APPENDIX A
Updated Detailed Condition Assessment of Sudbury Community Arena

A1. Sudbury Community Arena

The Sudbury Community Arena offers 4,610 fixed seats with a total capacity of 5,100 during performance events with floor seating. The structure of the building consists of cast-in-place concrete foundation, concrete slab-on-grade, concrete rink slab, steel structural columns and beams, suspended steel deck, wood deck roof structure, and steel deck roof structure.

Exterior finishes include cementitious board cladding, limestone cladding, metal cladding, masonry bricks, ceramic tiles, windows, aluminum glazing, fire-rated glass blocks, doors, and an overhead door.

The roofing system of the building is a combination of modified bitumen membrane and built-up roofing.

A1.1. Existing Condition and Asset Level of Service

The Facility Condition Index (FCI) is an industry standard that provides a benchmark to compare a constructed asset's condition at a current or projected point in time. The FCI is a ratio that is calculated as follows:

$$FCI = \frac{\text{Current and Deferred Investment Requirement}}{\text{Facility Replacement Value in current dollars}}$$

The Sudbury Community Arena has a Facility Condition Index (FCI) of 12.8%, which is considered to be Fair. An FCI of Fair is describing a facility that is safe for occupancy and programming. However, the facility is demonstrating its age and deterioration. As demonstrated in Figure A1, the FCI of the Sudbury Community Arena begins to quickly deteriorate in the short-term. Most notably the facility moves into a Poor Condition by 2025, and Very Poor Condition in 2030. The FCI projected over 25 years in Figure A1 does not consider any investment into the Sudbury Community Arena.

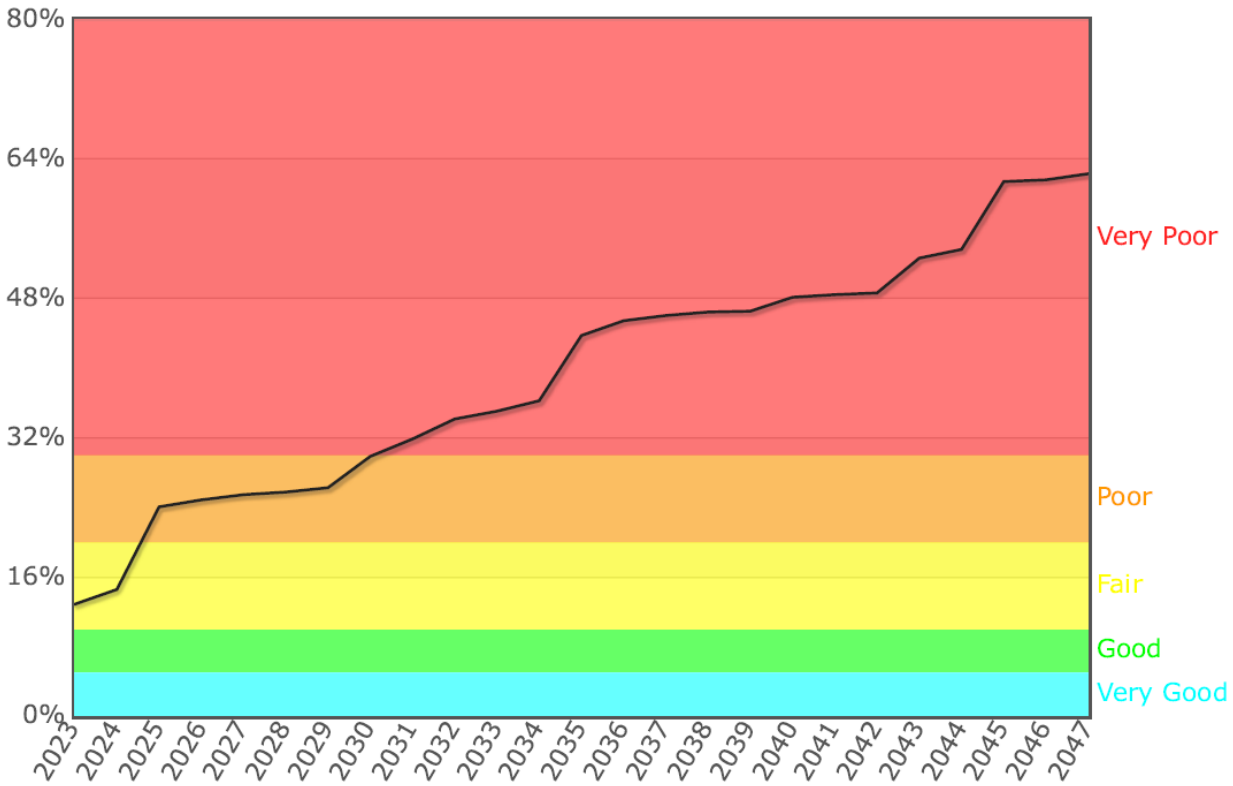

Figure A1: Facility Condition Index (FCI) Projected for 25 Years

The lifecycle interventions that are associated with the corresponding increase in FCI represent significant capital investment. The following interventions represent a sample of capital investment required within the next 10 year period. Lifecycle interventions include but are not limited to:

- Roof replacement
- Structural deficiences to accommodate snow load
- Refurbishment of structural steel columns and beams (currently in Fair condition)
- Replacement of the catwalk above the surface of the ice
- Foundation repair (experiencing water infiltration)
- Masonry repair in isolated areas
- Plumbing noted to be in Poor condition
- Building Automation System upgrade
- Dehumidification upgrade (humidifiers range from Good to Poor condition)
- Replacement of aging lighting
- Partial seating replacement
- Refrigerant system compressor replacements

In the Spring of 2023, Greater Sudbury performed a Barrier-free Accessibility Assessment to determine the improvement required to align the Sudbury Community Arena with the Accessibility for Ontarians with Disabilities Act. It should be noted that in some cases, the existing facility constraints limit the potential for accessibility improvement upgrade. The

estimated costs associated with the legislated accessibility upgrades are included in the condition and cost discussion for the existing facility. Improvement interventions are required throughout the facility and are not limited to:

- Ramps
- Exterior and Interior Doors
- Path of Travel, Concourse, and Corridors
- Universal Washroom
- Communal Washroom
- Change Rooms
- Fire Alarms and Controls
- Service Counters
- Viewing Positions

A1.2. Deferred Investment Requirement and Projected Capital Need

The following Figure A2 demonstrates the deferred and upcoming investment requirement for the existing Sudbury Community Arena over the next 10 year period. The deferred investment and capital need demonstrated includes all investment need identified within the facility. The investment need is typically prioritized by risk. It is not a requirement that all the items captured in Figure A2 are addressed to maintain the current facility condition index of 12.8% (Fair). Some of the items in Figure A2 may represent investment that is a relatively low risk to the City as opposed to a high risk project.

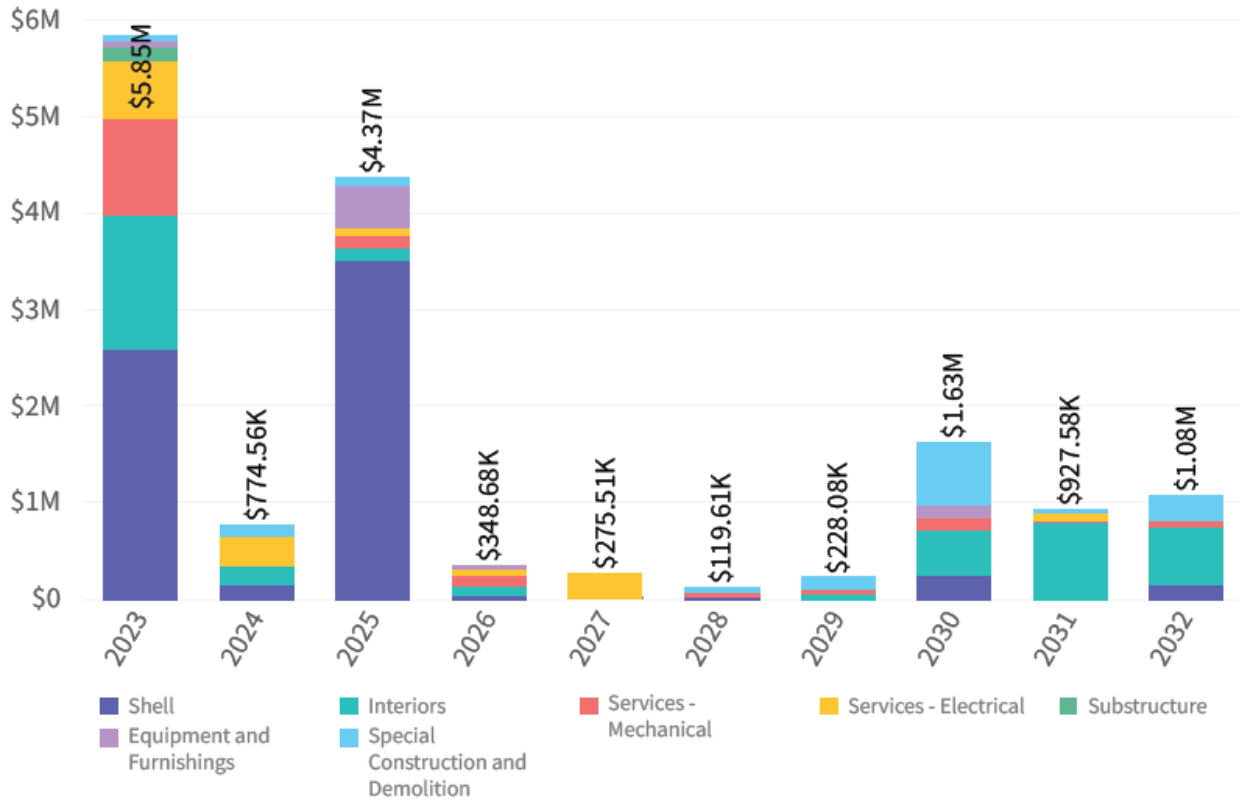

Figure A2: Cost by Detail for a 10 Year Period

The deferred and current investment requirement in Figure A2 equates to $5.85M, and the total projected capital need over a period of 10-years inclusive of deferred investment is $15.6M. As indicated, this value includes all capital need to the facility inclusive of all levels of risk. Of particular importance in Figure A2 is the deferred and current investment requirement. This is because lifecycle interventions that may be a low risk when the interventions are first noted, tend to increase to a greater risk as the interventions are deferred over time.

The values within Figure A2 represent the estimated cost of construction, inclusive of a 10% design contingency and a 10% general contingency but does not include municipal portion of HST. All costs are considered as a like-for-like repair, refurbishment, or replacement.

A1.3. Maintain Asset Level of Service

With further analysis of the FCI presented in Figure A1, the City may determine the investment required to maintain the Sudbury Community Arena's condition in its current state over a defined period.

Analyzing the FCI and average annual investment requirement over a 10-year period (AAR_{10}), the City may estimate the AAR_{10} to maintain the Facility Condition Index of 12.8% (Fair) is $973,674. The AAR_{10} investment to maintain the FCI is demonstrated in Figure A3.

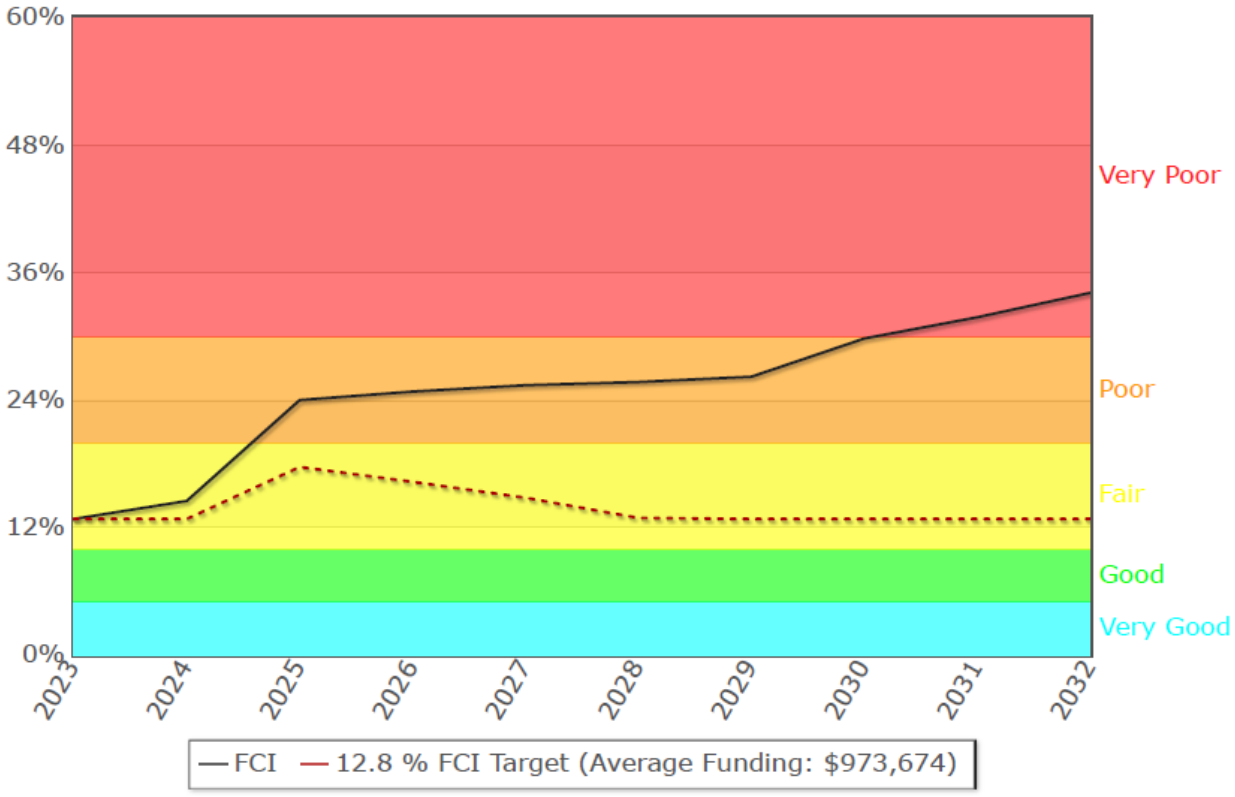

Figure A3: Facility Condition Index (FCI) and Average Annual Investment Requirement (AAR_{10}) Projected for 10 Years

A1.4. Long-Term Unfunded Costs

When projecting the Sudbury Community Arena capital need to a period of 50-years, the unfunded capital need value grows to $50.1M. The 50-year unfunded capital need projection is demonstrated in Figure A4.

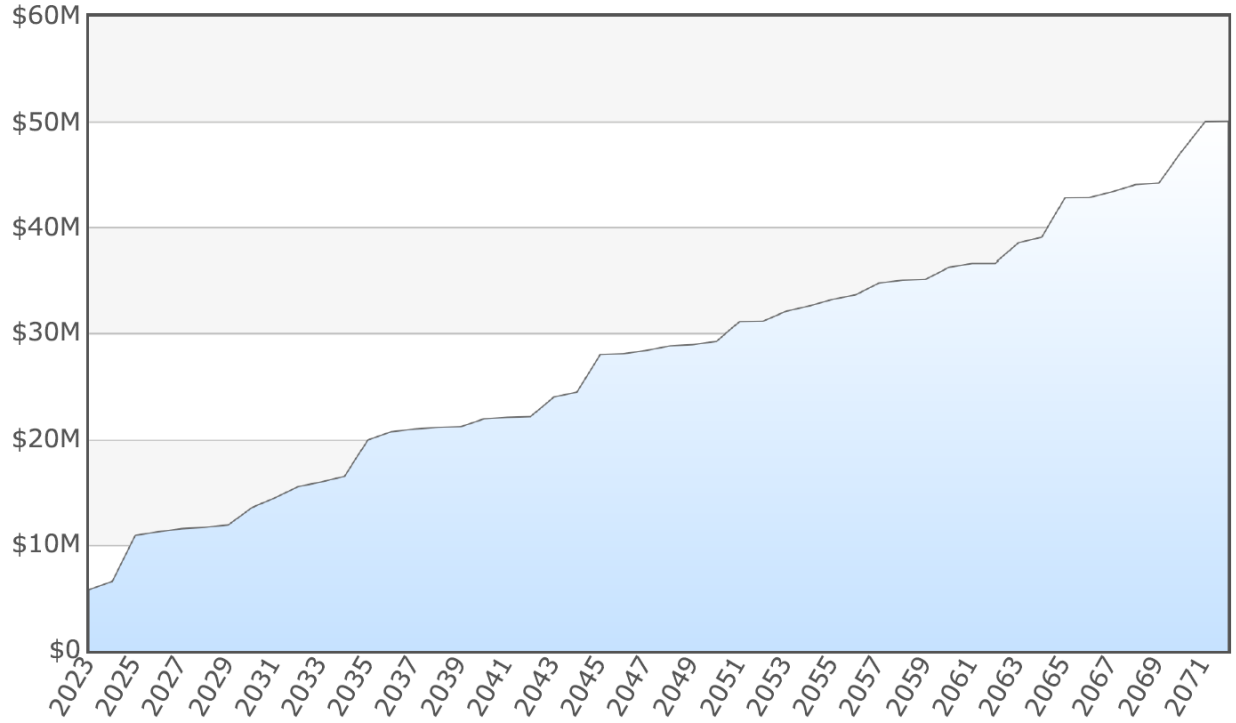

Figure A4: 50-Year Unfunded Capital Projection

A2. Maintaining the Asset Level of Service for the Sudbury Community Arena

The discussion in this section considers maintaining the existing facility at a Fair condition rating. Inherently, there would be some accessibility improvements made to the facility as typically scheduled renovation and maintenance work is completed.

A2.1.1. Prohibitive to Repair

The seventy-two (72) Ontario district school boards follow a facility condition framework that somewhat resembles the industry standard Facility Condition Index (FCI) described earlier in this report. However, there is one critical difference. The school boards determine the replacement cost value that is the denominator in the FCI ratio by the gross floor area and the number of student spaces; as opposed to the estimated construction cost to replace the facility that is implemented by Greater Sudbury. A variance in the denominator of the FCI calculation can have a significant impact on the output.

Within the Provincial investment prioritization framework, there is a term known as Prohibitive-to-Repair. For the purposes of the school boards, the Ministry defined a prohibitive-to-repair school as having an FCI equal to or greater than 65%. In June 2006, when the Ministry revised the replacement value methodology from estimated construction cost to gross floor area and

number of student spaces, the quantity of prohibitive-to-repair schools almost doubled instantaneously, from 136 to 208. The details are documented in the 2008 Annual Report of the Office of the Auditor General of Ontario.

Although Greater Sudbury has not yet formally defined a prohibitive-to-repair FCI value, with minimal investment, the existing Sudbury Community Arena would likely approach prohibitive-to-repair within the next 15 years.

A2.1.2. Sudbury Community Arena Limitations

From the soils below the foundations up to the roof structure, there are limitations associated with maintaining the Sudbury Community Arena by extending its service life. The following Table A1 outlines limitations of the current arena facility compared to the desired outcomes of an event centre.

Table A1: Impact of Limitations on Desired Outcomes

Desired Outcome	Limitations
Achieve the Accessibility for Ontarians with Disabilities Act (AODA)	• The Barrier-free Accessibility Assessment performed outlined facility upgrades to strive for accessibility. Although many upgrades can be completed within the existing facility, existing constraints do limit certain potential improvement upgrades.
Improved Event Viewing Experience for Community Members	• Desired fixed seating and capacity cannot be achieved • Unable to achieve the event experiences offered with a suites level • The roof structure and seating bowl prevent desired sight lines
Improved Congestion	• Limited improvements for the concourse and paths of travel • Minimal opportunity to improve main lobby and entrances
Improved Service	• Points of sale and kiosks may be improved from an accessibility perspective. However, space limits opportunity to increase points of sale
Business Attraction, Development, and Retention	• Commercial space with virtual seating will not be included within the facility footprint • Kitchen and commissary storage limited to existing
Event Attraction	• The facility will be considered to be too small to host desired Hockey Canada, Curling Canada, and International Ice Hockey Federation events. • Roof structure places limitations on clear heights, rigging, media booths, etc. • Vehicle entry and marshalling are limited to substandard conditions
Operational Efficiency	• The facility is currently operating under snow load restrictions. Structural analysis in the low roof areas on the north and south side of the arena identified that the roof structure is significantly under-designed to accommodate snow accumulation loading within the snow drift area. The interim solution of snow load restrictions involves a snow watch program to prevent accumulation greater than 16".
Alignment with CEEP Goals	• The facility is currently connected to the District Energy system which was once considered to be a 'green' alternative. However, the current system is powered by natural gas. Recent studies have demonstrated the use of natural gas and hydrocarbons is not as 'green' as it was once considered to be. There may be opportunity to improve the District Energy system.