tack, and the frame is a simple steel angle anchored to the concrete block wall.

2.8.3 Floor Finishes

The tiled skate flooring is in poor condition. There are wear marks throughout the Main Lobby, corridors, and Dressing Rooms. The flooring is losing its adhesion in places and can be pulled up. At several locations there are gaps in the flooring wide enough for skates to enter causing a tripping hazard. The skate flooring should be replaced with an upgrade to the Locker Rooms. The flooring on the Mezzanine is in good condition. The flooring in the Concession Stand should be replaced.

2.8.4 Millwork

The millwork / cabinets in the Concession Stand are old. The drawers slide well, but are well beyond the lifespan, and should be replaced with the flooring.

The counter in the Mens Washroom is starting to pull away from the wall. Solid backing should be installed and the counter remounted to the wall.

2.8.5 Ceilings

The ceilings in the Main Floor Lobby are gypsum board and generally in good condition. The ceiling in the Mezzanine is a T-bar and also in generally good condition. There are a few tiles in the Mens Washroom that have some water damage. The cause of the damage is unknown at the time of inspection. The leak should be reviewed in more detail and the ceiling tiles replaced to prevent mold from forming on the surface of the tile.

2.8.6 Washrooms

The washrooms on the Main Floor are in acceptable condition. The washrooms on the 2nd Floor are in good shape, except a hole in the gypsum board wall in the Mens Washroom that should be patched and repaired. A coat hook should be installed in the Barrier free stalls on the 2nd Floor.

2.8.7 Dressing Rooms

The Dressing Rooms need an upgrade. The benches are old, the existing tile from a previous renovation has not been removed but rather painted and skate flooring installed overtop of the tiles. A full renovation of the Dressing Rooms is recommended with upgrades to the washrooms, benches, and flooring.

2.8.8 Ice Plant Room

The Ice Plant Room does not meet the code requirements for a type T Machine Room.

Recommendations

As part of the overall renovation a portion of the budget should be allocated towards upgrading the front of the house including the Main Floor Lobby and Dressing Rooms.

- Replace existing skate flooring throughout the entire facility.
- Renovate the washrooms.
- Renovate the change rooms including removing the existing tiles.
- Replace the millwork in the Concession area.
- Replace the flooring on the 2nd Floor Concession area.
- Replace damaged ceiling tiles.
- Revise the existing ice plant to storage (refer to **Section 2.2** Code Violation).

Figure 2-28: Millwork in Concession Area

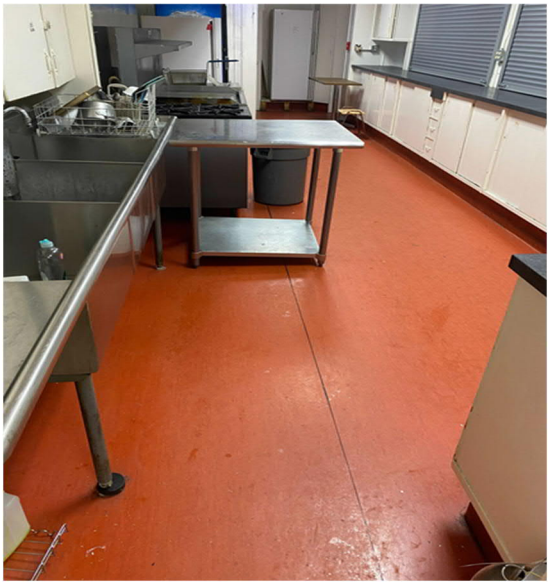

Figure 2-29: Flooring in Concession Area

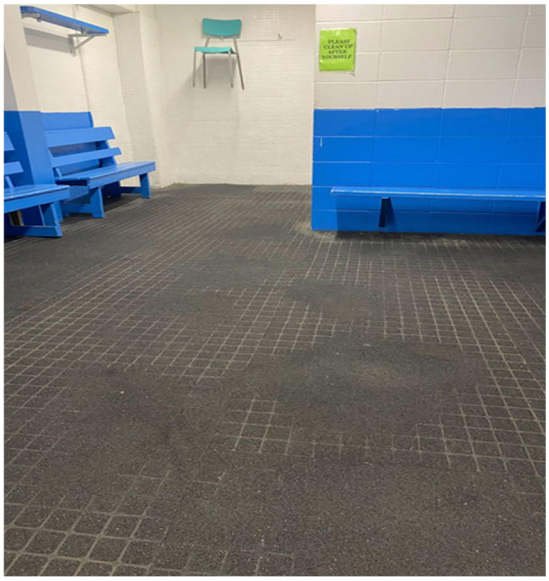

Figure 2-30: Skate Flooring & Benches

Figure 2-31: Skate Flooring Peeling Up with Gaps at the Corners

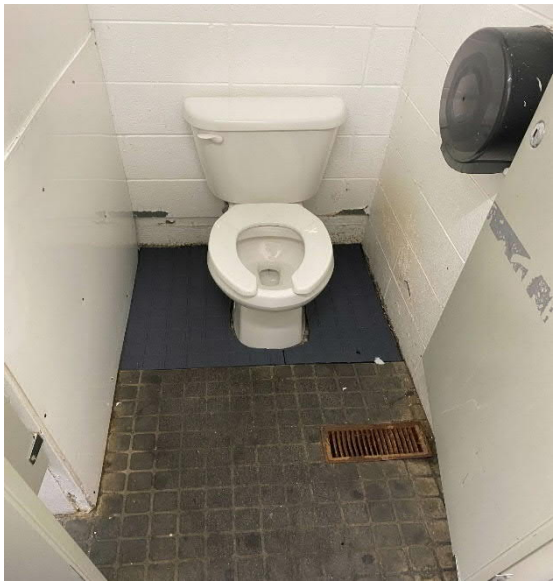

Figure 2-32: Typical Change Room Washrooms

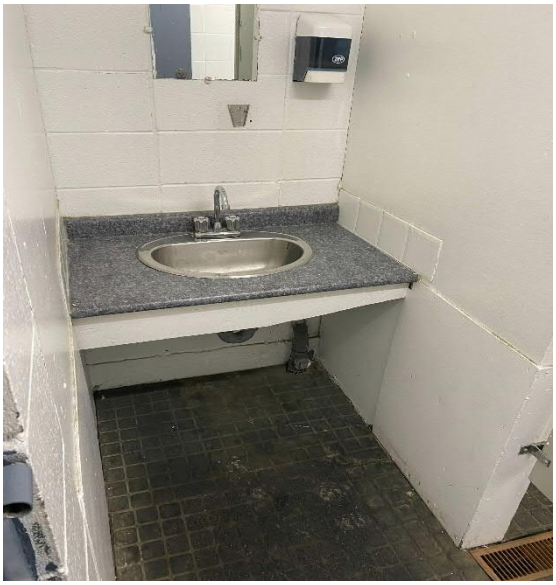

Figure 2-33: Typical Change Room Sink

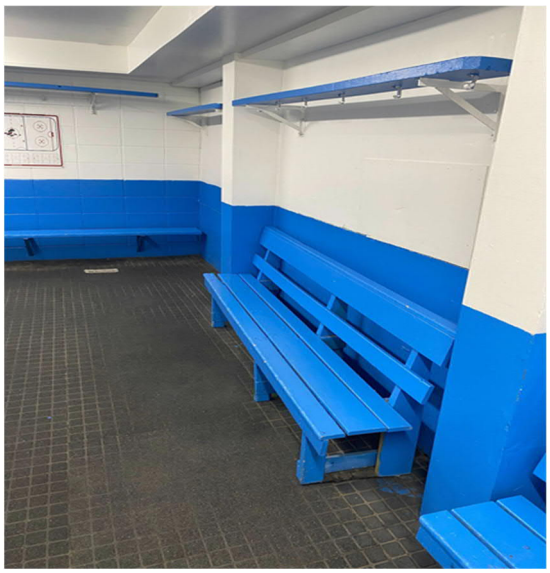

Figure 2-34: Change Room Benches

Figure 2-35: Skate Flooring over Existing Showers

2.9 Site

2.9.1 Exterior/Site

The site is in satisfactory condition. A list of deficiencies is noted below:

- Inadequate drainage on the southeast portion of the rink before the Ice plant.
- Cracked and degraded concrete slab on the north side of the building used by the Zamboni to dump snow.
- Asphalt cracking at the exterior doors.
- West side water drainage causing a slippery parking lot.

Recommendations

Revise the grading on the southeast corner by creating a swale to capture the water and take it to the ditch similar to the north east corner.

Provide a drainage corridor on the west side of the building to capture the roof run off and prevent the asphalt parking lot from becoming an outdoor skating rink and incorporate an internal gutter and heat trace, as part of the new renovation to prevent water from splashing onto the asphalt parking lot.

Figure 2-36: Drainage Issue on West Side

Figure 2-37: Revise Grading to Create a Swale on the East Side

2.10 Recommendations

Recommendations accompanied by ranking priority and an estimated probable cost related to architectural work are presented below in **Table 2-1**. The following is a Class D estimate of probable costs for the repairs or replacements. “Immediate” are considered risks to the public’s safety, “high” is within 1 to 5 years, “medium” is within the next 6 to 10 years, and “low” is within the next 11 to 20 years. Values are probable costs in 2021 dollars and are assumed to be combined with other scope items.

Items named may be eligible for Infrastructure Canada, Green and Inclusive Community Building funding.

Table 2-1
Estimated Costs for Architectural Upgrades

Disc.	Asset	Work Description	Priority	Estimated Cost
Arch.	Building	New ice surface (including demolition, excavation to 24", new refrigerated floor)	Immediate	$645,000
Arch.	Building	New Dasher Boards	Immediate	$190,000
Arch.	Interior	Add Door Closers to Interior Doors between Mezzanine & Arena	Immediate	$2,000
Arch.	Interior	Bleachers	High	$60,000
Arch.	Interior	Replace Skate Flooring	High	$30,000
Arch.	Interior	Renovate Dressing Rooms (includes benches, washrooms, showers)	High	$60,000
Arch.	Exterior	Install New Building Envelope c/w insulation and exterior metal cladding	High	$500,000
Arch.	Exterior	Install new roof as part of building envelope	High	$200,000
Arch.	Interior	Replace ULC ratings on interior doors	High	$5,000
Arch.	Interior	Renovate Main Floor washrooms	High	$10,000
Arch.	Exterior	Replace exterior doors in Arena	High	$17,500
Arch.	Exterior	Replace exterior door seals in front Lobby area	High	$1,000
Arch.	Interior	Install new Vestibule to meet NECB requirements as part of building renovation	High	$10,000
Arch.	Interior	Replace concrete slab around ice slab	High	$50,000
Arch.	Interior	Patch and repair penetrations through rated wall assemblies	High	$3,500
Arch.	Interior	Replace millwork in Concession area	Low	$10,000
		TOTAL IMMEDIATE PRIORITY		**$837,000**
		TOTAL HIGH PRIORITY		**$947,000**
		TOTAL MEDIUM PRIORITY		**$0**
		TOTAL LOW PRIORITY		**$10,000**
		TOTAL		**$1,794,000**

3 STRUCTURAL

3.1 Background

The Arena was built in 1971 and has a total floor area of approximately 3028 m^2. The building is single storey building with a 468 m^2 mezzanine. The Main Floor consists of an ice rink, ice plant, Zamboni Room, Dressing Rooms and Lobby area; the Mezzanine floor comprises of a viewing area, kitchen, and washrooms.

From visual observation the structure of the Arena is comprised of the following:

- Arched steel roof trusses supported on the curved metal corrugated deck.
- Curved metal ribbed corrugated sheathing which serves as the structural wall and building exterior.
- The corrugated sheathing bear on the concrete foundation.
- Concrete slab-on-grade in general floor areas.

In 2009, some renovations were performed, including construction of a new ice plant, Zamboni Room, and repurposing of the old ice plant space into the referee rooms.

3.2 Review

There are no record drawings of Bon Accord Arena available for review; therefore, the review was based on visual observations completed by AE, in August 2021. It cannot be determined if the foundation is concrete grade beams supported on piles or a foundation wall with strip footing.

3.2.1 Roofing System

The Arena's roof structure is comprised of steel roof trusses and corrugated metal roof deck sheathing on the top and bottom of the trusses. The metal roof sheathing and soffit are supported by purlins that are spaced approximately 2.5m apart and run in the north-south direction. The connection of the purlins to the trusses is accomplished by steel angles. The trusses are spaced at 1.2m apart and composed of steel angles. The roof trusses bear on the exterior building structural sheathing, which are supported by the foundation.

The two access hatches that were used to inspect the roof system were located approximately 5m from the north and south end of the arena boards. These hatches are 0.75m by 0.5m and are framed using light steel gauge framing.

The following deficiencies with the roof system were observed:

- Roof access is difficult to open. It is suspected that the access hatches are rusted.
- The light gauge framing steel around the hatch is rusted.
- Minor signs of rusting are present on the steel roof trusses. At the time of inspection, the ceiling cavity and the insulation were dry. In a previous report, by McNamara Project Management Ltd., in March 1990, the insulation was moist. Due to the light rusting observed, AE believes that a moisture issue is still present, but AE did not observe any moisture in the insulation. AE believes that was due to the warm summer and the non-operation of the arena over the winter that the moisture did not accumulate as it usually would.

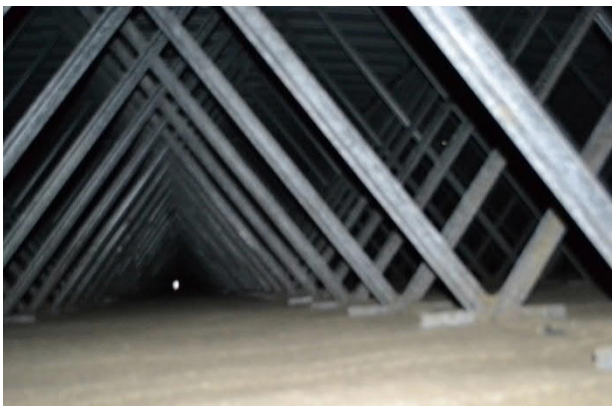

Figure 3-1: Roof Overview

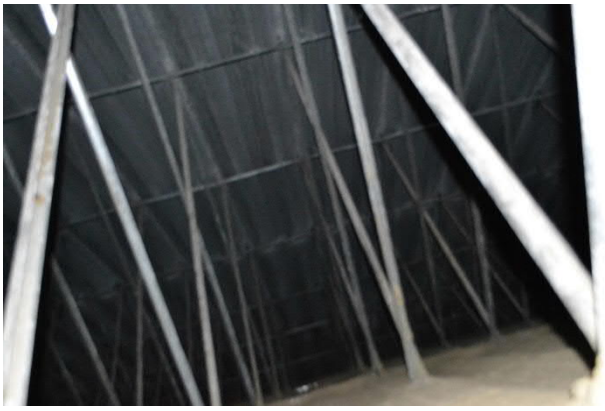

Figure 3-2: Roof Overview

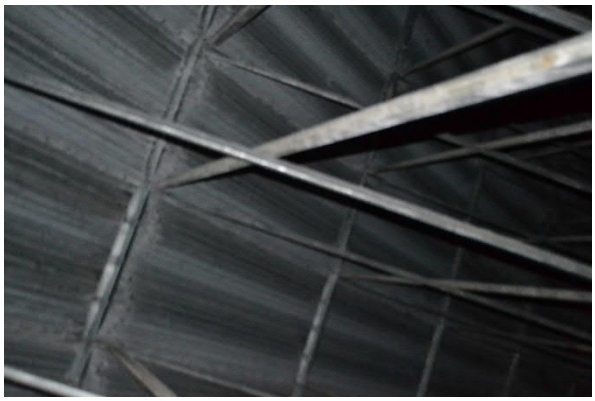

Figure 3-3: Overview Truss Connection to Ribbed Corrugated Sheathing

Figure 3-4: Connection Overview between Truss & Metal Purlin

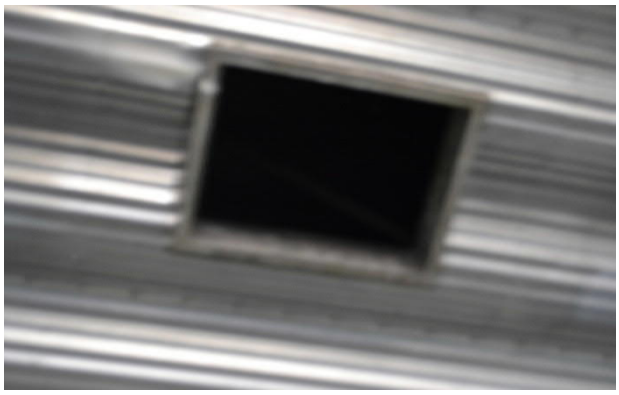

Figure 3-5: Roof Access Hatch Overview

Figure 3-6: Rusting on Roof Access Hatch Framing

3.2.2 Exterior Corrugated Roof

The roof exterior comprises of a curved ribbed corrugated metal roof which matched the building exterior. Around the perimeter of the sheathing is a metal drain gutter that is supported to the main building envelope using bolts and steel plates spaced approximately 200mm apart. The plates are 150mm long and about 6mm thick.

The following deficiencies where observed:

- Rusting on the exterior roof sheathing.
- Plates supporting the drain and ribbed sheathing together are severely rusted.
- Dirt and debris inside drains. To be cleaned.

Figure 3-7: Ribbed Corrugated Sheathing Roof Overview

Figure 3-8: Rusting on the Exterior Roof Sheathing

Figure 3-9: Dirt & Debris Inside Drains

Figure 3-10: Rusted Supporting the Drain Plates

3.2.3 Building Walls

The building walls consists of a single layer ribbed corrugated metal sheeting which serves as both structural support system and the building exterior. The sheathing is clipped together forming a lip and connected using bolts. The sheathing is connected to the concrete foundation walls.

Generally, the metal sheathing is in fair condition except for the following:

- Significant rusting at pipe penetrations on the north and south side of the building.
- Rusted corrugated sheathing between the concrete foundation under the bleachers.
- Damaged corrugated metal sheathing on the north side of the building.

Figure 3-11: Ribbed Corrugated Sheathing Overview

Figure 3-12: Rusting at Pipe Penetrations

Figure 3-13: Damaged Corrugated Sheathing

Figure 3-14: Rusted Corrugated Sheathing under Bleachers

3.2.4 Foundation Walls

There are no record drawings the foundation could either be concrete grade beams supported on piles or a foundation wall with strip footing. During the visual review, most of the foundations were not visible except for the top of the concrete foundation wall or grade beams under the bleachers and on the building exterior.

Below is a list of deficiencies observed:

- Efflorescence on foundation wall under the bleachers.
- Concrete scaling and spalling around the building foundation walls, particularly at door locations
- Shrinkage cracking around foundation wall exterior typical.
- Concrete discolouration of foundation wall exterior typical.

Figure 3-15: White Residue on Concrete Foundation Under Bleachers

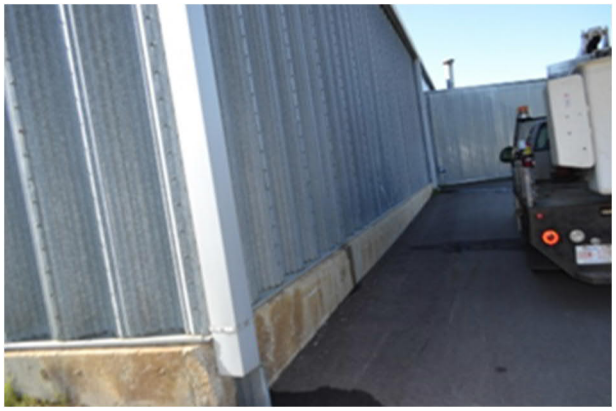

Figure 3-16: Concrete Discolouration of Foundation Wall Typical

Figure 3-17: Shrinkage Crack on Building Foundation Walls

Figure 3-18: Concrete Scaling at Door Location

3.2.5 Grade Supported Concrete Slabs

The Arena floor system is a combination of grade supported slabs. In general, the slabs can be separated into two; the Arena slab on grade and the general surrounding area slab on grade. A construction joint with caulking separates the two slabs.

According to the Town representative the rink slab is a reinforced 150mm thick slab with encased glycol lines, supported on compacted ground. There is a vapour barrier and insulation between the concrete and the compacted ground.

The following deficiencies were observed on the rink slab:

- Signs of shrinkage hairline cracking.
- Concrete slab has reached the end of its expected life span. Slab should be monitored to ensure no further significant deterioration.

According to the Town representative the slab in general areas is 150mm thick supported directly on the compacted ground. The following deficiencies were observed on general floor area slabs:

- Concrete under the bleachers is severely cracked.
- Severe cracking of slab on grade particularly under the stairs and the south east section of the building. Largest crack was approximately 2mm wide and 120mm deep.
- Severely cracked concrete slab thickening at entrance.
- Rusted grating in front of the north main entrance.

Figure 3-19: Shrinkage Cracking on Ice Arena Slab

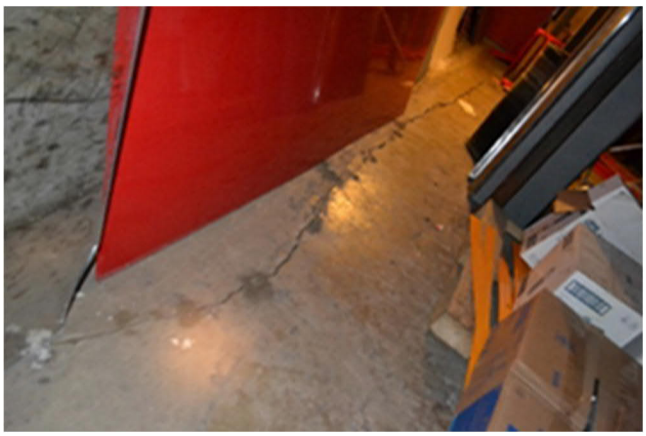

Figure 3-20: Cracked Slab under Bleachers

Figure 3-21: Cracked Slab at Storage Area at South East Corner of Arena

Figure 3-22: Cracked Slab at Storage Area at South East Corner of Arena

Figure 3-23: Slab Thickening Overview

Figure 3-24: Severely Cracked Slab Thickening at Main Entrance

Figure 3-25: Damaged Concrete

3.2.6 Dasher Board

The Arena ice slab is surrounded by dasher boards comprising of a combination of an older timber sheathing and lumber supported by steel framing as well as the newer galvanize metal and polyethylene sheeting. The old system frame is comprised of steel pipes welded onto steel plates that are anchored to the slab on grade using four anchor rods. On the south and north side corners, the supports are embedded into concrete. The corners of the dasher boards have a poured concrete base, and the wood boards all have metal supports, many of which are rusting. The newer metal boards are in good condition, with the existing wood boards in poor condition.

The following deficiencies were observed in the dasher boards:

- Painting on the older wood dasher boards is spalling off.
- Minor signs of rusting on dasher boards supports.

Figure 3-26: Dasher Boards Overview

Figure 3-27: Dasher Boards Supports Encased in Concrete

3.2.7 Bleachers

There are bleachers on the east and west side of the buildings. On each side the bleachers are split into two bays. Each bleacher is six-level stair wooden bleacher supported on steel stringers, reinforced by HSS steel posts anchored on the general slab on grade. The bleachers are in fair structural condition but have are deficient in the required fire rating, as noted in the **Section 2.2** of the Architectural Chapter.

During the review of the bleachers the following deficiencies were observed:

- Base of Bleachers post and baseplate missing anchor bolts.

Figure 3-28: Underside of Bleacher Overview

Figure 3-29: Base of Bleachers with Post & Baseplate Missing Bolts

3.2.8 Zamboni Room

The Zamboni Room is approximately 8m by 8m comprising of ribbed corrugated sheathing. The foundation was not visible during inspection; however, the foundation is likely grade beams supported on piles.

During the review of the Zamboni Room the following deficiencies were observed:

- Slab on grade is cracked. The cracks are approximately 0.7mm wide and vary in length.
- The concrete slab on grade and equipment housekeeping are discoloured.

Figure 3-30: Plant Room Overview

Figure 3-31: Cracked Plant Room Floor Slab

3.2.9 Ice Plant

The ice plant was constructed in 2009 and has an area approximately 40m^2. The roof structure comprises ribbed corrugated metal supported on corrugated matching metal sheathing; the same corrugated metal on the building exterior. The foundation is likely grade beams supported piles. The floor system is likely a concrete slab on grade.

During the review of the ice plant, the following deficiencies were observed:

- Slab on grade is cracked at the corner of equipment pad.

Figure 3-32: Ice Plant Room

3.2.10 Arena Lobby

The Lobby is part of main ribbed metal corrugated building structure. The corrugated deck is supported on the concrete block walls.

The following deficiency was observed:

- A gap between ceiling and masonry wall.
- Crack between masonry wall and concrete wall.

Figure 3-33: Crack Between Masonry Wall & Concrete Wall

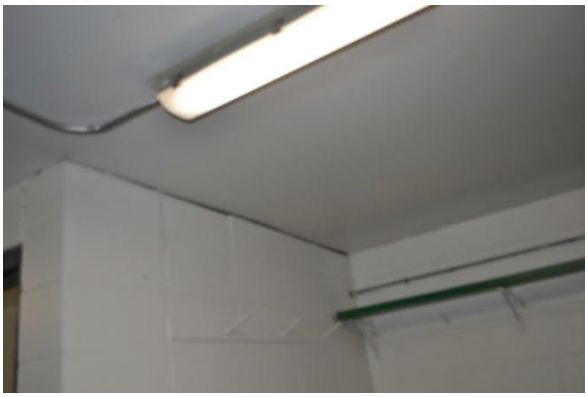

Figure 3-34: A Gap Between Ceiling & Masonry Wall

3.2.11 Exterior Concrete Pads

There are four main exterior concrete pads, 3 on the north face and 1 on the south face of the building. The exterior pads are likely to be reinforced concrete slab on grade. In general, the exterior slabs are in fair condition.

The following deficiencies were observed on the entrance concrete pads at the Arena.

- Deteriorated exterior pad is on the north side of building is severely fragmented. There is likely no reinforcement in the concrete pad.
- Generally, there is organics growing between the perimeter foundation wall and exterior slabs.

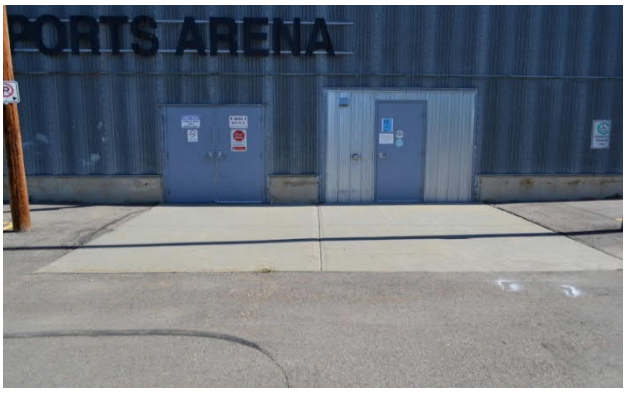

Figure 3-35: Exterior Concrete Pad

Figure 3-36: Exterior Concrete Pad

Figure 3-37: Deteriorated Exit Slab on North Side of Building

Figure 3-38: Organics Growing at Door Locations

3.2.12 Exterior Steel Structures for Mechanical Equipment

The exterior mechanical unit is supported by steel beams and columns supported on piles. The following deficiencies were observed:

- Severe rusting on base plate.
- Minor sign of rusting in the framing steel.

The steel should be wire brushed to determine the extent of the effects of the rust. If damage is significant then repairs should be undertaken.

Figure 3-39: Exterior Steel Structure Overview

Figure 3-40: Rusted Base Plate

3.2.13 Drainage

Th following deficiencies were observed:

- Deteriorated asphalt at emergency door locations at southeast parking lot as result of poor drainage. Water pools at the parking lot. During winter ice collects resulting in a very Icey parking lot. This is a safety concern.
- Damage swale with exposed rebar at the east portion of the building.

- Foundation undermining of swale grate at the west portion of building.

Figure 3-41: Parking Lot Overview

Figure 3-42: Undermined Swale

Figure 3-43: Undermined Swale

Figure 3-44: Damaged Swale

3.3 Recommendations

Recommendations accompanied by ranking priority and an estimated probable cost related to structural work are presented below in **Table 3-1**. The following is a Class D estimate of probable costs for the repairs or replacements. “Immediate” are considered risks to the public’s safety, “high” is within 1 to 5 years, “medium” is within the next 6 to 10 years, and “low” is within the next 11 to 20 years. Values are probable costs in 2021 dollars and are assumed to be combined with other scope items.

Items named may be eligible for Infrastructure Canada, Green and Inclusive Community Building funding.

Table 3-1
Estimated Probable Costs for Structural Upgrades

Disc.	Asset	Work Description	Priority	Estimated Cost
Struc.	Exterior	Mechanical wire brush to clean rust on the exterior roof sheathing & seal to avoid further deterioration & further damage to the roof	Immediate	$3,000
Struc.	Exterior	Remove & replace severely rusted plates supporting the drain & ribbed sheathing together.	Immediate	$5,000
Struc.	Exterior	Dirt & debris inside drains. To be cleaned	Immediate	$2,000
Struc.	Exterior	Parking lot grading to ensure proper drainage.	Immediate	$100,000
Struc.	Interior	Monitor rusting on roof trusses. If rusting worsens, extensive repair may be required	High	$0
Struc.	Exterior	Wire brush & seal at rusted corrugated panels at pipe penetrations.	High	$3,000
Struc.	Interior	Wire brush & seal rusted corrugated sheathing between the concrete foundation under the bleachers.	High	$2,000
Struc.	Exterior	Repair chipped out concrete on building foundation, using a high strength grout to avoid damage to the reinforcement. Reducing the effects of the freeze/thaw cycles.	High	$2,000
Struc.	Interior	Perform partial depth concrete repairs; severely damaged concrete slab on grade.	High	$10,000
Struc.	Interior	Remove & replace rusted grating.	High	$2,500
Struc.	Interior	Remove & replaces rusted roof access hatch including light gauge steel framing	Medium	$8,000
Struc.	Interior	Wire brush rusted steel roof trusses	Medium	$10,000
Struc.	Interior	Monitor white residue on foundation wall under the bleachers & ensure no further damage to the concrete.	Medium	$0
Struc.	Interior	Seal/caulk shrinkage cracks on foundation walls, ice rink slab, Zamboni, & Ice plant room.	Medium	$4,000
Struc.	Interior	Ongoing maintenance to dasher boards as required	Medium	$10,000
Struc.	Exterior	Remove & replace deteriorated/fragmented entrance pad with a reinforced concrete entrance pad.	Medium	$2,000
Struc.	Arena	Severe rusting exterior mechanical unit support structure steel should be wire brushed to determine the extent of the effects of the rust. If damage is significant, then repairs should be undertaken.	Medium	$2,000
Struc.	Exterior	Remove & replace undermined swale grates	Medium	$4,000
Struc.	Exterior	Replace damaged corrugated metal sheathing on the building envelope.	Low	$10,000
Struc.	Interior	Paint concrete wall or refinish concrete wall to address concrete discoloration.	Low	$3,500
Struc.	Foyer Area	Caulk masonry mortar joints that are de-bonded between block wall & the ceiling.	Low	$3,000
Struc.	Exterior	Remove organics growing between the perimeter foundation wall & entrance slabs. Gaps should also be sealed off.	Low	$1,500
			TOTAL IMMEDIATE PRIORITY	**$110,000**
			TOTAL HIGH PRIORITY	**$19,500**
			TOTAL MEDIUM PRIORITY	**$40,000**
			TOTAL LOW PRIORITY	**$18,000**
			TOTAL	**$187,500**

4 BUILDING MECHANICAL

4.1 Plumbing System

4.1.1 Sanitary Drainage

The building has a buried sanitary main which collects drainage from the plumbing fixtures installed in the building and connects to the municipal service on site. Most of the sanitary system could not be observed, but the exposed drain piping at plumbing fixtures was generally in acceptable condition. Based on the age of the building, the sanitary main is assumed to be cast iron, but sanitary connections to plumbing fixtures is observed to be a combination of PVC and ABS. Since the condition of the buried piping is not known, we recommended assessing the buried sanitary piping condition with a camera snake before proceeding with any major renovations involving the sanitary system.

Recommendations

- Confirm condition of buried sanitary piping via camera snake before proceeding with major renovation involving the buried sanitary system.

Figure 4-1: Typical Exposed Lavatory Drain

4.1.2 Domestic Cold Water and Domestic Water Piping

Domestic water for the building is supplied by a 40 mm water entry within the Mechanical Room in the Locker Room area on the southwest side of the building. The water meter appears to have been replaced very recently as the meter read only 22 m^3 at the time of the inspection. The water service does not appear to be protected by a backflow preventer, which is recommended by the current plumbing code.

The ice plant appears to have a separate water entry from below grade complete with a water meter for make-up water. AE recommends adding a suitable backflow preventer to the ice plant make-up water.

Copper distribution piping connecting to plumbing fixtures is used throughout the building for both hot and cold water piping. Portions of the domestic water piping appear to have been replaced where water heating equipment and devices were replaced, but some piping, including the water entry, is very old and has significant surface corrosion. Corrosion on the original hot water piping is generally in worse condition than the cold water piping.

Locations with heavy surface corrosion could develop leaks in the near future. Domestic water quality may also be degraded due to the age of the pipes. The domestic water piping is not insulated, except where run through the arena.

Some areas were noted as having water stains on the ceiling, such as the 2nd Floor washrooms. The cause should be identified, but is likely due to either pipe leaks, a leaking building envelope, or condensation forming on uninsulated domestic cold water plumbing.

Some pipes were noted as having inadequate or failed pipe supports. The pipe supports, especially where exposed in the Locker Room corridor, should be reviewed and corrected throughout the facility.

Recommendations

- Install backflow prevention to CSA B64 on the municipal water supply and make-up water for the ice plant.
- Replace the original sections of hot and cold copper plumbing piping and insulate the new piping.
- Investigate the cause of water marks on ceilings and repair plumbing piping as required.
- Replace damaged or missing pipe hangers throughout the facility.

Figure 4-2: Building Water Meter

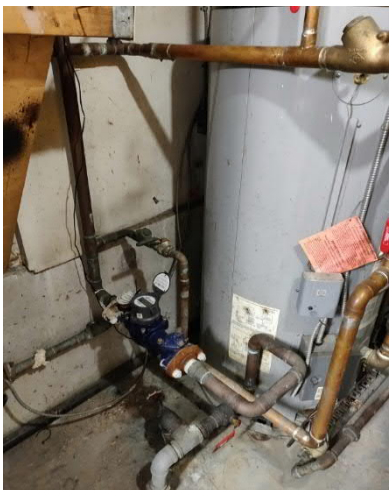

Figure 4-3: Water Entry & Domestic Cold Water Piping

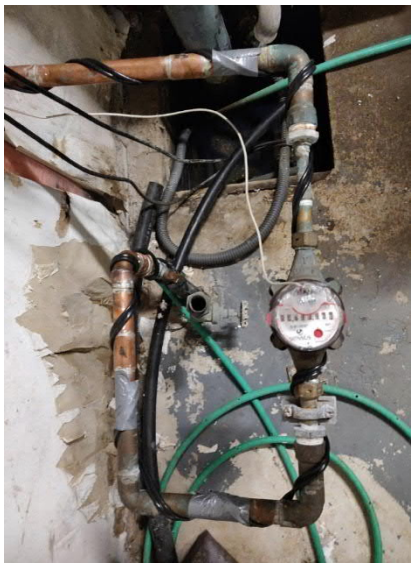

Figure 4-4: Ice Plant Water Entry & Meter

Figure 4-5: Significant Corrosion on Hot Water Piping

Figure 4-6: Ceiling Stain in 2nd Floor Washroom

Figure 4-7: Damaged & Inadequate Pipe Hangers

4.1.3 Domestic Water Heating Equipment

The Mechanical Room in the Locker Room area houses two 70 gallon atmospheric natural-gas-fired tank-style domestic water heaters and one 120 gallon water storage tank, all manufactured by State. The distribution piping from the two heaters are connected together and hot water is supplied to the upstairs kitchen area and public washrooms for the building. A thermostatic mixing valve supplies tempered water to the Locker Room showers.

A Grundfos circulation pump is installed to circulate water from the storage tank back through the heaters to prevent water from stagnating and cooling. A second Grundfos recirculation pump is installed and appears to prevent water stagnation within the distribution piping to the building. The water heaters were manufactured in 2000 and the storage tank was manufactured in 1994.

The building operator reported that complaints are occasionally made about cold showers. However, the system also used to serve the old Zamboni Room, which has since been relocated. Therefore, it is believed that the temperature complaints may be due to the mixing valve setpoint, rather than a lack of heater capacity. AE recommends having an engineer review the required heating capacity for the domestic hot water system and replace the mixing valve at the same time as the heaters.

The new Zamboni Room has a dedicated 85 gallon atmospheric natural-gas-fired domestic water heater connected to a 120 gallon hot water storage tank. A circulation pump is provided for the storage tank to prevent water from stagnating and cooling. The equipment for this hot water system was manufactured in 2003.

The expected equipment lifespan 10 years for a gas-fired water heater, 20 years for a storage tank, and 10 years for a circulator pump. Therefore, all hot water equipment is due for replacement, except for the hot water storage tank in the Zamboni Room, which has two years left before expected lifecycle replacement.

Recommendations

- Install backflow prevention to CSA B64 on the municipal water supply and make-up water for the ice plant.
- Hire an engineer to review the capacity of the domestic water heating system for the building at the next system replacement.
- Replace domestic water heaters, circulator pumps, storage tanks and mixing valve.

Figure 4-8: Water Heaters in Mechanical Room

Figure 4-9: Water Storage Tank, Mixing Valve & Circulation Pump in Mechanical Room

Figure 4-10: Domestic Hot Water Recirculation Pump in Mechanical Room

Figure 4-11: Domestic Hot Water Heater, Storage Tank & Circulation Pump in Zamboni Room

4.1.4 Plumbing Fixtures

The public-access washrooms on the Main Floor contains a mix of 4.8 Lpf and 6.0 Lpf tank-type water closets, 5.7 L/min lavatories with manual faucets, and manual lever-operated urinals in the men's washroom. Many of the lavatory drains on the Main Floor are missing their removable drain stoppers. A gooseneck faucet with lever handles is installed in the barrier-free washroom. The public access-water closets are circa 1983 and the rest of the fixtures are assumed to be of similar age. A floor drain is installed in each washroom. The fixtures in the Main Floor washrooms are dated but in generally good condition, except for the floor drains, which should be replaced.

The Locker Rooms contain similar water closets and lavatory fixtures to the main-floor public-access washrooms, with stainless steel lavatory basins in lieu of porcelain and the addition of showers. The plumbing fixtures in the Locker Room areas appear to be stained, possibly due to water quality issues. The referee room has a shower enclosure with a fixed shower head and temperature select faucet. The team Locker Rooms contain push-button showers and fixed shower heads with a flow rate of 2.5 gpm. One floor drain is installed for each group of two showers. The locker area plumbing fixtures are dated and are in poor condition (the shower in the janitor room is in good condition); therefore, they should be replaced.

The public-access washrooms on the 2nd Floor have been renovated and contain 4.8 Lpf tank-type water closets and 0.5 gpm automatic faucets with infrared sensors. The Mens Washroom contains urinals with automatic flush valves with infrared sensors. A floor drain is installed in each washroom. Lavatory battery holsters appear to have been tampered with and should be secured to prevent further damage. The 2nd Floor washroom fixtures are in good condition.

The kitchen on the 2nd Floor contains a full-flow (without aerator) three-compartment dishwashing sink and a full-flow single-compartment prep sink, both with manual faucets. Both sink faucets are dated and showing signs of surface corrosion. The kitchen fixtures are dated and should be replaced.

There are square floor-mounted mop sinks located in janitor rooms on the Mezzanine level, as well as the Main Floor Locker Room area. The Main Floor mop sink has individual hot and cold hose bibs in lieu of a faucet. It is recommended to replace the hose bibs with a janitor faucet with internal vacuum breaker. The 2nd Floor mop sink has been renovated and a wall-mounted faucet with bucket hanger and hose is installed. Both mop sink basins are dirty, and the Main Floor basin appears to be permanently stained. The 2nd Floor mop sink should be cleaned, and the Main Floor mop sink should be replaced.

It is recommended that low water consumption fixtures are used when replacing fixtures to reduce water consumption and energy demand for water heating. Fixture replacement should occur concurrently with the water heating system replacement mentioned in the previous section as the decrease in hot water demand may reduce the necessary size of the water heating equipment.

Recommendations

- Replace missing drain stoppers in Main Floor lavatories.
- Replace the following plumbing fixtures due to age and condition:
  - Main Floor Public Washrooms: Floor drains.
  - Main Floor Public Washrooms: Lavatories, water closets, urinals – low priority.
  - Locker area: Showers, lavatories, water closets and floor drains (excluding referee shower).
  - Kitchen: Sinks and faucets – low priority.
  - Main Floor Janitor Room: Mop sink and faucet (hose bibs).
- Secure battery holsters for the 2nd Floor lavatories.
- Clean the 2nd Floor mop sink basin.

Figure 4-12: Typical 6.0 LPF Water Closet

Figure 4-13: Typical Main Floor Washroom Lavatories

Figure 4-14: Mens Washroom Urinals

Figure 4-15: Typical Floor Drain on Main Floor

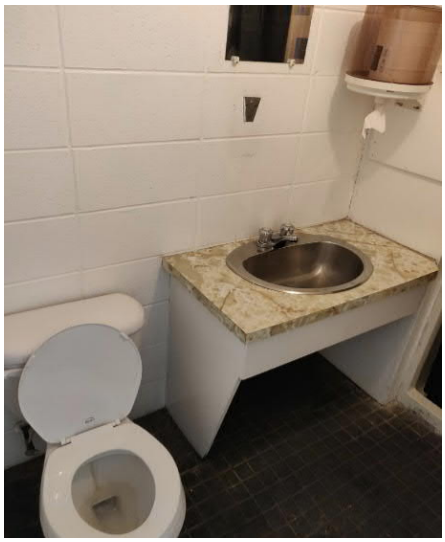

Figure 4-16: Typical Locker Room Lavatory & Water Closet

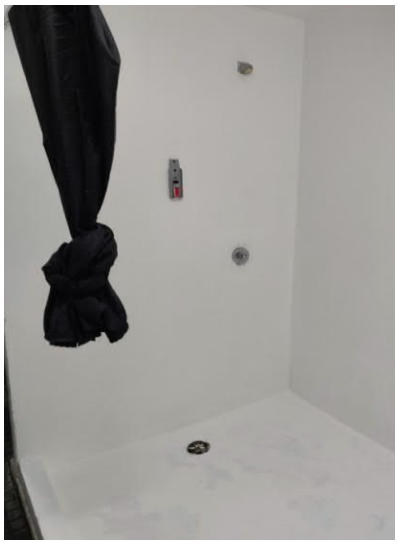

Figure 4-17: Typical Locker Room Shower

Figure 4-18: Typical 2nd Floor Water Closet

Figure 4-19: Plumbing Fixtures in 2nd Floor Mens Washroom

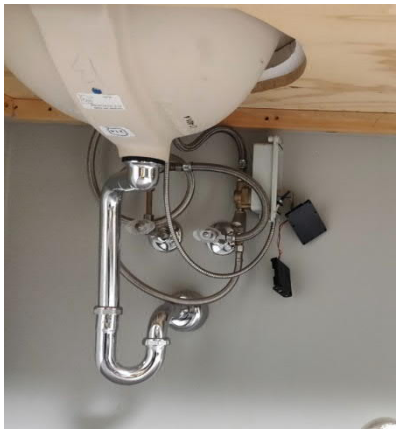

Figure 4-20: 2nd Floor Lavatory Battery Holster

Figure 4-21: Kitchen Three-Compartment Sink Faucet

Figure 4-22: Kitchen Prep Sink

Figure 4-23: Main Floor Janitor Room Mop Sink

Figure 4-24: 2nd Floor Janitor Room Mop Sink

4.1.5 Natural Gas

The natural gas service enters the Mechanical Room, where a gas meter and regulator are installed and vented to the outside. A second gas service entry with a separate meter is located in the Zamboni Room.

The gas piping within the building is steel with threaded joints and is showing some evidence of corrosion on the surface of the piping, especially within the Mechanical Room. On entrance to the Mechanical Room the first time, it was noted that the room smelled like gas. Staff present on site indicated that the room normally smells of gas, which could be evidence of a minor gas leak. It is recommended to complete a soap bubble test on the gas piping to confirm there are no leaks.

The gas distribution piping serves the furnaces and water heaters within the Mechanical Room, a furnace and water heater in the Zamboni Room, and a furnace in the ice plant equipment room. Some pipes were noted as having inadequate or failed pipe supports. The pipe supports, especially where exposed in the Locker Room corridor, should be reviewed and corrected throughout the facility.

The natural gas system requires combustion air and relief vent openings in each room for gas-fired equipment that is not directly provided with combustion air from the outdoors. We believe that the appliances in the Zamboni Room and Mechanical Room in the Locker Room area may not meet the combustion and relief venting requirements of CSA B149. Adequate ventilation of gas-fired equipment is a safety concern and is considered immediate priority.

Recommendations

- Complete soap bubble test and fix any gas piping leaks within Mechanical Room.
- Replace natural gas piping where original to the building or corroded.
- Complete an engineering review of combustion air for the Zamboni Room and Mechanical Room.

Figure 4-25: Gas Meter & Regulator in Mechanical Room

Figure 4-26: Damaged & Inadequate Pipe Hangers

4.2 HVAC System

4.2.1.1 Arena HVAC

The arena is ventilated by two centrifugal wall-mounted fans mounted on the northwest and southeast walls which exhaust air from the arena. Both fans are showing minor impact damage. Air is drawn in through two motorized louvres in the northeast wall to make up the exhausted air. Although the exact age of the fans could not be determined, the fans are believed to have about 5 years remaining in their expected life. Each fan is controlled by a switch located in the referee Locker Room. Both fans appear to be working; however, staff on site indicated that these fans are rarely used. Failing to run the exhaust fans allows carbon monoxide and sulfur oxides from the Zamboni exhaust to accumulate and poses a health hazard to arena occupants. AE recommends training staff on the importance of operating the arena exhaust fans and installing CO/NOx detectors and alarms to monitor gas levels within the arena.

We did not confirm if the fan capacity meets the vehicle exhaust requirements in the Building Code, nor if outdoor air requirements for the arena occupancy area under the ASHRAE 62 standard. AE recommends completing a ventilation study to ensure that the arena is adequately ventilated for occupant health.

Heating in the arena is accomplished with two 80% efficient 350 MBH Sterling propeller unit heaters from 1993 which are well beyond their expected lifespan of 13 years. Wall-mounted thermostats located beside each unit heater are used to control the heaters. Two 115 MBH Roberts Gordon infrared tube heaters from 2002 are provided for the spectator stands on the northwest side of the arena, which are also past their expected lifespan of 12 years. There are no tube heaters for the stands on the southeast side. The tube heaters are equipped with reflective shields to keep radiated heat away from the ice surface. The surface of the tube heater is showing some signs of corrosion, and it appears that one section has been already patched. The tube heater flue is not sealed well as light is visible through the exterior wall penetration. AE recommends replacing all heating equipment in the arena due to age and current condition.
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There are no dehumidifiers installed in the arena. Humidity and condensation within the arena could not be assessed as the ice plant was not operating. Arenas are often provided with dehumidification systems to minimize damage and wear on the building due to condensation and high humidity. A dehumidification system is recommended only if the installed ventilation is ineffective at controlling humidity levels within the building.

Recommendations

- Complete a ventilation study to determine if outdoor air rates for Zamboni ventilation and ASHRAE 62 are met.
- Complete staff training to ensure the fans are operated when the arena is scheduled to be used.
- Install CO/NOx sensors and alarms in the arena.
- Replacement of arena exhaust fans and louvre actuators in approximately 5 years.
- Replacement of arena unit heaters and infrared tube heaters.

Figure 4-27: Typical Arena Exhaust Fan

Figure 4-28: Typical Arena Motorized Louvre

Figure 4-29: Typical Arena Unit Heater & Thermostat

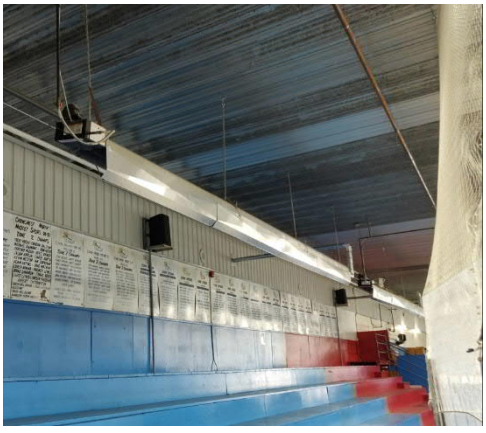


Figure 4-30: Tube Heaters for Northwest Stands

Figure 4-31: Corrosion on Tube Heater Surface

Figure 4-32: Poorly Sealed Tube Heater Flue Opening

4.2.1.2 Zamboni Room HVAC

The Zamboni Room has an exterior wall-mounted fuel compressor station and remote fill station within the Zamboni Room to provide fuel to the Zamboni. The fuelling station must meet the requirements of CSA B149, which appears to generally conform with the exception that there is no protection against vehicle impact with the fill station. AE recommends adding bollards or other protection to protect against vehicle impacts meeting CSA B149.

The Zamboni Room has a centrifugal blower at high level, which exhausts to the outdoors, apparently to meet the requirements indicated above. The fan is likely installed to ventilate Zamboni exhaust from the space. The blower appears to be recently installed and is in good condition. It was not confirmed if the ventilation rate is adequate to ventilate the Zamboni, but this should be included in the ventilation study recommended in the previous section.

The Zamboni Room is heated with an 80% efficient 135 MBH Carrier Comfort furnace from 2002, which is vented into a combined flue for the furnace and domestic nearby water heater. The furnace has some supply and return ductwork installed, but the ducts are open ended, damaged, and have no grilles or balancing devices. The furnace is currently at the end of its lifespan of 18 years and is due for replacement.

Recommendations

- Provide protection against vehicle impact for the fill station within the Zamboni Room (e.g.: bollards).
- Replacement of the furnace.
- Repair furnace ductwork and reattach missing grille(s).

Figure 4-33: Zamboni Room Exhaust Blower

Figure 4-34: Zamboni Room Furnace & Ductwork

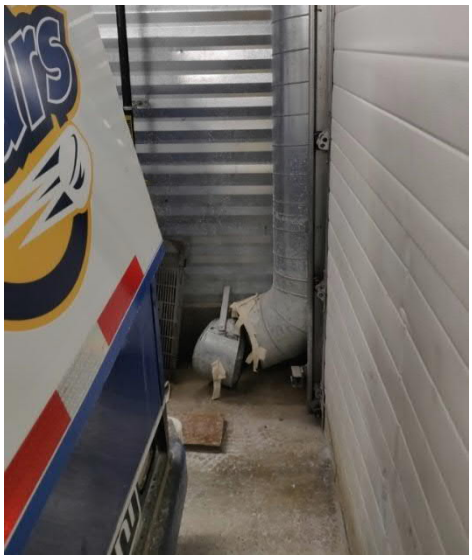


Figure 4-35: Damaged Air Terminal in Zamboni Room

Figure 4-36: Zamboni Fuelling Station

4.2.1.3 Ice Plant Room HVAC

The ice plant equipment room is equipped with a Canarm propeller wall fan from 2018, and a wall-mounted louvre on the opposing wall. The room is heated with a condensing-efficiency direct-vented Carrier Weathermaker 9200 furnace, controlled by a wall-mounted thermostat. The furnace is missing the front panel cover and is showing corrosion on the internal components. The age of the furnace is unknown, but it is dated and in poor condition.

Ammonia ice plants are classified as Class T machinery rooms and must meet the requirements of CSA B52. Although it appears that a new gas detection system, alarms, and new ventilation fan have been installed, the room still has clear deficiencies as follows.

- The installed furnace is not permitted in the room as it produces a flame.
- HVAC penetrations of the room walls must be tightly sealed. Light can be seen through the gap around the installed louvre and water marks are visible on the side of the louvre indicating that rain is entering the building through the gap. Spray foam was used to seal the pipe penetration location, but it appears that several repairs were done, possibly due to vibrations in the pipes causing deterioration of the seal.
- The ventilation fan requires a remote activation control, located outside the room
- The opener for the exterior overhead door is not located in the room, and the interior door to get to the opener does not have a proper vestibule.

Note that these requirements may no longer apply if the ice plant is replaced with a non-ammonia refrigerant.

Recommendations

Following the architectural recommendation to replace the ice plant with a new structure located outside the building, it is recommended to convert the room to unoccupied cold storage.

- Seal the gap around the wall-mounted louvre and properly sleeve pipe penetrations.

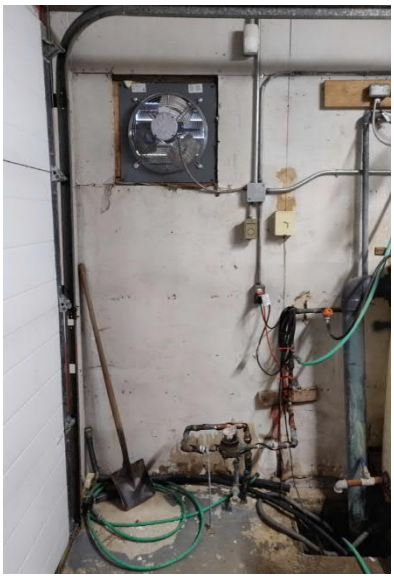


Figure 4-37: Ice Plant Room Ventilation Fan

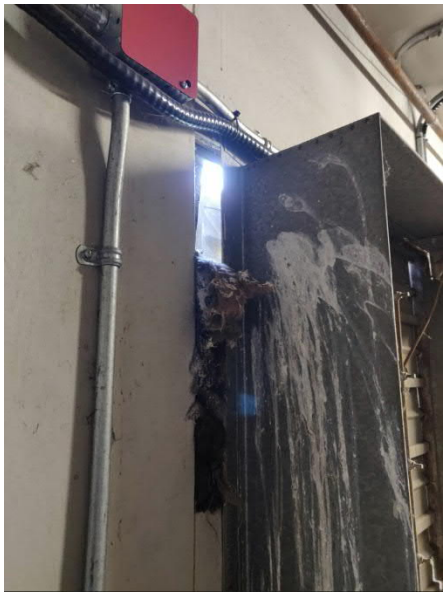


Figure 4-38: Ice Plant Room Louvre Mounting

Figure 4-39: Ice Plant Room Furnace

Figure 4-40: Ice Plant Room Pipe Penetrations

4.2.1.4 Building HVAC

Three 80% efficient Carrier furnaces from 2003 are installed in the Mechanical Room in the locker area to heat and ventilate the building. Two of the furnaces supply air into buried distribution ductwork to supply air grilles located in the floor of the Locker Rooms and public access washrooms. Overhead ducts in the Locker Room corridor return air from the Lobby and change rooms. The third furnace serves the overhead diffusers and low-level supply grilles on the 2nd Floor and draws return from the low-level return grilles in the spectator area.

Minor corrosion is present on the galvanized steel exhaust flue ductwork for the Mechanical Room. AE recommends replacing the furnaces as they are past their expected lifespan of 18 years.

The ASHRAE 62 standard governing outdoor air requirements for occupied spaces are not currently met for the building. The furnaces are controlled by remote thermostats within the zone being served, and the fans within the furnaces do not run unless there is a call for heat. Therefore, ventilation air is not provided continuously to the occupied spaces. A few spaces lack both ventilation and heat, including the workshop and Electrical Room attached to the Lobby area, the stairwell up to the 2nd Floor, and the Main Floor Janitor Room. Staff pointed out that the stairwell becomes very cold during the winter and a watermark on the ceiling tile for the stairwell points to either envelope or condensation problems in the space. Additionally, there are insufficient air balancing devices to balance outdoor airflow to each space and it is not believed that the fraction of outside air at the furnaces is high enough to achieve ASHRAE 62 outdoor air rates for the building. It is likely that most of the ductwork and furnaces will need to be replaced to meet ASHRAE 62, so it is recommended to complete the study before completing any renovation work.

Distribution ductwork for the furnace systems consists of a mix of aboveground and buried ductwork, none of which appears to be insulated. The aboveground ductwork is painted in areas exposed to moisture, such as the shower areas. Ductwork that is not painted is corroded in some areas. Return ductwork that is exposed in the change room corridor is damaged due to repeated impacts. The return duct from the janitor room is disconnected and left open-ended.

The ventilation grilles in the change room areas are nearly all showing extensive corrosion and should be replaced. Some grilles are missing entirely. Transfer air grilles in the Locker Room area are showing impact damage. Grille locations currently do not allow for optimal air mixing within the building.

Floor mounted grilles in the player areas increases the likelihood of dirt and debris entering the ductwork through the grilles. AE recommends allowing for ductwork cleaning for any ductwork being reused following renovation work.

Recommendations

- Complete a ventilation study to determine how to meet ASHRAE 62 outdoor air rates for the building.
- Replacement of the three furnaces in the Mechanical Room.
- Provide heat to the stairwell and unheated service rooms.
- Repair damaged and disconnected sections of ductwork in the Locker Room areas.
- Replace all rusted or damaged ventilation grilles.
- Clean furnace ductwork throughout building.

Figure 4-41: Furnaces Ventilating Building Areas

Figure 4-42: Combination Flue for Mechanical Room Equipment

Figure 4-43: Typical Thermostat for Heating Equipment

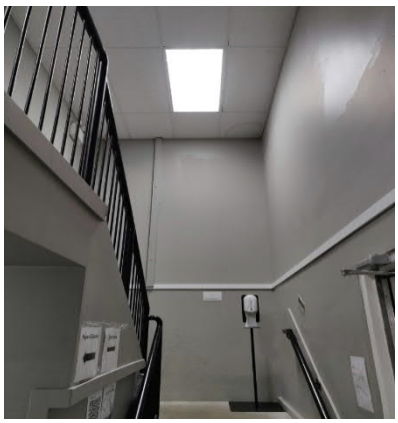


Figure 4-44: Ceiling Watermark in Stairwell

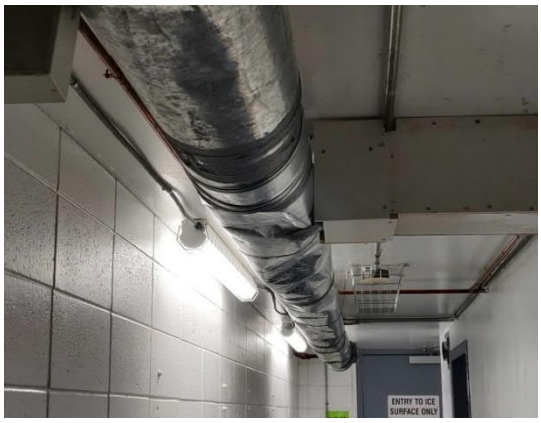


Figure 4-45: Damaged Ductwork in Locker Area Corridor & Disconnected Duct to Referee Room

Figure 4-46: Typical Corroded Supply Grille in Locker Area Shower Room

Figure 4-47: Typical Missing Ventilation Grille

4.2.1.5 Washroom and Locker Room Local Exhaust

Each public area washroom and change room area shower room has a local ceiling-mounted exhaust grille which combine into a common duct before being discharged out of the building on the northwest side by use of a wall-mounted centrifugal fan. The age of the fan was not determined as the fan nameplate is no longer legible. The exhaust fan is manually controlled by a switch in the office adjacent the Main Lobby and it is believed to be currently in

working order. The exhaust fan is showing signs of damage from falling snow and a flashing has been recently installed on the side of the building to protect the fan. The fan appears to be approximately 5 years remaining in its expected lifespan.

The exhaust air intakes on the Main Floor have accumulated dust which is clearly visible on the grille. Given the age of the ductwork, it is recommended to clean the ducts throughout the building to remove accumulated dust and debris within the ductwork. The washroom on the 2nd Floor has been recently renovated and does not show the same dust accumulation as the Main Floor grilles.

Recommendations

- Replacement of the exhaust fan in approximately 5 years.
- Clean dirty exhaust grilles and ductwork.

Figure 4-48: Locker Room Area Exhaust Fan

Figure 4-49: Typical Dust Buildup on Main Floor Exhaust Grilles

4.2.1.6 Kitchen

The kitchen has a commercial hood over the deep fryer that appears to be in relatively good condition. A switch beside the hood activates a belt-driven exhaust fan mounted on the outside of the building on the southwest wall. Although the fan does operate, it is visibly corroded and appears to be well beyond its expected lifespan. The kitchen does not have a make-up-air unit installed, so activation of the kitchen exhaust fan is assumed to draw air into the kitchen from other areas of the building. AE recommends installing a new make-up-air unit when the exhaust fan is replaced to prevent pressurization problems within the building when the hood is in use by supplying air to the kitchen.

Recommendations

- Replacement of the kitchen exhaust fan.
- Provide make-up air to the kitchen hood.

Figure 4-50: Kitchen Exhaust Hood

Figure 4-51: Kitchen Hood Exhaust Fan

4.3 Thermostatic Controls

The building does not have a central control system and makes use of individual thermostats to control heating equipment and manual switches to control fans. The typical thermostat within the building is approximately 20 years old and is digital, but non-programmable, and does not have night set-back capability. AE recommends replacing thermostats with new programmable thermostats to ensure accuracy and to allow for night setback for minor energy savings.

Recommendations

- Replace thermostats with programmable thermostats.

Figure 4-52: Exhaust Fan Control Switches for Arena Exhaust Fans

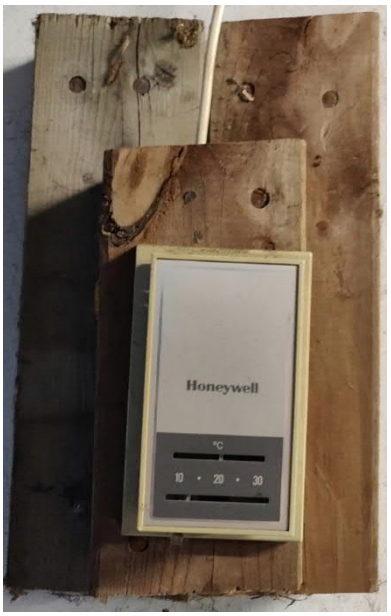


Figure 4-53: Typical Thermostat for Heating Equipment

4.4 Fire Protection

The building is not sprinklered. ABC type fire extinguishers are located at several locations throughout the building. The fire extinguishers are generally located within wall-mounted cabinets in public areas and on wall-hooks in service spaces. The fire extinguishers were observed to be charged and have inspection tags initialled within the past 12 months. A CO_2 type fire extinguisher is installed in the Electrical Room.

A fire suppression system designed to NFPA 96 is installed within the kitchen hood; however, the service date indicated on the inspection sticker has already passed (April 2020)

Fire separations are required in rooms where gas-burning equipment is installed. The Mechanical Room in the Locker Room area does not have an adequate fire separation as there are unprotected duct and pipe penetrations in the walls enclosing the room. Other rooms requiring fire separation include the Zamboni Room and Ice Plant Room. Refer to the architectural section of this report for additional comments on fire separations.

Recommendations

- Install fire dampers within dampers and fire caulking around pipes that penetrate fire rated walls.

Figure 4-54: Typical ABC Fire Extinguisher on Wall Hook

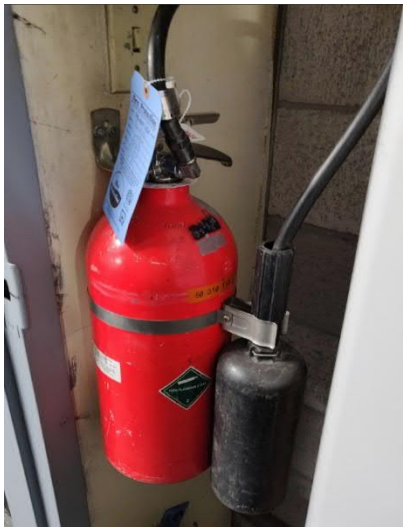


Figure 4-55: CO_2 Fire Extinguisher in Electrical Room

Figure 4-56: Fire Suppression Equipment Serving Kitchen Hood

Figure 4-57: Opening in Mechanical Room Wall Without Fire Damper

4.5 Ice Plant

The ice plant was originally installed in a different facility in the early 1980s and was moved to the Bon Accord arena in 2009. Some components of the plant have been more recently replaced, such as the chiller, which is circa 2005. Conversations with the building staff indicated that both the cooling tower and the main compressor do not function well, despite routine maintenance.
The main reciprocating compressor is original to the plant and is currently leaking oil and a bucket is placed beneath it to catch drips. Extensive corrosion is visible on piping and components carrying both ammonia and brine.

Brine piping between the ice plant and the in-slab tubing appears to have been replaced recently and are in good condition. The tubes within the slab and piping loops on the opposite end of the ice rink are steel and show surface corrosion. The steel piping loops are in contact with soil, which may be contributing to corrosion. The existing piping casing is hard and brittle on the north side, and with the rebuilding of the ice plant the existing lines on the south side of the rink have been cut and new piping has been added. This makes any future modification to the rink slab harder as the existing lines have already been modified once.

Since many components of the plant, including piping on the refrigerant side of the plant are now 40 years old and equipment is requiring increased maintenance attention, it is recommended that the ice plant be replaced in its entirety to renew the life of the plant. current integrity of the pressurized ammonia piping is unknown and may pose a safety risk due to its age. Brine tubing within the slab should be replaced soon also, but the brine tubing is a lower priority than the ammonia plant.

A gas detection system is installed in the Ice Plant Room and is wired to trigger an ammonia alarm and light on the outside of the room and shut down the ice plant. The detection system appears to be in good condition; however, its functionality was not tested as the ice plant was not in operation.

Recommendations

- Complete replacement of the ice plant including the ammonia plant skid, condensing unit, and brine system components. Recommended location of the new ice plant is in a separate enclosure outside the building (refer to architectural recommendations).
- Replacement of the in-slab tubing. (Refer to architectural section for recommendation to replace the arena slab).

Figure 4-58: Ice Plant Skid

Figure 4-59: Significant Corrosion on Unprotected Pump Casing

Figure 4-60: Heavily Corroded Piping to Outdoor Condensing Unit & Poorly Sealed Building Opening

Figure 4-61: Underside of Outdoor Condensing Unit

4.6 Recommendations

Recommendations accompanied by ranking priority and an estimated probable cost related to mechanical work are presented below in Table 4-1. The following is a Class D estimate of probable costs for the repairs or replacements. "Immediate" are considered risks to the public's safety, "high" is within 1 to 5 years, "medium" is within the next 6 to 10 years, and "low" is within the next 11 to 20 years. Values are probable costs in 2021 dollars and are assumed to be combined with other scope items.

Items named may be eligible for Infrastructure Canada, Green and Inclusive Community Building funding.

Table 4-1
Estimated Costs for Mechanical Upgrades

Disc.	Asset	Work Description	Priority	Estimated Cost
Mech.	Arena	Replace ice plant skid, condenser & associated piping. Screw compressor recommended for improved energy performance. CO_2 may be considered as an alternative to Ammonia but will require additional infrastructure to make use of waste heat recovery.	Immediate	$650,000
Mech.	Interior	Complete engineering review of combustion air for Zamboni & Mechanical Rooms. Provide combustion & relief air, as required to meet CSA B149.	Immediate	$10,000
Mech.	Foyer Area	Complete soap bubble test on natural gas piping within Mechanical Room. Fix any identified gas leaks.	Immediate	$1,500
Mech.	Arena	Convert Ice Plant Room to unoccupied storage: • Seal the gap around the Ice Plant Room louvre, fan & properly sleeve pipe penetrations. • Replace existing fan controls to be a manual switch.	Immediate	$1,500
Mech.	Interior	Provide fire dampers on duct penetrations, & fire-rated pipe sleeves & fire caulk for pipe penetrations of fire rated walls.	Immediate	$12,000
Mech.	Interior	Correct damaged or inadequate pipe hangers & supports	High	$3,000
Mech.	Foyer Area	Replace DHW storage tank in Mechanical Room due to age (1994). Check to ensure heating system is not oversized prior to replacement.	High	$3,000
Mech.	Arena	Replace DHW storage tank in Zamboni Room due to age (2003)	High	$3,000
Mech.	Arena	Replace DHW heater in Zamboni Room due to age (2003)	High	$5,000
Mech.	Foyer Area	Replace two DHW heaters in Mechanical Room due to age (2000). Check to ensure heating system is not oversized prior to replacement.	High	$10,000
Mech.	Interior	Replace plumbing fixtures with medium priority with water efficient fixtures meeting NPC consumption rates: • Main Floor public washroom: floor drains. • Locker area: floor drains, lavatories, water closets & showers, excluding referee shower. • Main Floor mop sink & faucet (hose bibs).	High	$40,000
Mech.	Foyer Area	Replace missing drain stoppers	High	$250
Mech.	Foyer Area	Clean 2nd Floor mop sink basin.	High	$250
Mech.	Foyer Area	Investigate cause of stained ceiling tiles in various locations. Repair any leaks found.	High	$5,000
Mech.	Interior	Replace natural gas piping where original to the building or corroded	High	$25,000
Mech.	Foyer Area	Replace 2@ DHW recirculation pumps due to age. (2000)	High	$2,500

Disc.	Asset	Work Description	Priority	Estimated Cost
Mech.	Interior	Replace 3@ furnaces in Mechanical Room & 1@ Zamboni Room due to age (2002 - 2004).	High	$15,000
Mech.	Arena	Install protection against Zamboni impact at fuel station	High	$3,000
Mech.	Arena	Replace Ice Plant Room furnace due to age, condition, & code violation. Replace with electric heat to meet CSA B52 Class T machine room requirements unless the ammonia ice plant has been removed from the room.	High	$5,000
Mech.	Interior	Building is under-ventilated. Complete an HVAC study to meet ASHRAE 62 & Zamboni ventilation requirements. Note: energy bills will increase due to increased outdoor air conditioning. Include heat recovery.	High	$15,000
Mech.	Arena	Install CO/NOx detectors & alarm to monitor gas levels in the arena.	High	$15,000
Mech.	Foyer Area	Provide heat from furnaces to stairwell area & service rooms without heat. Recommend completing after the ventilation study & during furnace replacement in Mechanical Room.	High	$7,500
Mech.	Foyer Area	Replace corroded / damaged grilles & diffusers.	High	$3,000
Mech.	Foyer Area	Clean ductwork throughout building	High	$7,500
Mech.	Arena	Replace arena unit heaters due to age (2002)	High	$8,000
Mech.	Mezzanine	Replace kitchen exhaust fan due to age. (pre-2000) & install a make-up-air unit to maintain kitchen pressurization	High	$20,000
Mech.	Foyer Area	Repair damaged & disconnected ductwork in Locker Room area. Repair ductwork in Zamboni Room. Recommend packaging this with AHSRAE 62 upgrades.	High	$5,000
Mech.	Arena	Replace arena tube heaters due to age (2002)	High	$10,000
Mech.	Interior	Replace original copper distribution piping & insulate new piping	High	$50,000
Mech.	Arena	Replace 2@ arena exhaust fans & louvre actuators due to age.	Medium	$12,000
Mech.	Interior	Replace furnace & unit heater thermostats due to age. Install programmable thermostats with night setback capability.	Medium	$3,500
Mech.	Foyer Area	Replace exhaust fan(s) serving Main Floor Locker Rooms/Washrooms due to age.	Medium	$5000
Mech.	Interior	Add backflow prevention to the water service entries.	Low	$4,000
Mech.	Mezzanine	Replace plumbing fixtures with low priority with water efficient fixtures meeting NPC consumption rates: • Main Floor public washroom: Lavatories, water closets & urinals. • Kitchen: sinks & faucets.	Low	$25,000
Mech.	Arena	Replace Zamboni Room exhaust fan due to age	Low	$2,000
Mech.	Interior	Observe sanitary piping condition with pipe snake before commencing with major renovations affecting sanitary system.	Low	$10,000
			TOTAL IMMEDIATE PRIORITY	$675,000
			TOTAL HIGH PRIORITY	$261,000
			TOTAL MEDIUM PRIORITY	$20,500
			TOTAL LOW PRIORITY	$41,000
			TOTAL	$997,500

5 ELECTRICAL

5.1 General

The electrical assessment included all general electrical and lighting systems for end-of-life, functionality, and general power distribution layout. In general, the existing electrical panels are dated and need to be replaced. The lighting throughout the interior of the building is presently being replaced with new LED fixtures, including emergency lighting.

The lighting in the arena rink must have mechanical protection. There is temporary lighting under the bleachers that must be replaced with permanent luminaires and permanent wiring. The fire alarm system appears to be in good working order; however, there are areas that will require additional devices to comply with National Building Code – Alberta Edition 2019.

The existing emergency generator is not operating and must be repaired.

The emergency panel feeds other loads than life safety loads, it doesn't comply with current CEC. Loads must be relocated to another normal panel or a different emergency electrical configuration must be designed.

Not all the distribution equipment is tagged, generic tags have been used for electrical equipment in this report.

5.1.1 Utility Power

The building is fed from an outdoor 3 single phase pole mounted 120V utility transformer consisting a three-phase system. The size of the transformer is not known and would need to be verified by the utility. The transformers feed an 800A rated, 120V/208V/3 phase main electrical panel with an 800A main breaker inside the Electrical Room. The utility meter is located inside the Electrical Room, upstream of the main 800A breaker.

The existing 800 A breaker is capable of a maximum 230.4 kW. The maximum demand load in the last 36 months was 127.9 kW. Based on this calculation, the available demand capacity is then 102.5 kW.

Any replacement of existing ice plant must take in consideration of available demand capacity and wiring replacement cost.

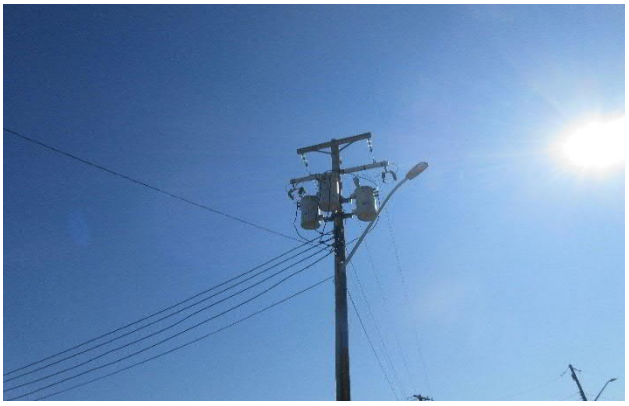


Figure 5-1: Utility Pole Mounted Transformers

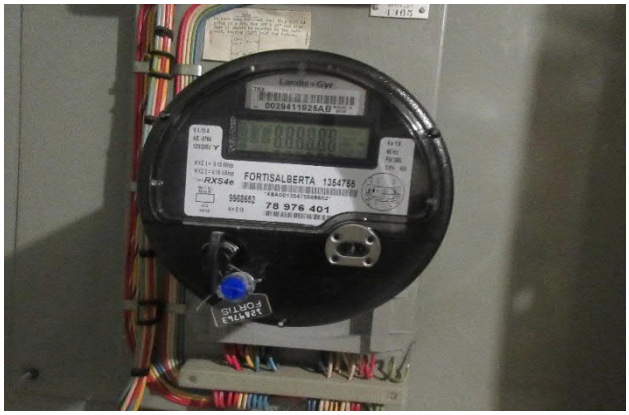


Figure 5-2: Indoor Utility Meter

5.2 120V/208V Distribution

The 120/208V distribution appears to be in working order, though they were not tested for functionality; However, they are original to the building since 1973 (48-year-old) and passed their life cycle. AE recommends replacement in the next 1-3 years.

The 120/208V distribution equipment are located in the Electrical Room.

The following is a summary list of the 120/208V (all 3 phase, 4 wire) distribution equipment:

- 800A main distribution panel with 800A main breaker, located in the Electrical Room.
- 225A Panel EMS, located in the Electrical Room.
- 200A Panel A, located in the Electrical Room.
- 200A Panel B located in the Electrical Room.
- 125A Sub-Panel C (single phase fed from Panel EMS), located in the Zamboni Room.
- A 125A panel, located in the kitchen.
- Automatic Transfer Switch (size is unknown).

Existing cabling throughout the facility was installed in conduit or concealed in walls, current condition is not known. Typical life expectancy for wiring insulation is 50-70 years. Current age is estimated to be 48+ years old. The existing cables may be useable for the next 10-20 years as long as they are sized properly as per Canadian Electrical Code. It is recommended that main cable feeds are megger tested when panels are replaced to ensure there are no issues with the existing cable insulation.

Figure 5-3: Main Distribution Panel - 800A, 120/208V, 3P, 4W

Figure 5-4: Panel EMS - 225A, 120/208V, 3P, 4W

Figure 5-5: Panel A - 200A, 120/208V, 3P, 4W

Figure 5-6: Panel B - 200A, 120/208V, 3P, 4W

5.2.1 Receptacles

Receptacles throughout the facility were not tested for functionality; however, they were observed for code compliance.

There are no receptacles in washroom near the lavatory and no receptacles near the kitchen sink.

A group of exterior receptacles is currently located at the south-west corner of the building. All receptacles are weather proof except 2 of them. As per CEC, they must be replaced with weather proof type.

Figure 5-7: Exterior Receptacle

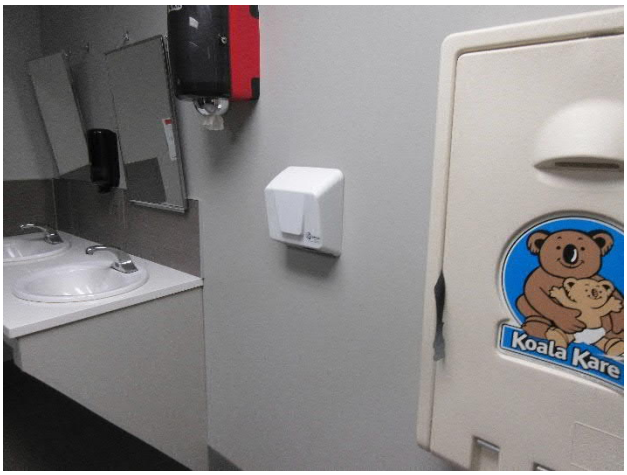


Figure 5-8: Washroom; No Receptacles

5.2.2 HVAC Power

For any rooftop HVAC equipment that need to be replaced, they will require a local disconnect as well as a 20A dedicated receptacle (GFI protected) must be located within 7.5 m of equipment located on rooftops (as per Canadian Electrical Code 26-710 requirements).

Currently, it does not appear that any of the existing HVAC have dedicated 20A receptacles nearby. If they are to be replaced, dedicated receptacles are required.

5.3 Generator

There is an emergency generator with outdoor enclosure in the south-east corner of the facility. The generator is 3 phase, 120V/208V 44kVA with 125A-3P breaker. During our visit the generator was not operational and required maintenance. AE recommends repairing the generator and maintain regular testing as required by CSA-C282 code.

The generator feeds an indoor ATS in the main Electrical Room. ATS feeds an emergency panel with life safety and non-life safety loads. AE recommends replacement of ATS and emergency panel and relocation of the non-life safety loads to the adjacent normal load panel, to comply with CEC 2019. Refer to the emergency lighting and exit signs section below.

5.4 Security System and Fire Alarm Devices

5.4.1 Security System

One DSC security keypad is installed in the main door vestibule, it monitors the main door with a door positioning switch and the vestibule with one infrared motion sensor. No other doors nor areas have any security intrusion devices. The security system is 8 years old. AE recommends replacement in the next 5-7 years.

A CCTV security camera system is installed in the facility with a total of 8 cameras installed throughout. the cameras are connected to the main CCTV control station located in the Electrical Room. The CCTV system is 20 years old. AE recommends replacement in the next 1-3 years.

Building security is not a Code requirement; therefore, this is up to the client if it should be extended to cover other areas.

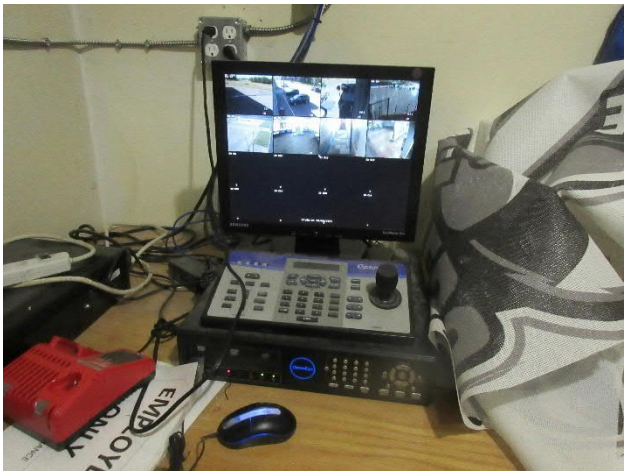


Figure 5-9: CCTV Security System

Figure 5-10: CCTV Camera

Figure 5-11: Security Keypad

Figure 5-12: Security Door Position Switch

5.4.2 Fire Alarm System

The building is not protected with sprinklers. The building has 2 addressable fire alarm control panels (FACP), manufactured by Simplex, Grinnell 4100 ES models. One is located in the Electrical Room and functions as an annunciator panel, and the other is located in the main vestibule and functions as the main control panel. Both panels were replaced in 2015 and the pull stations were replaced in 2018. The fire alarm control panel is monitored by a monitoring company called AMPTEC.

Smoke detectors, heat detectors, combination horn/strobes appear to be installed as per Code throughout the facility. Pull stations were observed to be located near exit doors from the facility. The Space underneath East and west bleachers in the arena are provided with fire alarm smoke detectors with protective guard and horn/strobes combinations. The recent fire alarm annual test and inspection report was completed on November 20, 2020. There were two listed deficiencies that the owner stated they have corrected since that date.

The following deficiency was observed on site:

- Lobbies at the front of elevator in Main Floor must have smoke detector.
- Exit from Main Floor elevator Lobby must have a fire alarm pull station.

National Building Code 2019 Alberta Edition section 2.2.3.3 (2) states that “unless deemed by the authority having jurisdiction to be a minor alteration to an existing system, all plans and specifications produced for a fire alarm system… shall be imprinted with the stamp or seal of a registered engineering professional.” Fire alarm drawings do not currently exist for the building; however, it is not known if the authority having jurisdiction (AHJ) considered the fire alarm replacement a minor alteration to an existing system. The Town should contact the AHJ to determine if the building should have fire alarm drawings created.

AE recommends fire alarm drawings be created for the building.

Figure 5-13: Main Fire Alarm Control Panel in Electrical Room

Figure 5-14: Main Fire Alarm Control Panel in Main Vestibule

Figure 5-15: Typical Pull Station by Each Exit

Figure 5-16: Typical Fire Alarm Horn/Strobe

5.5 Lighting

5.5.1 Exterior Lighting

As the site was visited during the day, all exterior lights were off and unable to be confirmed if in working order. 3 of the wall packs were replaced 3 years ago with an LED fixture and 3 existing fixtures are HID. AE recommends replacement of the HID light fixtures with LED light fixtures for energy savings in the next life cycle replacement, within the next 2-5 years.

Two pole mounted lights at the main entrance south are LED, the other 5 pole mounted lights are HID, all exterior fixtures have a built-in photocell. AE recommends replacement of the HID lights with LED lights for energy savings in the next life cycle replacement within the next 2-5 years.

Figure 5-17: Typical LED Exterior Lighting

Figure 5-18: Typical HID Lighting Standard

5.5.2 Interior Lighting

The interior lights were recently replaced in 2018 with LED fixtures throughout. Local line voltage lighting switches are original to the building. We observed one occupancy motion sensor in the kitchen entrance.

Luminaires in Dressing Rooms have polycarbonate lens and are rated for a damp environment. Luminaires in arena rink were replaced 3 years ago with linear LED without mechanical protection. AE recommends installing protective guards immediately.

Lighting in service rooms are A19 bulb screw type with no protective guards, they are prone to mechanical damage. AE recommends immediately installing protective guards or replace fixtures with linear luminaire with polycarbonate lenses.

Lighting under east and west bleachers are temporary, AE recommends installation of new permanent LED with mechanical protection with permanent wiring immediately.

Luminaires in Ice Plant Room are linear T8. AE recommends replacement with polycarbonate lens LED.

Figure 5-19: Concession Lighting

Figure 5-20: Arena Lighting

Figure 5-21: Dressing Room Lighting

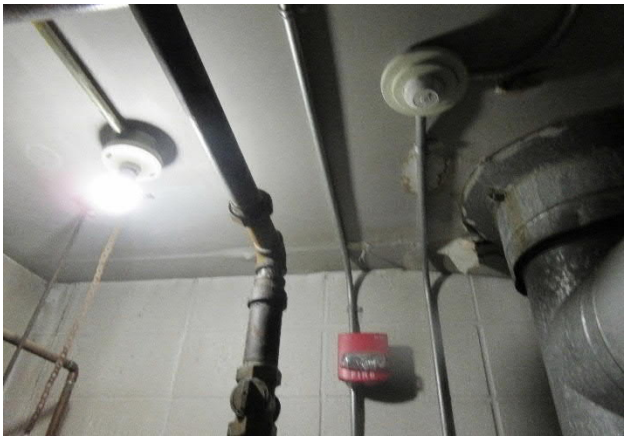


Figure 5-22: Room Lighting

5.5.3 Emergency Lighting and Exit Signs

Emergency lighting is installed throughout the building. AE did not test the emergency lighting levels throughout the facility; however, it appears all main egress paths are lit as per National Building Code-2019 Alberta Edition Section 3.2.7.3 “Emergency Lighting”. Most of the emergency lights are fed from the emergency electrical panel, while some emergency lights are battery combo or battery/exit sign combo. AE recommends modification of emergency panel loads to carry only fire alarm panel, emergency and exit lights or to connect all emergency lights to a battery backup system with sensing zones.

Currently all exit signs are older style “exit” signs. All the exit signs are original to the building where most of them are still operational, but some are broken or defective. The original exit signs are dimly lit, which does not meet building code requirements. it is recommended all original exit signs are replaced. AE recommends replacement with the updated green “running man” (pictogram) style signs as required per National Building Code-2019 Alberta Edition Section 3.4.5.

Figure 5-23: Rusty Exit Sign

Figure 5-24: Broken Exit Sign

5.6 Recommendations

Recommendations accompanied by ranking priority and an estimated probable cost related to electrical work are presented below in Table 5-1. The following is a Class D estimate of probable costs for the repairs or replacements. "Immediate" are considered risks to the public's safety, "high" is within 1 to 5 years, "medium" is within the next 6 to 10 years, and "low" is within the next 11 to 20 years. Values are probable costs in 2021 dollars and are assumed to be combined with other scope items.

Table 5-1
Estimated Costs for Electrical Upgrades

Disc.	Asset	Work Description	Priority	Estimated Cost
Elec.	Interior	Install smoke detector & pull station in stairwell. Verification required.	Immediate	$13,000
Elec.	Whole Facility	Replace the main electrical panels: 800A, 120/208V.	High	$65,000
Elec.	Whole Facility	Replace the four electrical panels: 200A, 120/208V.	High	$59,000
Elec.	Whole Facility	Replace ATS & relocate non-life safety loads.	High	$13,000
Elec.	Arena	Install protective guards for luminaire in the Ice Rink.	High	$13,000
Elec.	Whole Facility	Replace EXIT lighting throughout the facility.	High	$13,000
Elec.	Whole Facility	Create stamped fire alarm drawings (confirm with AHJ if required).	High	$13,000
Elec.	Whole Facility	Modify Emergency loads & add Zone Sensing Panels.	High	$26,000
Elec.	Ice Plant	Replace wiring & service for new ice Plant equipment.	Medium	$20,000
Elec.	Whole Facility	Replace combo battery/emergency lights.	Medium	$8,000
Elec.	Whole Facility	Replace & provide wiring for 12 mechanical equipment.	Medium	$65,000
Elec.	Whole Facility	Replace & extend CCTV system.	Medium	$65,000
Elec.	Whole Facility	Replace & extend Security Intrusion System.	Medium	$35,000
Elec.	Exterior	Replace 3 Wall pack light to LED.	Medium	$8,000
Elec.	Exterior	Replace 3 Lighting on pole with LED.	Medium	$12,000
Elec.	Whole Facility	Miscellaneous electrical switches & receptacles.	Low	$4,000
			TOTAL IMMEDIATE PRIORITY	$13,000
			TOTAL HIGH PRIORITY	$202,000
			TOTAL MEDIUM PRIORITY	$213,000
			TOTAL LOW PRIORITY	$4,000
			TOTAL	$432,000

6 SUMMARY OF RECOMMENDATIONS

A summary of the prioritized recommendations and probable costs is presented below. “Immediate” are considered risks to the public’s safety, “high” is within 1 to 5 years, “medium” is within the next 6 to 10 years, and “low” is within the next 11 to 20 years. Values are Class D probable costs (plus or minus 30%) in 2021 dollars and are assumed to be combined with other scope items.

The estimates exclude GST. It is recommended the Town budget Consulting Fees and Professional Services to be 12% of the cost of construction, in addition to the Class D estimates.

Table 6-1
Summary of Probable Cost Estimates

Disc.	Asset	Work Description	Priority	Probable Cost Estimate
Arch.	Building	New ice surface (including demolition, excavation to 24", new refrigerated floor).	Immediate	$645,000
Arch.	Building	New dasher boards.	Immediate	$190,000
Arch.	Interior	Add door closers to interior doors between Mezzanine & Arena.	Immediate	$2,000
Elec.	Interior	Install smoke detector & pull station in stairwell. Verification required.	Immediate	$13,000
Mech.	Arena	Replace ice plant skid, condenser, & associated piping. Screw compressor recommended for improved energy performance. CO_2 may be considered as an alternative to Ammonia but would require additional infrastructure to make use of waste heat recovery.	Immediate	$650,000
Mech.	Arena	Convert Ice Plant Room to unoccupied storage: • Seal the gap around the Ice Plant Room louvre, fan & properly sleeve pipe penetrations. • Replace existing fan controls to be a manual switch.	Immediate	$1,500
Mech.	Foyer Area	Complete soap bubble test on natural gas piping within Mechanical Room. Fix any identified gas leaks.	Immediate	$1,500
Mech.	Interior	Complete engineering review of combustion air for Zamboni Room & Mechanical Room. Provide combustion & relief air as required to mee CSA B149.	Immediate	$10,000
Mech.	Interior	Provide fire dampers on duct penetrations, & fire-rated pipe sleeves & fire caulk for pipe penetrations of fire rated walls.	Immediate	$12,000
Struc.	Exterior	Mechanical Wire brush to clean rust on the exterior roof sheathing & seal to avoid further deterioration & further damage to the roof.	Immediate	$3,000
Struc.	Exterior	Remove & replace severely rusted plates supporting the drain & ribbed sheathing together.	Immediate	$5,000
Struc.	Exterior	Dirt & debris inside drains to be cleaned out.	Immediate	$2,000
Struc.	Exterior	Parking lot grading to ensure proper drainage.	Immediate	$100,000
Arch.	Exterior	Install new building envelope c/w insulation & exterior metal cladding.	High	$500,000
Arch.	Exterior	Install new roof as part of building envelope.	High	$200,000
Arch.	Exterior	Replace exterior doors in Arena.	High	$17,500

Disc.	Asset	Work Description	Priority	Probable Cost Estimate
Arch.	Exterior	Replace exterior door seals in front Lobby area.	High	$1,000
Arch.	Interior	Replace bleachers.	High	$60,000
Arch.	Interior	Replace skate flooring.	High	$30,000
Arch.	Interior	Renovate Dressing Rooms (includes benches, washrooms, showers).	High	$60,000
Arch.	Interior	Replace ULC ratings on interior doors.	High	$5,000
Arch.	Interior	Renovate Main Floor washrooms.	High	$10,000
Arch.	Interior	Install new Vestibule to meet NECB requirements, as part of building renovation.	High	$10,000
Arch.	Interior	Replace concrete slab around ice slab.	High	$50,000
Arch.	Interior	Patch & repair penetrations through rated wall assemblies.	High	$3,500
Elec.	Arena	Install protective guards for luminaire in Ice Rink.	High	$13,000
Elec.	Whole Facility	Replace main electrical panels 800A, 120/208V.	High	$65,000
Elec.	Whole Facility	Replace 4 electrical panel 200A, 120/208V.	High	$59,000
Elec.	Whole Facility	Replace ATS & relocate non-life safety loads.	High	$13,000
Elec.	Whole Facility	Replace EXIT lighting throughout the facility.	High	$13,000
Elec.	Whole Facility	Create stamped fire alarm drawings (confirm with AHJ if required).	High	$13,000
Elec.	Whole Facility	Modify Emergency loads & add Zone Sensing Panels.	High	$26,000
Mech.	Arena	Replace DHW storage tank in Zamboni Room due to age (2003).	High	$3,000
Mech.	Arena	Replace DHW heater in Zamboni Room due to age (2003).	High	$5,000
Mech.	Arena	Install protection against Zamboni impact at fuel station.	High	$3,000
Mech.	Arena	Replace Ice Plant Room furnace due to age, condition, & code violation. Replace with electric heat to meet CSA B52 Class T Machine Room requirements unless the ammonia ice plant has been removed from the room.	High	$5,000
Mech.	Arena	Install CO/NOx detectors & alarm to monitor gas levels in the arena.	High	$15,000
Mech.	Arena	Replace arena unit heaters due to age (2002).	High	$8,000
Mech.	Arena	Replace arena tube heaters due to age (2002).	High	$10,000
Mech.	Foyer Area	Replace DHW storage tank in Mechanical Room due to age (1994). Check to ensure heating system is not oversized prior to replacement.	High	$3,000
Mech.	Foyer Area	Replace two DHW heaters in Mechanical Room due to age (2000). Check to ensure heating system is not oversized prior to replacement.	High	$10,000

Disc.	Asset	Work Description	Priority	Probable Cost Estimate
Mech.	Foyer Area	Replace missing drain stoppers.	High	$250
Mech.	Foyer Area	Clean 2nd Floor mop sink basin.	High	$250
Mech.	Foyer Area	Investigate cause of stained ceiling tiles in various locations. Repair any leaks found.	High	$5,000
Mech.	Foyer Area	Replace 2@ DHW recirculation pumps due to age (2000).	High	$2,500
Mech.	Foyer Area	Provide heat from furnaces to stairwell area & service rooms without heat. Recommend completing after the ventilation study & during furnace replacement in Mechanical Room.	High	$7,500
Mech.	Foyer Area	Replace corroded / damaged grilles & diffusers.	High	$3,000
Mech.	Foyer Area	Clean ductwork throughout building.	High	$7,500
Mech.	Foyer Area	Repair damaged & disconnected ductwork in Locker Room area. Repair ductwork in Zamboni Room. Recommend packaging this with AHSRAE 62 upgrades.	High	$5,000
Mech.	Interior	Correct damaged or inadequate pipe hangers & supports.	High	$3,000
Mech.	Interior	Replace plumbing fixtures with medium priority with water efficient fixtures meeting NPC consumption rates: • Main Floor public washroom: Floor drains. • Locker Area: Floor drains, lavatories, water closets & showers excluding referee shower. • Main Floor mop sink & faucet (hose bibs).	High	$40,000
Mech.	Interior	Replace natural gas piping where original to the building or corroded.	High	$25,000
Mech.	Interior	Replace 3@ furnaces in Mechanical Room & 1@ Zamboni Room due to age (2002-2004).	High	$15,000
Mech.	Interior	Building is under-ventilated. Complete an HVAC Study to meet ASHRAE 62 & Zamboni ventilation requirements. Note: Energy bills will increase due to increased outdoor air conditioning. Include heat recovery.	High	$15,000
Mech.	Interior	Replace original copper distribution piping & insulate new piping.	High	$50,000
Mech.	Mezzanine	Replace kitchen exhaust fan due to age. (pre-2000) & install a make-up-air unit to maintain kitchen pressurization.	High	$20,000
Struc.	Exterior	Wire brush & seal at rusted corrugated panels at pipe penetrations.	High	$3,000
Struc.	Exterior	Repair chipped out concrete on building foundation using a high strength grout to avoid damage to the reinforcement. Reducing the effects if the freeze thaw cycles.	High	$2,000
Struc.	Interior	Monitor rusting on roof trusses. If rusting worsens extensive repair may be required.	High	$0
Struc.	Interior	Wire brush & seal rusted corrugated sheathing between the concrete foundation under the bleachers.	High	$2,000
Struc.	Interior	Perform partial depth concrete repairs severely damages concrete slab on grade.	High	$10,000
Struc.	Interior	Remove & replace rusted grating.	High	$2,500
Elec.	Exterior	Replace 3 Wall pack light to LED.	Medium	$8,000

Disc.	Asset	Work Description	Priority	Probable Cost Estimate
Elec.	Exterior	Replace 3 Lighting on pole with LED.	Medium	$12,000
Elec.	Ice Plant	Replace wiring & service for new ice Plant equipment.	Medium	$20,000
Elec.	Whole Facility	Replace combo battery/emergency lights.	Medium	$8,000
Elec.	Whole Facility	Replace & provide wiring for 12 mechanical equipment.	Medium	$65,000
Elec.	Whole Facility	Replace & extend CCTV system.	Medium	$65,000
Elec.	Whole Facility	Replace & extend Security Intrusion System.	Medium	$35,000
Mech.	Arena	Replace 2@ arena exhaust fans & louvre actuators due to age.	Medium	$12,000
Mech.	Foyer Area	Replace exhaust fan(s) serving Main Floor Locker Rooms/ Washrooms due to age.	Medium	$5,000
Mech.	Interior	Replace furnace & unit heater thermostats due to age. Install programmable thermostats with night setback capability.	Medium	$3,500
Struc.	Arena	The severely rusted exterior mechanical unit support structure steel should be wire brushed to determine the extent of the effects of the rust. If damage is significant, then repairs should be undertaken.	Medium	$2,000
Struc.	Exterior	Remove & replace deteriorated/fragmented entrance pad with a reinforced concrete entrance pad.	Medium	$2,000
Struc.	Exterior	Remove & replace undermined swale grates.	Medium	$4,000
Struc.	Interior	Remove & replaces rusted roof access hatch including light gauge steel framing.	Medium	$8,000
Struc.	Interior	Wire brush rusted steel roof trusses.	Medium	$10,000
Struc.	Interior	Monitor white residue on foundation wall under the bleachers & ensure no further damage to the concrete.	Medium	$0
Struc.	Interior	Seal/caulk shrinkage cracks on foundation walls, ice rink slab, Zamboni, & Ice plant room.	Medium	$4,000
Struc.	Interior	Ongoing maintenance to dasher boards, as required.	Medium	$10,000
Arch.	Interior	Replace millwork in Concession area.	Low	$10,000
Elec.	Whole Facility	Miscellaneous electrical switches & receptacles.	Low	$4,000
Mech.	Arena	Replace Zamboni Room exhaust fan due to age.	Low	$2,000
Mech.	Interior	Add backflow prevention to the water service entries.	Low	$4,000
Mech.	Interior	Observe sanitary piping condition with pipe snake before commencing with major renovations affecting sanitary system.	Low	$10,000
Mech.	Mezzanine	Replace plumbing fixtures with low priority with water efficient fixtures meeting NPC consumption rates: • Main Floor public washroom: Lavatories, water closets & urinals. • Kitchen: sinks & faucets.	Low	$25,000

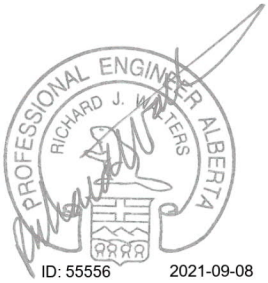
Disc.	Asset	Work Description	Priority	Probable Cost Estimate
Struc.	Exterior	Replace damaged corrugated metal sheathing on the building envelope.	Low	$10,000
Struc.	Exterior	Remove organics growing between the perimeter foundation wall & entrance slabs. Gaps should also be sealed off.	Low	$1,500
Struc.	Foyer Area	Caulk masonry mortar joints that are de-bonded between block wall & the ceiling.	Low	$3,000
Struc.	Interior	Paint concrete wall or refinish concrete wall to address concrete discoloration.	Low	$3,500
			TOTAL IMMEDIATE PRIORITY	$1,635,000
			TOTAL HIGH PRIORITY	$1,429,500
			TOTAL MEDIUM PRIORITY	$273,500
			TOTAL LOW PRIORITY	$73,000
			TOTAL	$3,411,000

CLOSURE

This report was prepared for the Town of Bon Accord to provide recommendations for repairs and modernization of the Bon Accord Arena.

The services provided by Associated Engineering Alberta Ltd. and Solis Architecture Ltd. in the preparation of this report were conducted in a manner consistent with the level of skill ordinarily exercised by members of the profession currently practicing under similar conditions. No other warranty expressed or implied is made.

Respectfully submitted,
Associated Engineering Alberta Ltd.



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Engineering Study

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Executive Summary

The energy analysis determined that the Bon Accord Arena has a weather normalized annual energy consumption of **2,336 GJ/year**, and associated greenhouse gas emissions of **247** tonnes of carbon dioxide equivalent (**tCO_2e**) per year. The current operating schedule of the Bon Accord arena is from Aug 15th to April 1st and the town plans to increase it to from Aug 1st to June 1st. This will increase the annual energy consumption to **2,834 GJ/Yr** and the associated greenhouse gas emissions to **294** tonnes of carbon dioxide equivalent (**tCO_2e**) per year. Table 1 displays the energy and financial performance of the refrigeration system upgrade.

Table 1: Energy and Financial Performance

Measure	Capital Cost ($)	Energy Savings (kWh)	Cost Savings ($/yr.)	Simple Payback (yrs.)	Net Present Value ($)	Annual GHG Reduction (tCO_2e)	GHG Abatement Rate ($/tCO2e)
Refrigeration skid package including; Ammonia Reciprocating MYCOM 80 Ton Compressor + VFD, Pumps + VFD, Control Package and Adiabatic Condenser	651,600	169,092	$11,385	57	$178,600	108	241

The replacement of the existing ice plant system with a new Ammonia reciprocating system with adiabatic condenser, VFDs and control system is recommended for implementation and produces favorable financial results.

This measure results in a net present value of **$178,600** and is estimated to cost **$651,600**. The simple payback is high at 57 years, however, with available rebates the measure can payback within 12 years and produce a net present value of $694,220.

The measure with reduce energy consumption by **169,092 kWh** (609 GJ) and reduce carbon dioxide equivalent emissions by over **108** tonnes CO_2e per year.

The detailed equipment specifications can be found in the attached detailed quote documents.

01 | Background

1.1 Teams and Qualifications

Client Details		
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Analysis and Report		
Mike Krokis		P. Eng., CEM, EP
Revision	**Date**	**Description**
0	August 23, 2021	Issued for Client Use

1.2 Methodology and Scope

The Engineering Study will include a walkthrough of the facility, brief interviews with facility personnel, utility bills analysis and benchmarking, and a brief review of facility equipment lists and nameplate data. The goal is to conduct financial and environmental analyses on the identified measure (ECM). The report will include cost estimates for the recommended projects, energy and emission reduction calculations as well as simple paybacks and life cycle costing. life cycle costing and greenhouse gas emissions reductions are targeted to be within +/- 15% accuracy relative to the available information at the time of report generation. This is achieved by defining the project scope through discussions with the client and sub contractor, obtaining quotes as well as estimates on the equipment schedule and performance. Any change in project scope or utility rates will affect the financial and environmental results.

1.3 Limitations

This report was prepared by 3D Energy Ltd for the above-listed client. It is based on available data, visual observation, and interviews with the client and site representatives. 3D Energy does not accept responsibility for any incorrect or inaccurate information presented by the three sources. All assumptions on conditions, performance, and costs are made solely to estimate the viability of the ECMs. Confirmation shall be made by the implementing party based on actual designs, conditions, and costs. The client shall indemnify and hold 3D Energy harmless from all claims by third parties arising from or relating to the use of this report in any manner whatsoever

02 | Facility Characteristics

Figure 1: Bon Accord Arena

Located in the Town of Bon Accord, the Arena was constructed between 1972-75. It has a total floor area of 3,183 m², with no windows and a total door area of 82 m^2. Most of the building consists of an ice rink and spectator seating, with an ice plant room and a Zamboni room coming off the east and west sides. At the south end of the building there is a lobby, washrooms, and dressing rooms on the main floor, with a mezzanine level containing a commercial kitchen, a large seating area, and washrooms.

3D Energy performed a walkthrough of the facility on May 5th, 2020 with a refrigeration contractor to discuss site specific solutions to the refrigeration system. Photographs were taken of the refrigeration system and multiple options for upgrades to improve the operation and efficiency of the system were proposed.

The town of Bon Accord plans to increase the operating schedule of the arena to maximize utilization and available ice time for the community. The Bon Accord Arena does not have a heat floor installed to prevent frost heaving. It is therefore not recommended to operate the facility year round unless a heat floor is installed. Heat floor installation is outside the scope of this report. It is however recommended not to operate the arena over 10 months per year to prevent any frost heaving from occurring. The surface should still be monitored for frost heave and corrective measure taken immediately if any heaving is observed.

2.1 Space Types and Occupancy Schedule

The main facility space types and occupancy schedules are described in Table 2 below.

Table 2: Space Types and Occupancy

Space Type	Hours per Week	Average People per Week	Operational Months	Operational Months
Historic Arena Schedule	74	2,000	Aug 15 - April 1st	8
Proposed Arena Schedule	74	2,000	Aug 1st - June 1st	10

2.2 HVAC and Mechanical Equipment Inventory

2.2.1 Heating and Cooling Equipment

The following types of heating and cooling equipment are present in the facility:

- Natural gas indirect fired forced-air convective furnaces (F), which mix return air with fresh outdoor air, then filter, condition, and supply the heated air to the lobby, dressing room, mezzanine, Zamboni, and ice plant spaces.
- Ceiling-mounted natural gas radiant tube heaters (RTH), which provide heat for the spectator areas of the rink.
- Ceiling-mounted natural gas unit heaters (UH) tied to air intake louvers.
- Natural gas storage type domestic hot water heaters (DHW).

2.2.2 Seasonal Efficiency

Seasonal Efficiency represents the actual efficiency of heating and cooling equipment over an entire year. The efficiency of heating and cooling equipment degrades over time and can be calculated from the age of the equipment and a maintenance factor, M. The current Seasonal Efficiency is calculated using the following equation.[i]

$$EF_{current} = EF_{origianl} \times (1 - M)^{Age}$$

Table 3: HVAC Equipment Inventory

Tag	Equipment Description	Zone	Capacity		Age	Condition
			Heating	Cooling		
			(kW)	(kW)	(yrs.)	
DHW-1	Natural Gas Storage DHW Heater	Dressing Room	95	-	20	Average
DHW-2	Natural Gas Storage Water Heater	Dressing Room	95	-	21	Average
DHW-3	Natural Gas Storage Water Heater	Zamboni Room	132	-	18	Average
UH-1	Natural Gas Unit Heater	Arena	92	-	17	Average
UH-2	Natural Gas Unit Heater	Arena	92	-	17	Average
RTH-1	Natural Gas Radiant Tube Heater	Arena	34	-	17	Average
RTH-2	Natural Gas Radiant Tube Heater	Arena	34	-	17	Average
F-1	Natural Gas Furnace	Mezzanine	35	-	16	Average
F-2	Natural Gas Furnace	Dressing Room	24	-	17	Average
F-3	Natural Gas Furnace	Lobby	24	-	17	Average
F-4	Natural Gas Furnace	Ice Plant	11	-	26	Average
F-5	Natural Gas Furnace	Zamboni Room	35	-	18	Average

2.2.3 Process Equipment Inventory

The facility has a combination of the following pumps fans, motors and other process equipment:

- Furnace (F) blower supply fans.
- Unit heaters (UH) blower fans.
- Exhaust fans (EF) in washrooms.
- Range hood fan (RHF) in the kitchen.
- Wall-mounted Exhaust fans (EF) in the rink and ice plant.
- Circulation pump (CP) for domestic hot water (DHW) heating system.
- Ammonia compressor (CMP) for the ice plant
- Evaporative condenser fans (F) for the ice plant
- Evaporative condenser spray pump (P) for the ice plant
- Various other water, coolant, and brine pumps for the ice plant

Figure 2 – Ice Making Equipment

The ice plant requires significant maintenance and is considered past the end of its rated life. An inventory of the facility's process equipment can be found in Table 4.

Table 4: Pumps, Fans and Motors

Tag	Equipment Description	System	Qty.	Power Rating (W)	Annual Operating Hours (Hrs)
UH-1	Unit Heater Blower	Ice Rink	1	249 W	805
UH-2	Unit Heater Blower	Ice Rink	1	249 W	805
F-1	Furnace Blower	Mezzanine	1	373 W	1,067
F-2	Furnace Blower	Dressing Area	1	249 W	1,507
F-3	Furnace Blower	Lobby Area	1	249 W	1,535
F-4	Furnace Blower	Ice Plant	1	249 W	2,451
F-5	Furnace Blower	Zamboni	1	373 W	218
CP-1 to -2	DHW circ pump	Dressing Area	2	85 W	730
CMP-1	Compressor	Ice Plant	1	55,927 W	3,363
F-1 to -2	Condenser Fans	Ice Plant	2	3,728 W	3,363
P-2	Condenser Pump	Ice Plant	1	7,460 W	3,363
P-1	Brine Pump	Ice Plant	1	18,650 W	3,363
EF-1 to -3	Exhaust Fan	Lobby Area	3	50 W	1,535
EF-4 to -6	Exhaust Fan	Dressing Area	3	50 W	1,507
EF-7 to -8	Exhaust Fan	Mezzanine	2	50 W	1,067
RHF-1	Exhaust Fan	Mezzanine	1	559 W	730
EF-9	Exhaust Fan	Zamboni	1	50 W	218
EF-10 to -12	Exhaust Fan	Ice Rink	2	1,119 W	805
EF-12	Exhaust Fan	Ice Plant	1	746 W	1,200

2.3 Overall Facility Envelope Condition

Overall, the facility envelope appeared to be in poor condition. The facility staff noted that there are several leaks in the roof. In the rink area there are areas with exposed insulation, some of which has fallen off, leaving only the exterior metal. A total of about 18 m^2 of missing insulation is estimated. Several doors appear to be ill-fitting in their frames, creating air gaps around the edges.

2.4 Electrical

2.4.1 Interior Lighting

The interior lighting consists of the fixtures shown in Table 5. All interior lighting is controlled by manual switches. The average lighting power density in the facility is 5.32 W/m². A typical average LPD for similar facilities from ASHRAE 90.1 2016 is 12.73 W/m².

Table 5: Interior lighting Schedule

Fixture Type	Watts per Fixture	Number of Fixtures	Total Wattage
1x4' T8-recessed 2-lamp	59	2	118
2x4' T8-recessed 3-lamp	89	29	2,581
1x2' T8-surface 2-lamp	33	1	33
Exit Sign (Incandescent)	25	14	350
1x4' T8-surface 2-lamp	59	21	1,239
1x4' T12-surface 2-lamp 34W	72	22	1,584
CFL (21W)	21	8	168
2x4' T8-recessed 4-lamp	112	7	784
PAR30 Halogen	75	32	2,400
2x4' T8-surface 6-lamp	192	40	7,680
Total		176	16,937

2.4.2 Exterior Lighting

The exterior lighting consists of the fixtures shown in Table 6. These fixtures are controlled manually.

Table 6: Exterior Lighting Schedule

Fixture Type	Watts per Fixture (W)	Number of Fixtures	Total Wattage (W)
PAR30 Halogen	75	2	150
HPS 250W	295	1	295
LED Exterior Wall Fixture	30	2	60
Total		5	505

03 | Utility Analysis

3.1 Utility Bill Analysis

The annual energy consumption and savings rates for the facility were provided. Savings rates are the marginal costs of each utility and account for the charges that vary based on consumption, ignoring the fixed charges. Thus, they are suitable for calculating the cost savings associated with reduced consumption of that utility and are used in the financial analysis of ECMs. See Appendix A for the billing data provided. The savings rates corresponding to each utility type are summarized in Table 7.

Table 7: Utility Cost/Unit

Utility Type	Utility Provider	Savings Rate
Electricity Consumption	Retailer: AMSC	$0.067/kWh
Electricity Demand	Distributor: Fortis (61)	$0.59/kW/Day
Natural Gas	Retailer: AMSC	$5.27/GJ
Water	Distributor: Town of Bon Accord	$3.25/m^3

3.2 Utility Cost Breakdown

Figure 3 and Table 8 show the relative costs of electricity consumption, transmission and distribution, natural gas, and water, averaged over the entire billing period.

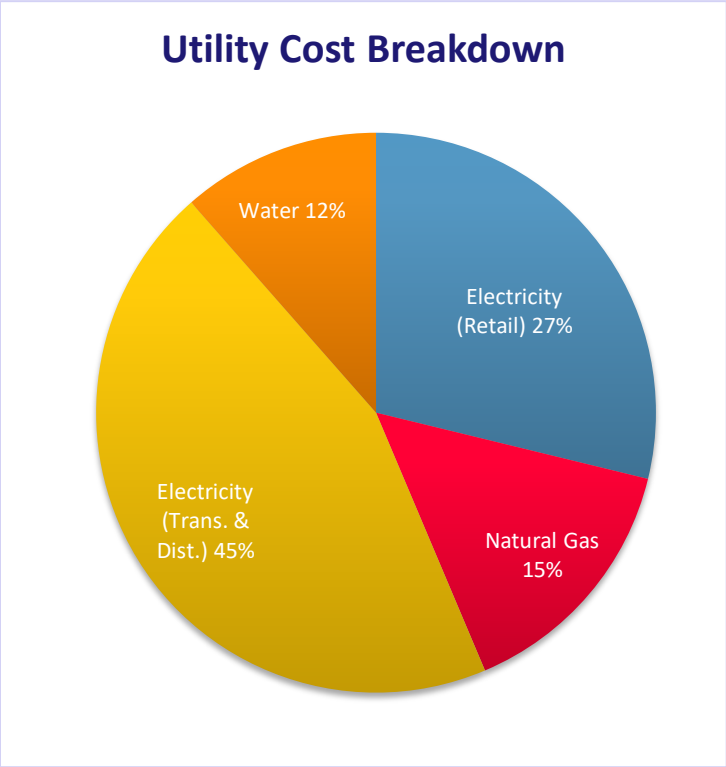

Figure 3: Utility Cost Breakdown

Table 8: Utility Cost Breakdown

Year	Electrical Energy Retail Cost ($)	Trans + Dist ($)	Natural Gas ($)	Water ($)
2017	$ 15,483	$23,700	$10,186	-
2018	$ 15,793	$24,898	$9,666	$3,984
2019	$ 16,926	$26,762	$7,466	$2,767
2020	$ 12,130	$ 24,692	$ 6,613	-
Average	$ 15,083	$ 25,013	$ 8,483	$6,675
% of Total	27%	45%	15%	12%

04 | Energy Use Analysis

4.1 Electricity Consumption and Demand

The monthly electrical consumption trend (lines in Figure 4) shows higher electricity use in the winter months due to an increase in hours on the ice plant, especially during start up.

The estimated electrical demand trend (vertical bars in Figure 4) shows that the demand for the facility is peaks in the winter months and shoulder seasons. Any permanent reduction in peak demand will see significant savings due to the demand ratchet.

A summary of the annual electrical consumption and demand is shown in Table 9.

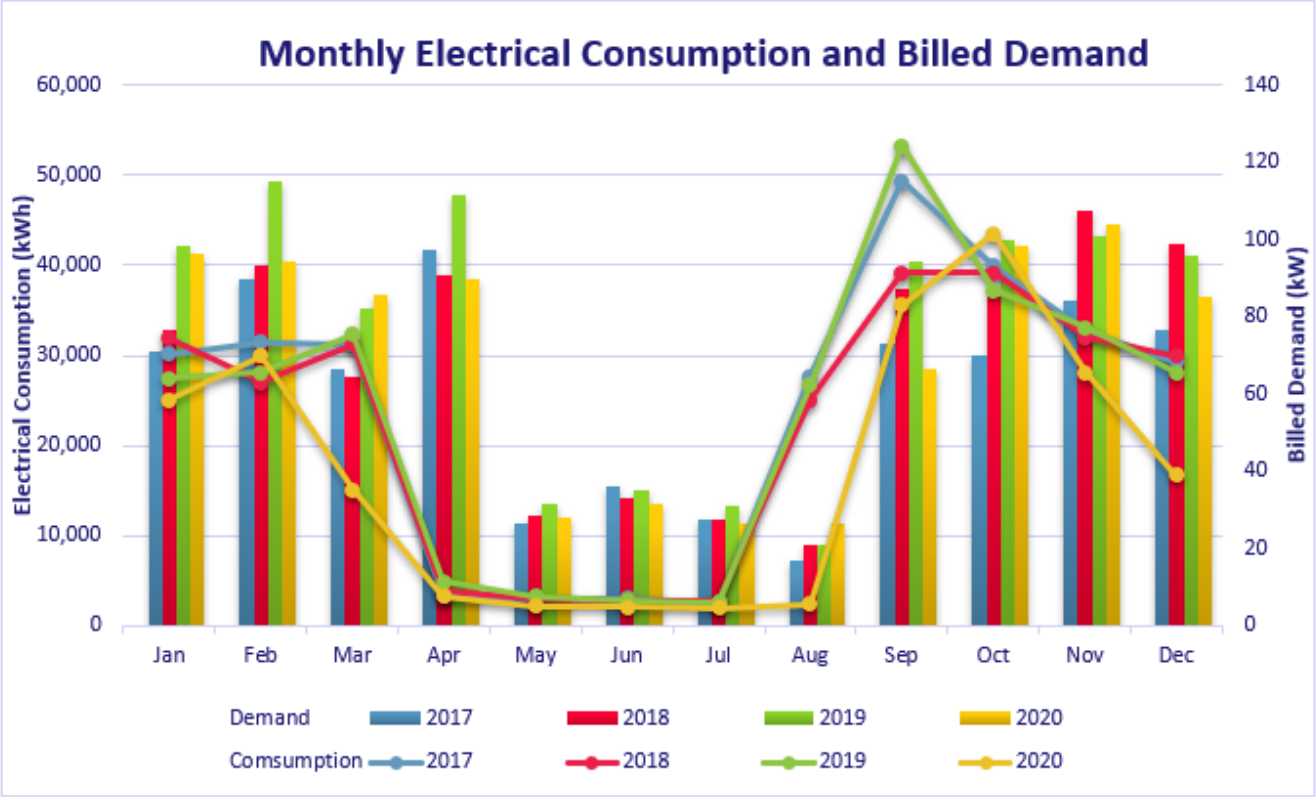

Figure 4: Monthly Electrical Consumption and Billed Demand

Table 9: Electrical Consumption and Demand Summary

Year	Electricity Consumption (kWh)	Peak Demand (kW)
2017	283,472	97
2018	267,856	107
2019	279,866	115
2020	206,003	104
Annual Average	259,299	106

4.2 Natural Gas Consumption

The natural gas consumption pattern shown in Figure 5 is typical for facilities located in a cold climate. Most of the natural gas is used during the winter months due to the colder temperatures. The lowest consumption levels are experienced during the summer months and may be attributed to domestic water heating or other process loads. A summary of the annual natural gas consumption is shown in Table 10.

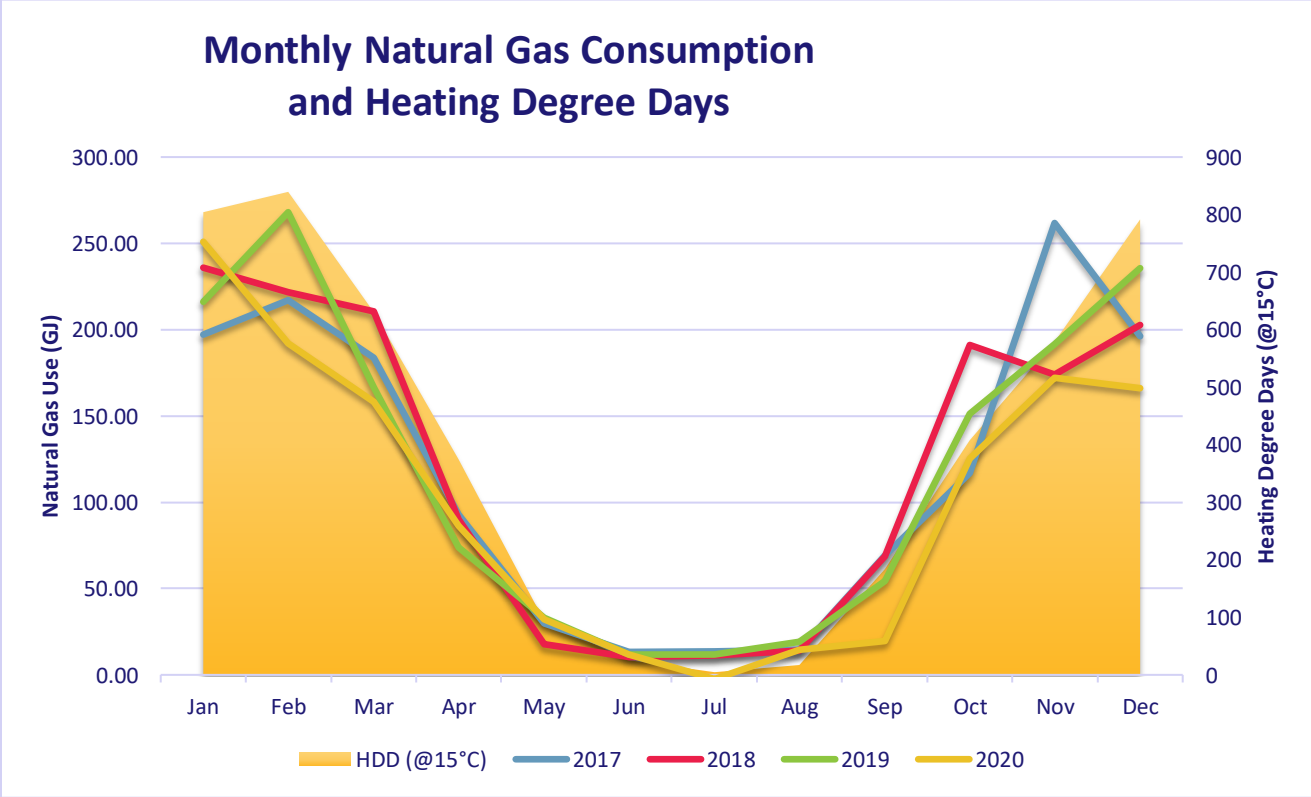

Figure 5: Monthly Natural Gas Consumption

Table 10: Natural Gas Summary

Year	Natural Gas Consumption (GJ)
2017	1,406
2018	1,445
2019	1,433
2020	1,468
Annual Average	1,438

05 | Adjusted Baseline

5.1 Weather Normalization

Natural gas consumption is weather normalized to ensure that any atypical heating degree day values during the billing period do not distort the energy consumption. The number of Heating Degree Days (HDD) for the billing period is compared to a historical reference period (1999-2021) to determine an Adjustment Factor (See Table 11). An adjustment factor above 1.0 indicates that the billing period was hotter than the historical average while an adjustment factor below 1.0 indicates the billing period was cooler than the historical average.

Table 11: Determination of Weather Adjustment Factor – Natural Gas

Year	Year	HDD	Average HDD (Billing Period)	Average HDD 1998-2021	Adjustment Factor
Bon Accord, AB	2018	4,958	4,897	4,560	0.93
	2019	4,923			
	2020	4,811			

Electricity consumption for the facility is weather dependant and therefore must be normalized to ensure that any atypical cooling degree day values during the billing period or changes in scheduling do not distort the energy consumption. The number of Cooling Degree Days (CDD) for the billing period is compared to a historical reference period (1999-2021) to determine an Adjustment Factor (See Table 12). CDD with a base of -4C (average ice temp) are used to estimate the amount of cooling required from the refrigeration system and is measured from Aug 15th to April 1st to measure the CDD within the cooling season. An adjustment factor above 1.0 indicates that the billing period was colder than the historical average while an adjustment factor below 1.0 indicates the billing period was hotter than the historical average.

Table 12: Determination of Weather Adjustment Factor - Electricity

Year	Year	CDD (-4C)	Average CDD (Billing Period)	Average CDD 1999-2021	Adjustment Factor
Bon Accord, AB	2018	3,137	3,193	3,426	1.07
	2019	3,072			
	2020	3,371			

5.2 Schedule Normalization for Annual Equipment Run Times

The number of Cooling Degree Days (CDD) for the building location is compared to the historical operating hours of the ice plant equipment which serves as a reference period (2012-2020) (See Table 12). The relationship between CDD and compressor run hours is not linear as a base number of hours is required regardless of CDD. Therefore, a regression analysis is completed to understand how the increase in CDD results in higher compressor run times. This equation is then used to estimate the new compressor run times for each month of the extended season including March, April, May, August and a new total is calculated. Using this method to estimate each month will avoid inaccuracies produced by using a blended ratio of total Hours/CDD.

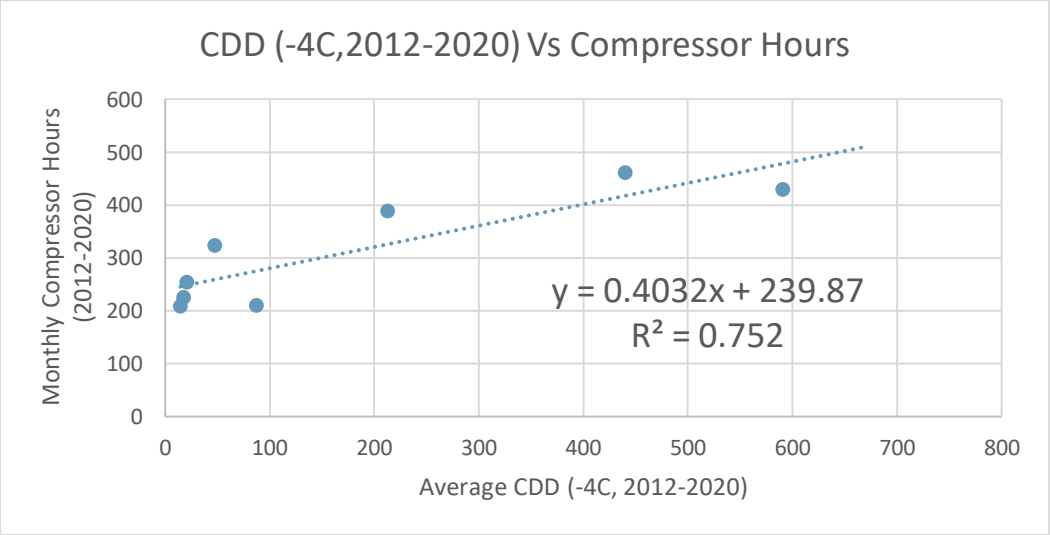

Figure 6: Regression CDD Vs Compressor Hours

Table 13: Estimating Compressor Hours

Month	Average CDD (-4C, 2012-2020)	Seasonal Run Times (Hrs)	Total Annual Run Time (Hrs)	Estimated Monthly Run Time (Hrs)	Adjusted Annual Run Time (Hrs)
January	21	253		253	
February	18	225		225	
March	87	210		275	
April	223	0		329	
May	461	0		425	
June	577	0		0	
July	672	0	2,282	0	3,363
August	591	215 (Aug 15th)		476	
September	440	460		460	
October	213	388		388	
November	48	323		323	
December	15	208		208	

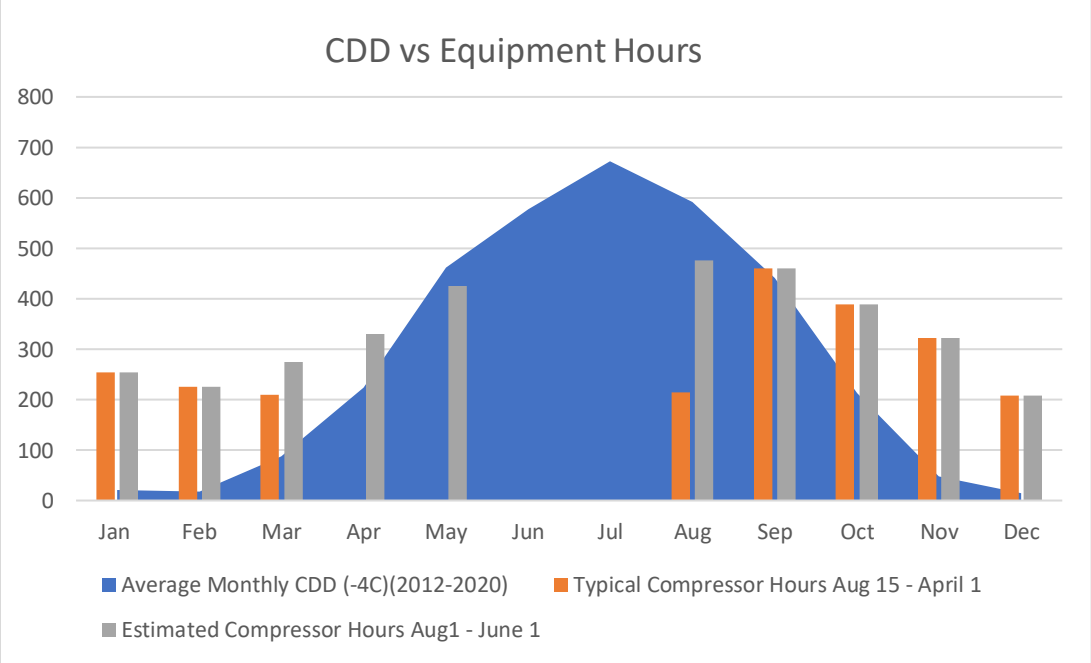

Figure 7: CDD Vs Equipment Hours

5.3 Adjusted Baseline Energy

The arena is intended to operate at an increased schedule from August 1st to June 1st to provide more ice time for the community of Bona Accord. This will increase the run time on the main compressors and pumps and increase the energy consumption of the system. A computer model of the facility was created in RETScreen Expert software to evaluate potential energy consumption and savings. The energy model was calibrated to the adjusted baseline energy use, which is based on

- The weather normalized utility billing data, as described above; and,
- The increased operating schedule from Aug 15th- April 1st to Aug 1st – June 1st.

The increased schedule will increase energy consumption on the ice making equipment as well as lights, ventilation fans and domestic hot water equipment. A variance between the adjusted baseline energy and the calibrated model of less than 10% for each energy type is considered acceptable. The results are shown in Table 14.

Table 14: Energy Model Calibration

	Electricity		Natural Gas		Total	
	kWh	% Diff.	GJ	% Diff.	GJ	% Diff.
Weather Normalized Bills	277,450	-	1,337	-	2,336	-
Calibrated Energy Model	274,369	-1%	1,362	2%	2,350	1%
Adjusted Baseline Energy Use	324,676	17%	1,665	25%	2,834	21%

5.4 Greenhouse Gas Emission

The baseline GHG emissions are calculated from the adjusted baseline energy consumption. This facility has annual greenhouse gas emissions of 292 tonnes of CO_2 equivalent (tCO_2e). The following emissions factors are used to estimate GHG emissions:

- 0.64 tonnes of CO2 per MWh of Electricity
- 0.0518 tonnes of CO2 per GJ of Natural Gas

GHG reductions for the proposed case are shown in the Executive Summary section as well as in the individual ECM sections.

5.5 Energy End-Use

The calibrated simulation shows that the following end uses (Table 15) are responsible for the facility's total energy consumption (combined kWh and GJ) and shown by end-use percentages in Figure 8.

Table 15: Adjusted Baseline Energy End-Use Breakdown

Energy Use	Electricity (GJ)	Natural Gas (GJ)	Total (GJ)	Percentage (%)
Space Heating		1368	1368	48%
Lighting	215		215	8%
Electrical Equipment	29		29	1%
Refrigeration Equipment	897		897	32%
DHW		297	297	10%
Miscellaneous	28		28	1%
Total	1169	1665	2834	100%

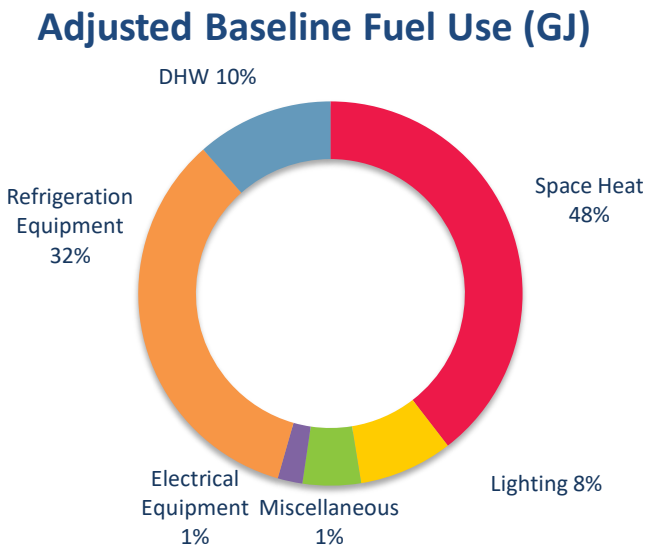

Figure 8: Categorized Facility Energy Uses (GJ)

06 | Ice Plant Upgrade

6.1 Ice Plant Upgrade

6.1.1 Measure Boundary & Baseline

This study proposes replacing the existing ammonia ice plant with a new ice plant, condenser, and controls including VFDs on main compressors and pumps. The measure will affect the energy consumption and annual operating hours of the ice making equipment. The adjusted baseline energy consumption and operating hours are estimated in Section 5.2 and Section 5.3. An inventory of the existing and proposed equipment can be found in Table 17. The total annual energy consumption before and after implementation along with the total estimated installed cost can be found in Table 18.

6.1.2 ECM Description

This ECM proposes replacing the existing aging ice plant with a new low volume ammonia ice plant with an adiabatic condenser. Previously, three refrigerant options were considered for the ice plant: low volume ammonia, synthetic Opteon, and CO_2. Each option has its benefits and disadvantages and ammonia was selected due to the increased efficiency, lifespan, and availability of local expertise.

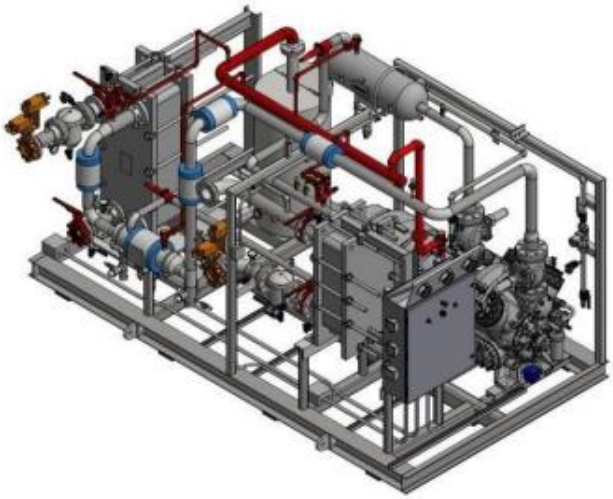

Figure 9 - Refrigeration Skid Package

Background

Of the 3,300 ice rinks in Canada over 50% have ammonia chillers in their ice plants. A Canadian Recreation Facilities Council census in 2005 revealed there were more than 2,450 arenas and 1,300 curling rinks in Canada. Of those, 65% of the arenas ice plants were ammonia, 25% HCFCs, primarily R22 and the remaining 10% natural ice. Ammonia chillers are the most efficient ice plants; however, they have significant operating risks which must be controlled through safety controls, proper operating procedures and protocols. R22 has a high global warming potential (GWP) of 1,810 as well as an ozone depletion potential (ODP) of 0.055 and is being phased out, with 2020 being the end of production and imports.

Controls

All of the options include a fully automatic control system to take advantage of operational efficiencies including:

- Automated direct digital controls for
  - scheduling ice sheet temps for various activities and unoccupied times,
  - interlocking brine pumps with compressor operation.
- Variable Speed Drives on Compressors
- Variable Speed Drives on Brine Pumps
- Variable Speed Drives on Glycol Pumps

Figure 10 – Control Panel

The combined effect of the automated controls and temperature setbacks will be to produce less total cooling load and therefore, less total run hours on the pumps and compressors. This effect was not included in the calculations in order to produce a more conservative result. The variable frequency drives will reduce the load factor on the compressors and pumps while also reducing maintenance costs and extending their lifespans. The magnitude of the reduction was estimated by referencing several real world projects with similar upgrades in the local area. The overall load factor on compressors, brine and condenser pumps is estimated to be %70.

Ammonia Reciprocating Compressor

Ammonia, R717, has been utilized as a refrigerant for over 125 years, is the most efficient refrigerant for ice rink applications, and has no global warming or ozone depleting potential. The disadvantages of Ammonia are copper incompatibility and toxicity requiring application of stringent safety code regulations.

A new low volume ammonia ice plant chiller consists of two titanium plate and frame heat exchangers, compressor(s), a condenser, an expansion valve, a refrigerant charge, and interconnected piping. The total charge of ammonia required is quite low at 55lbs.

Adiabatic Condenser

The existing condenser is in poor condition causing a reduction in system efficiency. An adiabatic condenser has been selected over the existing evaporative style which will add additional savings from water consumption. The overall system efficiency of the existing system is reduced due to the condition of the evaporative cooler.

Figure 11 – Existing Condenser

Non-Standard Part Load Value

The seasonal efficiency of the compressors can be estimated using the IPLV (Integrated Part Load Value) or NPLV (Non-Standard Part Load Value). Since the compressors cannot go down below %50 the NPLV will be used to calculate the seasonal efficiency using the following equation.

$$NPLV = \frac{COP(\%95)}{3} + \frac{COP(\%80)}{3} + \frac{COP(\%65)}{3}$$

The new compressor will be equipped with VFD control and are able to reduce its speed to de-load rather than shut down cylinders. This results in a more efficient NPLV. The NPLV will be based off the part load COP values provided by the manufacturer.

$$NPLV = \frac{3.98}{3} + \frac{4.04}{3} + \frac{4.09}{3} = 4.04$$

Heat Recovery Potential

There is potential to include heat recovery in the design of the new ice plant. One to three low temp fan coil units could be installed on the south and east side of the facility to address some current deficiencies. The stairwell on the south-east corner, the mechanical shop, electrical room, and lobby are not sufficiently heated. Additional equipment and controls would also be required to operates this heat recovery system. Preliminary quotes were received totaling and additional installed price of $250,000 for the heat recovery system. The feasibility of this system is analyzed in the below table. The utilization rate of a heat recovery system at this facility will be low due to the scheduling of the refrigeration load and the heat load. During the coldest months when the heat load for the facility is high, the ice plant will operate at lower hours while in the shoulder seasons when the heat load in the building is lower, the ice plant will run at much higher hours. In addition to this, the new compressors will have lower run times overall due to their increased efficiency, reducing the available heat to be recovered. Therefore a 50% heat recovery utilization rate was selected. Due to the increase in system efficiency and low resulting available heat, the Heat Recovery potential is low and will not be recommended.

Table 16: Heat Recovery

Heat Recovery - Mycom N4MII Compressor	
Annual hours	1131 Hrs
Heat Rejection	4.2 kW
Utilization rate	%50
Total	2,375 kWH/yr
Total	8.55 GJ/yr

Table 17: Ice Plant Specifications

Equipment Description		Existing System	Proposed System	Proposed System with Heat Recovery
Refrigerant Type		R717 - Ammonia	R717 - Ammonia	R717 - Ammonia
Refrigerant Ozone Depletion Potential		0	0	0
Refrigerant Global Warming Potential		0	0	0
Estimated Leakage (%/Year)		2-5%	2-5%	2-5%
Estimated System COP		1.11	2.48	2.55
MYCOM N4M Reciprocating 80Ton Compressor	COP (NPLV)	1.73	4.04	4.04
	Capacity kW (hp)	56 (75)	75 (100)	75 (100)
	Hours	3,363	1131	1131
	Load Factor	.75	.7	.7
	Cooling Load (kWh)	239,992	239,992	239,992
Brine Pump + VFD	kW (hp)	18.5 (25)	22.4 (30)	22.4 (30)
	Hours	3,363	1131	1131
	Load Factor	0.75	0.7	0.7
Jacket Cooling Pump	kW (hp)	-	1/8 (1/6)	1/8 (1/6)
	Hours	-	1131	1131
	Load Factor	-	0.7	0.7
Condenser Pump + VFD	kW (hp)	7.5 (10)	7.5 (10)	7.5 (10)
	Hours	3,363	1131	1131
	Load Factor	0.75	0.7	0.7
Condenser	Type	Evaporative Condenser	Adiabatic Fluid Cooler	Adiabatic Fluid Cooler
	Hours	3,363	1131	1131
	Fan kW(hp)	3.7 (5)	11.9(15.9)	11.9(15.9)
Total System Energy Consumption	(kWh)	216,745	96,607	94,232
Annual Energy Saved	(GJ)	-	-	8.55
Remaining Lifespan	(Year)	0	25+	25+
Estimated Maintenance cost	($/Year)	$15,600	$15,600	$15,600
Installed Cost	($/kW)	-	$8,700	$12,000
Total Installed Cost	($)	-	651,598	900,000

6.1.3 Assumptions and Interactions

The following assumptions were used to calculate the costs and savings for this ECM:

- The current equipment capacity and efficiency were based on equipment tags and de-rated based on age and observed maintenance conditions.
- The installed costs were estimated from multiple contractor quotes.
- The equipment life expectancy was obtained from the ASHRAE Equipment Life Expectancy Chart and the Comparative Study of Refrigeration Systems for Ice Rinks (Natural Resources Canada).
- The same cooling load has been modelled before and after the new install to provide a conservative estimate. The controls, including Ice temp setbacks, will however reduce the overall cooling load.

This ECM will interact minimally with the HVAC equipment except explicitly within the heat recovery scenario. All interactions from the application of this ECM are accounted for within the simulation.

6.1.4 Energy, GHG and Financial Performance

See Appendix B for the RETScreen model results.

Table 18: EZ ICE ADX-C80 refrigeration skid package

Description	Electricity	Natural Gas	Total
Adjusted Baseline Usage	324,676 kWh	1,665 GJ	2,834 GJ
ECM Proposed Usage	155,584 kWh	1,665 GJ	2,225 GJ
Annual Savings	169,092 kWh	0 GJ	609 GJ
Annual GHG Reduction	108.2 tCO_2e	0.0 tCO_2e	108.2 tCO_2e
Annual Cost Savings	$ 11,385	$ 0	$ 11,385
Lifetime Eligible Savings	4,227,300 kWh	0 GJ	15,218 GJ

Description	Total
Equipment Lifetime	25 Years
ECM Unit Cost ($/kW)	$ 8,688
Number of Units	75
ECM Total Cost	$ 651,598
Simple Payback	57.2 Years
ECM NPV	$ 178,600
Lifetime Cost Savings	$ 284,610
Lifetime GHG Reductions	2,705.5 tCO_2e
GHG Abatement Rate	$ **241/tCO_2e**
Expected Rebate Amount	$ 515,625
ECM total Cost w/ Rebate	$ 135,970
ECM Simple Payback w/ Rebate	11.9 Years
ECM NPV w/ Rebate	$ 694,220

6.1.5 Recommendation

Replacement of the existing ice plant system with a new Ammonia reciprocating system with adiabatic condenser, VFDs and control system is recommended and produces favorable financial results.

This ECM results in a net present value of $178,600 and is estimated to cost $651,598. With available rebates the measure can payback within 12 years and produce a net present value of $694,220.

The detailed equipment specifications can be found in the attached detailed quote documents.

7 | Appendices

7.1 Appendix A: Historical Energy Billing Data

Date	Electricity		Natural Gas	
	Usage (kWh)	Total Bill ($)	Usage (GJ)	Total Bill ($)
Jan-16				
Feb-16				
Mar-16				
Apr-16				
May-16	2416.01	$1,460.92	24.26	$310.65
Jun-16	2592.01	$1,502.62	9.9	$235.04
Jul-16	2536	$1,497.29	10.18	$127.52
Aug-16	13239.99	$2,257.77	10.1	$140.04
Sep-16	53440.01	$4,952.59	50.47	$247.13
Oct-16	41303.98	$4,722.45	184.65	$1,077.14
Nov-16	38456	$4,352.90	157.81	$1,113.81
Dec-16	25616.01	$3,823.63	227.19	$1,552.51
Jan-17	30184.02	$4,140.15	197.22	$1,433.17
Feb-17	31424	$4,292.45	216.92	$1,423.42
Mar-17	31272	$4,132.79	183.54	$1,290.73
Apr-17	3327.98	$2,698.96	92.66	$1,019.66
May-17	2928	$1,459.74	29.98	$432.95
Jun-17	3031.98	$1,604.82	13.29	$227.35
Jul-17	2480.01	$1,488.29	13.73	$164.99
Aug-17	27648.01	$2,891.73	14.55	$148.01
Sep-17	49335.99	$5,054.12	69.3	$314.95
Oct-17	39928	$4,782.27	117.1	$924.89
Nov-17	32655.99	$4,451.53	261.79	$1,343.01
Dec-17	29256.01	$4,145.66	196.04	$1,462.94
Jan-18	31952	$4,469.33	235.91	$1,489.28
Feb-18	27016	$4,092.84	221.59	$1,490.57
Mar-18	31304	$4,131.00	210.46	$1,310.33
Apr-18	3784	$2,622.40	89.9	$833.09
May-18	2968	$1,491.59	17.88	$333.00
Jun-18	2768.01	$1,520.34	10.32	$256.06
Jul-18	2688.03	$1,456.11	11.48	$124.59
Aug-18	25082.17	$2,932.00	14.09	$142.76
Sep-18	39213.83	$4,939.52	68.77	$302.45
Oct-18	39152.01	$5,272.19	191.04	$1,094.35
Nov-18	31976	$5,061.36	174.03	$971.15
Dec-18	29952.01	$4,737.16	202.61	$1,318.73
Jan-19	27424.69	$4,547.94	215.99	$1,038.66
Feb-19	28066.67	$4,745.33	268.05	$1,265.61
Mar-19	32328.42	$4,656.07	166.44	$998.40
Apr-19	4895.14	$3,060.91	74.06	$534.48
May-19	3287.99	$1,576.81	33.02	$255.68

Date	Electricity		Natural Gas	
	Usage (kWh)	Total Bill ($)	Usage (GJ)	Total Bill ($)
Jun-19	2800	$1,559.76	11.82	$135.27
Jul-19	2615.99	$1,511.50	11.81	$114.11
Aug-19	26720	$3,076.83	19.21	$117.90
Sep-19	53294.83	$6,320.91	54.44	$277.36
Oct-19	37224	$5,292.99	151.18	$698.29
Nov-19	33088	$4,963.98	191.69	$981.35
Dec-19	28120	$4,559.21	235.46	$1,049.50
Jan-20	25064	$4,463.74	250.94	$1,282.80
Feb-20	29976	$4,489.83	192.15	$935.24
Mar-20	15072	$3,415.37	158.03	$1,130.80
Apr-20	3248	$2,563.87	86.26	$630.24
May-20	2128	$1,421.24	32.03	$256.53
Jun-20	2104	$1,442.00	11.51	$24.81
Jul-20	1976	$1,386.99	-2.44	$10.05
Aug-20	2424	$1,420.82	14.56	$161.83
Sep-20	35656	$4,367.66	19.81	$114.63
Oct-20	43510.82	$5,621.50	125.38	$528.71
Nov-20	28075.86	$4,518.36	172.31	$739.53
Dec-20	16767.95	$3,468.24	166.09	$797.52
Jan-21	17486.31	$3,566.52	186.06	$859.96

7.2 Appendix B: Energy Model Outputs

Project verification

Fuel type	Fuel consumption - unit	Fuel consumption - historical	Fuel consumption: Base case	Fuel consumption - variance
Natural gas	GJ	1,337	1,665	24.5%
Electricity	kWh	277,450	324,676	17%

Savings

Fuel consumption	Heating: GJ	Cooling: GJ	Electricity: GJ	Total: GJ
Base case	1,665	0	1,169	2,834
Proposed case	1,665	0	560	2,225
Fuel saved	0	0	609	609
Fuel saved - %	0%	0%	52.1%	21.5%

Pumps							
Brine Pump		44,387	0	2,912	0	Immediate	☑
Evaporative Condenser Spray Pump		18,181	0	1,193	0	Immediate	☑
Jacket Pump		-107	0	-7	0	None	☑
Fans							
Washroom Exhaust Fans		0	0	0	0		☐
Ice rink exhaust fans		0	0	0	0		☐
Ice plant exhaust		0	0	0	0		☐
Kitchen Range hood		0	0	0	0		☐
Evaporative Condenser Fans / Adiabatic Fluid Cooler		24,889	0	1,633	0	Immediate	☑
Furnace/UH Fans		0	0	0	0		☐
Motors							
Ammonia Compressor		81,742	0	5,362	0	Immediate	☑
Total	**0**	**169,093**	**0**	**11,092**	**0**	**Immediate**	

7.3 Appendix C: Glossary

Adjusted Baseline

If the equipment or components of a facility are broken or inoperable, they should be replaced before any upgrades to ensure that the facility is in working order. If there is damaged equipment, it is assumed that it has been in that state throughout the billing period. To account for efficiency upgrades to damaged equipment, an adjusted baseline will be created which simulates the broken equipment to be operating as originally designed. This allows for proper energy and costs savings comparisons between standard and high-efficiency equipment.

AFUE

Annual Fuel Utilization Efficiency

ASHRAE

American Society of Heating, Refrigeration and Air-conditioning Engineers, Inc.

Assumptions

For each ECM, all assumptions on performance, lifespan, replacement costs, schedule, and the efficiency of the existing equipment will be stated.

CFM

Cubic Feet per Minute

Code Minimum Recommendations

At times the Alberta Building Code or the National Energy Building Code will be referenced for replacement or installation of new equipment. The referencing of building codes does not indicate that any specific code is in effect or applicable. Any building codes referenced in this document provide the minimum recommended equipment performance levels only.

COP

Coefficient of Performance

Costing

Material and installation costs are estimated using RETScreen Expert, manufacturer quotes, or RS Means. This section may include corrections to facility deficiencies or components that are performing poorly compared to current standards. Additional costs may be included to account for specific installation issues or site location. All equipment lifespans, material/installation costs, and equipment specifications presented in the ECMs are for example and modelling purposes only.

ECM NPV

The net present value of the energy conservation measure assumes the replacement of the current equipment with high-efficiency equipment in year one. These efficiencies may be equal to or above the current code requirements.

EF

Efficiency or Energy Factor

Equipment Selection

The proposed equipment for each ECM was selected based on the existing site conditions and high-efficiency equipment specifications. Any manufacturers specified are for example purposes only. Any similar model and/or manufacturer can be implemented based on external factors; however, the performance may change if the installed equipment differs from the proposed equipment.

GPM

Gallons Per Minute

Interactions

An ECM can affect the performance and characteristics of another ECM by altering the load profile and/or flow of energy. RETScreen Expert accounts for interactions between the ECMs. Overall energy and financial performance of the proposed case will be less than the sum of individual ECMs because of the interactions.

Life Cycle Cost Analysis

A fuel escalation factor of 1% and a discount rate of 5% are used in the Life Cycle Cost Analysis of the ECMs. Life Cycle Costing for ECMs and the proposed case requires using a weighted average to calculate the average lifespan of ECMs with multiple installations. This typically affects lighting upgrades and the proposed case model. Life cycle costing for an ECM and the proposed case excludes any financial rebates or incentives.

LPF

Litres Per Flush

Minimum Code NPV

The minimum code net present value is based on the replacement of the current equipment with equivalent equipment or equipment that meets the minimum applicable code at the end of its rated life. The applicable building codes are referenced to provide the minimum performance requirements.

No-cost/low-cost Energy Conservation Measures (ECMs)

Measures that save significant energy but require little to no initial capital investment, typically up to $1,000.

Uncertainty

As specified in the *Quantification Protocol for Energy Efficiency in Commercial and Institutional Buildings*[ii], a factor is applied to the energy savings to account for uncertainty. Uncertainty for each ECM is estimated to have an impact of less than 5% of the baseline energy use and less than 15% of any individual ECM. If the uncertainty for an ECM is larger than 50%, an additional description will be included with further recommendations or post-retrofit measurements that would reduce uncertainty. An uncertainty factor of 0.9 is applied to all measures.

7.4 Appendix D: Unit Conversions

Metric	to	Standard
1 mm	=	0.03937 in
1 m	=	3.2808 ft
1 m^2	=	10.7639 ft^2
1 kW	=	3,412.14 Btu/h
1 kW	=	0.284345 tons
1 COP	=	3.4121 SEER
1 ˚C	=	$(T_{(˚C)}$ x 1.8) + 32 ˚F
1 L/s	=	2.11888 CFM
1 W	=	0.001341 hp
1 RSI-value	=	5.6783 R-value
1 USI-value	=	0.1761 U-value
1 LPM	=	0.26417 GPM

7.5 Appendix E: References

[i] Office of Energy Efficiency & Renewable Energy – US Department of Energy (2018), *Understanding the Efficiency Rating of Furnaces and Boilers*, https://www.energy.gov/energysaver/home-heating-systems/furnaces-and-boilers

[ii] Government of Alberta (2010), Quantification protocol for energy efficiency in commercial and institutional buildings (version 1.0), https://open.alberta.ca/publications/9780778589921

TOWN OF BON ACCORD

Request for Decision (RFD)

MEETING: *Regular Council Meeting*

MEETING DATE: **October 05th, 2021**

AGENDA ITEM: **Bon Accord Arena: Restriction Exemption Program**

RECOMMENDATION:

THAT Council approve additional staffing costs for up to a maximum of $12,000 for implementation of the provincial Restriction Exemption Program at the Bon Accord Arena.

BACKGROUND:

As per the Alberta Government Covid-19 website (www.alberta.ca), the following public health restrictions are in effect:

Starting September 20, in-scope businesses, entities and events must follow one of these 2 options:

1. Implement the Restrictions Exemption Program requiring proof of vaccination or negative test result, plus mandatory masking, to continue operating as usual, or
2. Comply with all public health restrictions as outlined in Order 44-2021.

The Chief Medical Officer of Health (CMOH) Order # 44-2021 released on September 23rd, 2021 and its predecessor CMOH Order # 42 released on September 16th, 2021 were implemented at the Bon Accord Arena to allow minor hockey programs to continue that had already been scheduled to start on September 19th, 2021.

Under the most current CMOH Order # 44-2021, adult hockey groups are not able to play as per part 11—Adult physical activity, performance activity and recreational activity, points 11.1 and 11.2 as noted below:

11.1 No adult may attend at an indoor location of a business or entity for the purposes of participating in a group physical activity, group performance activity, group recreational activity, or a competition or similar activity.

11.2 No operator of a business or entity may offer or provide services to, or a location for, an adult to participate in an indoor group physical activity, group performance activity, group recreational activity, or a competition or similar activity.

As a recreational facility, the Bon Accord Arena is eligible to implement the Restriction Exemption Program (REP) that would enable adult hockey programs to resume. Participation in this program would also allow adults to accompany children on ice for public skating programs.

The provincial guidance document for the REP Requirements is enclosed.

There are several challenges to implementing this program:

1. The time involved with screening every individual at the door for vaccine status or negative test results and the required provision of ID. Therefore, additional staff time will be required.
2. Additionally, the potential for staff to interaction with individuals refusing to comply with the program requirements.

Please note, that other communities have placed the onus on the user group to screen and implement the program requirements. However, the facility owner/operator does have some responsibility to ensure that the program requirements are being met.

Administration has consulted with our minor hockey groups (as their spectators would be impacted) and our adult groups to find a solution that would work for everyone. We have requested that user groups provide a team representative to assist our staff with screening and compliance during their rental periods. This is currently an option under review.

All of the user groups at our arena have been exceptional in their willingness to work with us to ensure that everyone can play safely.

Administration further recommends that if the Town does implement the Restriction Exemption program, that the Town assess the program prior to January 01st, 2022 to determine if the program is working well or whether participation in the program should discontinue.

FINANCIAL IMPLICATIONS:

Administration is anticipating a salary and wages surplus in the total budget of $50,000 as of December 31, 2021.

Additionally, $128, 651 of funding is still available in the 2021 Sturgeon County Recreational Funding to cover this cost if the surplus is less than anticipated.

The cost of hiring two, part-time staff to assist with screening at the door is estimated to cost a maximum of $12,000 for the months of October through to December 31st, 2021.

LEGAL IMPLICATIONS: N/A

LEGISLATIVE HISTORY: N/A

ALTERNATIVES:

1. Council may direct Administration to continue operating under CMOH Order #44-2021 and therefore not implement the Restriction Exemption Program at the Bon Accord Arena. This would result in the cancellation of any adult hockey programs until the public health order changes to allow for adult hockey without the REP Program.
2. Council may direct Administration to delay implementing the Restriction Exemption Program until after the election and further to allow for any further changes to public health orders and restrictions. Note, this would delay adult hockey programs significantly and may result in teams choosing not to play in Bon Accord this season.

Prepared and Submitted By: Jodi Brown, CAO

Reviewed By: Jodi Brown, CAO

Date: September 30th, 2021

Alberta Health

Office of the Chief Medical Officer of Health
10025 Jasper Avenue NW
PO Box 1360, Stn. Main
Edmonton, Alberta T5J 2N3
Canada

RECORD OF DECISION – CMOH Order 44-2021

Re: 2021 COVID-19 Response

Whereas I, Dr. Deena Hinshaw, Chief Medical Officer of Health (CMOH) have initiated an investigation into the existence of COVID-19 within the Province of Alberta.

Whereas the investigation has confirmed that COVID-19 is present in Alberta and constitutes a public health emergency as a novel or highly infectious agent that poses a significant risk to public health.

Whereas under section 29(2.1) of the *Public Health Act* (the Act), I have the authority by order to prohibit a person from attending a location for any period and subject to any conditions that I consider appropriate, where I have determined that the person engaging in that activity could transmit an infectious agent. I also have the authority to take whatever other steps that are, in my opinion, necessary in order to lessen the impact of the public health emergency.

Whereas a state of public health emergency for the province of Alberta was declared on September 15, 2021.

Whereas having determined that additional measures are necessary to protect Albertans from exposure to COVID-19 and to prevent the spread of COVID-19, I hereby make the following order:

Table of Contents

Part 1 – Application

1.1 This Order applies throughout the province of Alberta.

1.2 This Order comes into force on September 20, 2021 except where otherwise stated in this Order.

1.3 If a section of this Order is inconsistent or in conflict with a provision in Record of Decision – CMOH Order 10-2020, 37-2021 or 38-2021, the section in those Orders prevail to the extent of the inconsistency or conflict.

1.4 This Order amends CMOH Order 42-2021 by making the following amendments to Part 7 effective September 16, 2021:

(a) deleting sections 7.1 through 7.6; and
(b) substituting the words "Despite this Part of this Order, a" with "A" in section 7.7.

1.5 This Order rescinds CHOH-Order 42-2021 effective September 20, 2021.

Part 2 – Definitions

2.1 In this Order, the following terms have the following meanings:

(a) "adult" means a person who has attained the age of eighteen years.

(b) "authorizing health professional" means one of the following regulated members under the *Health Professions Act* who holds a practice permit:

i. nurse practitioners;

ii. physicians;

iii. psychologists.

(c)"child care program" means any of the following:

i. a facility-based program providing day care, out of school care or preschool care;

ii. a family day home program;

iii. a group family child care program;

iv. an innovative child care program.

(d) "Class A, B or C liquor licence" has the same meaning given to it under the *Gaming, Liquor and Cannabis Regulation, AR 143/96*, under the *Gaming, Liquor and Cannabis Act*.

(e) "cohort", as the context of this Order requires, means:

i. for a person who resides on their own, one or two other persons with whom the person who resides on their own regularly interacts with during the period of this Order;

ii. for a household, the persons who regularly reside at the home of that household;

iii. for a household in which all eligible persons who regularly reside at the home are fully vaccinated, the members of that household and the members of a second household whose eligible members are fully vaccinated, up to a maximum of ten fully vaccinated persons, excluding children eleven and younger who are not vaccinated. This must be the same two households for the duration of the Order;

iv. for a fully vaccinated person who resides on their own, the person who resides on their own, and up to a maximum of nine fully vaccinated persons, excluding children eleven and younger who are not vaccinated. This must be the same nine people for the duration of the Order;

v. for a person attending an overnight camp, the group of campers and staff members assigned to them who stay together throughout the day, day to day, and overnight;

vi. for a school, the group of students and staff who primarily remain together for the purposes of instruction as a COVID-19 safety strategy.

(f) "commercial vehicle" means a vehicle operated on a highway by or on behalf of a person for the purpose of providing transportation, but does not include a private passenger vehicle.

(g) "day care" has the same meaning given to it in the *Early Learning and Child Care Regulation*.

(h) "drive-in activities" means outdoor activities that a person can participate in or observe while remaining in a motor vehicle including the following:

i. a worship service;

ii. a drive-in movie;

iii. a graduation ceremony;

iv. physical activity, performance activity or recreational activity;

v. any activity similar in nature to those listed in this definition.

(i) "eligible person" means a person born in 2009, or before 2009, who is living, working or going to school in Alberta who is eligible to receive the COVID-19 vaccine.

(j) "face mask" means a medical or non-medical mask or other face covering that covers a person's nose, mouth and chin.

(k) "facility-based program" has the same meaning given to it in the *Early Learning and Child Care Act*.

(l) "Facility Licence" has the same meaning given to it under the *Gaming, Liquor and Cannabis Regulation*, AR 143/96, under the *Gaming, Liquor and Cannabis Act*.

(m) "family day home program" has the same meaning given to it in the *Early Learning and Child Care Act*.

(n) "farming or ranching operation" means the primary production of eggs, milk, grain, seeds, fruit, vegetables, honey, livestock, diversified livestock animals within the meaning of the *Livestock Industry Diversification Act*, poultry or bees, an operation that produces cultured fish within the meaning of the *Fisheries (Alberta) Act*, and any other primary agricultural operation specified in the regulations, but does not include the operation of a greenhouse, mushroom farm, nursery or sod farm.

(o) "fitness activity" means a physical activity that occurs at a gym, fitness studio, dance studio, rink, pool, arena or recreation centre and includes dance classes, rowing, spin, yoga, boxing, boot camp, Pilates and other activities of a similar nature.

(p) "food-serving business or entity" means a restaurant, café, bar, pub or similar business or entity.

(q) "fully vaccinated" means a person who is eligible for vaccination who has:

i. received two doses of a World Health Organization approved COVID-19 vaccine in a two dose vaccine series or one dose in a one dose vaccine series; and

ii. had fourteen days elapse since the date on which the person received the second dose of the World Health Organization approved COVID-19 vaccine of a two dose series or one dose of the vaccine in a one dose vaccine series.

(r) "Gaming Licence" has the same meaning given to it under the *Gaming, Liquor and Cannabis Regulation, AR 143/96*, under the *Gaming, Liquor and Cannabis Act*.

(s) "group family child care program" has the same meaning given to it in the former *Child Care Licensing Regulation*.

(t) "health condition" means the following mental or physical limitations:

i. sensory processing disorders;

ii. developmental delays;

iii. mental illnesses including: anxiety disorders; psychotic disorders; dissociative identity disorder; and depressive disorders;

iv. facial trauma or recent oral maxillofacial surgery;

v. contact dermatitis or allergic reactions to face mask components; or

vi. clinically significant acute respiratory distress.

(u) "highway" means any thoroughfare, street, road, trail, avenue, parkway, driveway, viaduct, lane, alley, square, bridge, causeway, trestleway or other place or any part of any of them, whether publicly or privately owned, that the public is ordinarily entitled or permitted to use for the passage or parking of vehicles and includes:

i. a sidewalk, including a boulevard adjacent to the sidewalk;

ii. if a ditch lies adjacent to and parallel with the roadway, the ditch; and

iii. if a highway right of way is contained between fences or between a fence and one side of the roadway, all the land between the fences, or all the land between the fence and the edge of the roadway, as the case may be,

but does not include a place declared by regulation not to be a highway.

(v) "innovative child care program" has the same meaning given to it in the former *Child Care Licensing Regulation*.

(w) "masking directive or guidance" means, as the context of this Order requires, either:

i. a directive or guidance document made by a regional health authority, or a contracted service provider of a regional health authority, which sets out directions or guidance respecting the use of face masks in facilities or settings operated by the regional health authority or the contracted service provider; or

ii. a directive or guidance document made by Alberta Health and posted on the Government of Alberta website.

(x) "medical exception letter" means written confirmation provided to a person by an authorizing health professional which verifies that the person has a health condition that prevents the person from wearing a face mask while attending an indoor public place and

i. clearly sets out the information required by section 3.6 of this Order; and

ii. is valid for a period of one year from the date on which it is made.

(y) "outdoor food and beverage services" means services which an operator of a food-serving business or entity provides in an outdoor area to persons who remain at the food-serving business or entity while consuming food or beverages. For greater certainty, outdoor food and beverage services are provided in an area that meet the following requirements:

i. patios and dining areas with a roof must not have more than one enclosing wall;

ii. patios and dining areas without a roof may have one or more enclosing wall;

iii. for the purposes of this Order umbrellas and pergolas are not considered to be roofs;

iv. for the purposes of this Order, a fence or a half-wall is not an enclosing wall.

(z) "out of school care" has the same meaning given to it in the Early Learning and Child Care Regulation.

(aa) "performance activity" means singing, playing a musical instrument, dancing, acting or other activities of a similar nature and includes, but is not limited to, a rehearsal, concert, theatre, dance, choral, festival, musical and symphony events.

(bb) "person who resides on their own" means a person living on their own or a person living on their own who has one or more youth living with them and under their care.

(cc) "physical activity" means a fitness activity or sport activity.

(dd) "preschool care", has the same meaning given to it in the *Early Learning and Child Care Regulation*.

(ee) "post-secondary institution" means a public or private post-secondary institution operating under the *Post-Secondary Learning Act* and includes the physical location or place where the post-secondary institution provides a structured learning environment through which a program of study is offered.

(ff) "private place" means a private place as defined under the *Public Health Act*.

(gg) "private social gathering" means any type of private social function or gathering at which a group of persons come together and move freely around to associate, mix or interact with each other for social purposes rather than remaining seated or stationary for the duration of the function or gathering, but does not include a cohort consisting of persons referred to in section 2.1(e) of this Order.

(hh) "public place" has the same meaning given to it in the *Public Health Act*, and for greater certainty does not include a rental accommodation used solely for the purposes of a private residence.

(ii) "recreational activity" means any structured or organized activity or program where the purpose of the activity or program is intended to develop a skill, including but not

limited to, Girl Guides, Scouts, arts and crafts, pottery or other substantially similar activities.

(jj) "school" has the same meaning given to it in the *Education Act.*

(kk) "school building" has the same meaning given to it in the *Education Act.*

(ll) "Special Event Licence" has the same meaning given to it under *Gaming, Liquor and Cannabis Regulation*, AR 143/96, under the *Gaming, Liquor and Cannabis Act.*

(mm) "sport activity" means sports training, practices, events, games, scrimmages, competitions, gameplay, league play, and other activities of a similar nature.

(nn) "staff member" means any individual who is employed by, or provides services under a contract with, an operator of a school.

(oo) "student" has the same meaning given to it in the *Education Act.*

(pp) "visitor" means any individual who attends a school, but who is not a student or staff member.

(qq) "youth" means a person under eighteen years of age.

(rr) "youth activity" means any physical activity, performance activity or recreational activity youth are participating in.

Part 3 – Masking

A. Indoor masking requirements

3.1 Except as set out in this Order and subject to Part 13, a person must wear a face mask at all times while attending an indoor public place.

3.2 For greater certainty, indoor public places include, but are not limited to:

(a) a school building;

(b) commercial vehicles transporting the driver and one or more other persons who are not members of that persons household, or if the person is a person living alone, then the person's close contact;

(c) the common areas of a day camp or overnight camp; and

(d) all indoor spaces under the control of a business or entity, including all areas where the public or employees of the business or entity may attend.

3.3 For greater certainty, except as otherwise set out in this Order:

(a) face masks must be worn at a wedding ceremony or funeral service that is held in an indoor public place; and

(b) a person must comply with all masking directives or guidance while attending at a facility operated by a regional health authority under the *Regional Health Authorities*

Act or a facility operated by a contracted service provider of a regional health authority.

B. General exceptions to indoor masking

3.4 Despite this Part of this Order, a person is not required to wear a face mask at all times while attending an indoor public place if the person is:

(a) a youth under two years of age;

(b) a youth participating in an indoor performance activity in circumstances where it is not possible for the youth to wear a face mask while participating in the indoor performance activity;

(c) a youth participating in an indoor physical activity;

(d) an adult participating in an indoor physical activity;

(e) an adult participating in an indoor performance activity where it is not possible for the adult to wear a face mask while participating in the indoor performance activity;

(f) a person marrying another person during a wedding ceremony, and the individuals in their wedding party;

(g) unable to place, use or remove a face mask without assistance;

(h) seated at a table while consuming food or drink or, if standing at a standing table while consuming food or drink, as long as the person remains at the standing table at all times while consuming the food or drink;

(i) providing or receiving care or assistance where a face mask would hinder that caregiving or assistance;

(j) alone at a workstation and separated by at least two metres distance from all other persons;

(k) the subject of a workplace hazard assessment in which it is determined that the person's safety will be at risk if the person wears a face mask while working;

(l) separated from every other person by a physical barrier that prevents droplet transmission;

(m) a person who needs to temporarily remove their face mask while in the public place for the purposes of:

i. receiving a service that requires the temporary removal of their face mask;

ii. an emergency or medical purpose, or

iii. establishing their identity.

C. Exceptions for health conditions

3.5 Despite this Part of this Order, a person who is unable to wear a face mask due to a health condition as determined by an authorizing health professional is excepted from wearing a face mask while attending an indoor public place.

3.6 For the purposes of section 3.5, the health condition must be verified by a medical exception letter that includes the following:

(a) the name of the person to whom the exception applies;

(b) the name, phone number, email address, professional registration number, and signature of the authorizing health professional; and

(c) the date on which the written confirmation was provided.

3.7 For greater certainty, although the medical exception letter must verify that a health condition applies, the medical exception letter must not include specific information about the health condition.

D. Exception for child care programs

3.8 Despite this Part of this Order, a youth attending at a child care program is not required to wear a face mask except in accordance with any masking directive or guidance made by Alberta Health and posted on the Government of Alberta website.

E. Exceptions for farming or ranching operations

3.9 Despite this Part of this Order, a person does not need to wear a face mask while working at a farming or ranching operation, unless the person is interacting with a member of the public.

Part 4 – Physical distancing

A. Two metres physical distance required

4.1 For all indoor and outdoor activities and settings, a person must maintain a physical distance of two metres from any other person who is not part of the person's cohort as referred to in sections 2.1(e)(i) or 2.1(e)(ii) of this Order.

4.2 For greater certainty, a person must maintain a physical distance of two metres from any other person who is not a member of the person's cohort as referred to in sections 2.1(e)(i) or 2.1(e)(ii) of this Order, when the person:

(a) Is attending an indoor or outdoor space under the control of a business or entity, including all areas where the public or employees of the business or entity may attend;

(b) is attending as a spectator at an indoor or outdoor location of a business or entity for the purposes of observing physical activity, performance activity or recreational activity;

(c) is attending as a spectator at a school building for the purposes of observing indoor youth activity;

(d) is participating in an outdoor private social gathering including a wedding ceremony or reception and a funeral service or reception where the only indoor spaces are washroom facilities;

(e) is a youth or staff member attending at a day camp;

(f) is attending a place of worship.

4.3 For greater certainty, staff and students at post-secondary institution must maintain a physical distance of two metres from any other person who is not a member of their cohort as referred to in sections 2.1(e)(i) or 2.1(e)(ii) of this Order.

B. General exceptions to two metre physical distance requirement

4.4 Despite this Part, a person is not required to maintain a physical distance of two metres from any other person when the person is receiving a service from a business or entity that the person cannot receive while maintaining a physical distance of two metres.

4.5 Despite this Part, a coach, instructor or trainer is not required to maintain two metres physical distance from the person being coached, guided or instructed for physical activity, performance activity, or recreational activity if doing so inhibits the guidance or instruction being provided.

4.6 Despite this Part, a youth is not required to maintain two metres physical distance while participating in an indoor or outdoor physical activity or performance activity.

4.7 Despite this Part, an adult is not required to maintain two metres physical distance

(a) while participating in an outdoor physical activity or performance activity;

(b) while participating in an indoor professional or semi-professional physical activity as a member of a professional or semi-professional sports team or as a professional or semi-professional athlete;

(c) while participating in an indoor professional or semi-professional performance activity as a member of a professional or semi-professional performance team or as a professional or semi-professional performer.

4.8 Despite this Part,

(a) a person in a cohort as defined at section 2.1(e)(i), (ii), (iii), and (iv) of this Order that attends indoors at a private residence is not required to maintain a distance of two metres from another person in that same cohort;

(b) a person in a cohort as defined at section 2.1(e) of this Order that attends outdoors at a private residence is not required to maintain a distance of two metres from another person in that same cohort.

C. Three metres physical distance required

4.9 An adult must maintain a physical distance of three metres from any other person who is not a member of their cohort, referred to in sections 2.1(e)(i) or 2.1(e)(ii) of this Order, when the person is participating in indoor solo or 1:1 physical activity with a coach, instructor or trainer.

4.10 An operator of a business or entity providing a place for indoor solo or 1:1 physical activity with a coach, instructor or trainer must ensure that an adult who is participating in

indoor solo or 1:1 physical activity maintains three metres distance from any other person, including the coach, instructor or trainer, who is not a member of their cohort, referred to in sections 2.1(e)(i) or 2.1(e)(ii) of this Order.

D. Exceptions to three metre physical distance requirement

4.11 Despite this Part, a coach, instructor or trainer is not required to maintain three metres physical distance from the person being coached, guided or instructed for physical activity, performance activity, or recreational activity if doing so inhibits the guidance or instruction being provided.

Part 5 – Work from one's private residence

5.1 An employer must require a worker to work from the worker's own private residence unless the employer determines that the worker's physical presence is required at the workplace to effectively operate the workplace.

Part 6 – Private Residences

6.1 Subject to sections 6.3, 6.4 and 6.5 of this Order, a person who resides in a private residence must not permit a person who does not normally reside in that residence to enter or remain in the residence.

6.2 Section 6.1 of this Order does not prevent a person from entering the private residence of another person for any of the following purposes:

(a) to provide health care, personal care or housekeeping services;

(b) for a visit between a child and a parent or guardian who does not normally reside with that child;

(c) to receive or provide child care;

(d) to provide tutoring or other educational instruction related to a program of study;

(e) to perform construction, renovations, repairs or maintenance;

(f) to deliver items;

(g) to provide real estate or moving services;

(h) to provide social or protective services;

(i) to respond to an emergency;

(j) to provide counselling services;

(k) for a visit between a person who is at the end of their life (last four to six weeks, as determined by that person's primary health care provider) and a family member, friend, faith leader or other person as long as no more than three visitors enter the private residence of the dying person at one time;

(l) to provide or receive personal or wellness services;

(m) to provide physical activity or performance instruction; or

(n) to undertake a municipal property assessment.

6.3 A person who resides on their own may have their cohort described in section 2.1(e)(i) of this Order attend at their own private residence and may attend at the private residence of the one or two other persons described in section 2.1(e)(i) provided the following conditions are met:

(a) each person whose residence the person is attending at lives alone at their private residence; or

(b) each of the two people at the residence the person is attending at live together.

6.4 A cohort for a household as defined at section 2.1(e)(iii) of this Order, can choose one other household to visit with at each other's private residences provided that the following conditions are met:

(a) the two households, when meeting together, are limited to a maximum of ten eligible persons; and

(b) all eligible persons who are part of the household must be fully vaccinated.

6.5 A cohort for a fully vaccinated person who resides on their own, as defined at section 2.1(e)(iv) of this Order, can visit with a maximum of nine eligible persons at each other's private residences provided that the following conditions are met:

(a) the eligible persons, when meeting together, are limited to a maximum of ten eligible persons; and

(b) all eligible persons must be fully vaccinated.

6.6 For greater certainty, the maximum number of persons set out in sections 6.4 and 6.5 does not include persons eleven and younger.

Part 7 – Private social gatherings

7.1 All persons are prohibited from attending a private social gathering at an indoor or outdoor private or public place except in accordance with this Part of the Order.

7.2 For greater certainty, an indoor wedding reception or a funeral reception is a prohibited private social gathering.

7.3 Despite section 7.1 of this Order, a private social gathering of fifty persons or fifty percent of the total operational occupant load, whichever is less, as determined in accordance with the Alberta Fire Code and the fire authority having jurisdiction may occur at an indoor public or private place, excluding private residences, for the purposes of a wedding ceremony or a funeral service.

7.4 A private social gathering of two hundred persons or less may occur at an outdoor public or private place including for the purposes of a wedding ceremony or reception or a funeral service or reception.

A. Private social gatherings for protests

7.5 Despite this Part of this Order, a person may attend at an outdoor public place to exercise their right to peacefully demonstrate for a protest or political purpose without limit to the number of persons in attendance if the person:

(a) remains outdoors except where necessary to use the washroom;

(b) wears a face mask at all times;

(c) maintains a minimum physical distance of two metres from any other person in attendance, including any other person who is a member of the person's household, unless:

i. either the person or the other person is, or both persons are, eleven years of age or younger; and

ii. both persons are members of the same household;

in which case this subsection does not apply;

(d) does not offer food or beverages to any other person in attendance, regardless of whether the food or beverage is provided for sale or not; and

(e) immediately disperses in a coordinated fashion at the conclusion of the gathering, while at all times adhering to the requirements in this section.

7.6 For greater certainty, a protest or political purpose as described in section 7.5 means for the purpose of expressing a position on a matter of public interest.

Part 8 - Places of worship

8.1 A faith leader may conduct a worship service at a place of worship if the number of persons who attend the worship service at the place of worship is limited to thirty-three percent of the total operational occupant load as determined in accordance with the Alberta Fire Code and the fire authority having jurisdiction.

8.2 A person attending a worship service at a place of worship must remain in a cohort consisting of persons referred to in sections 2.1(e)(i) or 2.1(e)(ii) of this Order.

Part 9 – Businesses and entities

9.1 An operator of a business or entity listed in sections 1 through 4 of Appendix A must limit the number of members of the public that may attend the location where the business or entity is operating to the greater of:

(a) thirty-three percent of the total operational occupant load as determined in accordance with the Alberta Fire Code and the fire authority having jurisdiction; or

(b) five persons.

9.2 A person may only attend at a business or entity with a cohort consisting of the persons referred to in sections 2.1(e)(i) or 2.1(e)(ii) of this Order.

9.3 Section 9.1 of this Order does not apply to a business or entity listed in sections 5 though 8 of Appendix A.

9.4 Despite this Part of this Order, a business or entity operating exclusively outdoors, excepting washrooms, is not subject to any capacity limits.

9.5 Despite this Part of this Order an unlimited number of persons may attend a drive-in activity if the persons who attend the drive-in activity:

(a) remain within a motor vehicle that is designed to be closed to the elements while attending and observing or participating in the drive-in activity except where necessary to use the washroom or access other amenities; and

(b) position their motor vehicle at least two metres away from other motor vehicles.

Part 10 – Restaurants, cafes, bars and pubs

10.1 An operator of a food-serving business or entity is prohibited from offering or providing indoor food and beverage services.

10.2 A person who attends a food-serving business or entity that offers or provides outdoor food and beverage services, may eat or drink alone or with a cohort where the cohorts participating are the persons referred to in sections 2.1(e)(i) or 2.1(e)(ii) of this Order.

10.3 An operator of a food-serving business or entity that offers or provides outdoor food and beverage services must:

(a) limit the number of persons seated at the same table to a maximum of six persons for persons who are members of same household and a maximum of three persons for persons who reside on their own; and

(b) require persons to remain seated while consuming food or beverages and must prohibit persons seated at a table or standing at a standing table from interacting with persons seated at a different table or standing at a different standing table.

10.4 An operator of a business or entity with a Class A or C liquor licence, including but not limited to restaurants, bars, lounges, pubs, cafes, legions or private clubs is prohibited from serving liquor after 10 p.m. and must ensure that liquor consumption at the business or entity ends at 11 p.m..

10.5 An operator of a business or entity with a Gaming Licence or Facility Licence or a Class B liquor licence, including but not limited to bowling alleys, casinos, bingo halls, pool halls and indoor recreation entertainment centers is prohibited from serving liquor after 10 p.m. and must ensure that liquor consumption at the business or entity ends at 11 p.m..

10.6 A person who holds a Special Event Licence is prohibited from serving liquor after 10 p.m. and must ensure that liquor consumption at the event ends at 11 p.m..

10.7 For greater certainty, an operator of a food-serving business or entity may, subject to applicable laws, provide food or beverages, including liquor, by take-out, delivery or drive-thru at any time, including after 10 p.m..

Part 11 – Adult physical activity, performance activity and recreational activity

11.1 No adult may attend at an indoor location of a business or entity for the purposes of participating in a group physical activity, group performance activity, group recreational activity, or a competition or similar activity.

11.2 No operator of a business or entity may offer or provide services to, or a location for, an adult to participate in an indoor group physical activity, group performance activity, group recreational activity, or a competition or similar activity

11.3 Despite anything in this Part, an adult is not prohibited from participating in 1:1 or solo indoor physical activities, performance activities or recreational activities and an operator of a business or entity is not prohibited from offering or providing services to, or a location for, an adult to participate in 1:1 or solo indoor physical activities, performance activities or recreational activities.

11.4 Despite anything in this Part, an adult is not prohibited from participating in group physical activity, performance activity or recreational activity when the participating adults are in a cohort referred to in sections 2.1(e)(i) or 2.1(e)(ii) of this Order.

A. Professional physical activities and performance activities

11.5 Part 11 of this Order does not apply to:

(a) a person attending or an operator of a business or entity, providing or hosting a physical activity as member of or for a professional or semi-professional sports team or as a professional or semi-professional athlete;

(b) a person attending or an operator of a business or entity, providing or hosting a performance activity as a member of or for a professional or semi-professional performance team or as a professional or semi-professional performer.

Part 12 – Youth activities

12.1 A parent or guardian of a youth must screen a youth for symptoms of COVID-19 prior to the youth participating in indoor youth activities in accordance with the COVID-19, Alberta Health Daily Checklist (for children under the age of eighteen).

Part 13 – Schools

A. Physical distancing in schools

13.1 An operator of a school must assign each youth enrolled in kindergarten to grade six to a cohort as in accordance with the guidance on the Government of Alberta website.

13.2 Students, staff and visitors at a school building must maintain a physical distance of two metres from any other person who is not a member of their cohort as referenced in sections 2.1(e)(i), 2.1(e)(ii) or 2.1(e)(vi) in accordance with the guidance on the Government of Alberta website.

13.3 Despite this Part and in accordance with the guidance on the Government of Alberta website, students and staff at a school building are not required to maintain two metres physical distance if doing so inhibits the guidance or instruction being provided or where it is not possible to maintain two metres physical distance.

B. Masking requirements in schools

13.4 All students, except for students enrolled in grades kindergarten through three, and all staff, and visitors must wear a face mask while attending at a school building.

13.5 An operator of a school must ensure that all students enrolled in grades four through twelve, staff, and visitors wear a face mask while attending at a school building.

C. Exceptions to masking in schools

13.6 Despite Part 3 and this Part of this Order, students, staff or visitors are not required to wear a face mask at all times while attending at a school building if the student, staff or visitor:

(a) is unable to place, use or remove a face mask without assistance;

(b) is unable to wear a face mask due to a health condition;

(c) is consuming food or drink in a designated area;

(d) is engaging in a physical activity;

(e) is seated at a desk or table

(i) within a classroom or place where the instruction, course or program of study is taking place, and

(ii) where the desks, tables and chairs are arranged in a manner

(A) to prevent persons who are seated from facing each other, and

(B) to allow the greatest possible distance between seated persons;

(f) is providing or receiving care or assistance where a non-medical face mask would hinder that caregiving or assistance; or

(g) is separated from every other person by a physical barrier.

13.7 An operator of a school must use its best efforts to ensure that any student, staff member or visitor who is not required to wear a face mask:

(a) as permitted by section 13.6(a) or (b) of this Order is able to maintain a minimum of two metres distance from every other person;

D. School buses

13.8 Subject to section 3.10 of this Order, an operator of a school must ensure that the following persons wear a face mask while being transported on a school bus:

(a) all students attending grades kindergarten through grade 12;

(b) all staff members;

(c) all visitors.

13.9 For greater certainty, section 13.8(b) applies in respect of any individual who transports students attending grades kindergarten through 12 on a school bus to a school, regardless of whether that individual is a staff member.

13.10 All students attending grades kindergarten through 12, staff members and visitors must wear a face mask that covers their mouth and nose while being transported on a school bus, unless the student, staff member or visitor:

(a) is unable to place, use or remove a face mask without assistance;

(b) is unable to wear a face mask due to a mental or physical concern or limitation;

(c) is providing or receiving care or assistance where a face mask would hinder that caregiving or assistance; or

(d) is separated from every other person by a physical barrier.

E. Exception to masking where physical distancing can be maintained

13.11 Subject to section 13.12 of this Order, sections 13.4 to 13.10 of this of Order do not apply in respect of an operator of a school who is able to ensure that all students, staff members and visitors maintain a minimum of two metres distance from every other person while attending an indoor location within a school or while being transported on a school bus.

13.12 An operator of a school must:

(a) create a written plan that sets out how physical distancing will be maintained;

(b) provide the plan upon request from the Chief Medical Officer of Health, Medical Officer of Health or Alberta Education; and

(c) receive an exemption from the Chief Medical Officer of Health.

13.13 Despite section 13.11 of this Order, an operator of a school does not need to ensure that students, staff members and visitors are able to maintain a minimum of two metres distance from every other person when a student, staff member or visitor is seated at desk or table:

(a) within a classroom or place where the instruction, course or program of study is taking place, and

(b) where the desks, tables and chairs are arranged in a manner

(i) to prevent persons who are seated from facing each other, and

(ii) to allow the greatest possible distance between seated persons.

Part 14 – Exemptions under Alberta Government's Restrictions Exemption Program

14.1 Notwithstanding anything in this Order, the Chief Medical Officer of Health may, pursuant the Alberta Government's Restrictions Exemption Program, exempt a person or class of persons from the application of some, or all, parts of this Order.

Part 15 – General

15.1 Notwithstanding anything in this Order, the Chief Medical Officer of Health may exempt a person or a class of persons from the application of this Order.

15.2 This Order provides the minimum standards for public health measures in Alberta for those matters addressed by this Order.

15.3 For greater certainty, nothing in this Order relieves a person from complying with any provision of any federal, provincial or municipal law or regulation or any requirement of any lawful permit, order or licence covering those matters which are addressed in this Order.

15.4 This Order remains in effect until rescinded by the Chief Medical Officer of Health.

Signed on this 23rd day of September, 2021.

Deena Hinshaw, MD
Chief Medical Officer of Health

Alberta

Document: Appendix A to Record of Decision – CMOH Order 44-2021

Subject: CMOH Order 44-2021 Restrictions

Scope of Application: As per Record of Decision – CMOH Order 44-2021

Overview
This document sets out the businesses and entities that are subject to restrictions under Part 9 of this Order.

Businesses or entities subject to thirty-three percent capacity limit

1. **Retail**
   - all retail, including indoor markets.

2. **Recreational or Entertainment Business or Entity**
   - a business or entity, or a business or entity that is similar in nature to those described in this section, offering or providing access to the following types of recreational facilities or entertainment facilities:
     - Community halls and centres;
     - Theatres, auditoriums, concert halls, and community theatres;
     - Banquet halls and conference centres;
     - Hotel and Condominium fitness facilities, pools, hot tubs, saunas and steam rooms.

3. **Festival or Event Business or Entity**
   - a business or entity, or a business or entity that is similar in nature to those described in this section, offering or providing any of the following activities:
     - Festivals;
     - Concerts;
     - Exhibitions;
     - Tradeshows;
     - Professional sporting or performance events.

4. **Recreational or Entertainment Business or Entity**
   - a business or entity offering, or a business or entity that is similar in nature to those described in this section, or providing access to the following types of

recreational facilities or entertainment facilities:

- Movie theatres, libraries and science centres;
- Indoor children's play centres and indoor playgrounds;
- Museums and galleries;
- Casinos;
- Gaming Entertainment Centre (as defined by the Alberta Gaming, Liquor and Cannabis);
- Nightclubs;
- Bingo halls, bowling alleys and pools halls;
- Racing Entertainment Centres;
- Indoor Recreation and Entertainment Centres;
- Amusement parks and water parks;
- Any indoor portion of an interpretative centre, excluding public washrooms;
- Any indoor portion of a zoo, excluding public washrooms.

Businesses or entities not subject to thirty-three percent capacity limit

5. **Personal Service Business or Entity**
   - a business or entity offering or providing a personal service. For the purposes of this Appendix, a "personal service" has the same meaning given to it in the *Personal Services Regulation*, AR 1/2020, under the *Public Health Act*.

6. **Wellness Service Business or Entity**
   - a business or entity offering or providing a wellness service, including massage therapy services and reflexology services.

7. **Professional Service Business or Entity**
   - a business or entity offering or providing the following professional services, including but not limited to:
     - Health services;
     - Legal services;
     - Tax services;
     - Financial advisory services;
     - Accountant or bookkeeping services;
     - Photography services;
     - Mediation services;
     - Instructional services provided to an individual;
     - Counselling services.

8. **Other entities**
   - a business or entity offering or providing the following:
     - mutual support meetings;
     - elections purposes and related activities;
     - child care services;
     - blood donation and collection activities;

- jury selections;
- shelters for vulnerable persons;
- charitable activities including but not limited to food, clothing, and toy collection and distribution.

COVID-19 INFORMATION

REQUIREMENTS FOR THE RESTRICTIONS EXEMPTION PROGRAM

Overview

The Restrictions Exemption Program (REP) permits businesses/entities/organizers[1], referred to as operators in this document, to operate without the majority of public health restrictions in CMOH Order 44-2021. The REP is an optional program, and operators who choose not to participate may continue to operate but must fully implement all of the public health restrictions outlined in CMOH Order 44-2021. This document has been developed to support operators in the implementation of their proof of vaccination program to qualify for the necessary exemption.

The REP is not intended or required for employees or contractors attending workplaces. Operators are strongly encouraged to promote COVID-19 vaccination to staff, volunteers, attendees and other eligible persons as part of their public health strategy, and any consideration of vaccine requirements for staff is an employer decision.

There is a chart of the in-scope and out-of-scope operators in the appendix of this document. In-scope operators that implement the REP must continue to follow indoor face mask requirements, but are otherwise exempt from public health restrictions in CMOH Order 44-2021. Out-of-scope operators for the REP, as listed in the appendix, are not exempt from public health restrictions even if they decide individually to introduce additional requirements.

Good public health practices are always encouraged, and can minimize transmission of respiratory infections, including COVID-19, influenza and common colds. These practices include: immunization, proper hand washing or use of hand sanitizer, respiratory etiquette, and enhanced cleaning and disinfecting. In addition, staying home when sick with COVID-19 symptoms is legally required even if a test is not done.

PROGRAM DETAILS

General	• Operators participating in the REP must implement their program in alignment with this guidance document, unless otherwise noted.
	  ○ Operators are able to implement more restrictive measures, but not less.
	  ○ Youth participating in youth activities, where all participants are under the age of 18 years of age, are not required to be under the REP (see youth section for more details).
	• Face masks are required in all indoor public spaces, regardless of whether the operator is participating in the REP.
	• Individuals who have COVID-19 symptoms must isolate, in accordance with CMOH Order 39-2021.

[1] Examples of entities/organizers may include not for profit organizations, municipalities, or community groups, as long as there is a responsible party overseeing the Restrictions Exemption Program.

REQUIREMENTS FOR THE RESTRICTIONS EXEMPTION PROGRAM

	• Operators should review the general mitigation for COVID-19 and other respiratory illnesses guidance document and are encouraged to implement public health measures that are applicable to their settings.
	• At minimum, operators participating in the REP should clearly communicate to the public/clients/staff:
	  ○ that they are participating in the program, and
	  ○ what is required to enter/receive services.
	  ○ Operators may use the poster available on alberta.ca/COVID19.
	• Operators participating in the REP that provide rental spaces to others must ensure their renters are aware of and adhere to the REP requirements
	• Operators not participating in REP that rent facilities to other groups (for private events) are responsible for ensuring the renting group is aware of the need to adhere to public health orders unless the rental group implements the REP.
	  ○ If the rental group implements the REP, they must strictly adhere to the requirements of this document.
	  ○ Operators remain responsible for the adherence to public health restrictions in their facilities.
	• Operators participating in the REP must maintain a written plan that outlines the processes and requirements of the program. Staff need to be trained on the plan including processes and steps to protect personal information.
	  ○ This should include training for staff, information for clientele, a written plan for auditing purposes and policies for what to do if individuals are non-compliant.

Screening Process	• Operators must screen all attendees for one of the following at the point of entry:
	  ○ Proof of vaccination; or
	  ○ Proof of a negative privately-paid test result from a sample that is taken within the prior 72 hours (Results from Alberta Health Services are not eligible for consideration for this program), or
	  ○ An original (non-copied) medical exemption letter.
	• Individuals 18 years or older must produce valid personal identification as defined in the personal ID section below.
	  ○ Individuals who are under the age of 18 do not need to show personal identification.
	• Individuals must maintain physical distancing until they have been screened into the facility.

REQUIREMENTS FOR THE RESTRICTIONS EXEMPTION PROGRAM

	• At minimum, the process must include:
	  ○ The name and the date of birth of the individual listed on the proof of immunization or testing must be matched with the name and date of birth on the identification (for 18+).
	  ○ Verification that the proof of vaccination is appropriate (see below) OR the test result indicates the individual has tested negative for COVID-19 within the last 72 hours (see below), or the medical exemption letter is an original and in the prescribed form.
	• Operators may implement an electronic offsite validation program (e.g., application-base or mobile-application) to validate that the vaccination requirements have been met.

What is valid proof of vaccination	• The patron/attendee seeking entry to the business/entity/event is solely responsible for demonstrating that they are the legitimate holder of the vaccination record, and that the information being provided is complete and accurate.
	  ○ If they cannot demonstrate that to the business/entity/event, the individual must not be allowed to enter.
	• Business must make a reasonable attempt to asses the validity of the proof of vaccination of each patron or attendee. If a businesses is unsatisfied that the documentation is genuine, the business should deny entry.
	• Proof of vaccination includes:
	  ○ A picture or paper record of a valid Alberta Health Services, MyHealth Records, pharmacy, First Nations, or physician immunization record prominently displaying the name, type of vaccine and date of administration, or
	  ○ Canadian armed forces immunization record, displaying the name, type of vaccine and date of administration, or
	  ○ An immunization record from another Canadian Province or Territory, displaying the name, type of vaccine and date of administration, or
	  ○ Valid Government of Alberta Vaccination QR code (when available).
	• Operators must verify that the date of administration of the last required dose in the series is at least fourteen days prior to the date the patron is seeking access to the business/entity/event.
	  ○ Up to October 25: At least one dose is required at least 14 days prior.
	  ○ October 25 and later: Two doses of a two-dose series are required, with the second at least 14 days prior. (Note that the

REQUIREMENTS FOR THE RESTRICTIONS EXEMPTION PROGRAM

	Janssen vaccine is the only Health Canada approved vaccine that requires only a single dose for a complete series – if an individual has received one dose of a Janssen vaccine at least two weeks prior, this would be considered sufficient) • For international travellers, the ArriveCan app code and a valid international travel identification document is acceptable.

What is valid proof of a negative test result	• Testing must not be sourced from the Alberta Health Services public COVID-19 testing system.
	  ○ This system is currently reserved for symptomatic individuals and those in outbreak situations. If an individual has COVID-19 symptoms, they must isolate.
	  ○ A self-test completed offsite is not sufficient evidence to support entry into a facility operating under the REP program.
	• The test result should be a written or printed copy that indicates the individual has tested negative for COVID-19 on a Health Canada approved rapid antigen, rapid PCR, or lab based PCR test approved by Health Canada or the lab accreditation body of jurisdiction.
	  ○ Self-produced documentation of a negative result is not sufficient evidence to support entry into a facility operating under the REP program.
	• Operators are permitted to offer on-site rapid testing.
	• It is recommended that operators seek expert advice including medical oversight prior to implementing a rapid test program.
	  ○ If an individual tests positive for COVID-19, that individual must isolate, per CMOH Order 06-2021 and CMOH Order 39-2021.
	  ○ Most rapid tests do not have paper-based results.
	  ○ Businesses that implement a rapid testing program (for the purposes of immediate entry) should not provide written confirmation of a negative test result unless being implemented by a regulated and competent health professional. However, a business may allow entry to that individual for up to 72 hours after the negative result was obtained.
	• Documentation of a test completed offsite must include:
	  ○ A clear indication of the laboratory or the health care professional that completed the test (e.g., DynaLIFE), the type of test, time of sample collection, and clear indication of a negative result.
	  ○ If the result of a rapid test is being verified by a health care professional, a written record must also include the name, phone number, contact information, professional registration number, and signature of the physician or nurse practitioner.

REQUIREMENTS FOR THE RESTRICTIONS EXEMPTION PROGRAM

	○ A picture or any other written documentation of a rapid test result taken off site is not sufficient evidence for entry. ○ Businesses may implement programs that include rapid testing completed offsite provided the integrity of the results and reporting is congruent with an onsite program and the business maintains quality control and assurance oversight. ○ Individuals must not bring completed rapid tests or self-tests to operators, as they can pose a communicable disease risk during transportation. ○ Only a regulated health care professional (acting within their scope of practice, in accordance with the College's Standards of Practice) or an accredited laboratory may provide written diagnostic confirmation of near care or rapid care test results to an individual for the purposes of the REP.
What is a valid medical exemption	• A valid medical exemption is the original signed letter from a physician or nurse practitioner that includes: ○ The name of the person in the written documentation that matches the identification provided. ○ The physician's or nurse practitioner's information is complete by including: ○ Name, phone number, contact information, professional registration number, and signature of the physician or nurse practitioner; ○ Statement that there is a medical reason for the individual's exemption from being fully vaccinated against COVID-19; and ○ The duration that the exemption is valid.
What is a valid Personal ID	• Individuals who 18 years of age or older must also present personal ID. • Proof of identity can be established using documentation issued by an institution or public body, provided it includes the name of the holder and date of birth. • Examples of identification documents that may be used to confirm the identity of the holder of the vaccine receipt include: ○ Birth certificate, ○ Citizenship card, ○ Driver's licence, ○ Provincial or Territorial Government issued identification card, including health card (Alberta or other), ○ Metis card, Treaty card, Inuit Status card, or ○ Passport, or

REQUIREMENTS FOR THE RESTRICTIONS EXEMPTION PROGRAM

	○ Permanent Resident card. • Photo identification is not required.
Collecting and Storing Personal Health information	• Operators should obtain legal advice about the impact of this program in their business/industry context. • Operators should obtain legal advice to inform their program if collecting and maintaining a list of individuals that can enter and re-enter a facility (e.g., so that repeat clients do not need to show proof of vaccination each time). • Personal health information should not be stored onsite.
Participation and application	• Operators may implement a program that is more restrictive than outlined above. • Once the program is implemented, it must be operated consistently for daily operations and throughout the facility. ○ It is not permitted to have the program operate some days and not others, for certain times during a business day and not others, or in some areas and not others. ○ Specifically, restaurants that have implemented the program must apply the program to the entire area of food service, both inside and outside. • Operators must operate the program continuously during the time of restrictions and may not implement and de-escalate over time. • Operators that wish to exit the program should notify their clientele through posters, online information, or any other appropriate mechanism.
Workers, contractors, staff etc.	• Employees, contractors, repair workers, delivery workers, volunteers, inspectors or others who are entering the business/entity/event for work purposes and not as patrons are not required to be screened.
Enforcement	• Operators will be audited for compliance. Alberta Health Services, Alberta Gaming, Liquor, Cannabis and police units in Alberta are able to enforce the requirements of this program. • Additionally, public complaints will support increased compliance and enforcement efforts. • If operators are not complying with these requirements or the current public health restrictions, then enforcement and prosecution may result in fines up to $100,000 (for a first offence).
Delivery, Pick-Up, Take Out	• Individuals who are entering a facility participating in REP for only delivery, pick-up and take out are not required to show their proof of vaccination if the items are collected at the point of screening.

REQUIREMENTS FOR THE RESTRICTIONS EXEMPTION PROGRAM

	• All individuals entering for this purpose must continue to mask the entire time they are in the facility and maintain 2 metres physical distancing from all other persons.
Mutual Support Groups, Elections and Jury Selection	• Individuals participating in mutual support groups, elections, and jury selection in a facility that is participating in REP are not required to be screened as part of the REP. ○ If not screened per REP requirements, individuals participating in these activities are subject to physical distancing at all times. • If individuals participating in mutual support groups, elections, and jury selection wish to access amenities in a facility participating in REP, they will be required to be screened per the REP, as applicable (12+ years of age).

Youth Activities and Youth Participation	• For the purposes of this program, a youth is someone who is under the age of 18 years of age.
	• Youth participating in youth activities in a facility that is participating in REP are not required to be screened as part of the REP.
	  ○ Parents who are required to support youth in their activities (e.g. parent and tot groups) would be required to follow REP requirements in order to attend.
	  ○ Youth are subject to physical distancing at all other times when not engaged in the physical activity (e.g. locker rooms, common areas etc.)
	• If youth wish to access other amenities beyond youth-specific sports, recreation or performance activities in a facility participating in REP, for these purposes they will be required to be screened per the REP, as applicable (12+ years of age).
	• Coaches, instructors, trainers, referees etc. for youth activities, who are 18 years or older, are subject to the public health measures or REP requirements in the facility.
	• School groups accessing facilities otherwise under REP (for the purposes of K-12 curriculum) are not required to be screened as part of REP.

Note: Publicly funded post secondary institutions identified in the PSLA, First Nations College entities, private colleges, private faith based institutions will be addressed in a separate, specific exemption.

This document and the guidance within it is subject to change and will be updated as needed.

Last Revised: September 2021.

REQUIREMENTS FOR THE RESTRICTIONS EXEMPTION PROGRAM

In-Scope Operators	Out-of-Scope Operators
Restaurants and Food Courts with closed access to the public	Events in Private Dwellings
Nightclubs	Retail & Shopping Malls
Casinos, Bingo Halls, VLT Lounges	First responders attending for the purposes of responding to an emergency situation
Entertainment/Rec Centres, such as: • Bowling, racing entertainment, arcades, billiards halls, other similar entertainment. • Museums, art galleries	Workers/employees in/on a worksite for the purposes of their employment
Movie theatres	Places of Worship – for faith services
Recreation facilities for physical activity, performance activity and recreational facility, *excluding*: • youth physical activity, performance activity and recreational facility • mutual support meetings • jury selection • elections purposes and related activities	Schools, K-12
Conferences / Meeting Spaces / Halls/ Rented spaces (excluding private dwelling units), *excluding*: • mutual support meetings • places of worship – for faith services • jury selection • elections purposes and related activities	School curriculum based activity
Weddings and Funerals held in public facilities where the facility maintains responsibility for adherence to these requirements	Child care settings (e.g., daycares)
Private social events held in public facilities where the facility maintains responsibility for adherence to these requirements	Accommodations (e.g., hotel)
Spectator settings for professional sport or performance activity	Health Services
Recreation classes/activities (outside physical activity)	Personal Services

REQUIREMENTS FOR THE RESTRICTIONS EXEMPTION PROGRAM

Adult recreational sport groups (players/participants)	Wellness Services
Amenities in hotels and condos, such as: • fitness rooms, pools • game rooms, movie rooms • other similar amenities	Youth activities, where all participants under the age of 18 • Note that coaches, instructors, trainers, referees subject to the requirements of the facility if under REP.
Fitness facilities	Libraries
	Public Transit
	Mutual Support Groups
	Jury selection
	Election purposes and related activities

TOWN OF BON ACCORD

Request for Decision (RFD)

MEETING: *Regular Council Meeting*

MEETING DATE: **October 05th, 2021**

AGENDA ITEM: **54th Avenue Road Maintenance Update**

RECOMMENDATION:

THAT Council accept the following 54th avenue road maintenance update as information.

BACKGROUND:

Town staff are currently grading 54th avenue (the road providing access to Lillian Schick School) twice per week to ensure that the road is safe and in reasonable condition as part of their weekly road maintenance activities.

Additionally, Town staff recently applied ash millings to 54th Avenue to assist with dust abatement.

Paving this road is not an option at this time due to the significant cost involved and the impact of future development in the area, including any required changes to the infrastructure that may be needed.

Administration is working with our engineering firm to determine if there are affordable options to help improve overall road conditions on 54th Avenue.

FINANCIAL IMPLICATIONS: N/A

LEGAL IMPLICATIONS: N/A

LEGISLATIVE HISTORY: N/A

ALTERNATIVES: N/A

Prepared and Submitted By: Jodi Brown, CAO

Reviewed By: Jodi Brown, CAO

Date: September 30th, 2021

TOWN OF BON ACCORD

Council Report – October 05, 2021

The following is a list of my activities as Mayor from September 16, 2021 to October 05, 2021.

September 16, 2021	Attended a Municipalities Information Session with Premier Kenny, Minister McIver, and Dr. Hinshaw. (Virtual) • Overview/clarification of new Covid restrictions. • Vaccination information.
September 21, 2021	Attended the Town of Bon Accord – Regular Meeting of Council. (Virtual).
September 27, 2021	Attended the Capital Region Northeast Water Services Commission (CRNWSC crnwsc.ca) Board meeting. (Virtual) • Final meeting of current Commission directors before October election. • Updated on status of current and upcoming projects by Commission engineer. • Passed final policies and bylaw on adding or removing members of the Commission. • Dealt with standard Commission business.
September 30, 2021	Attended Alberta Community Crime Prevention Association (ACCPA albertacrimeprevention.com) Annual General Meeting. (Virtual)
October 05, 2021	Attended the Town of Bon Accord – Regular Meeting of Council. (Virtual) • Final regular meeting of this Council term.
General	Ongoing day to day, meeting preparation, and community engagement.

Notes:

While I will continue my duties as Mayor until October 25th, this is my final regular Council meeting and final official report. The next regular meeting of Council will occur after the October 18th Municipal Election and will feature a new Council which will be representing the interests of Bon Accord's residents for the next four years.

I would like to once again congratulate Mayor-elect Brian Holden who was elected by acclamation on September 20, 2021 and wish best of luck to the candidates for Councillor, both incumbent and new, who will be elected to Council on October 18th. Elections are always an exciting time and are often viewed as a time of rebirth for new ideas and direction, but this time around we are fortunate to also have a fresh start in our Administration with a new CAO and some new administrative staff. I believe the combination of existing experienced and new Administration personnel and Council members will put Bon Accord on a strong path moving forward.

Being a politician can take its toll on family, and I would like to thank my wife Maureen for putting up with me and my return to Council last December, and for being my sounding board when needed. The decision to run for Mayor came about quite suddenly, and the quick outcome was a bit of a shock during Christmas and a pandemic. Whoops. Thanks Hon!

Last, but not least, I thank the residents of Bon Accord for having allowed me to represent them over this past ten months. While my time here was short, I'd like to think it was productive and hopefully fulfilled the direction that the community and existing Council members had desired and had set in the three years prior. In has been a pleasure to have once again served this community in the role of an elected official and as a proud resident of Bon Accord.

All my best to everyone!

This ends my report.

Greg Mosychuk

Greg Mosychuk
Mayor
Town of Bon Accord

The needs of the many outweigh the needs of the few, or of the one.
-Spock-

The "problem" is not the problem. The problem is your attitude about the "problem".
-Captain Jack Sparrow-

Beware of false knowledge; it is more dangerous than ignorance.
-George Bernard Shaw-

TOWN OF BON ACCORD
Council report

September 16 – September 30, 2021

September 21 Attended regular meeting of council.

September 30 Attended virtually the ACCPA AGM

Notes: It has been a very interesting four years. I want to wish everyone good luck in the next election. A big thank you to everyone who voted me in last time. This has truly been an experience like no other. It has helped me grow and learn and I truly appreciate this opportunity you have given me. Thank you all very much!!

To the office staff:
A big thank you to the office staff for fixing my reports. With out my laptop I don't have the backdrop. Lol so I just wanted you guys to know I appreciate you doing this for me!! I also want to thank you guys for all your hard work over the last four years too!! With out you guys our job would be a lot harder. So thank you all!!

Tanya May
Deputy Mayor
Town of Bon Accord

TOWN OF BON ACCORD

Councilor Report – for period of September 7- October 5 2021

September 7 Regular Meeting of Council.

September 24 Salutes Regular Meeting (virtual)

They are always looking for new members, so if there are any military or any interested residents, they can submit an application and/or attend meetings virtually.

Note: I would like to say, thank you for the opportunity, I have truly enjoyed being a councilor for the Town of Bon Accord and I truly hope to be re-elected to serve another term.

Lacey Laing

Councilor

Town of Bon Accord

TOWN OF BON ACCORD

Councillor Report – for period September 7 – October 5, 2021

September 7, 2021	*Attended Regular Meeting of Council in chambers*
September 17, 2021	*Virtually attended Town Hall Meeting with Premier Kenny, Minister McIver and Dr. Deena Hinshaw. Discussed Covid restrictions and vaccines. Minister McIver gave his thoughts regarding campaigning under current restrictions. OK to door knock as long as we wear masks and maintain appropriate distancing.*
September 21, 2021	*Virtually attended Regular Meeting of Council.*
September 27, 2021	*Virtually attended Capital Region Northeast Water Services Commission meeting. Discussed Capital Plan, approved policies and bylaws as well as Strategic Plan and Asset Management Plan.*
September 30, 2021	*ACCPA (Alberta Community Crime Prevention Association) Annual General Meeting*
October 5, 2021	*Attended final Regular Meeting of Council before election.*

I would like to thank our Mayor for his leadership and dedication over the past 11 months and wish Greg the best with all of his future endeavours. I would also like to thank Council for all of the hard work that was put in over the past 4 years. There were a few bumps in the road that included 2 by-elections; however, it was a 4 year learning process through which I saw a tremendous amount growth. I'm really looking forward to the next 4 years.

Brian Holden
Councillor
Town of Bon Accord

TOWN OF BON ACCORD

Councillor Report – for Sept 16 to Oct 5, 2021

Sept 17, 2021	Attended virtually the ACRWC meeting.
Sept 21, 2021	Attended the Regular Meeting of Council via Teams
Sept 23, 2021	Attended virtual meeting of Homeland Housing. I am happy to report that all of the Governance policies my committee worked on were approved. The new board should have clear guidance in place.
Oct 1, 2021	Attended the final meeting of the ACRWC virtually.
Oct 5, 2021	Will be attending the final Regular Meeting of Council.

Note: Wishing everyone good luck with their council campaigns. The last four years has been a great learning opportunity and I feel council has made some good responsible choices. Hoping to have a chance to continue down that path. I also want to take this opportunity to thank administration for supporting council for the last few years including now retired CAO Pierce. A big thankyou to outgoing Mayor Mosychuk for stepping in over the last 11 months.

Lynn Bidney

Councillor

Town of Bon Accord

TOWN OF BON ACCORD
Request for Decision (RFD)

MEETING: Regular Council Meeting

MEETING DATE: September 21, 2021

AGENDA ITEM: **Hosting Munis 101**

RECOMMENDATION:

THAT….

BACKGROUND:

At the RMC September 7, 2021:

> COUNCILLOR LAING MOVED THAT administration research the possibility and financial implications of hosting "Munis 101", following the election, in Bon Accord Chambers and bring forward findings at the next Regular Meeting of Council September 21, 2021. **CARRIED RESOLUTION 21-290**

Jointly owned and operated by the Rural Municipalities of Alberta (RMA) and the Alberta Urban Municipalities Association (AUMA), the Elected Officials Education Program (EOEP) provides elected officials with professional development opportunities in the form of courses, such as Munis 101.

Administration has reached out to the registrar for the EOEP and was advised the 2021 course schedule is at maximum capacity for facilitators as well as municipal lawyers. This topic has been brought forward to their management committee, but still requires the Board to make a decision or give direction.

Costs and pricing structure would also fall to the Board. The next tentative Board meeting is scheduled for October 1, 2021.

Dates are available in Edmonton in November that Council could attend:

November 15 and 16 – Edmonton Convention Centre (AUMA Conference)

November 22 and 23 – Edmonton Convention Centre (RMA Conference)

Additionally, members of Council have a placeholder at a new Council orientation session on October 28, 2021 in Morinville hosted by Sturgeon County. Details are forthcoming.

FINANCIAL IMPLICATIONS: N/A

LEGAL IMPLICATIONS: N/A

LEGISLATIVE HISTORY: N/A

ALTERNATIVES:

1. Council accepts the RFD as information and for discussion purposes.
2. Council directs administration to…

Prepared and submitted by: Jessica Caines **Reviewed by:** Jodi Brown, CAO
Date: September 15, 2021