



# Buildings and Facilities Asset Management Plan



Version No. 1

2023

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# **1. Executive Summary**

## **1.1. Purpose**

Asset management is the systematic and coordinated activities and practices of an organization to deliver on its service objectives optimally and sustainably through cost-effective lifecycle management of assets.

The Buildings and Facilities Asset Management Plan provides details of the building and facility portfolio including the actions required to provide the current level of service while outlining the associated risks of asset ownership. The plan defines the current services provided, how the services are provided and what funds are required to maintain the services over a ten-year planning period.

## **1.2. Asset Management Strategy**

The lifecycle intervention strategies for Buildings and Facilities discussed within this report include best practice activities. Best practices for the management of vertical infrastructure elements, and the equipment, furnishings and appliances are applied with intervention decisions to strive for the lowest lifecycle cost. These best practices include:

- Preventative maintenance and inspection program protocols;
- Document issues identified from asset users;
- Adhere to the manufacturer's scheduled maintenance;
- Retain certified asset users when applicable and provide additional training to address proper use and maintenance for each asset;
- Monitor the condition of assets on a regular basis, monthly and annually depending on the asset.

## **1.3. Failure Prediction and Risk Management**

A risk framework has been developed and implemented with each individual asset assigned a risk score based on a calculated probability and consequence of failure.

The probability of failure is an estimate of the likelihood of an asset is to not meet its service expectations. The consequence of failure is an estimate of the effect or outcomes if an asset fails. Under the Buildings and Facilities portfolio infrastructure assets are prioritized for renewal or replacement with the output of the risk assessment. The parameters of the risk assessment are discussed in further detail within the plan.

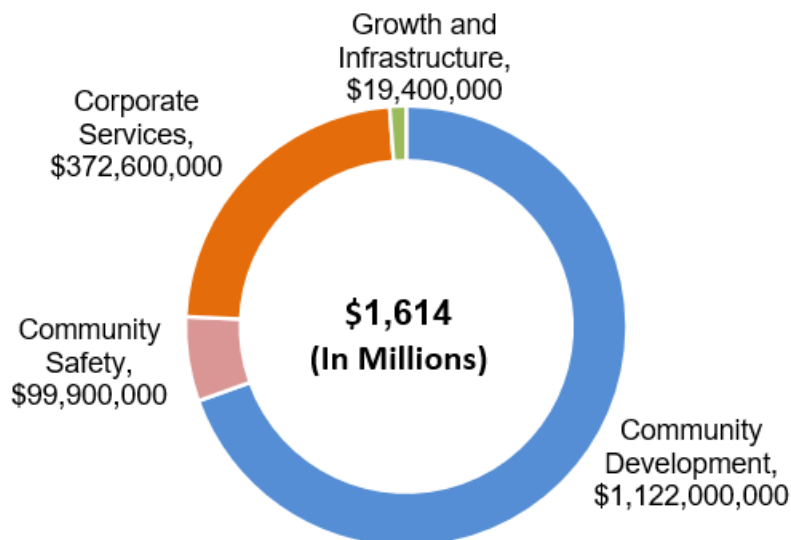
Additionally, a Facility Condition Index has been prepared for each facility. The Facility Condition Index is an industry standard that may be forecasted into the future to analyze the expected useful life and performance of facility.

#### 1.4. State of the Infrastructure

The scope of the plan encompasses the buildings and facilities (vertical infrastructure) owned and operated by the City of Greater Sudbury, including: the building elements, equipment, and furnishings required to operate the buildings and deliver municipal services. This asset management plan encompasses all city facilities with the exemption of Water and Wastewater facilities that are included in the Water-Wastewater Asset Management Plan.

The building and facility infrastructure portfolio has a replacement value of **\$1,613,900,000**. The replacement value of Greater Sudbury's building and facility infrastructure is summarized in Figure 1.

**Figure 1: Replacement Value Distribution of Building and Facility Infrastructure**



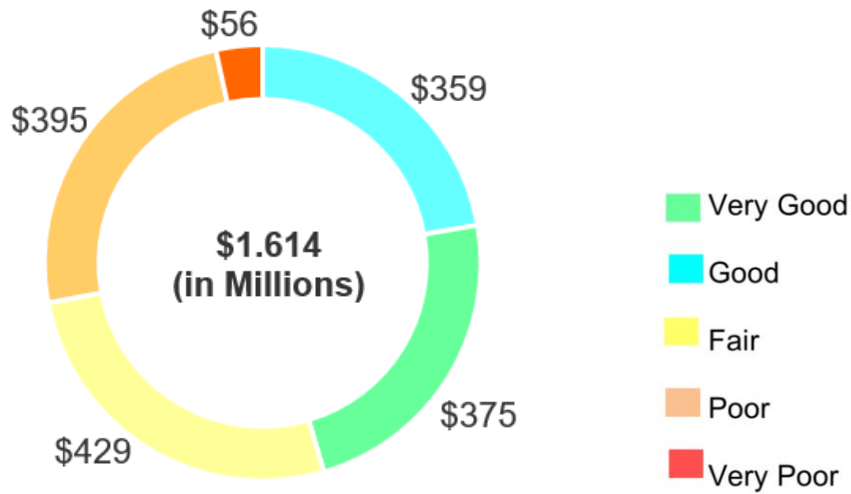
Information utilized to develop the plan is derived from various sources including a work order management system, building condition assessments and asset management and capital planning software.

The details behind the development of condition and inspection frameworks are attached in Appendix A. Facility Conditions vary according to their age and the historical investment and are described with a Facility Condition Index (FCI) calculated as a percentage using the deferred investment requirements by facility replacement value. For this asset management plan the City has categorized the FCI into the following:

Very Good: 0% to < 6%
Good: 6% to < 10%
Fair: 11% to < 20%
Poor: 20% to < 30%
Very Poor: > 30%

Figure 2 outlines the condition ratings of the Building and Facilities Inventory as they relate to their replacement costs.

**Figure 2: Condition and Valuation of the Building and Facility Inventory**



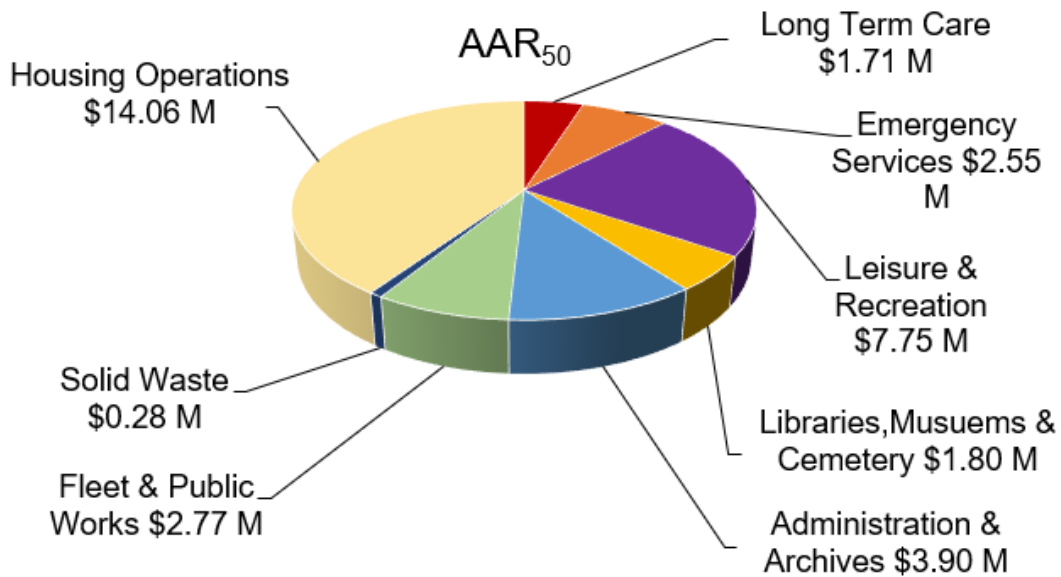
### 1.5. Level of Service

Levels of Service (LoS) are used to define the extent that the City is currently delivering services and the extent that the City will aim to deliver services to the community. They provide a direction for a particular service area against which performance can be measured. Levels of Service are imperative to establish reasonable expectations while taking into consideration the risks associated with service delivery and the affordability of delivering a service. Following the approval by Council of the Buildings and Facilities Asset Management Plan, staff will work towards defining level of service targets for Council review, consideration, and approval and are discussed further in this plan.

### 1.6. Long-Term Need

Figure 3 details the 50-year average annual reinvestment requirement (AAR<sub>50</sub>) by asset class. The AAR<sub>50</sub> represents the estimated annual amount of capital the City requires to reinvest in the Buildings and Facilities inventory. Investment was analyzed on a 50-year period to capture the theoretical useful life of Buildings and Facilities. The 50-year annual average reinvestment requirement for all Buildings and Facilities assets is **\$34.8M**.

**Figure 3: 50-Year Average Annual Reinvestment Requirement**



**1.7. Future Demand**

The City’s buildings and facilities are monitored for future demand requirements. The most significant future demand drivers for Buildings and Facilities infrastructure are population health, growth, and climate change and energy efficiency. The City has implemented preventative measures in anticipation of the demand drivers and are outlined in section 8 of this plan.

**1.8. Climate Change**

In September 2020, Council approved the Community Energy Emissions Plan (CEEP) that is the long-term plan to reduce carbon emissions and pollution in Greater Sudbury. The City is beginning to monitor the effects of climate change on its infrastructure assets and the effects of climate change are discussed in further detail in section 9 of this plan.

## 1.9. Next Steps

Table 1 identifies the next steps that emerged during the development of the plan.

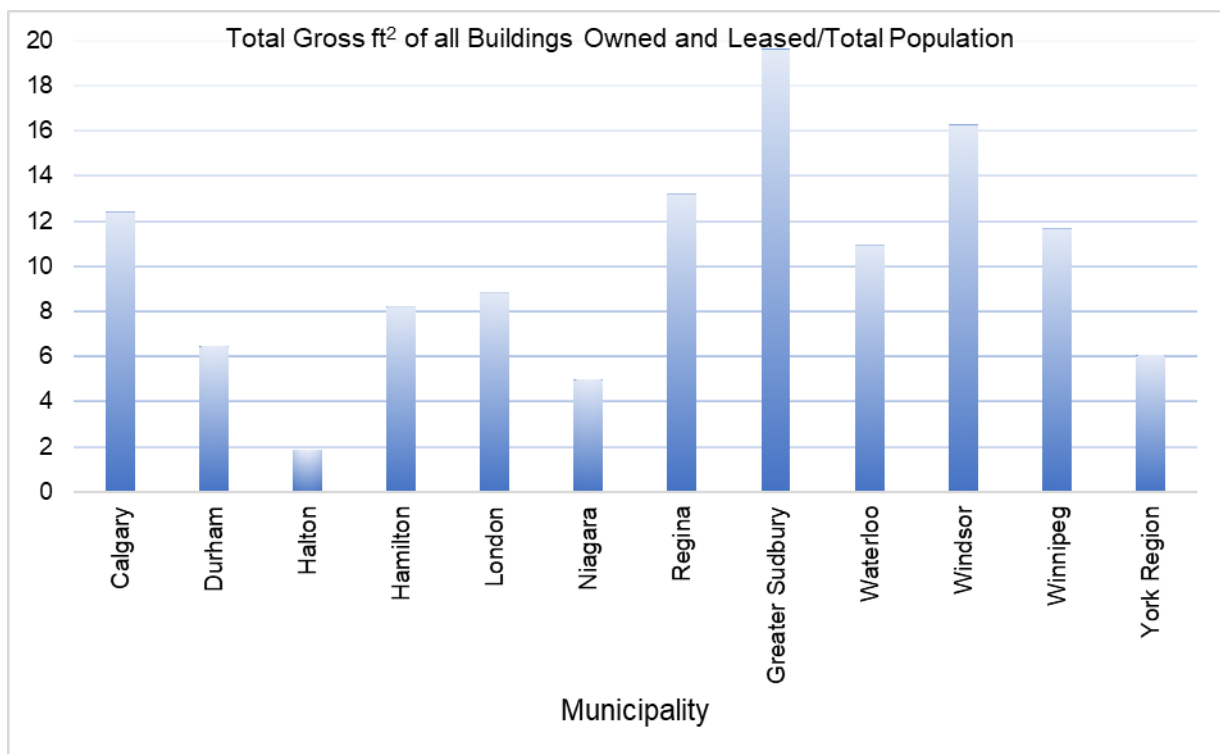
<b>Table 1: Next Steps</b>		
<b>Section</b>	<b>Category</b>	<b>Action Item</b>
State of the Infrastructure	Inventory	<ul style="list-style-type: none"> <li>• Monitor and refine the building and facility asset inventory to reduce the quantity of data assumptions</li> <li>• Develop and implement an updated asset identification standard for all buildings and facilities</li> <li>• Perform audits on building and facility site conditions at five (5) year intervals</li> </ul>
Level of Service	Asset Level of Service	<ul style="list-style-type: none"> <li>• Develop target service levels for Council review</li> </ul>
Asset Management Strategy	Lifecycle Management Plan	<ul style="list-style-type: none"> <li>• Review and refine strategies as necessary</li> </ul>
Failure Prediction Risk Management	Risk Assessment and Exposure	<ul style="list-style-type: none"> <li>• Monitor and refine the risk framework for buildings and facilities as necessary</li> </ul>
Long-Term Needs	Funding Sources	<ul style="list-style-type: none"> <li>• Develop a sustainability strategy to achieve target levels of service for Council review, discussion, and approval.</li> <li>• Determine funding source for infrastructure need.</li> </ul>

## 2. Introduction

Greater Sudbury was formed on January 1, 2001, as recommended by the Report to the Minister of Municipal Affairs and Housing on Local Government Reform for Sudbury (November 1999). The amalgamation of the former Regional Municipality of Sudbury and several unincorporated townships marked the beginning of the evolution of the City of Greater Sudbury. Greater Sudbury is unique due to its large geographic area; the largest municipality by area in the Province of Ontario.

The City of Greater Sudbury owns a building inventory consisting of 620 buildings and facilities that equates to 5.4M square feet. The building inventory is managed across several areas including Assets and Fleet Services, Cemetery Services, Clerks Services, Emergency Services, Environmental Services Solid Waste, Leisure Services, Library and Heritage Services, Long-Term Care as well as Sudbury Housing Operations. The buildings and facilities that make up the water/waste water portfolio are included in the Water, Waste Water Asset Management Plan.

When comparing the total square footage of owned and leased buildings to the total population of all the municipalities that submitted to the Municipal Benchmarking Canada (MBNCan) 2021 data call, Greater Sudbury has the highest value by a significant margin. The data comparison from the 2021 MBNCan data call is presented in Figure 4.



**Figure 4: Ratio = Gross Square Footage of all Buildings Owned and Leased / Total Population**

Note: The above Figure 4 does not reflect the gross square footage of Housing Units.

### **3. Asset Management Strategy**

Best practices for the management of buildings and facilities assets are applied with intervention decisions to strive for the lowest lifecycle cost. In addition, facility condition data is collected and involved in maintaining level of service contemplations and in the asset lifecycle intervention strategies for buildings and facilities.

#### **3.1. Maintain or Adjust Level of Service**

Departments manage their buildings and facilities to maintain existing levels of service.

Best practices include but are not limited to:

- Continue to collect and report on performance measures currently tracked, while developing collection and reporting strategies for newly identified performance measures
- Perform annual inspections and certification as per NFPA standards
- Bi-monthly inspection and maintenance of HVAC Systems

Following the approval by Council of the Buildings and Facilities Asset Management Plan, staff will work towards defining level of service targets for Council review, consideration, and approval. The process of reviewing and setting target levels of service will involve Council and Department Leads to introduce the appropriate targets that can be sustained financially through capital infrastructure spending. To set targets, Council will be provided with the risks associated with the target options.

Future versions of the Building and Facilities Asset Management plan will include the target levels of service as defined by Council at the appropriate time. The targets will include an explanation of why the targets are suitable for Greater Sudbury by explaining the associated risks and funding strategies to achieve the targets over time.

#### **3.2. Lifecycle Management Plan**

Best practices for the management of Buildings and Facilities assets are applied with intervention decisions to strive for the lowest lifecycle cost. These best practices include:

- The Facility Condition Assessment program protocols discussed in Section 3.4 Asset Useful Life;
- Document issues identified from asset users;
- Adhere to the manufacturer's scheduled maintenance;
- Retain certified asset users when applicable and provide additional training to address proper use and maintenance for each asset;

- Monitor the condition of assets annually.
- Maintenance activities are standard operating procedures across the Facility Maintenance portfolio. They are required to meet legislated requirements, approved serviced levels, and to optimize asset lifecycles. Non infrastructure solutions are considered in all stages of the planning process to identify opportunities to optimize asset lifecycles and reduce asset related service delivery costs through optimizing asset use, monitoring asset condition, and assessing asset specific risk to service.

## 4. State of the Infrastructure

### 4.1. Asset Data Inventory

A detailed asset inventory is a key component in understanding what assets the City owns to develop and implement an asset management plan that provides a vision, strategy, and disciplined approach to achieve sustainable, efficient, and resilient facilities.

Achieving a complete inventory can be a time-sensitive and costly effort, but one that can provide invaluable to future operational needs. An inventory that is up to date can feed many other initiatives. With a complete data set, it is easier to frame the structure of future condition assessments and define capital replacement needs. Concise asset inventories are also used to establish preventative maintenance programs.

Recently Greater Sudbury has developed a standardized and very detailed inventory of all the buildings and facilities owned and operated by City staff. The city has significantly advanced the asset management program as it relates to buildings and facilities.

The asset inventory is updated regularly and is managed using an industry leading asset management software solution. This software has capabilities to not only provide a complete data inventory of the City of Greater Sudbury’s building and facilities, but also provides robust reporting and analytical tools for innovative decision support.

Table 2 outlines a complete asset inventory of buildings and facilities within the City of Greater Sudbury.

<b>Service Area</b>	<b>Asset Type</b>	<b>Quantity</b>	<b>Square Feet</b>
<b>Community Development</b>	Arenas	14	639,000
	Cemeteries	20	31,000
	Community Centre and Recreation Complex	46	235,000
	Film - Leisure	1	26,000
	Housing Operations (GSHC) - High Rise Apartment	6	2,209,000
	Housing Operations (GSHC) - Low Rise Apartment	10	
	Housing Operations (GSHC) - Townhouse	8	
	Housing Operations (GSHC) - Single/Duplex/Semi	198	

	Housing Operations (GSHC) - Recreation Center	1	
	Libraries	13	194,000
	Long Term Care	9	326,000
	Museums	16	37,000
	Parks, Playground and Tot Lots	157	152,000
	Parks Depot	3	6,000
	Pool - Leisure Services	6	127,000
	Ski Hill Buildings and Facilities	17	20,000
	Tourism Welcome Centre	3	4,000
	<b>Community Development Total:</b>	<b>528</b>	<b>4,006,000</b>
<b>Community Safety</b>	Fire and Paramedic (additional fire hall included in LEL)	23	129,000
	Lionel E. Lalonde Centre (LEL)	4	115,000
	<b>Community Safety Total:</b>	<b>27</b>	<b>244,000</b>
<b>Corporate Services</b>	Administration	3	537,000
	Archives	1	85,000
	Communication Towers	12	2,000
	Family Health Teams and Clinics	5	33,000
	Fleet including Transit	2	147,000
	Public Works - Asset and Fleet Services	33	244,000
	<b>Corporate Services Total:</b>	<b>56</b>	<b>1,048,000</b>
<b>Growth and Infrastructure</b>	Environmental Services Solid Waste	9	47,000
	<b>Growth and Infrastructure Total:</b>	<b>9</b>	<b>47,000</b>
	<b>Grand Total:</b>	<b>620</b>	<b>5,345,000</b>

#### 4.2. Estimated Asset Value

The information provided to describe asset condition reflects the best available data and professional judgment. The value of the building and facility infrastructure is determined through a combination of site reviews and assessments, appraisals, and estimating.

A summary of the City's Buildings and Facilities replacement value is provided in Table 3.

Service Area	Asset Type	Replacement Value
<b>Community Development</b>	Arenas	\$254,700,000
	Cemeteries	\$7,600,000
	Community Centre and Recreation Complex	\$81,000,000
	Film - Leisure	\$11,400,000
	Housing Operations - High Rise Apartment	\$170,700,000

	Housing Operations - Low Rise Apartment	\$63,800,000
	Housing Operations - Townhouse	\$148,900,000
	Housing Operations - Single/Duplex/Semi	\$56,200,000
	Housing Operations - Recreation Center	\$2,800,000
	Libraries	\$76,300,000
	Long Term Care	\$118,600,000
	Museums	\$11,400,000
	Parks Fieldhouses	\$39,500,000
	Parks Depot	\$5,900,000
	Pool - Leisure Services	\$55,700,000
	Ski Hill Buildings and Facilities	\$11,200,000
	Tourism Welcome Centre	\$1,000,000
	Furniture, Fixtures and Equipment	\$5,300,000
	<b>Total Community Development:</b>	<b>\$1,122,000,000</b>
<b>Community Safety</b>	Fire and Paramedic (additional fire hall included in LEL)	\$50,900,000
	Lionel E. Lalonde Centre (LEL)	\$49,000,000
	<b>Community Safety Subtotal:</b>	<b>\$99,900,000</b>
<b>Corporate Services</b>	Administration	\$228,000,000
	Archives	\$31,100,000
	Communication Towers	\$700,000
	Family Health Teams and Clinics	\$11,100,000
	Fleet including Transit	\$50,700,000
	Public Works - Asset and Fleet Services	\$48,600,000
	Furniture, Fixtures and Equipment	\$2,400,000
	<b>Corporate Services Subtotal:</b>	<b>\$372,600,000</b>
<b>Growth and Infrastructure</b>	Environmental Services Solid Waste	\$19,400,000
	<b>Growth and Infrastructure Subtotal:</b>	<b>\$19,400,000</b>
	<b>Grand Total Facilities:</b>	<b>\$1,613,900,000</b>

The estimated replacement value of the City's Buildings and Facilities is **\$1.61B**. This value represents 15% of the replacement value of the City's total asset inventory.

Also considered within this asset management plan are the furniture, fixtures, and equipment (FF&E) that are critical to support the service delivery provided by Greater Sudbury from its buildings and facilities. For the purposes of defining what is FF&E as opposed to part of the facility, FF&E items are not permanently affixed to a building and are consequently easily removable from their respective locations. Examples of critical FF&E items are Infrastructure Technology (IT) equipment, adjustable beds within Long-Term Care homes, and certain appliances within a tenant's permanent residence through Housing Operations.

### 4.3. Asset Useful Life and Asset Condition

As part of the Building Facilities asset management data repository, Building Condition Assessments (BCA) will be routinely updated at five-year intervals as a means of reporting on the City's Vertical infrastructure. By adhering to the building inspection and monitoring program that the City has recently adopted, Greater Sudbury can confidently report on conditions, regulatory compliance, and identify changes such as advanced deterioration that will impact the remaining useful life the asset inventory.

Building condition assessments are produced based on the actual on-site condition of the building, the individual building elements and components, and the building site. The condition assessments identify the physical adequacy of construction, material, and equipment, and outline the life cycle of all building components. It is a planning tool intended to facilitate the provision of adequate funds as required to address routine capital replacements.

Most BCA's are completed with life cycle intervention needs for ten-year intervals, which help clearly identify the building elements, and estimated timeframe for repair or replacement. Also indicated is the life expectancy of all major building components, including general states of repair, conditions, quantities, unit replacement costs and current replacement costs. Once the BCA's are uploaded to the City's Asset Management and Capital Planning Tool, the building and its elements are lifecycle modeled for the remainder of their expected service lives to facility longer term financial planning.

Building Condition Assessments (BCA) are important because they determine the extent to which a facility can meet its intended purpose. Essentially, a BCA is a risk analysis for physical resources and assets.

The condition of an asset is a measure of its physical state and provides indication as to whether service levels are being attained. Building Condition Assessments are demanding to the overall health of a mature facility operation. The outcomes of an BCA can be multifaceted; they can inform you of conditions and prioritization of needed repairs but also predict timing of capital renewal requirement.

Elements of a comprehensive FCA include:

- Date of Installation
- Condition rating.
- Remaining Useful Life (RUL) as determined by current condition and lifecycle expectation.
- Immediate issues including poor maintenance conditions or effects to operability or access.
- Pictures
- Replacement value
- Repair strategies and associated costs

- Performance characteristics

When working with BCA's it is crucial to remember that asset conditions do not remain stagnant and that an BCA is only a timestamp of condition. It is best practice to complete a comprehensive BCA every five years, while revisiting aging assets and critical equipment intermittently.

In addition to capital planning, Greater Sudbury's Facilities Management section implements a series of routine activities to perform planned maintenance intervention of building elements. In general, maintenance management uses a facility maintenance program consisting of these protocols:

- Regular scheduled preventative maintenance as per manufacturer recommendations and best practices. Greater Sudbury has adopted and adheres to preventative maintenance schedules with planned and automated interventions tracked through a work order management software. The maintenance intervention tracking is applied to individual building elements and their systems and distinguishes between preventative and reactive maintenance. Preventative work orders adhere to mandated guidelines such as ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers), and/or manufacturers recommendations. The maintenance work order system also allows City staff to be made aware of upcoming maintenance duties so that staff resourcing can be utilized efficiently and to ensure that assets are being inspected and maintained on a timely basis.
- Maintenance work orders are prioritized to ensure that critical assets are dealt with prior to less critical assets to minimize the impact on service delivery and to prevent further depreciation due to neglect.
- As some facilities are operational 24/7 or may have a higher volume of usage, maintenance programs are suited to accommodate these facilities with more frequent inspection and maintenance schedules. One example is police facilities which operate 24/7 and are critical emergency services.
- Visual inspections and documentation of conditions.
- Legislated and safety inspections and certifications.
- Discussions with the asset users, operators, and stakeholders regarding the performance of an asset.

For further details on methodology behind the assigned conditions to Buildings and Facilities assets, please refer to Appendix A.

#### 4.4. Current Asset Condition

The primary measurement used to evaluate a buildings current state of repair is a Facility Condition Index (FCI). This is an industry standard that provides a benchmark to compare a constructed asset's condition at the current point in time. An FCI is assigned to all buildings and facilities within the City's inventory. The FCI is a ratio that is calculated as follows:

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

The Facility Condition Index of the asset inventory is provided in Table 4.

<b>Table 4: Facility Condition Index (FCI)</b>			
<b>Service Area</b>	<b>Asset Type</b>	<b>FCI</b>	<b>Condition</b>
<b>Community Development</b>	Arenas	10.50%	Fair
	Cemeteries	8.36%	Good
	Community Centre and Recreation Complex	8.00%	Good
	Film - Leisure	1.18%	Very Good
	Housing Operations - High Rise Apartment	12.27%	Poor
	Housing Operations - Low Rise Apartment	5.61%	Good
	Housing Operations - Townhouse	22.49%	Poor
	Housing Operations - Single/Duplex/Semi	23.19%	Poor
	Housing Operations - Recreation Center	0.65%	Very Good
	Libraries	5.36%	Good
	Long Term Care	2.55%	Very Good
	Museums	14.59%	Fair
	Parks Fieldhouses	12.30%	Fair
	Parks Depot	16.66%	Fair
	Pool - Leisure Services	10.69%	Fair
Ski Hill Buildings and Facilities	14.43%	Fair	
Tourism Welcome Centre	0.09%	Very Good	
<b>Community Safety</b>	Fire and Paramedic (additional fire hall built into LEL facility)	41.99%	Very Poor
	Lionel E. Lalonde Centre (LEL)	19.16%	Fair
<b>Corporate Services</b>	Administration	11.44%	Fair
	Archives	6.28%	Good
	Communication Towers	7.00%	Good
	Family Health Teams and Clinics	4.37%	Very Good
	Fleet including Transit	6.55%	Good
	Public Works - Asset and Fleet Services	9.92%	Good
<b>Growth and Infrastructure</b>	Environmental Services Solid Waste	1.29%	Very Good

The Buildings and Facilities Asset Management Plan also considers the condition of the assets within the facilities themselves that are included as part of furniture, fixtures, and equipment (FF&E) which are critical in supporting service delivery. FF&E items are not permanently affixed to a building and are consequently easily removable from their respective locations. The three divisions where FF&E is considered within the Buildings and Facilities Asset Management Plan are: Information Technology, Long-Term Care and Housing Operations. The FF&E within these departments include items such as server nodes, port switches and firewalls within the IT portfolio, laundry equipment, mechanical floor lifts and motorized resident beds within the Long-Term Care portfolio and fridges, stoves, and laundry facilities within the Housing Operations portfolio. These assets are all considered to be in good condition.

## **5. Levels of Service**

The levels of service discussed in this plan outline the current service levels with the current funding levels. Further development of the Building and Facilities Asset Management Plan will provide opportunities for Council to review alternatives to the current levels of service. These future alternatives will be evaluated considering various levels of acceptable condition, risk, and financial alternatives.

The review of target levels of service will provide insight to establishing the criticality of assets and the long-term financial stability of the various options and impacts of proceeding with or deferring capital expenditures.

Consultation with staff, review of current activities and review of financial data have all been used in the preparation of the level of service framework. The current levels of service are described below.

### **5.1 Community:**

Levels of service are high level qualitative descriptions which indicate what the City currently strives to achieve through community, stakeholder, and individual expectations. Community levels of service for buildings and facilities can be described as follows:

- maintain an acceptable level of cleanliness and in a state of good repair to avoid service interruptions
- provide a safe and secure environment
- are accessible and equipped to meet the needs of users
- user concerns are promptly addressed
- meet legislative, regulatory, and code standards and are available to meet service programming needs
- efficient and cost effective
- have appropriate security provisions in place

- site access is provided to emergency services
- appropriate parking is provided
- ensure all regulatory requirements are met
- \* Long Term Care Facilities are compliant to Ministry Standards, Ministry of Health, and Long-term Care
- \* Long Term Care Facilities are capable to meet the capacity requirements of the aging population
- \* Housing Operations tenant concerns are dealt with in a timely manner

**5.2 Strategic:** Qualitative and Quantitative measures that describe what is being provided to the community. Examples of how this can be defined can include reliability, legislative compliance, quantity, quality, and safety.

The strategic levels of service indicated below support the community levels of service. Buildings and Facilities are maintained in accordance with Building Code Act, 1992, Ontario Regulation 332/12.

For specific facilities the City of Sudbury has recognized that certain provisions are necessary to measure what is recommended for the municipality and what is currently being offered. These provisions can also be measured against MBNC Canada, and the average of other Canadian municipalities versus the municipality of Greater Sudbury.

- Buildings and Facilities General:
  - o The facilities provide security in public spaces
  - o Plan for the opportunity to provide enhancements to accessibility per City of Greater Sudbury 2017-2021 Multi-Year Accessibility Plan and the Accessibility for Ontarians with Disabilities Act, 2005.
  - o Develop a connection between facilities and opportunities to provide sustainability features and design to the Community Energy and Emissions Plan CEEP. The CEEP is a long-term plan to reduce carbon emissions and pollution in Greater Sudbury. It responds to City Council's Climate Emergency declaration in May 2019, which included a commitment to achieve net-zero emissions by 2050. That means reducing greenhouse gas emissions (GHG) caused by human activity to as close to zero as possible and removing remaining emissions from the atmosphere, by working towards set goals.
  - o Develop a connection between facilities and opportunities to design new facilities and refurbish existing facilities through the elements of Crime Prevention Through Environmental Design Principles (CPTED)

- Pool Facilities provide opportunities for citizens to access physical recreation and leisure activities supporting Council's strategic priority of Creating a Healthier Community and advancing the population health Priority of Play Opportunities.
  - o Recommended Provision Level, derived from the Parks Open Space and Leisure Plan, outlines one indoor aquatic facility for every 25,000 residents (includes CGS, YMCA and University facilities)
  - o Current Provision Level: one aquatic facility for every 23,076 residents.
  - o Number of operational indoor pool locations per 100,000 population
    - City of Greater Sudbury = 3.10
    - MBNCan Average = 2.05
  - o Number of public swim visits = 49,993 (CGS Core Services Review 2019)
  - o Number of aquatic lesson registrants 71,782 (CGS Core Services Review 2019)
- Arena Facilities: The City of Greater Sudbury operates and maintains 16 ice pads across 14 municipal arenas. Arenas provide opportunities for citizens to access physical recreation and leisure activities. They also provide economic benefits through semi-pro sporting events, tournaments, concerts, conferences, and other tourism events. Municipalities have been the traditional provider for arena facilities.
  - o Recommended Provision Level derived from the Parks Open Space and Leisure Plan, one ice pad for every 405 youth registrants
  - o Current Provision Level: one ice pad for every 368 youth registrants
  - o Number of operation indoor ice pad per 100,000 population
    - City of Greater Sudbury = 9.91
    - MBNCan Average = 5.09
- Long Term Care Facilities: Pioneer Manor is a 433-bed municipal facility that provides long-term care to residents outlined by the Long-Term Care Act (LTCHA),2007. Service mandate is to provide 24-hour care, supervision, and accommodation to persons 18 years of age and older who are no longer able to manage in an independent setting.
  - o Number of Long-Term Care beds per population 75 years of age and over
    - City of Greater Sudbury = 0.096 (2021)
    - MBNCan Median = 0.072 (2021)

- Pioneer Manor provides high quality medical and nursing care, therapy services, nutritional care, and other related resident healthcare in a Long-Term Care Home setting in accordance with the MOHLTC Act and regulations.
- Pioneer Manor is committed to promoting healthy aging and well-being through programs and services that focus on all aspects of care (physical, emotional, spiritual, cultural, cognitive/ intellectual, social) and maximize or maintain the independence of the residents.
- Pioneer Manor is accountable under the Long-Term Care Homes Act (LTCHA), 2007, and Regulation 79/10 to ensure residents receive safe, consistent, high-quality, and resident-centered care.
- In addition, Pioneer Manor is also accountable to the Northeast Local Health Integration Network (NELHIN) under the Local Health System Integration Act, 2006.

### **5.3 Asset (Technical) – Key Performance Indicators (KPI)**

Buildings and Facilities Existing Level of Service, outlines the levels of services that are currently being offered by facilities within the City of Greater Sudbury. This current level of service is the condition of the facility as a percentage based on the current and deferred investment requirement by the Facility replacement value in current dollars.

- Facility condition state = % of facilities in various condition state, by Current Replacement Value
  - % of facilities in poor or very poor condition = 20%
  - % of facilities in fair condition = 12%
  - %of facilities in good or very good condition = 68%
- 95% of Buildings and Facilities have Facility Condition Assessments completed, with a 100% completion target.
- Facility Condition Assessments completed at 5-year intervals for all Buildings and Facilities.
- Percent of critical and urgent priorities responded to within one hour or less = 95%
- Planned work orders as a percentage of total work order = 65%
- Percent of work orders completed within targets = 90%
- Compliance with facility and asset management regulations = 100%

## 6. Failure Prediction and Risk Management

Risk management is a major component of asset lifecycle management. The City’s risk management goals involve identifying, understanding, and managing the potential for infrastructure assets to meet planned service objectives.

Risk assessment is applied to prioritize and optimize capital spending and decision making. The City evaluates both the Probability of Failure (PoF) and the Consequence of Failure (CoF) when prioritizing for the capital budget. This helps clarify and build a shared understanding about the risk associated with a decision to not engage in a project. A customized risk management framework that analyzes the PoF and CoF of building and facility system and individual elements has been developed and implemented.

### 6.1. Probability of Failure (PoF)

The probability of failure is an estimate of the likelihood of an asset is to not meet its service expectations. The PoF for Buildings and Facilities has been derived from building element condition. Table 5 demonstrates the rationale to determine the PoF of buildings and facilities assets. The PoF is a direct reflection of inspected on-site conditions of a building element such as a rooftop air exchanger HVAC unit, or a building system such as the entire HVAC system itself.

<b>Table 5: Probability of Failure (PoF) Buildings and Facilities</b>			
<b>Asset Condition translates to → Likelihood and PoF</b>			
<b>Condition</b>		<b>Likelihood</b>	<b>PoF</b>
<b>F (Very Poor)</b>	Less than 20	Almost Certain: 80% of Greater	<b>P5</b>
<b>D (Poor)</b>	20 - 39	Likely: 60 – 79%	<b>P4</b>
<b>C (Fair)</b>	40 - 59	Possible: 40 – 59%	<b>P3</b>
<b>B (Good)</b>	60 - 79	Unlikely: 20 – 39%	<b>P2</b>
<b>A (Very Good)</b>	80 - 100	Rare: Less than 20%	<b>P1</b>

### 6.2. Consequence of Failure (CoF)

The consequence of failure is an estimate of the effect on outcomes if an asset fails. The consequences of failure could range from a service interruption to a catastrophic result depending on the asset criticality.

To determine the CoF of the elements and systems required for a facility to operate and meet service objectives, Greater Sudbury has prepared and implemented a weighted framework that considers the categories and parameters outlined in Table 6.

<b>Table 6: Consequence of Failure (CoF) for Buildings and Facilities</b>	
<b>CoF Categories</b>	<b>CoF Parameters</b>
Legislation	Consideration of various codes including but not limited to: Ontario Building Code, Accessibility for Ontarians with Disabilities, Electrical Safety Authority, Technical Standards and Safety Authority, and Fire and Life Safety.
Health and Safety	Consideration of various Health and Safety issues including but not limited to potential for injury, known event such an injury, security, mold, designated substances, and non-conformance to Occupational Health and Safety Act.
Shutdown or Service Level	Consideration of various scenarios should a building element/system fail including but not limited to tenant's and residence, service level provided such as an essential service, partial shutdown, complete shutdown, and redundancy and mitigation.
Urgency	Consideration for prioritized building systems including but not limited to life safety systems, accessibility, HVAC system, electrical system, operational enhancement, and aesthetics.
Operation, Maintenance, and Energy	Consideration for four (4) parameters of impacts on building operation, maintenance, energy consumptions, and emissions.
Climate Change Vulnerability	Consideration for five (5) parameters of impacts on the environment, and of the environment and climate change on building elements.
Risk of Deferral	Consideration for three (3) parameters of risk of deferral.

Each of the categories and parameters described within Table 6 are weighted within a consequence of failure framework to calculate situation specific CoF's. Greater Sudbury has recently made significant strides to collect and analyze the data required to generate outputs from the CoF framework. However, the City acknowledges there is still work to be done as the framework and feeder data will continue to improve.

The CoF framework has been developed to adhere to the Corporate Impact and Likelihood Criteria for Enterprise Risk Management recommended by the City's Auditor General. The City also has planned mitigation already in place to maintain service objectives should an asset fail.

### **6.3. Risk Assessment and Exposure**

The probability and consequences of failure allow the corporation to focus on assets that have the greatest impact on service delivery. The following formula demonstrates the PoF and CoF are multiplied to determine risk exposure.

$$\text{Risk Exposure} = \text{Probability of Failure} \times \text{Consequence of Failure}$$

The risk exposure for all the City's Buildings and Facility infrastructure is monitored and implemented for prioritizing projects related to reactive maintenance duties and Greater Sudbury's annual capital budget.

## **6.4. Failure Prediction**

Failure prediction is performed to assess the potential for an asset to deliver an expected level of service over time. Current and historical condition and performance data is analyzed to determine the current position of an asset within its lifecycle. This information informs a judgment about how much remaining service life is available. For this asset management plan, failure prediction and the remaining life of Buildings and Facilities have been determined with the Facility Condition Index.

Further to the discussion about Facility Condition Index (FCI) in Section 4.4, the FCI can be forecasted with a lifecycle model. The lifecycle model is a complex model used to forecast and analyze the most recent existing site conditions and how the existing conditions are anticipated to depreciate over time. The depreciation curve is used to estimate the appropriate type, cost, and timing for building system lifecycle intervention. The type of lifecycle intervention can range from a study to a repair, or a complete building element or system replacement. The City's asset management and capital planning database for Buildings and Facilities keeps lifecycle models current. However, it is industry standard to perform on-site audits of Facility Condition Assessments at 5-year intervals to ensure the data being modeled accurately reflects on-site conditions.

## **6.5. Risk Response**

The City's operating departments have risk response built into daily operations. Risk response includes contingency plans and mitigation strategies that have been developed with the experience of delivering levels of service to the community.

The steps to eliminate or avoid risk by reducing the probability and consequences of failure vary by department. Typical mitigation includes additional back-up facilities or facilities that can produce multiple uses and services. Examples of risk response planning to reduce the disruption of service delivery includes:

- Facility Maintenance works with the operating departments to plan and schedule maintenance. For example, load testing emergency power generators, changing oil and filters of equipment, housekeeping, and the five-year updates to conduct condition audits.
- Some of the buildings and facilities that provide services to residents are multi-use facilities such as libraries that can also serve as Citizen Service Centers or warming and cooling centers. Often where maintenance or refurbishment is required at some facilities, service delivery can be conducted without disruption.

## **7. Long-Term Needs**

The capital need detailed below is based on lifecycle modeling of Greater Sudbury's building and facility inventory. For this asset management plan, the lifecycle analysis represents the capital investment needed to rehabilitate and replace assets; the cost of operational

maintenance is not included. Operational maintenance costs will be included in future updates to the asset management plan as part of full lifecycle cost analysis.

Detailed below is a 50-year average annual reinvestment requirement ( $AAR_{50}$ ) which is the mean annual capital investment required over a 50-year period. The  $AAR_{50}$  is useful for defining the required rate of funding to maintain service levels based on the investment profile. It is recognized that spending will vary from year to year, however this value provides a benchmark upon which to measure whether buildings and facilities are being renewed at a rate that is financially sustainable. With the average annual reinvestment requirement value, the City may either benchmark infrastructure investment against the metric while monitoring the variability year to year or contribute to reserves in years where the annual investment is short of the average annual reinvestment requirement value.

It is anticipated that a significant quantity of infrastructure investment need will be captured in an expenditure backlog. The risk-based lifecycle model discussed in Section 6 has been projected to determine upcoming investment requirements of buildings and facilities.

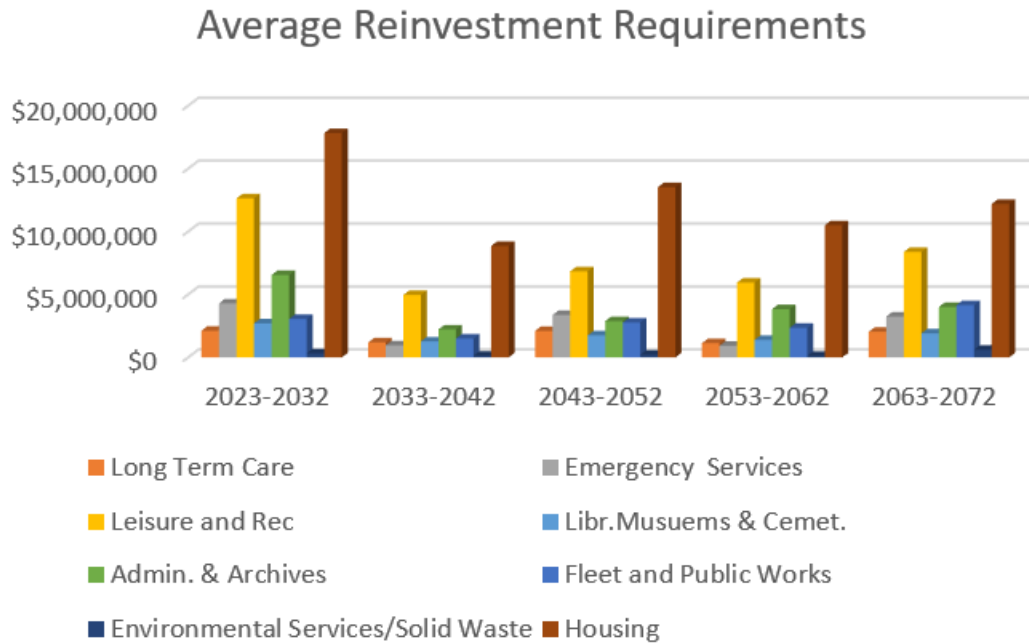
Figure 4 below provides the 50-year average capital reinvestment need for buildings and facilities assets. This represents the estimated amount of capital the City required to reinvest in the building and facilities inventory to maintain the existing level of service condition. The 50-year annual average reinvestment requirement in this scenario ( $AAR_{50}$ ) for all buildings and facilities is \$34.8M.

### **50-Year Capital Need Assumptions**

The long-term needs for buildings and facilities are based on the following assumptions:

- Buildings and Facilities assets are being refurbished and/or replaced with elements that are in similar function;
- 50-year average annual reinvestment requirement does not consider service expansion or reduction;
- High Risk projects as defined within Section 6 Failure Prediction and Risk Management is immediate need in the year 2023;
- Calculated in 2022 Canadian Dollars where actual costs vary with currency fluctuations.

**Figure 4: Building and Facilities 50-Year Capital Need Summary by Department**



**7.1. Infrastructure Reinvestment Financing Strategy**

Historical investments within the Buildings and Facilities portfolio have fallen short of the 50-year average annual investments of \$34.8 Million which is an estimate to strive to keep assets in a State of good repair (SoGR). The SoGR is the condition that an asset can operate at a full level of performance. The Building and Facilities Asset Management Plan in conjunction with the annual capital budget proposes and prioritizes the City’s infrastructure investment requirements according to their respective financing sources.

In Table 7 the 50-year average annual reinvestment requirement is compared to historical expenditure from a period of 5 years to demonstrate the financial risk associated with asset ownership. The variance is the unfunded capital value of infrastructure renewal needs in the current year.

<b>Table 7 Funding Gap (Capital)</b>			
<b>Asset Class</b>	<b>5 Yr Expenditure (Mean)</b>	<b>AAR<sub>50</sub></b>	<b>Funding Gap</b>
Buildings and Facilities	\$10,703,432	\$34,800,000	\$24,096,568

The above example of the funding shortfall will be addressed in future reiterations of the Asset Management Plan with financing strategies per O. Reg. 588/17.

## 7.2. Sustainability Strategy

The existing level of service for buildings and facilities detailed in Section 4 Levels of Service drive the reinvestment forecasts in the asset management plan. Levels of service are based on regulation, standards, and Council approved service levels. Following the asset management roadmap, Council will be provided with the opportunity to determine level of service targets to manage infrastructure within the City's capacity to renew and maintain assets and accept the associated risk.

## 7.3. Next Steps

Ensuing Council approval of the Building and Facilities Asset Management Plan, target level of service options will be prepared for Council review, discussion, and approval. The target level of service framework may require additional key performance indicators and will be the main driver of the sustainability strategy. When target level of service is reviewed, Council will have the option to select service levels that lead to either a reduction or an increase of assets that are in-service and require financing.

Table 8 identifies the next steps that emerged during the development of the asset management plan.

<b>Table 8: Next Steps</b>		
<b>Section</b>	<b>Category</b>	<b>Action Item</b>
State of the Infrastructure	Inventory	<ul style="list-style-type: none"> <li>• Monitor and refine the buildings and facilities asset inventory to reduce the quantity of data assumptions</li> <li>• Continue to implement the digital solution to track, monitor and analyze buildings and facilities</li> <li>• Continue to conduct building condition assessments at the five-year intervals.</li> </ul>
Level of Service	Asset Level of Service	<ul style="list-style-type: none"> <li>• Develop target service levels for Council review</li> </ul>
Asset Management Strategy	Lifecycle Management Plan	<ul style="list-style-type: none"> <li>• Review and refine strategies as necessary</li> </ul>
Failure Prediction Risk Management	Risk Assessment and Exposure	<ul style="list-style-type: none"> <li>• Monitor and refine the deterioration model for buildings and facilities assets as necessary</li> </ul>
Long-Term Needs	Funding Sources	<ul style="list-style-type: none"> <li>• Develop a sustainability strategy to achieve target levels of service for Council review, discussion, and approval.</li> <li>• Determine funding source for infrastructure need.</li> </ul>

Amendments to the Asset Management Planning for Municipal Infrastructure regulation (O.Reg. 588/17) are as follows:

July 1, 2024 (previously July 1, 2023): Date for municipalities to have an approved asset management plan for all municipal infrastructure assets that identifies current levels of service

and the cost of maintaining those levels of service.

July 1, 2025 (previously July 1, 2024): Date for municipalities to have an approved asset management plan for all municipal infrastructure assets that builds upon the requirements set out in 2024. This includes an identification of proposed levels of service, what activities will be required to meet proposed levels of service, and a strategy to fund these activities.

The Level of Service and the Long-Term Needs will be addressed in the next version of the Building and Facilities AMP in 2025.

## **8. Future Demand**

### **8.1. Demand Drivers**

Drivers affecting demand include parameters such as population, legislation, demographics, seasonal factors, technological advancement, economic, environmental awareness, and Council directed service revisions.

### **8.2. Demand Forecasts and Impact on Assets**

The present position and projections for demand drivers that may impact future service delivery and use of assets were identified and documented in Table 16. The present position and projection statistics are from the City of Greater Sudbury Outlook for Growth to 2046 that was developed in March 2018.

### **8.3. Demand Management Plan**

The City will regulate the demand on assets through a combination of managing existing assets, upgrading of existing assets and providing new assets to meet demand. Opportunities identified for demand management are provided in Table 9. Further opportunities will be developed in future versions of the asset management plan.

**Table 9: Demand Drivers, Projections, Impact on Services and Management Plan**

Demand Driver	Present Position	Projection	Impact on Services	Demand Management Plan
Population	City of Greater Sudbury Population: 166,130	Population (2046): • Low: 165,090 • Mid-Range: 172,990 (Reference Scenario) • High: 181,290	The City's population is anticipated to remain relatively constant. This will minimize the impact on buildings and facilities.	The City will continue to monitor population. Should the population deviate from the expected constant, the data will be analyzed to formulate an appropriate plan.
Legislation	Housing and Long-term care is evolving to meet and exceed legislation.	Additional legislative requirements are anticipated. For example, implementation and enforcement for an accessible Ontario by 2025.	Replacement cost of buildings and facilities assets are expected to increase with evolving legislation.	The replacement value of buildings and facilities is monitored to reflect legislation and compliance, latest technology, and limited number of suppliers.
Demographic	Households: 69,152	Households (2046): • Low: 72,890 • Mid-Range: 75,250 (Reference Scenario) • High: 77,590	The anticipated increase in housing will be monitored against the services provided by buildings and facilities assets.	The City has an expansive geographic area of 3,228 km <sup>2</sup> that is serviced by the City of Sudbury Housing Operations, Long term Care and availabilities of services through buildings and facilities. With an increase in housing, the City will monitor the services provided to the area.
Population Health	Pioneer Manor and the services provided to those in need, is evolving the delivery of care to residents to meet and exceed ministry guidelines and legislation.	This is a new service designed as a preventative measure to optimally distribute resources around the City.	The Health Promotion Services will monitor repeat callers, deliver clinical services in patient homes, and develop predictive modeling for service needs.	The City will continue to monitor population health within the long-term care facility and continue to provide high quality care that is closer to home, care that is innovative, a strong voice for seniors, good jobs and economic benefits that build strong communities.

**Table 9 Cont'd: Demand Drivers, Projections, Impact on Services and Management Plan**

Demand Driver	Present Position	Projection	Impact on Services	Demand Management Plan
Aging Population	Median Age from 2016 Canada Census: 43.2	There is an anticipated increase in median age of population. By 2037 the population of seniors (75+) in Ontario is expected to increase to 2.1 times its current size.	The inevitable increase in median age of population is expected to have an impact on long-term care facilities, therapeutic facilities/pools, community centers and especially paramedic and emergency care facilities.	The City will monitor aging population trends and the impact on Paramedic facilities and the increased need for therapeutic facilities used by an aging population. The increase in median age population is expected to increase the need for services provided by Paramedic and EMS Facilities as well as the need for leisure services geared towards and older population.
Seasonal Factors	Drastic shifts in temperature and precipitation from summer to winter months	Per climate change models, drastic shifts in temperature and precipitation from summer to winter months are expected to continue for the foreseeable future.	The shifts in temperature and precipitation will be monitored against the services provided by buildings and facilities assets.	Buildings and Facilities will be monitored for its durability to withstand the shifts in temperature and precipitation. Divisions across the building and facilities portfolio will incorporate capital projects that take the changing climate into account where and when possible, to ensure the assets are able to withstand the drastic climate implications on the buildings and facilities and to prevent asset failure.
Technological Advancement	The City monitors available technology to improve the level of service provided by buildings and facilities assets.	The need for additional investment in technology is anticipated.	Replacement cost of buildings and facilities assets are expected to increase with technological advancement.	The replacement value of buildings and facilities is monitored annually to reflect market demand resulting from legislation, latest technology, and limited number of suppliers.
Economic	Jobs: 79,440	Jobs (2046): • Modest: 81,230 • Mid-Range: 85,750 (Reference Scenario) • High: 90,460	The City's employment is expected to grow with the minor projected increase in population. Impact on buildings and facilities assets is anticipated to be minimal.	The City will continue to monitor employment. Should the employment deviate from the expected constant, the data will be analyzed to formulate an appropriate plan.

**Table 9 Cont'd: Demand Drivers, Projections, Impact on Services and Management Plan**

Demand Driver	Present Position	Projection	Impact on Services	Demand Management Plan
Environmental Awareness	Through legislation and the City's own actions, the City has demonstrated that it recognizes the need for environmental and climate protection.	In recent years, environmental awareness has received considerably more attention. This is expected to continue. Environmental awareness is anticipated to result in additional legislative requirements and stricter best practices.	New buildings and facilities assets are being developed to produce a lower carbon footprint. Replacement cost of assets are expected to increase as environmental awareness increases.	The replacement value of fleet and equipment is monitored annually to reflect market demand resulting from legislation, latest technology, and limited number of suppliers. A policy may be generated to include the installment of energy efficient elements that make up a building and facility.

## 9. Climate Change

In September 2020, Council approved the Community Energy Emissions Plan (CEEP) that is the long-term plan to reduce carbon emissions and pollution in Greater Sudbury. The CEEP is a response to the City of Greater Sudbury Council's Climate Emergency declaration in May 2019. The CEEP outlines 18 goals that need to be met to attain the City's target of becoming a net-zero GHG emission community by 2050. For further information with respect to the Community Energy Emissions Plan, please visit:

<https://www.greatersudbury.ca/live/environment-and-sustainability1/net-zero-2050/>.

Global climate models for the Greater Sudbury geographic area are available through various online resources, namely:

- Climatedata.ca, undertaken with the support of Environment and Climate Change Canada;
- Climateatlas.ca, undertaken with the support of Environment and Climate Change Canada, Public Health Agency of Canada, and Health Canada.

The data provided in the websites identify that there will be an increase in precipitation and an overall increase in mean temperature for the municipality. The increase in mean temperature within the area will result in a decrease of freeze-thaw days, additional summer days, more very hot days, and additional tropical nights.

The following Table 10 provides the results of several Global Climate Models for the City of Greater Sudbury geographic area with high and low carbon emission scenarios and the anticipated impact on building and facilities assets. It is important to note that the anticipated impact is of climate change on infrastructure, not the potential impact of infrastructure contribution to climate change.

Variable	Current Mean	RCP	2021 - 2050	2051 - 2080	Anticipated Impact
			Mean	Mean	
Precipitation (mm)	848	High 8.5	904	938	The increase in precipitation may require additional maintenance or wear to roofing systems and the drainage systems to handle the increased precipitation and properly diver away from building foundations.
		Low 4.5	890	924	
Mean Temperature	4.3°C	High 8.5	6.5°C	8.8°C	No specific impact.
		Low 4.5	6.3°C	7.3°C	
Tropical Nights (+20°C)	1	High 8.5	5	17	Some buildings and facilities that currently are not air conditioned may need to install cooling systems. Those buildings with cooling systems already will see increased use from demand and an increase in preventative maintenance will be
		Low 4.5	4	7	

					anticipated.
Very Cold Days (-30°C)	5	High 8.5 Low 4.5	1 2	0 1	Heating systems in buildings may see less strain as the very cold days decrease.
Very Hot Days (+30°C)	6	High 8.5 Low 4.5	18 16	39 24	Cooling systems may see increased strain as the very hot days increased, causing increased maintenance costs and a decrease in asset life.
Frost-Free Season (days)	137	High 8.5 Low 4.5	163 157	184 168	The decrease in frost days will allow for a longer construction season and allowing for ease of maintenance routines.
Freeze Thaw Cycles	68	High 8.5 Low 4.5	64.2 65.4	61.5 64.3	The decrease in freeze-thaw cycles may ease pressure on the building foundations and siteworks.
Mild Winter Days (-5°C)	120.1	High 8.5 Low 4.5	103.6 104.5	84.2 96.6	The decrease in mild winter days will allow for more efficient heating costs and less strain on the heating systems within buildings and facilities.
Summer Days (+25°C)	42.9	High 8.5 Low 4.5	68.9 65.2	93.8 77.4	Potential for an increase in risk of brush fires.
Winter Days (-15°C)	58.4	High 8.5 Low 4.5	42 43.9	24.8 35.3	The decrease in winter days will allow for more efficient heating costs and less strain on the heating systems within building and facilities.

Of the 18 goals outlined in the CEEP that need to be met to attain the City’s target of becoming net-zero GHG emissions, the following goals relate directly to Buildings and Facilities and this Asset Management Plan will encompass these goals going forward.

Goal 4: Achieve net-zero emissions in City buildings by 2040.

Primary Action: Develop a prioritized list of City buildings to retrofit and perform energy audits, payback analyzes, and retrofits starting with the highest priority buildings. Through retrofitting its own building stock for enhanced energy efficiency, the City will show leadership to homeowners and ICI building owners and operators. The lessons learned through City building retrofit processes will be transferable to retrofit efforts in other sectors. Municipal building retrofits can start in the near-term and will be a medium-term endeavor.

The City of Greater Sudbury has implemented a group of people directed to forge ahead with and respond to respond to the climate emergency declaration by creating an action and policy pathway to achieve net-zero emissions community-wide by 2050.

## City of Greater Sudbury Field Definitions & Guidelines (Methodology Behind Condition Assessment)

### Asset Details

Audit # & Summary	System Generated Audit # and Summary from Audit ( <b>Not Editable</b> )
Asset Name	Asset Name ( <b>Not Editable</b> )
Address	Street address; correct it if it is incorrect.
Construction Year	Year the building was constructed. <b>Auditors are responsible for confirming the construction date.</b> Correct as necessary.
Size (Sq. Ft.)	The Gross Sq. Ft. Area for the entire building. Auditors are responsible for confirming the number of heated square feet of building space, accurate to +/- 7%
Floors Above Grade	Number of floors above grade, including the ground floor.
Floors Below Grade	Number of floors below grade.
Description	Provide a brief description including construction type, functional use, unusual construction types or other features (such as heritage status). Make note of any Sections (additions) and the year they were added to the structure.  <i>For example, "Sample building is a 1-storey wood framed structure built in 1968. The annex was added to the rear of the building in 1997"</i>
General Summary	Provide a General Summary of the audit results. Note the general condition of the facility, renovations or modernizations and any major concerns. Notes relating to the on-site review can be included in this summary ("Unable to access the roof due to lack of roof hatch key during assessment.").  <i>"Sample building was observed to be in good condition overall, having undergone several recent renovation projects (Exterior Walls, Interior Finishes and HVAC). Major capital items anticipated for renewal over the next 5 years are the Windows and Roofing"</i>
Architectural	Provide a summary of the Architectural systems. Note the general

Summary	<p>condition of the architectural systems, any modernizations, and any major concerns.</p> <p><i>“Exterior walls consist of brick veneer and concrete block. Windows are a combination of newer, double-glazed, vinyl-framed units and older, steel-framed units. Steel-framed windows will require replacement in the short term. The roof consists of two-ply SBS bitumen membrane. Interior finishes include carpet and sheet vinyl flooring throughout the building, drywall partitions and ceilings.”</i></p>
Mechanical Summary	<p>Provide a summary of the Mechanical systems. Note the general condition of the mechanical systems, any modernizations, and any major concerns.</p> <p><i>“Rooms are heated by electric baseboard heaters with the common hallways served by two roof-top packaged units. The baseboards, installed in 2008, and the roof top units, installed in 1998, were observed and reported to be in good condition. Plumbing fixtures appear to be in working order, however some consideration for water conservation should be reviewed. Fire protection is provided by a sprinkler system and fire extinguishers throughout the remainder of the building.”</i></p>
Electrical Summary	<p>Provide a summary of the Electrical systems. Note the general condition of the electrical systems, any modernizations, and any major concerns.</p> <p><i>“The building is provided with a 400-amp service and distributed to circuit breaker panels. Electrical panel boards and branch wiring appear to be from the building’s renovation in 2006. We recommend infrared testing to ensure safe and efficient operations. The interior lighting varies with linear, compact fluorescent and some incandescent fixtures. Other electrical components include exit and emergency lights and fire alarm system, which are all in good condition.”</i></p>

## Element Fields

Element	UNIFORMAT II category name is not editable	
Element Number	Not editable. This refers to the number of categories and not the quantity of the element.	
Last Major Action Year	Enter the year that the element was last replaced or installed. In the case of Foundations, Exterior Walls or other systems that are typically not replaced you can use this field to indicate the year in which a major refurbishment took place.	
Overall Condition	Identify the overall condition of the entire element.	
	<b>Very Good</b>	Sound; New or like new; No evidence of deterioration; Does not require repair(s)
	<b>Good</b>	Minor defects; Minor wear and tear, or Minor deterioration; Intervention is not required
	<b>Fair</b>	Component/System in Adequate condition; Defects are evident; Components require minor maintenance or minor intervention
	<b>Poor</b>	Components or systems not functioning as intended; Severe component deterioration; Components are damaged but repairable; Materials Finishes are damaged; Minor structural defects, Major system defects, Imminent service interruptions leading to moderate intervention and/or moderate maintenance
	<b>Very Poor</b>	Structural defect and/or failure; Component and system failures requiring replacement; Environmental contamination, or spills exist; Major intervention, Replacement or Renewal required
Replacement Cost	The replacement cost field should capture the total value of the element. Be sure that this value matches up with any associated "Replacement" actions.	
Location	This field is used to describe the exact location of specific items within the building where further clarity is required (e.g., Maintenance Room 2, First Floor Corridor, etc.)	
Element	The element description should be utilized to provide a brief description	

Description	<p>which must include general description of overall system, type, size, make/model, count (in brackets).</p> <p><i>“(2) Two Boiler Brand, 1,500,000 BTU, gas fired, mid-efficiency 85% boilers, Model: BOIL-85”</i></p> <p><i>“Domestic Water Distribution – copper mains, PEX distribution to classrooms”</i></p>
Commentary	<p>Enter a description for the element detailing any <b>additional information</b> relating to its condition and any on-site observations. Generally, if condition is fair, poor, or critical a commentary should be provided to describe the noted issues. If the system is in good condition and no pertinent additional information is present the commentary field can be left blank.</p> <p><i>e.g., “Listed as Fair Condition due to the major repair required on the South Elevation due to observed significant moisture ingress, otherwise remaining three elevations are in Good Condition.”</i></p> <p>For Category B- Shell elements, please include the quantity (or an estimate if the quantity is not available). Examples include:</p> <ul style="list-style-type: none"> <li>• <i>“12,500 sq. ft. of Modified SBS roof”</i></li> <li>• <i>“40% of wall area is clad with brick veneer”</i></li> </ul>
Validated (Y/N)	<p>This field has no impact on the data – it is entirely for the auditor’s personal use to keep track of Elements reviewed while on site. It does not need to be utilized.</p>

**Action Fields**

Action Type	<b>Replacement</b>	Element is at the end of economic life and should be replaced
	<b>Repair</b>	Element can be repaired and its life extended. <b>Remember to also include the associated “Replacement” action item at a later year for end-of-life renewal.</b>
	<b>Install (New)</b>	A new system is required to be installed (e.g., Installing an Air Conditioner in a building without cooling, adding Sprinklers to a building that did not have them, etc.)

	<b>Study</b>	A deficiency exists (or is likely to exist) and a Study should be commissioned to determine scope of work and cost. Refer to <b>Appendix D - Study and End of Life Matrix</b> for additional guidance. <b>Remember to also include the associated “Replacement” action item.</b>
	<b>Decommission</b>	The system requires decommissioning.
	<b>Decommission AND Demolish OR Sell</b>	The system requires decommissioning and should be demolished, removed, or sold.
Action Summary	<p>Provide a brief description of the work to be conducted. Examples include:</p> <ul style="list-style-type: none"> <li>• <i>Replace boiler</i></li> <li>• <i>Conduct a Study to determine if the crack in the basement wall is an issue</i></li> <li>• <i>Finish form tie sealant patches on wall adjacent to main entrance, to match rest of wall</i></li> <li>• <i>Replacement of skylight along West perimeter of building, North of main entrance</i></li> <li>• <i>Replacement of brick tile in main entrance lobby</i></li> </ul>	
Action Details	<p>Provide a longer explanation of the deficiency observed and justification for why the action is or will be necessary. You must also utilize this field to include any quantities, costs or measurements used to calculate the overall Action Cost.</p> <p>Examples include:</p> <ul style="list-style-type: none"> <li>• <i>We recommend replacing the boiler with a more energy efficient condensing type</i></li> <li>• <i>Brick tile appears to be quite durable; replacement may only be needed when finish becomes “dated”.</i></li> <li>• <i>Modified bitumen roofing: 4550 square feet* \$10/sq. ft. = \$45,500. The modified bitumen roof membrane is reaching its projected useful life.</i></li> <li>• <i>Linoleum flooring needs replacement due to cracking and</i></li> </ul>	

	<i>peeling. About 600 square feet* \$6/ sq. ft. = \$3600</i>
Action Cost	The cost to perform the action in current year dollars, including removal, disposal, and replacement. Do not include allowances – this should represent the full replacement. <b>The Action Cost for Replacement action types should align with the Element Replacement value.</b>
Action Year	The year that the action is to be conducted.
Repeat Interval (years)	The Lifecycle of the element. The template will generate a general assumption of how long a typical element will last. In most cases this will not require modification however <b>it is expected that the auditor will adjust the Repeat Interval based on observed system(s) onsite.</b>