Dymond
Haileybury
New Liskeard

City of • Ville de
Temiskaming Shores

Asset Management Plan

2025

The Corporation of the City
of Temiskaming Shores

325 Farr Drive, Haileybury, Ontario

Version 1.3

Executive Summary

The Asset Management Plan (Phase 3) document has been developed for the City's major infrastructure asset groups. This Third and Final phase of the Asset Management Plan will provide a framework for considering, prioritizing, and optimizing asset management efforts, and providing direction for effective management of its aging infrastructure to best achieve established goals and objectives for its entire asset portfolio.

This Plan seeks to formalize and present some of the major capital infrastructure needs, with an emphasis on the 10 year period from 2025 to 2035, and provide a framework for expanding and enhancing the Municipality's asset management system. Phase 3 of the plan has built on phase 1 (completed in March 2022) and phase 2 (completed in April 2024) to include all remaining assets and Financial Strategies. Phase 3 will include the proposed levels of service and a strategy to fund the activities. This funding strategy will further identify the gap between municipal own source revenues and the need. Finally, Municipal Council will conduct an annual review of its AMP progress on or before July 1st in each year. The City will also review and update its AMP at least five years as of 2025 and every five years thereafter. The focus of the Plan is primarily on major capital needs. Therefore, the estimated service life of assets was used as the primary indicator for measuring our current and proposed levels of service. Areas the Municipality will focus on to advance its asset management capabilities and improve future updated versions of the Plan are highlighted throughout.

It should be noted that while phase 1 of the Plan focused on its core assets and phase 2&3 focused on the City's entire asset portfolio. The City remains proactive and responsible in managing its infrastructure and forecasting its capital needs. Several inspection programs are currently in practice in the municipality, including a CCTV program for sanitary and storm sewer systems, updating our roads needs studies, and OSIM inspections of Temiskaming Shore's bridge and culvert inventory. The costs associated with these programs, however, have not been incorporated in this Plan.

This Plan is considered a 'living document" and will be updated and revised as additional information becomes available, as existing infrastructure is renewed and as changes in strategy are required. To ensure that the Plan remains visible, it will be referred to in regular reports to Council. Any major changes may be presented to Council more frequently, if required.

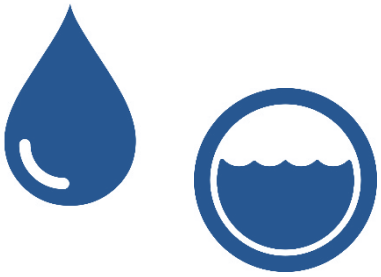
A major component of this Plan is related to non-infrastructure solutions intended to improve the City's Asset Management Capacity. This includes the development of a dedicated Asset Management System and a complete well-designed geographic information system (GIS) to support Municipal Asset Management efforts. Details for the non-infrastructure solutions are presented in Section 7.2. Alongside this task, the City shall integrate and align its data records between departments such that in the final Asset Management System, asset information will only need to be stored in one location and the data will be structured to enable effective management of the City's infrastructure. This will include refinement of the existing infrastructure data bases, such as that contained in the Public Sector Accounting Board (PSAB) reporting and Roads Needs Studies, utilizing the same segmentation and naming conventions for consistency.

$623.9 Million

Total Replacement Cost (2025)

$209.5 Million

Transportation & Stormwater



$297.3 Million

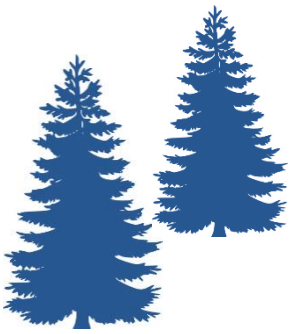
Water, Sanitary & Solid Waste

$64,760

Is the per-capita share of the total replacement cost

$89.2 Million

Corporate Facilities



$9.5 Million

Recreation & Culture

$15.2 Million

Corporate Fleet

$3.2 Million

Machinery & Equipment

City Population: 9,634

[2021 census profile]

Land Area: 178km²

The per-capita replacement cost does not include lifecycle costs.

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1.0 INTRODUCTION

Introduction

1.1 About the City of Temiskaming Shores

The City of Temiskaming Shores is located on the shores of beautiful Lake Timiskaming in northeastern Ontario. The community is at the head of the Ottawa River waterway and offers all of the amenities and services found in larger centres. The community was founded in 2004 by the amalgamation of the former communities of Haileybury, New Liskeard and Dymond.

Temiskaming Shores is a community with endless opportunities for business development within a setting that offers a range of residential living environments and four-season recreation at the doorstep. Scenic landscapes, a healthy environment, an abundance of clean water, a rich heritage, a mature range of consumers, educational, social and health care services, and a multi-cultural population offer a quality living environment for this northern community. The provision of regional services in the areas of education, health and public administration to the 32,000 people living throughout the rest of Timiskaming District and northwestern Quebec fill out the City's economic impact.

1.2 City of Temiskaming Shores Mission & Values Statements

Mission Statement:

To ensure that the City of Temiskaming Shores is a dynamic leader providing incredible opportunities for all.

Statement of Values:

The Municipal Government of the Corporation of the City of Temiskaming Shores hereby adopts and embraces the following values as being integral to its good governance:

Responsibility, Teamwork, Promise-Keeping and Fairness

1.3 Asset Management Plan Purpose

Historically, the City of Temiskaming Shores has been proactively and responsibly managing its infrastructure portfolio. As the infrastructure ages and demands increase, so will the challenge of ensuring the needs of the community are effectively met with the limited resources available. This Final Asset Management Plan (Phase 3) seeks to address this concern by providing a framework for considering, prioritizing, and optimizing asset management efforts, and providing direction for effective management of Municipal infrastructure to best achieve established goals and objectives.

As an integrated plan, this Asset Management Plan considers the lifecycle and needs of all infrastructure assets and classes within the plan's scope and provides a sustainable and holistic view of

the asset portfolios described herein. The plan not only focuses on managing individual assets but considers the condition and performance of complete asset systems through a systematic, risk-based decision-making process. The resulting plan is intended to provide the optimal allocation of resources towards meeting prescribed goals, objectives, and levels of service.

The City currently manages an asset portfolio of over **$624 M** worth of public physical capital assets (estimated replacement value, 2024 CAD). These assets provide the foundation upon which the City's economic growth, strength and quality of life are based. This second phase of the Asset Management Plan is an overview for managing its assets of all categories in the City's portfolio.

This Plan is being developed under Council Resolution No. 2019-063, dated May 21, 2019, at which time Council approved the submission of an Expression of Interest to obtain funding for the preparation of the comprehensive Asset Management Plan. Since that time staff have refined inventories of assets groups and amended the Plan. The final draft of (phase 2) of the Plan was presented to Council and approved on April 16th, 2024. The final draft of (phase 3) of the Plan will be presented to Council which is anticipated to be completed before July 1st, 2025.

1.3.1 Provincial Regulation (O. Reg. 588)

In many parts of Ontario, existing infrastructure is degrading faster than it is being repaired or replaced, putting services at risk. To help address this issue, the Province implemented the *Asset Management Planning for Municipal Infrastructure Regulation, O. Reg. 588/17,* effective January 1, 2018.

The goal of this regulation is to help improve the way municipalities manage their infrastructure. The regulation builds on the progress municipalities have made while bringing consistency and standardization to asset management plans to spread best practices throughout the sector and enable the collection of comparable data.

1.4 Asset Management Plan Goals and Objectives

The City of Temiskaming Shores currently manages its infrastructure proactively and with fiscal responsibility. A variety of programmes have already been initiated to improve the quality of investment decisions made, and support the City's asset management efforts. This Plan seeks to formalize and present some of the major capital infrastructure needs, with an emphasis on the initial 10 year period from 2025 to 2035, and provide a framework for expanding and enhancing the City's asset management system. While the Planning process commenced in 2018, the City will conduct an annual review of the state of infrastructure report. The evaluation and improvement process discussed in Section 1.8 also reflects the intent that this Plan be considered a "living document," to be revised and updated as necessary.

1.5 Relationship with Other Documents

Funding for the preparation of this Asset Management Plan was provided, in part, by the Ministry of Infrastructure programs as well as from within the existing Municipal Budget documents. Our

operation and maintenance practices are guided by the strategies presented herein but operate under the budgets established by Council.

The City utilizes a standard Geographic Information System (GIS), where information is available, as well as data held in the various spreadsheets and other forms. Some of the data available appears to overlap traditional segmentation of roads or piped infrastructure information. Assumptions were made to combine data where this overlap was evident. Information from some of the sources could not be combined due to the naming or segmentation creating ambiguity in the data.

1.6 Asset Management Plan Scope

The City's Asset Management Plan encompasses asset management strategies and policies, the management of all assets within the various categories from conception to end-of-life, performance and condition monitoring and assessment, risk management, financing strategies, future demand and improvement processes.

This Plan (phase 3) considers the following municipal own asset categories:

Water:

- Approximately 103.7 kilometres of water distribution infrastructure.
- Approximately 36.3 kilometres of water service lines of various sizes.
- Approximately 1,358 control and specialized valves.
- Approximately 451 hydrants.
- 8 water treatment and distribution facilities

Sanitary:

- Approximately 95.1 kilometres of sanitary sewer collection and forcemain infrastructure.
- Approximately 3,850 sanitary sewer connections.
- Approximately 1,047 maintenance structures.
- Approximately 31 specialized valves/meters.
- 16 sanitary treatment and collection facilities

Stormwater:

- Approximately 64.8 kilometres of storm sewer collection infrastructure.
- Approximately 2,075 catch basins and maintenance structures.
- Approximately 468 kilometres of drainage ditches.
- Approximately 7.8 kilometres of centerline culverts
- Approximately 9.5 kilometres of entrance culverts

- 1 storm water management system

Transportation:

- Approximately 211 lane kilometres of paved roadway.
- Approximately 30.8 lane kilometres of surface treated roadway.
- Approximately 174.8 lane kilometres of gravel roadway.
- Approximately 39.2 kilometres of sidewalk.
- Approximately 38.8 kilometres of curb
- 10 bridge structures.
- 6 large diameter culverts.
- 1,299 street, decorative and traffic control lights.
- 3,351 traffic signs.
- 5.6 kilometres of guard rails.

Solid Waste:

- 1 Landfill (including operational buildings and equipment).

Corporate Facilities:

- 61 mix buildings & facilities.

Recreation & Culture:

- Approximately 17.8 kilometres of active recreation trails
- Approximately 2.0 kilometres of Natural trails
- 35 parks (all types) & green spaces.

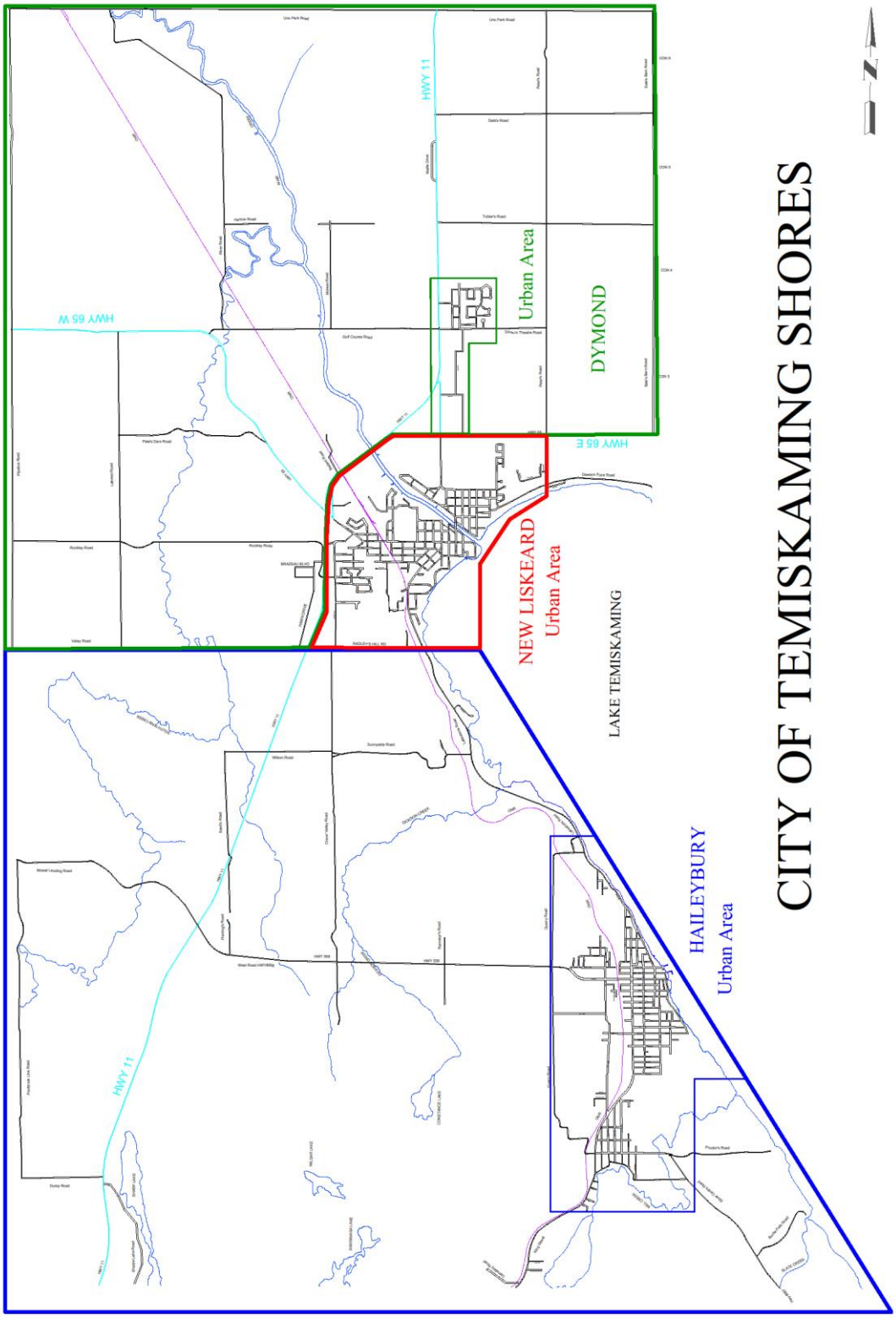
Corporate Fleet:

- 66 fleet & heavy equipment units.

Machinery & Equipment:

- Numerous machinery and equipment such as small tools and attachments

Figure 1.1: Overview Map of Temiskaming Shores



1.7 Asset Management Plan Development Process

The City of Temiskaming Shores utilized existing staff and resources as well as contract support persons to facilitate the development of this plan. The process for developing the Asset Management Plan, limitations of the current version of the plan, and planned next steps are detailed below.

1.7.1 Municipal Goals and Objectives:

The first step in the plan development process was to determine the desired outcomes, as well as plan the approach or approaches that were to be used to achieve them.

Known infrastructure inventories and all other available information were used within individual asset groups to identify and express priorities and needs associated with provision of those services. A plenary session involving staff, elected officials and other appropriate stakeholders was also used to identify and discuss goals and objectives.

Limitations of this Plan

The City considers this to be the third and final phase of its asset management planning process that forms an important part of its overall asset management effort. As a result of the project timeline and data availability, other elements have now been included in this version of the plan. The City will seek to incorporate missing and improve data accuracy in future reviews of the plan.

Next Steps

As the City moves forward with its asset management practices, the plan will be adjusted to reflect a more accurate representation of asset needs. The City will re-visit the goals and objectives documented in this plan as additional information becomes available, and at a minimum, review them upon repeating the asset management planning process for the next plan revision.

1.7.2 State of Infrastructure:

The second step in the plan development process was to determine the current state of infrastructure along with levels of service. While the state of infrastructure is independent of infrastructure needs, a thorough understanding of the present state of infrastructure was determined to be a key element required when considering the needs of the infrastructure portfolio and what levels of service are realistically achieved. There are a variety of ways to assess and report on the state of infrastructure.

Individual asset performance and condition assessments are considered as the preferred measure for assessing the state of individual infrastructure assets, though asset age or maintenance data were also used as an indicator where the information was otherwise unavailable.

The City of Temiskaming Shores currently has several infrastructure condition, monitoring, and assessment programs in place, including;

- Sanitary and Storm Sewer Closed Circuit Television (CCTV) Program:

  Most of the City's sanitary and storm sewer systems have been inspected over a number of years and the condition of these sections have been documented to highlight areas that should be considered as priority for replacement or rehabilitation. Recently, the City has acquired a CCTV camera to inspect those areas that poise gaps in information.

- Road Needs Study:

  The City engaged external consultants to update the roads study in 2020, and funding for this review was available through the Federation of Canadian Municipalities (FCM). This study reviewed the road network, broke the various road sections down into individual segments, consistent in their characteristics and other infrastructure located within, and recorded the performance and condition details for each. This information has and will continue to be used and updated internally to identify the capital and maintenance needs of the system, the timing for the required work and the road priority.

- OSIM Bridge Inspections:

  As legislated by the Province of Ontario, every bridge and large diameter culvert is inspected under the Ontario Structure Inspection Manual (OSIM) every two years. The most recent inspection was carried out by a qualified consultant in 2024 and is being repeated in 2026. From this inspection, a Bridge Condition Index was developed that assists in the scheduling of bridge maintenance and upkeep. Safety concerns are addressed immediately.

Limitations of this Plan

This version of the plan is largely based on infrastructure asset age information collected through PSAB 3150 reporting records and available information on the asset groups that was collected since 2015.

Additional limitations, that have been identified, are documented in section 3 of the plan, identified by asset category.

Next Steps

The City should consider revisions to the procurement policies to support and improve data management practices. Contract terms should specify the format of electronic deliverables and define minimum data requirements to support Asset Management efforts moving forward.

All reporting procedures should incorporate / include asset condition information, as it becomes available. This will assist in determining or establishing a more accurate representation of the state of infrastructure.

1.7.3 Current Levels of Service:

Level of service defines the performance required of the infrastructure. To measure the level of service, one or more corresponding key performance Indicator (KPI) must be identified. In order to minimize monitoring and analysis efforts, the KPI's monitor should be limited to those required to measure the current Levels of Service.

Limitations of this Plan

The current Levels of service defined for the initial version of the plan have been limited to those associated with the capital replacement of assets. An estimated service life was established for each asset that corresponds with either the typical lifespan experienced in industry or adjusted to better represent the asset management strategy for the replacement or retention of the particular asset.

1.8 The Asset Management Plan as a "Living Document"

The process for developing and implementing this plan was intended to follow the Plan, Do, Study, Act (PDSA) cycle for quality control (the W.Edwards Deming Institute). This process provides a framework for continual monitoring and improvement of the Plan, as well as for planned asset management strategies and activities. A variety of components are included in each step as outlined below.

Figure1.2: PDSA (Plan-Do-Study-Act) The W. Edwards Deming Institute

* www.deming.org

Step 1: Plan

The following components are included in this step:

Review of Previous Plan

Prior to establishing or revising the Asset Management Plan, previous plans will be reviewed. This review will establish a historical context for the decisions made and an understanding of the future visions pursued, as well as providing a framework to measure asset performance. By recognizing the "living" nature of the Plan documents, evaluation of changes made over time will also serve to identify best practices and unsuccessful strategies to avoid. Where the Plan continues to serve the City's needs, it may serve as a template to produce future Plans.

Audit Results and Auditor Recommendations

Results from audits on the Asset Management Plan or system, and other associated auditor recommendations, will be considered in revising the active Plan and producing future plans.

Management Review Results

As part of the third step of the plan development process, a management review will be conducted. While the results from this review are intended to be incorporated in the existing Plan as a process of continuing improvement, some issues may not be immediately actionable. Assessment of management review results during the development process for subsequent plans will provide the opportunity to re-assess and potentially implement recommendations that were previously not accepted.

The full asset management planning process should be undertaken by the City every five years. The process should be initiated one year prior to the intended release of the updated or revised Plan. The City may consider retaining the services of a third party, to facilitate the review and revision for every other plan to incorporate changes of industry best practices and capture the benefits of an external review.

Step 2: Do

The second step of the Plan development process is its implementation. The Plan will be implemented upon completion of the first step. Where necessary, significant changes may be implemented through a phased approach as documented in the plan.

Step 3: Check

The Plan shall be considered a "living document," to be revised and refined as required. Prior to making adjustments, the efficacy and propriety of the Plan, strategies and activities must be assessed. This is performed through six approaches: monitoring, inspections and testing, performance documentation, audits, management reviews, and stakeholder engagement.

Monitoring

Asset management activities specified in the Plan will be monitored on an on-going basis. Overall activities in the Plan will be compared with performance measures and the results will be used to develop an improvement plan which will document specific tasks.

The State of Infrastructure report will also be reviewed and revised on an annual basis by the City.

It is anticipated that in the early stages of implementation, this monitoring may lead to more frequent adjustments to the Plan.

Inspections and Testing

Assets will be inspected and tested as specified in the Plan. If subsequent inspections identify significant deterioration in condition or performance, corrective actions may be undertaken and inspection frequency may be increased until the desired outcome is achieved and confirmed.

Performance Documentation

A review of asset performance (design capacity in comparison to actual measured capacity) may be carried out to ensure that the current and desired Levels of Service can be provided. This review may take the form of summary tables or charts displaying capacity in relation to levels of service. It may also include assessment of other studies or models used to evaluate asset performance, such as water system models or traffic demand studies.

Management Review

The Asset Management System, including applicable policies, procedures, and plans, should undergo management review every (3) three years.

Audits

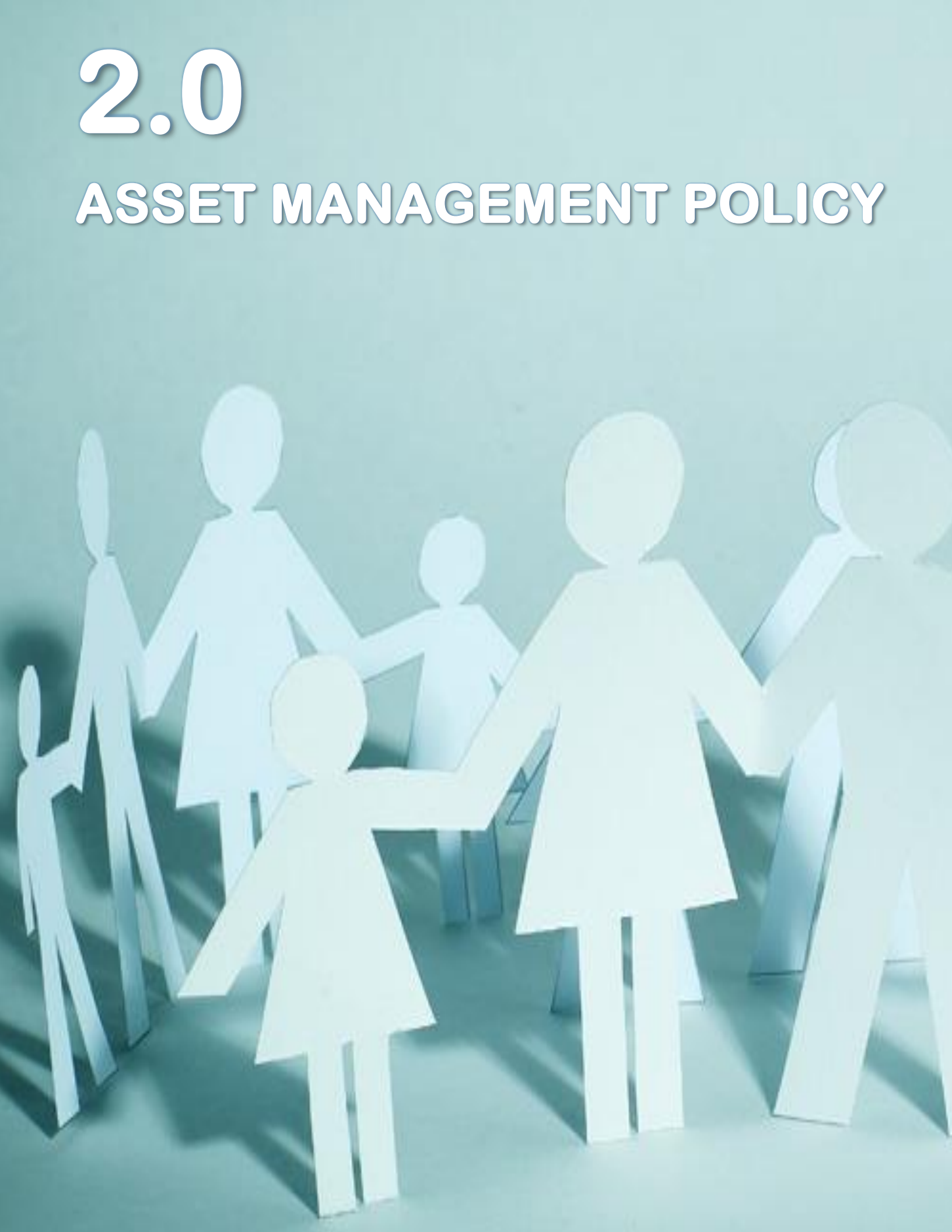
The Asset Management System, including applicable policies, procedures, and plans, may undergo audit by an external consultant every (5) five years.

Step 4: Act

The final step in the Plan development is to act on the information gathered from the previous step. This step is implemented through continual plan evaluation and improvement efforts. The Plan will be evaluated and adjusted on an ongoing basis by Municipal staff and management during implementation. Formal management evaluation and audited reviews will take place as described previously. The outcomes and recommendations of each review will be incorporated into improving future versions of the Plan.

2.0

ASSET MANAGEMENT POLICY



Asset Management Policy

An Asset Management Policy may be defined as the "*principles and mandated requirements derived from, and consistent with, the organizational strategic plan, providing a framework for the development and implementation of the asset management strategy and setting of asset management objectives".*

Simply put, the asset management policy defines an organization's commitment to asset management and provides staff with a mandate and direction to implement the plan strategy and activities in compliance with the overall organizational strategic plan. Creation of such policies is an essential requirement of asset management systems, and highly recommended by most recognized guidelines and standards, including InfraGuide and the International Infrastructure Management Manual (IIMM).

The City of Temiskaming Shores formally adopted a documented Municipal Asset Management policy by Resolution No. 2019-063, dated May 21, 2019. This policy signifies Council's commitment to effective asset management, and the establishment of municipal priorities for our asset management programmes.

2.1 Policy Statements

Asset management is a broad strategic framework that encompasses many disciplines and involves the entire organization. The term asset management, as used in this document, is defined as *"The application of sound technical, social and economic principles that considers present and future needs of users, and the service from the asset."*

To guide the organization, the following policy statements have been developed for all three phases of the plan:

a) The City of Temiskaming Shores will maintain and manage infrastructure assets at defined levels to support public safety, community well-being and community goals.

b) The City of Temiskaming Shores will monitor standards and service levels to ensure that they meet/support community and Council goals and objectives.

c) The City of Temiskaming Shores will develop and maintain asset inventories of all of its infrastructure.

d) The City of Temiskaming Shores will establish infrastructure replacement strategies through the use of full life cycle costing principals.

e) The City of Temiskaming Shores will plan financially for the appropriate level of maintenance of assets to deliver service levels and extend the useful life of assets.

f) The City of Temiskaming Shores will plan for and provide stable long term funding to replace/ renew/decommission infrastructure assets.

g) Where appropriate, the City of Temiskaming Shores will consider and incorporate asset management in its other corporate plans.

h) The City of Temiskaming Shores will report to citizens regularly on the status and performance of work related to the implementation of this asset management policy.

2.2 Background & Purpose of Asset Management Policy

Council has a mandate to provide a wide range of services. Council adopts policies that support their vision, goals and objectives and guide staff to effectively implement the policy for the delivery of those services.

Council Vision and Goals for Infrastructure Assets

Council's vision and goal for the community is a safe, livable, sustainable and economically vibrant community underpinned by well managed and maintained infrastructure assets. These assets include efficient transportation networks, safe and reliable water distribution networks, economical and reliable sewage collection systems, productive fleets, accessible parks, recreation and civic facilities.

Though these assets age and deteriorate, by using sound asset management practices, Council and the community can be assured that assets meet performance levels, are used to deliver the desired service in the long term and are managed for present and future users.

This policy articulates a Council's commitment to asset management, and guides staff using the policy statements for all three phases of the plan. In doing so, this policy also outlines how it is to be integrated with other organization goals in such a way that it is coordinated, cost effective and sustainable. This policy demonstrates to the community that Council is exercising good stewardship and is delivering affordable service while considering its legacy to future residents.

Staff will implement the policy through the development and use of asset management guidelines and best practices. Since the performance of asset management is organization specific, reflective of knowledge, technologies and available tools, and will evolve over time, the responsibility for developing guidelines and practices is delegated to staff.

2.3 Policy Principles, Guidelines and Integration

Principles

The key principles of the asset management policy are outlined in the following list.

The City shall:

- Make informed decisions by identifying all revenues and costs (including operation, maintenance, replacement and decommission) associated with infrastructure asset decisions, including additions and deletions. Trade-offs shall be articulated and evaluated, and the basis of the decision recorded.

- Integrate corporate, financial, business, technical and budgetary planning for infrastructure assets.
- Establish organizational accountability and responsibility for asset inventory, condition, use and performance.
- Consult with stakeholders where appropriate.
- Define and articulate service, maintenance and replacement levels and outcomes.
- Use available resources effectively.
- Manage assets to be sustainable.
- Minimize total life cycle costs of assets.
- Consider environmental and energy conservation goals.
- Consider social and sustainability goals.
- Minimize risks to users and risks associated with failure.
- Pursue best practices where available.
- Report the performance of its asset management program.

Guidelines and Practices

This policy shall be implemented by staff using accepted industry guidelines and best practices (such as those recommended by the Federation of Canadian Municipalities e.g., InfraGuide and the by the Municipal Finance Officers Association e.g., Amp It Up).

The City will comply with required capital asset reporting requirements, and integrate the asset management program into operational plans throughout the organization.

Strategic asset management plans may be developed for a specific class of assets, or be generic for all assets, and should outline long term goals, processes and steps toward how they will be achieved. The Asset Management Plan should be based on current inventories and condition (acquired or derived), projected or desired performance and remaining service life and consequences of losses ***(e.g., vulnerability assessments, Emergency Management Ontario Critical Infrastructure Consequence of Loss Assessment***). Operational plans should reflect these details. Replacement portfolios and associated financial plans should consider alternative scenarios and risks, as well as include public consultation.

Context and integration of Asset Management within the City

The context and integration of asset management throughout the organization's lines of business is typically formalized through references and linkages between corporate documents. Where possible and appropriate, Council and staff will consider this policy and integrate it in the development of corporate documents such as:

- Official plan
- Business plans
- Corporate strategic plan
- Corporate financial plan
- Capital budget plan
- Operational plans and budgets (including vehicle and fleet plans and budgets)
- Energy Conservation plans
- Neighborhood plans
- Community Improvement plans
- Annual reports
- Design criteria and specifications
- Infrastructure servicing, management and replacement plans, e.g., transportation plans
- Community social plans
- Parks and recreation plans
- Facility plans
- Economic Development plans

2.4 Key Roles for Managing the Asset Management Policy

City policies are approved by Council. While staff, public and other agencies may provide input on the nature and text of the policy, Council retains the authority to approve, update, amend or rescind policies.

Table 2-1: Roles and Responsibilities

Role	Responsibility
Identification of issues, and development of policy updates	Council and staff
Establish levels of service	Council, staff and public
Exercise stewardship of assets, adopt policy and budgets	Council
Implementation of policy	City Manager and staff
Development of guidelines and practices	City Manager and staff
On-going review of policies	Council and staff

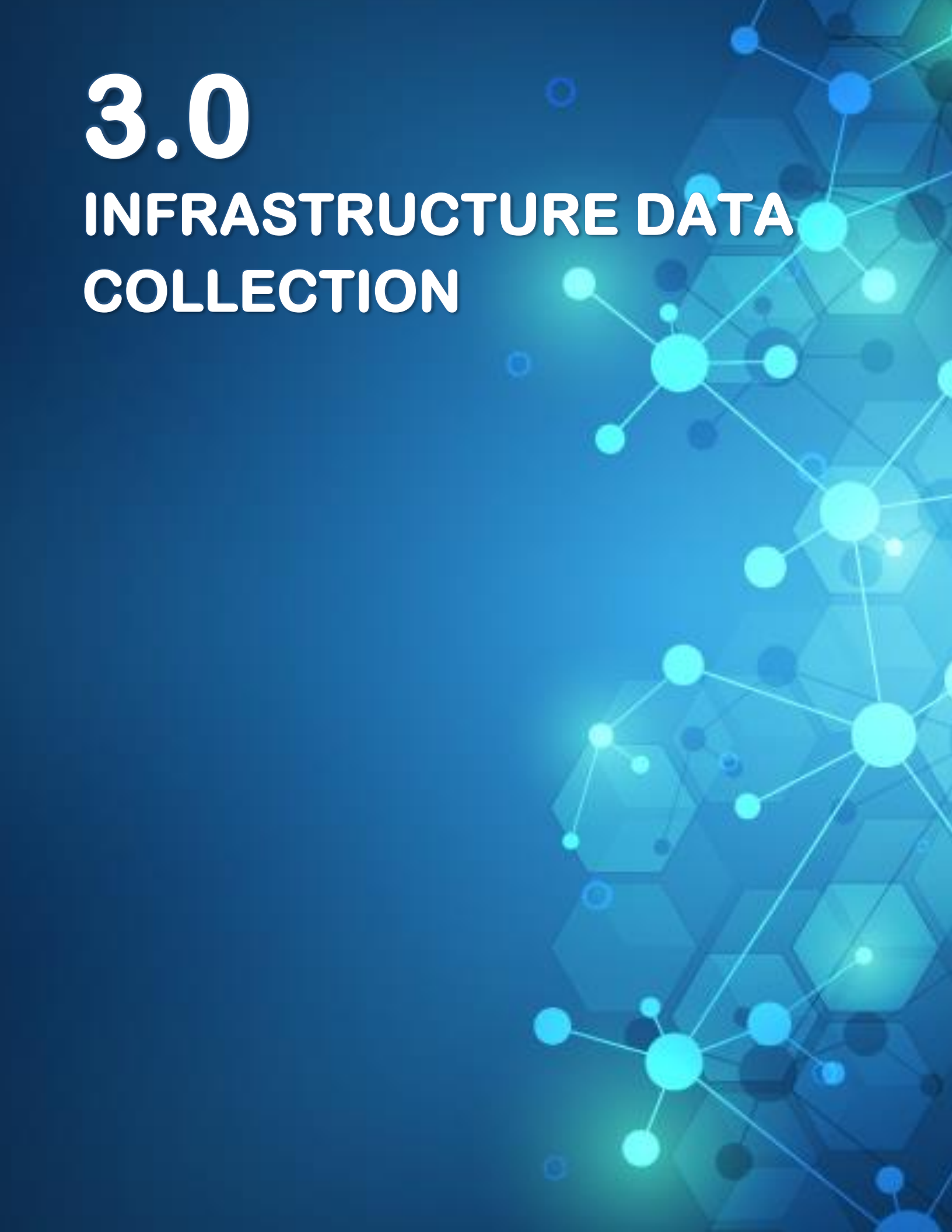
Implementation, review and reporting of Asset Management work

The implementation, review and reporting of this policy shall be integrated within the organization. Due to the importance of this policy, the organization's asset management program shall be reported annually to the community, and implementation of this policy reviewed by Council at the mid-point of its term.

Table 2-1: Roles and Responsibilities

Actions	Responsibility
Adopt Asset Management Policy	Council and City Manager
Monitor and review infrastructure standards and service levels at established intervals	Council and City Manager
Develop and maintain infrastructure strategies including development and service plans	Recreational Services, Community and Planning, Public Works, Finance, other asset operation and maintenance departments, Finance
Develop and maintain asset inventories	Public Works, Finance, other asset operation and maintenance departments, Finance
Assess infrastructure condition and service levels	Public Works, and other asset operation and maintenance departments
Establish and monitor infrastructure replacement levels through the use of full life cycle costing principles	Public Works, Finance, and other asset operation and maintenance departments
Develop and maintain financial plans for the appropriate level of maintenance, rehabilitation, extension and decommission of assets	Public Works, Finance, and other asset operation and maintenance departments, Finance
Report to citizens on status of the community's infrastructure assets and asset management program. The channels may include annual citizen reports, business plans, etc.	Council, City Manager, Corporate Services

3.0
INFRASTRUCTURE DATA COLLECTION



Infrastructure Data Collection

3.1 Water System Inventory

The water system infrastructure inventory data was gathered from several sources. A combination of geographic information system (GIS) information and other available records were collected to provide a complete accounting. Limited global positioning (GPS) data was available for hydrants, curb stops and water valves connected to the water infrastructure. The City's inventory of these appurtenances, linked to the water infrastructure piping are considered to be fairly accurate. Base information about the material, installation date, diameter and length were derived from available records. Records also provided information about the size of valves, hydrants and connections per pipe segment and the two data sets were linked via their street (location) information. Information on water treatment and storage facilities were gathered separately.

3.2 Sanitary System Inventory

The sanitary system infrastructure data was compiled from several sources. The combination of geographic information system (GIS) information and other available records were collected to provide a complete accounting. Limited global positioning (GPS) data was available for maintenance holes and cleanouts connected to sanitary infrastructure, however the City's inventory of appurtenances, linked to the sanitary sewer infrastructure piping are considered to be accurate. Base information about the material, installation date, diameter and length were derived from available records. Records also provided information about the number and location of maintenance holes and connections per pipe segment and the two data sets were linked via their street (location) information. Information on wastewater treatment and pumping facilities were gathered separately.

3.3 Stormwater System Inventory

The stormwater system infrastructure data used for the analysis was compiled from several sources. A combination of geographic information system (GIS) information and other available records were collected to provide a complete accounting. Limited global positioning (GPS) data was available for the maintenance holes and catch basins connected to the stormwater infrastructure, however the City's inventory of these appurtenances linked to the stormwater infrastructure piping are considered to be accurate. Base information about the material, installation date, diameter and length were derived from available records. Records also provided information about the number and location of maintenance holes and catch basins per pipe segment and the two data sets were linked via their street (location) information.

3.4 Road Network Inventory

Data derived from a roads needs survey, conducted in 2020 and an internal survey in 2023, was used in conjunction with the previously developed geographic information system (GIS) layer for the municipality's roads. The information gathered in the survey was reviewed. It was determined that road condition data contained more suitable information for use in an Asset Management Plan. It is recommended that all data sets be combined in the future to provide a more detailed source of information when combined with other asset inventories.

3.5 Bridge Inventory

The bridge inventory was developed through the use of the most recent Ontario Structure Inspection Manual (OSIM) data. Basic bridge condition index values were calculated for each structure using the estimated cost of repair derived from inspections, initial installation cost, and current bridge values. Bridges with a repair value either greater or close to the replacement value were considered to be in poor condition.

3.6 Miscellaneous Asset Inventories

Information for the following asset classes was acquired from various sources of data. This information assisted in providing a current and base cost for each asset.

- Sidewalks, curb and active trails
- Centerline and entrance culverts
- Street, decorative and traffic control lights
- Fleet units
- Traffic signs
- Guard rails
- Buildings and facilities
- Parks & structures
- Solid waste
- Machinery and equipment

4.0
STATE OF INFRASTRUCTURE

State of Local Infrastructure

4.1 Introduction & Overview

The City of Temiskaming Shores infrastructure may be considered to be in "fair to good" condition. This is a result of the City being proactive in the management of its infrastructure. As the infrastructure continues to age, however, adequate funding will need to be made available to continue this trend and replace, rehabilitate or dispose of the assets as required.

4.1.1 Inventory Overview

The State of Local Infrastructure Report is a review of existing infrastructure data pertaining to infrastructure age and condition. The City's public sector accounting board (PSAB) asset registry and staff knowledge of the various categories of infrastructure forms the basis for the assessment, with any available condition information taking priority in forecasting for both short and long-term needs.

This report was developed to advance the understanding of the state of the local infrastructure assets, and to improve transparency with respect to management of the infrastructure inventory. The report is the first element of an asset management plan whose purpose is to improve infrastructure-related decision-making processes.

The State of Local Infrastructure Report Card reviews the following infrastructure:

- Water distribution and treatment system
- Sanitary collection and treatment system
- Stormwater collection and management system
- Transportation network
- Solid waste management
- Buildings & facilities
- Parks & structures
- Fleet units
- Machinery and equipment

Table 4-1 summarizes the estimated replacement cost for the City's infrastructure asset portfolio, derived on the basis of replacement costs, while Figure 4.1 illustrates each infrastructure asset division as a percentage of the total portfolio value. All values are estimated construction / replacement costs represented in 2024 Canadian Dollars (CAD).

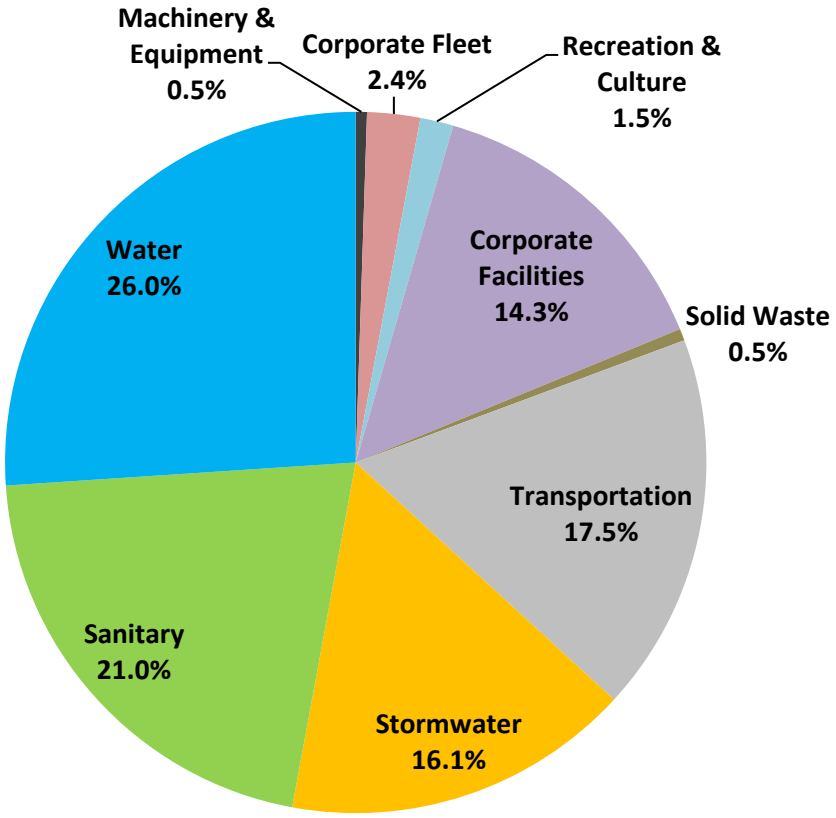
Note: The replacement costs outlined in this strategy are based on direct capital costs and do not incorporate soft costs, reference 7.1.2. for additional information.

Table 4-1: Total Replacement Cost per Asset Category

Asset Category	Replacement Cost
Water	**$ 162,514,034**
Sanitary	**$ 131,323,937**
Stormwater	**$ 100,338,056**
Transportation	**$ 109,094,152**
Solid Waste	**$ 3,401,248**
Corporate Facilities	**$ 89,234,746**
Recreation & Culture	**$ 9,538,085**
Corporate Fleet	**$ 15,238,174**
Machinery & Equipment	**$ 3,212,541**

Total: $623,894,974

Figure 4.1: Asset Replacement Cost by Asset Category (%)



4.1.2 Factors to Determine Infrastructure Condition

In order to prepare asset category risk profiles, and create capital needs forecasts, appropriate condition ratings have been established for each category. The state of the infrastructure was assessed based on a variety of factors including age, material (service life), number of repairs, sufficient capacity, etc.

Age and material are the most significant assessment criterion. As an asset ages, its condition deterioration is influence by many factors. The asset's material significantly affects the rate of deterioration. The estimated service life of a material can be adjusted to match industry good practices and reflect the typical life span of similar assets, to match local experience, or to match the asset management strategy of the infrastructure owner. In general, an asset's estimated service life is heavily influenced by the demands placed on it, operation and maintenance practices, and legislative / regulatory and technological changes (e.g., technological obsolescence). For this plan, initial service lives were derived to reflect accepted industry asset performance as well as the City's asset management goals.

The number of repairs provides a measure of operational decline due to deterioration. Therefore, areas that have a history of "breakage" are a significant burden on the operational budget.

Sufficient system capacity is also a violable factor when it comes to determining the condition of particular assets. For example, watermains that have large diameters are often transmission lines that supply significant quantities of water to large areas within the city. As such, problems with larger diameter pipes are considered to have high associated social and economic risks.

Table 4-2: Average Age per Category

Asset Category	Average Age (years)
Water	43
Sanitary	44
Stormwater	42
Transportation	41
Solid Waste	-
Corporate Facilities	42
Recreation & Culture	24
Corporate Fleet	7
Machinery & Equipment	-

4.1.3 Useful Life Consumption

While age is not a precise indicator of an asset's health, in the absence of assessed condition assessment data. It can serve as a high-level, meaningful approximation and help guide replacement needs and facilitate strategic budgeting.

4.1.4 System Characteristic Overview

A basic character overview has been established for each asset category included in this Plan. Due to the nature of the individual asset categories, the overviews cannot be readily combined and summarized.

Beyond the risk of infrastructure failures, Temiskaming Shores faces a number of potential legislative / regulatory and potential reputational risks. One identified risk is that related to hazardous materials. A section of the water main inventory for instance, contains asbestos cement. A change in water distribution legislation requiring the removal of such materials could impose a cost of nearly $1.5M on the City for the Water system alone. To address these risks, the City may choose to accelerate the replacement of certain material or asset types.

4.1.5 Final Report Card Score

To rate the asset inventory using a report card, a scoring system modified from the Canadian Infrastructure Report Card was applied. The system is outlined in Table 4-3 and Table 4-4.

Table 4-3: Infrastructure Condition Score

Average Score	Rating	Definition of Rating
5	Very Good (A) 80-100%	*Fit for the Future* – The infrastructure in the system or network is generally in very good condition, new or recently rehabilitated. A few elements show general signs of deterioration that may require attention.
4	Good (B) 60-79%	*Adequate* – The infrastructure in the system or network is in good condition; some elements show general signs of deterioration that require attention. A few elements may demonstrate signs of significant deficiencies.
3	Fair (C) 40-59%	*Requires Attention* – The infrastructure in the system or network is in fair condition; it shows general signs of deterioration and requires attention. Some elements demonstrate significant deficiencies.
2	Poor (D) 20-39%	*At Risk* – The infrastructure in the system or network is in poor condition and mostly below acceptable standards, with many elements approaching the end of the expected service life. A large portion of the system demonstrates significant deterioration.
1	Very Poor (F) 0-19%	*Unfit for Service* – The infrastructure in the system or network is in unacceptable condition with wide spread signs of advanced deterioration. Many components or elements in the system demonstrate signs of imminent failure, which is / will affect service delivery.

Table 4-4: Financial Capacity Score

Average Score	Rating	Definition of Rating
5	Very Good (A)	The municipality is fully prepared for its short, medium and long-term replacement needs based on existing infrastructure portfolio.
4	Good (B)	The municipality is well prepared to fund its short and medium-term replacement needs but requires additional funding strategies in the long-term to begin to increase its reserves.
3	Fair (C)	The municipality is underprepared to fund its medium to long-term infrastructure needs. The replacement of assets in the medium-term will likely be deferred to future years.
2	Poor (D)	The municipality is not well prepared to fund its replacement needs in the short, medium or long-term. Asset replacements will be deferred and levels of service may be reduced.
1	Very Poor (F)	The municipality is significantly underfunding its short, medium and long-term infrastructure requirements based on existing funds allocation. Asset replacements will be deferred indefinitely. The municipality may have to divest some of its assets (e.g., bridge closures, facility closures) and levels of service will be reduced significantly.

Table 4-5 summarizes the condition scores determined for each asset category, and their corresponding Grade.

Figure 4.2: State of Infrastructure Assets (%)

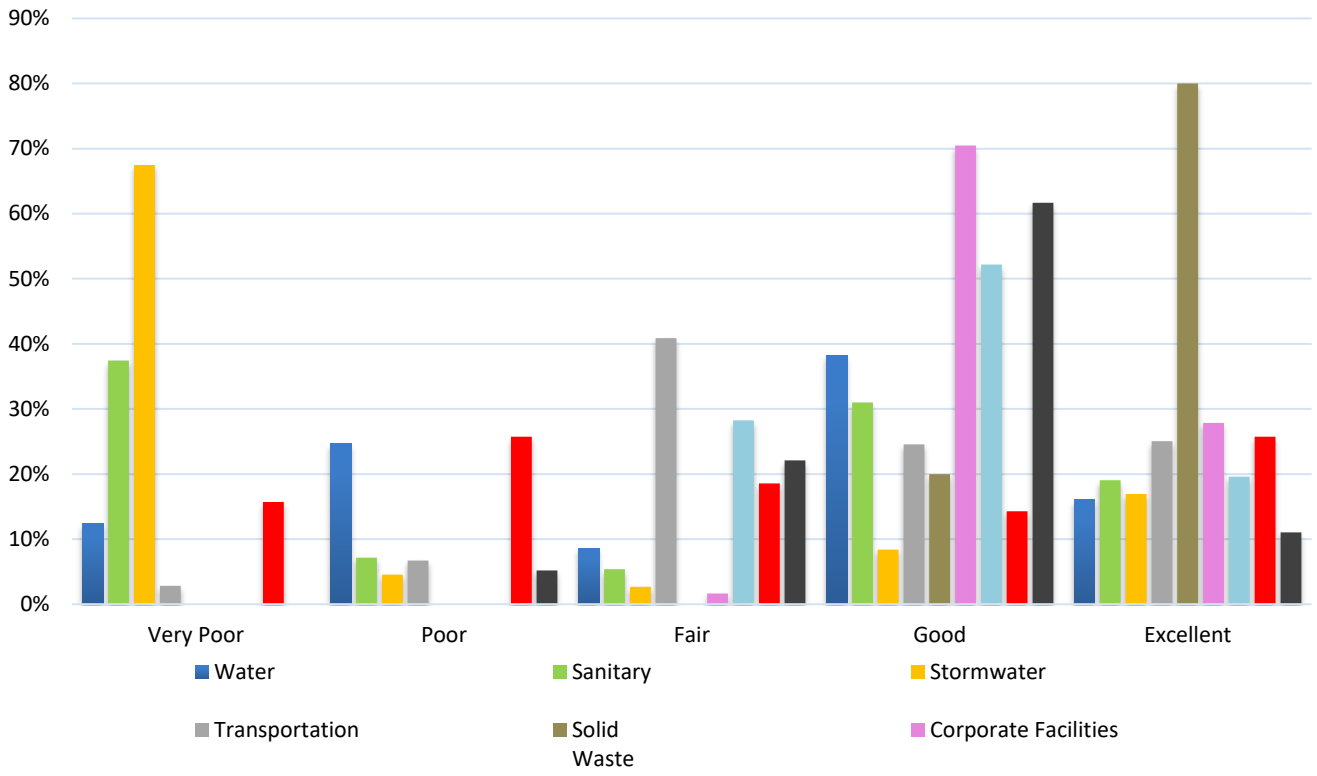
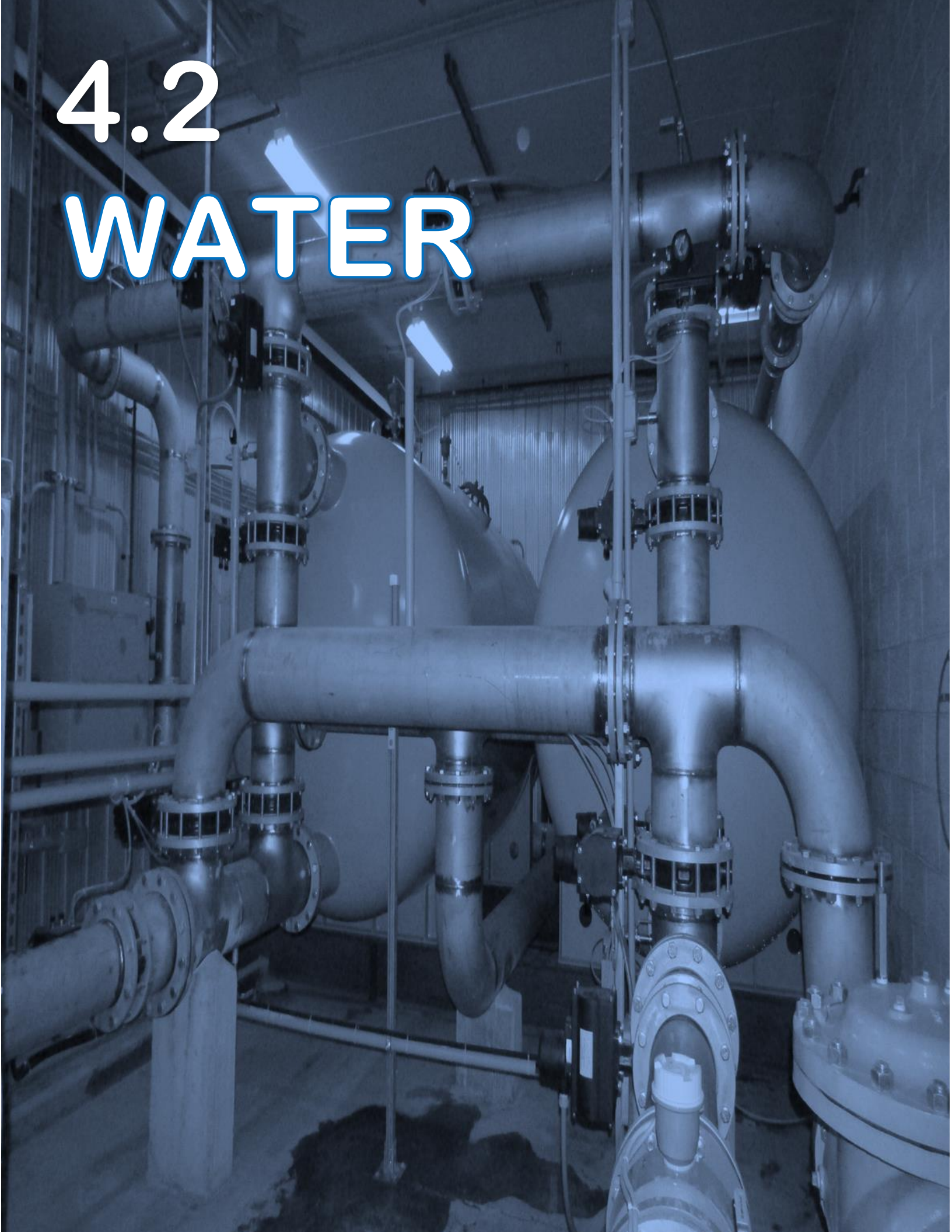


Table 4-5: Infrastructure Report Card Summary

Asset Category	Financial Capacity	Asset Condition	Overall Grade
Water	C	B-	C+
Sanitary	C	C+	C+
Stormwater	C-	C-	C-
Transporation	C	C	C
Solid Waste	C+	A	B
Corporate Facilities	C+	A-	B
Recreation & Culture	C	B+	B-
Corporate Fleet	B	C+	B-
Machinery & Equipment	B	B	B

Final Score: B-



4.2 WATER

4.2 Water

4.2.1 Inventory Overview

The water distribution and treatment system for Temiskaming Shores includes 103.7 km of piping, 1,358 control and specialized valves and 451 hydrants. The average age of pipe in the system is 43 years old. The age distribution of the water infrastructure is shown in Figure 4.3 and Figure 4.4.

Table 4-6: Total Replacement Cost for Water Assets

Asset Type	Quantity	Useful Life (Years)	Replacement Cost
Watermains	103.7 km	60-100	$ 109,373,948.00
Control and Specialized Valves	1,358 units	75	$ 3,385,300.00
Fire Hydrants	451 units	75	$ 3,608,000.00
Water Services	36.3 km	60-100	$ 25,604,776.00
Water Facilities	8 units	15-75	$ 20,547,290.00
		Total:	**$ 162,519,314.00**

Figure 4.3: Water Distribution Infrastructure by Age (%)

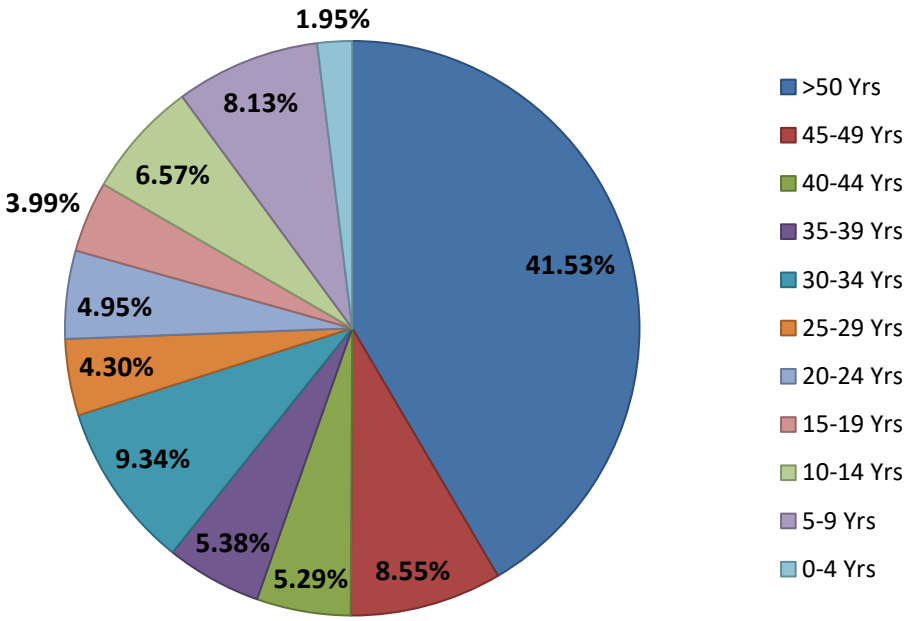
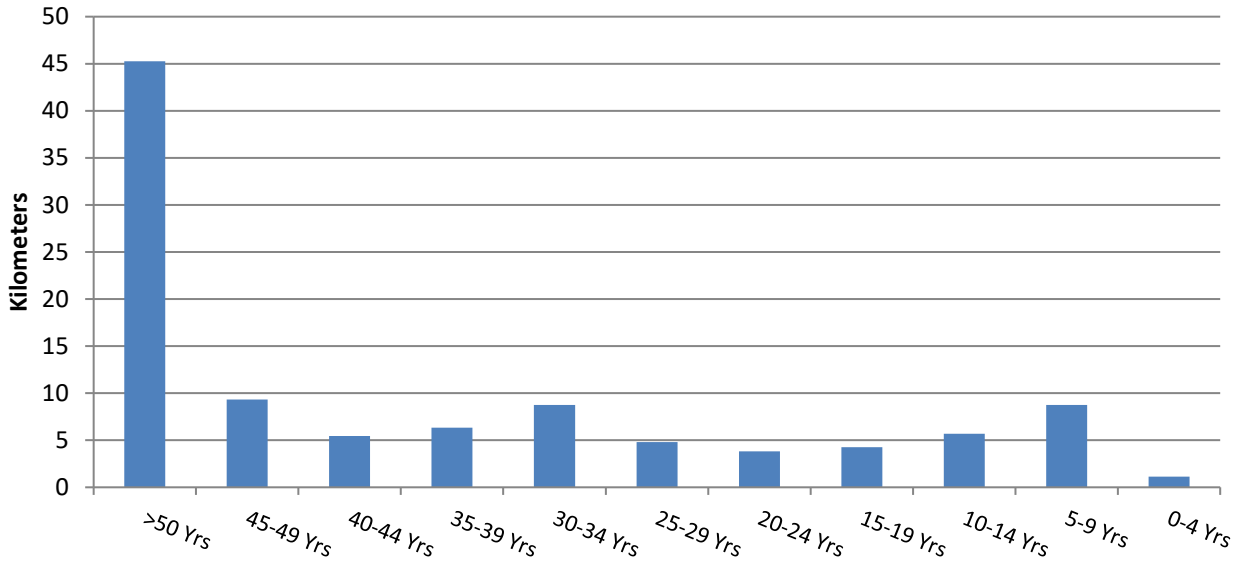


Figure 4.4: Length of Water Distribution Infrastructure by Age (Km)



The majority of water distribution pipes in Temiskaming Shores are 150 mm diameter cast / ductile iron installed over 50+ years ago, as shown in Figures 4.5, 4.6 and 4.7.

Figure 4.5: Length of Water Distribution Infrastructure Material by Age (Km)

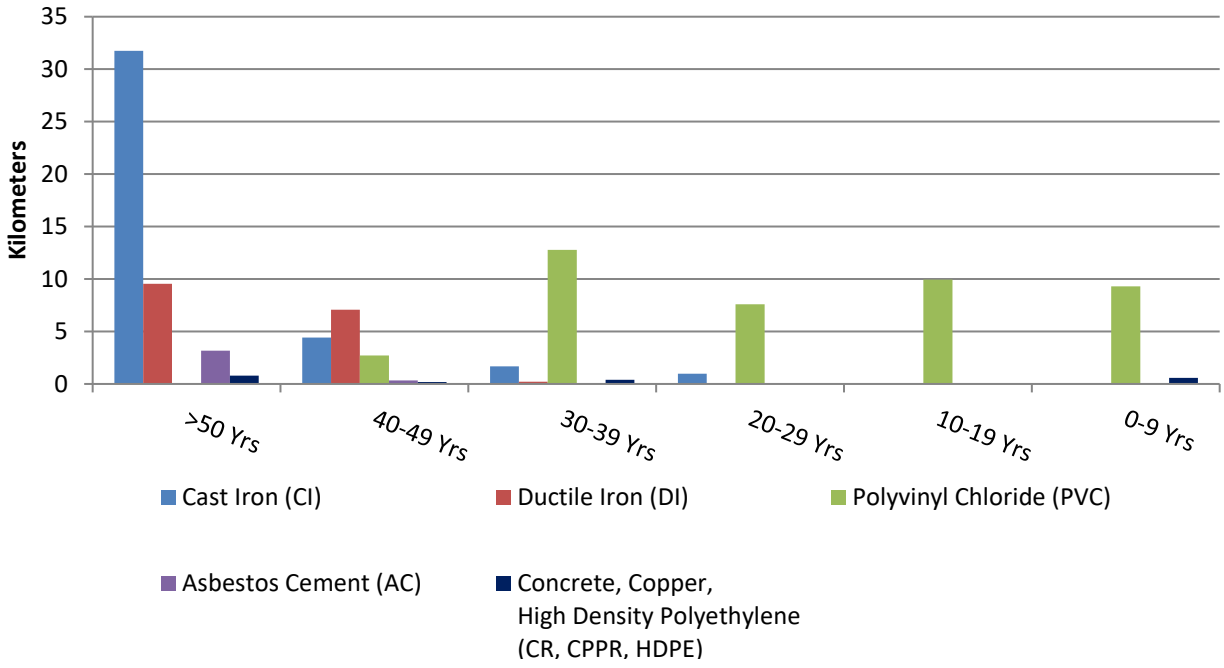


Figure 4.6: Water Distribution Infrastructure Material (%)

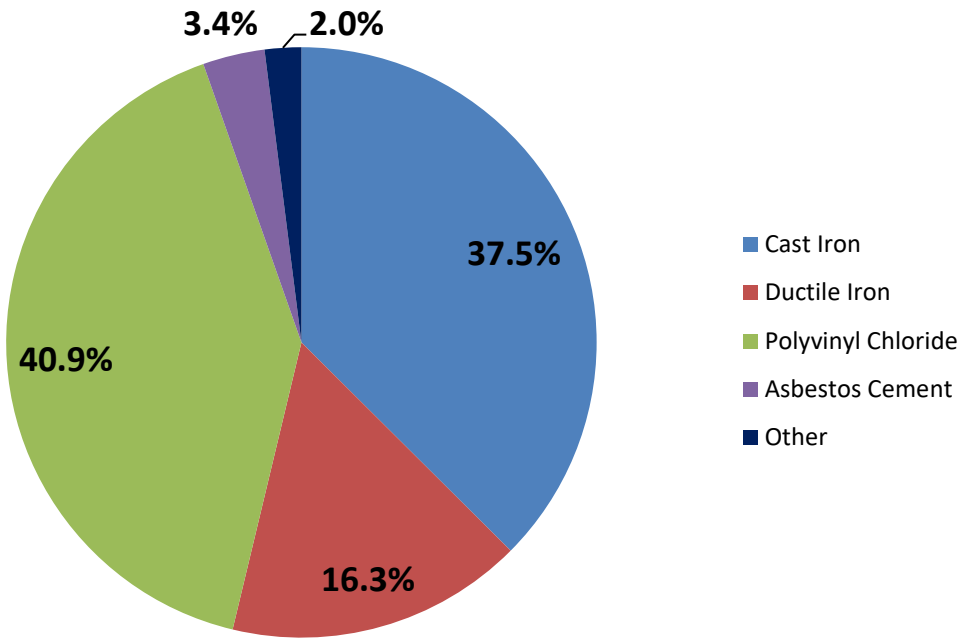
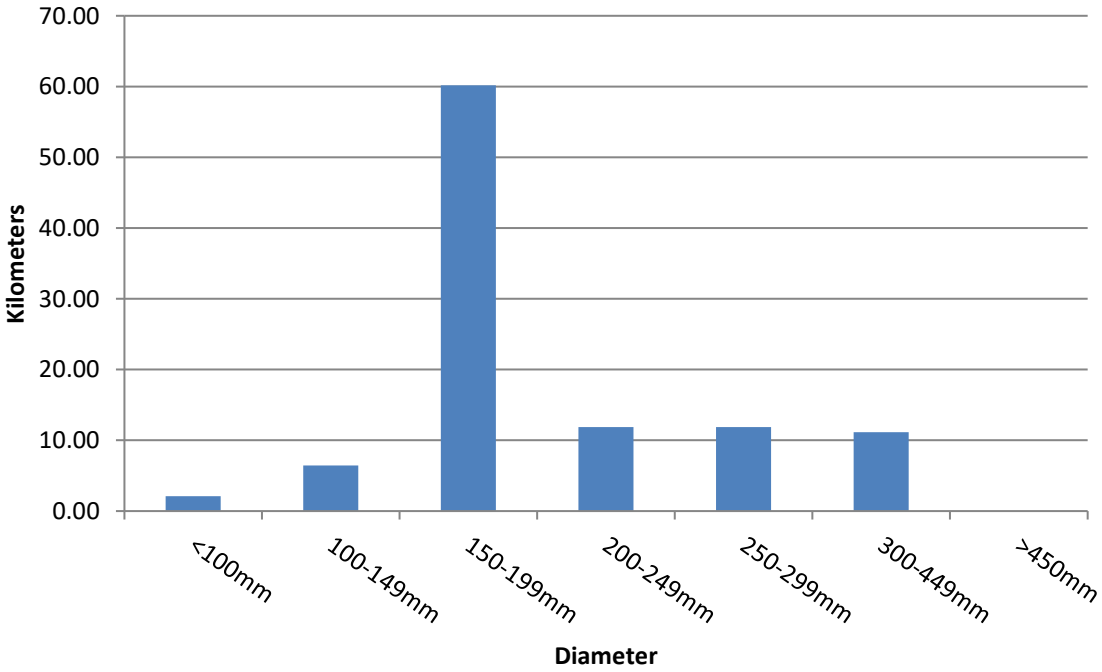


Figure 4.7: Water Distribution Infrastructure Diameter (Km)



4.2.2 Water Facilities

The City of Temiskaming Shores is responsible for 2 water treatment plants and 3 water reservoirs for servicing its residents. The average age of the City's water facilities is 50 years. However, a large percentage of these facilities have received significant maintenance and upgrades since that time. The City's water facilities are currently operated under contract by the Ontario Clean Water Agency.

- The New Liskeard Water Treatment Plant is located at 305 McCamus Avenue and attains its raw water from two drilled wells (raw water) and then treated. Once completed, treated water is directed to a clear well and pumped to the water reservoir located at 177104 Shepherdson Road. The New Liskeard system currently services about 4,800 residents. This location has a rated capacity limit of 7,865 m^3/day with an average consumption of 3,675m^3/day as of 2024.

  As of 2016, the New Liskeard plant and storage facility, also directs water to the Dymond water reservoir located at 284 Raymond Street. The Dymond system services about 500 residents.

- The Haileybury Water Treatment Plant located at 1 Browning St. receives its water source directly from Lake Temiskaming and is then treated. Once completed, treated water is directed to a clear well and is pumped to the Water Reservoir located at 400 Niven St. S. The Haileybury systems services about 4,200 residents. This location has a rated capacity limit of 6,820 m^3/day with an average consumption of 2,298m^3/day as of 2024. The Haileybury Water Treatment Plant is also utilized as the Ontario Clean Water Agency (current contracted agency) hub office for this district.

4.2.3 Risk and Criticality Analytics

Risk and criticality calculation determines the overall risk of water asset failures. Figure 4.8 and 4.9 provide a representation of the level of risk per kilometer and cost. Figure 4.10 represents the total risk of the water assets.

Note: The level of risk for all environmental facilities will remain in the high risk levels due to social and environmental impacts. Analyzing and determining the consequence and probability of failure of these facilities remains a difficult task for the municipality. However, these facilities are consistently monitored in order to allow the City to prioritize operational and capital projects based on the greatest risk of failure for each facility.

Figure 4.8: Level of Risk - Watermains (Km)

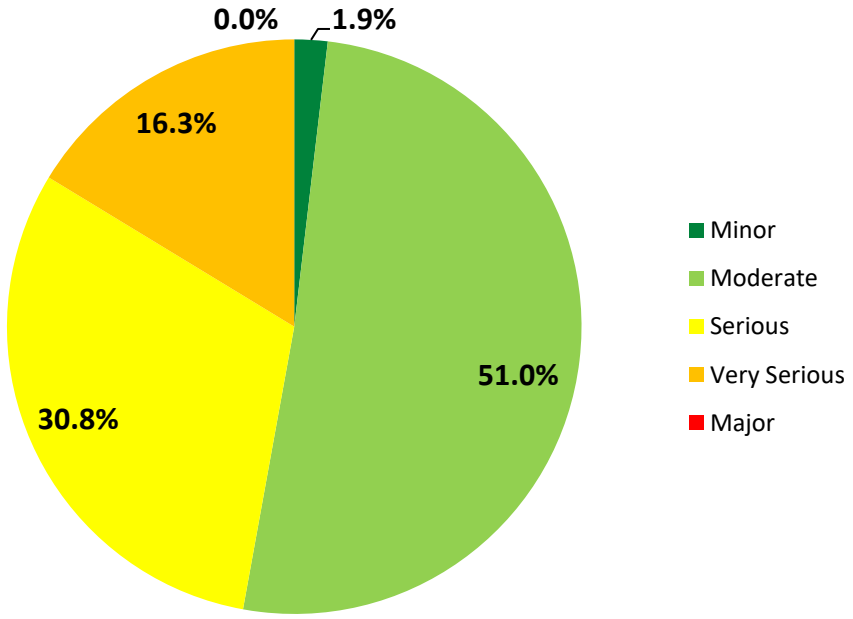
Consequence						
	5	0.00	1.95	0.09	0.00	0.00
	4	13.46	1.18	2.60	3.72	0.00
	3	4.96	1.61	2.49	2.91	0.00
	2	23.68	5.81	23.42	7.21	0.00
	1	2.37	0.62	3.32	2.23	0.00
		1	2	3	4	5
		Probability				

Figure 4.9: Level of Risk - Watermains ($)

Consequence						
	5	$ -	$ 2,839,200	$ 126,672	$ -	$ -
	4	$ 15,689,546	$ 1,347,800	$ 3,042,288	$ 4,375,858	$ -
	3	$ 5,301,850	$ 1,717,350	$ 2,660,020	$ 3,106,460	$ -
	2	$ 24,391,224	$ 5,983,270	$ 24,122,600	$ 7,425,270	$ -
	1	$ 1,925,590	$ 551,360	$ 2,942,470	$ 1,825,120	$ -
		1	2	3	4	5
		Probability				

*Reference section 7.4.1

Figure 4.10: Total Risk of Water Assets (%)



4.2.4 Lifecycle Activities

Figure 4.11 provides a representation of the overall cost of the lifecycle activities that the City would need to undertake in order to maintain the current level of service for its water assets (10-year forecast). The City's annual average operating expenditure for water assets total $2,326,548. The City's annual average total requirements are $12,269,634.

Figure 4.11: Water Lifecycle Forecast Cost ($)

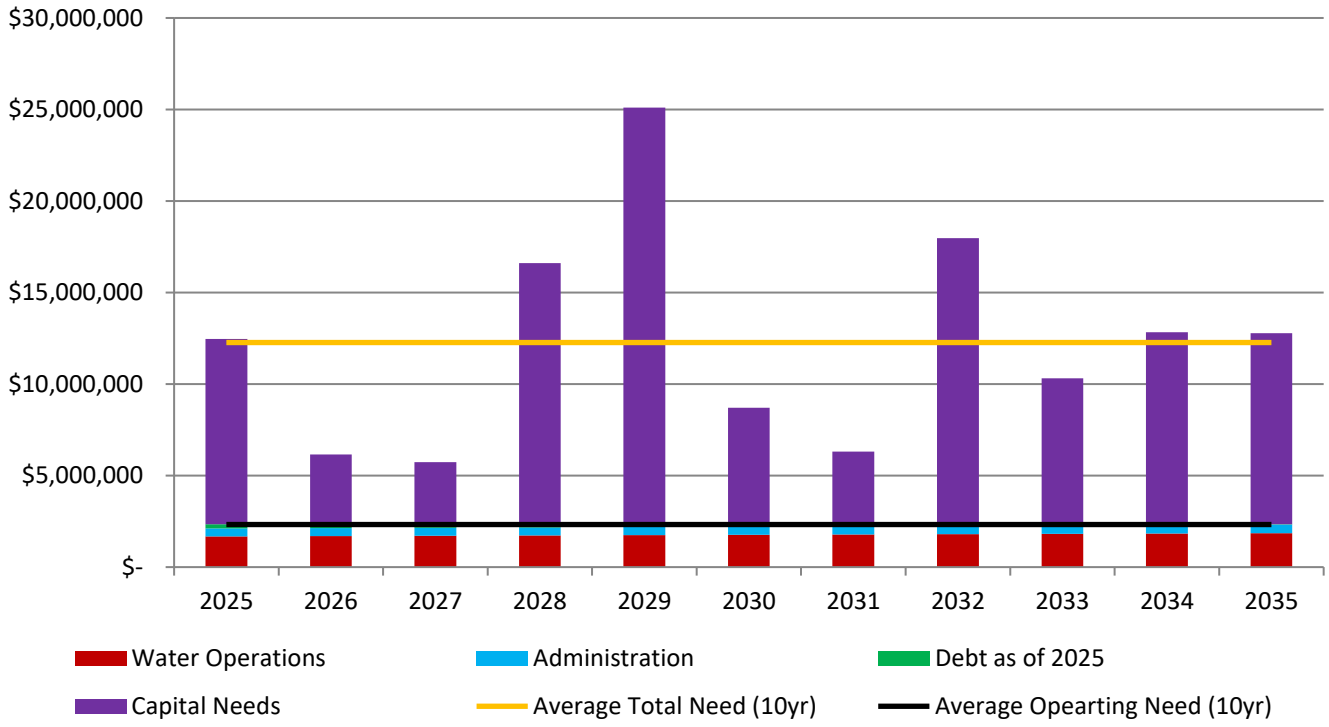
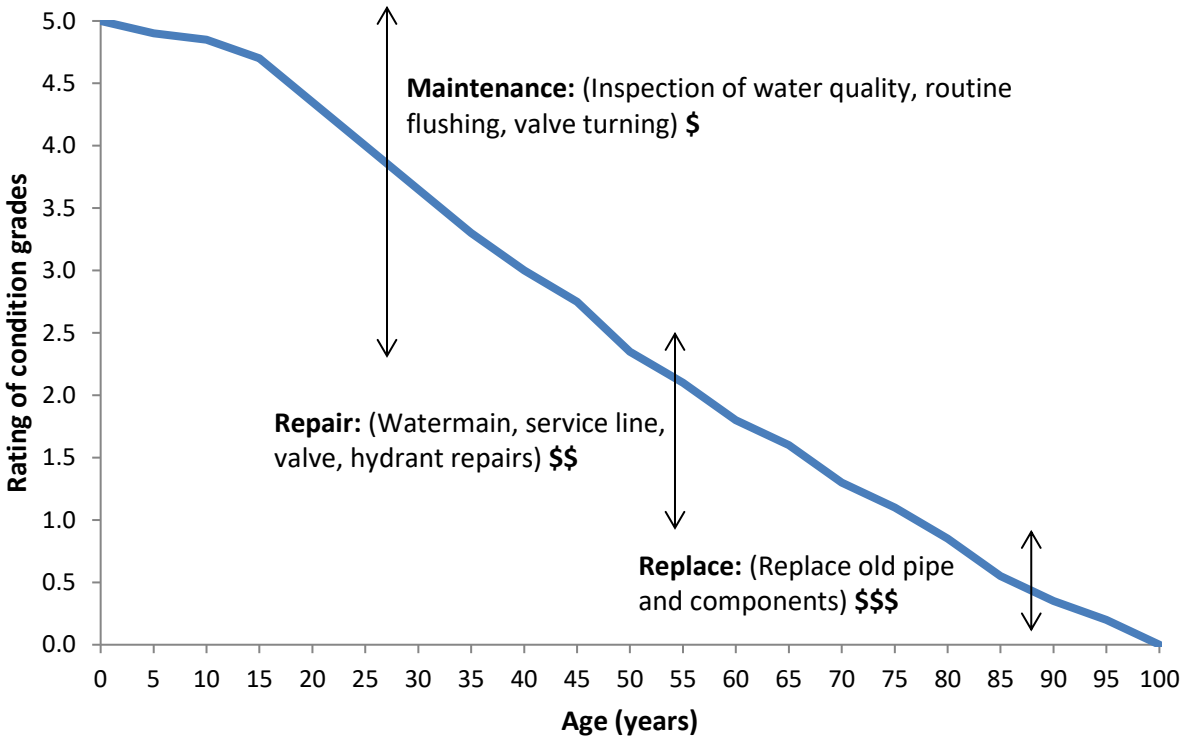


Figure 4.12 is intended to summarize the intervention strategies that are generally appropriate depending on the stage of deterioration/condition of the asset. The selection of the strategy is determined through the analysis in order to come up with the preferred intervention. It's also important to consider the approach in assessing the intervention method, in order to determine which decision can provide the most return on the investment from construction to disposal of the asset. It's also important to consider the varieties of factors that can cause the lifespan of the asset to vary from its expected service life. These factors can include but are not limited to:

- Quality of initial construction
- Appropriateness of the materials selected
- Loadings exerted on the pipe from traffic above or natural soil movement
- Soil conditions
- Chemistry of the flow within the pipe

Note: The following lifecycle deterioration rate and strategies example will be based on the current recommended and best construction practices and materials for each asset category. Watermains will be calculated using polyvinyl chloride (PVC) with a life expectancy of 100 years.

Figure 4.12: Water Lifecycle Intervention Strategies



Some operational lifecycle activity options for water assets include but are not limited to:

- Regulated watermain flushing and inspections programs
- Valve exercising programs to prevent improper functionality of the asset
- Watermain and service line repairs
- Fire hydrant repairs
- Fire hydrant winterizing
- Treatment monitoring
- Treatment facility repairs

The overall cost of these options may include wages/labour, materials, contracted/hired costs and other miscellaneous costs related to the lifecycle intervention such as consultation and design work for rehabilitation and replacement activities.

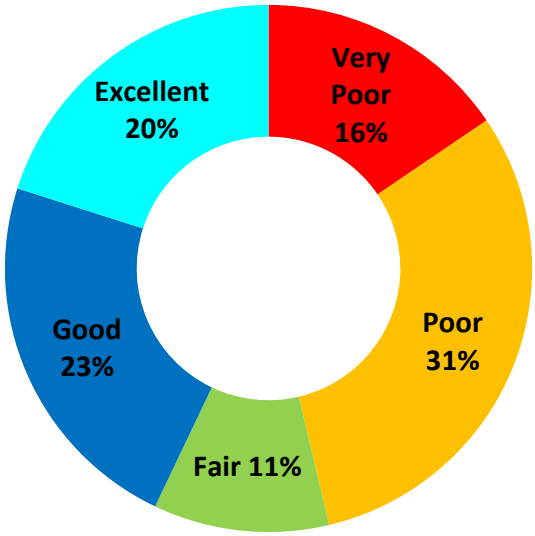
4.2.5 Condition Report Card

In 2022, the City of Temiskaming Shores experienced the highest total number of repairs (109 watermain and service line breaks). As the number of watermain breaks consistently increase over the years, it can directly attribute to the significant reconstruction and rehabilitation needs of the city.

Figure 4.13 and table 4-7 shows the average ratings and overall report card grade for the City's water system using a five point system. This initial condition report is age based. Material type and diameter (capacity) of pipe have been considered in the risk analysis. These values may be adjusted as the City developpes a physical condition assessment program, as more information is gathered, or as the City upgrades the asset. *Reference section 4.1.5

Figure 4.13: Water Condition Report Card (%)

Water Distribution System



Water Treatment and Storage Facilities

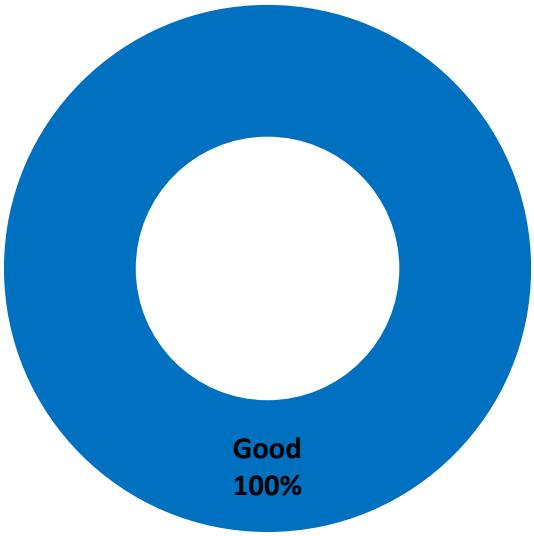
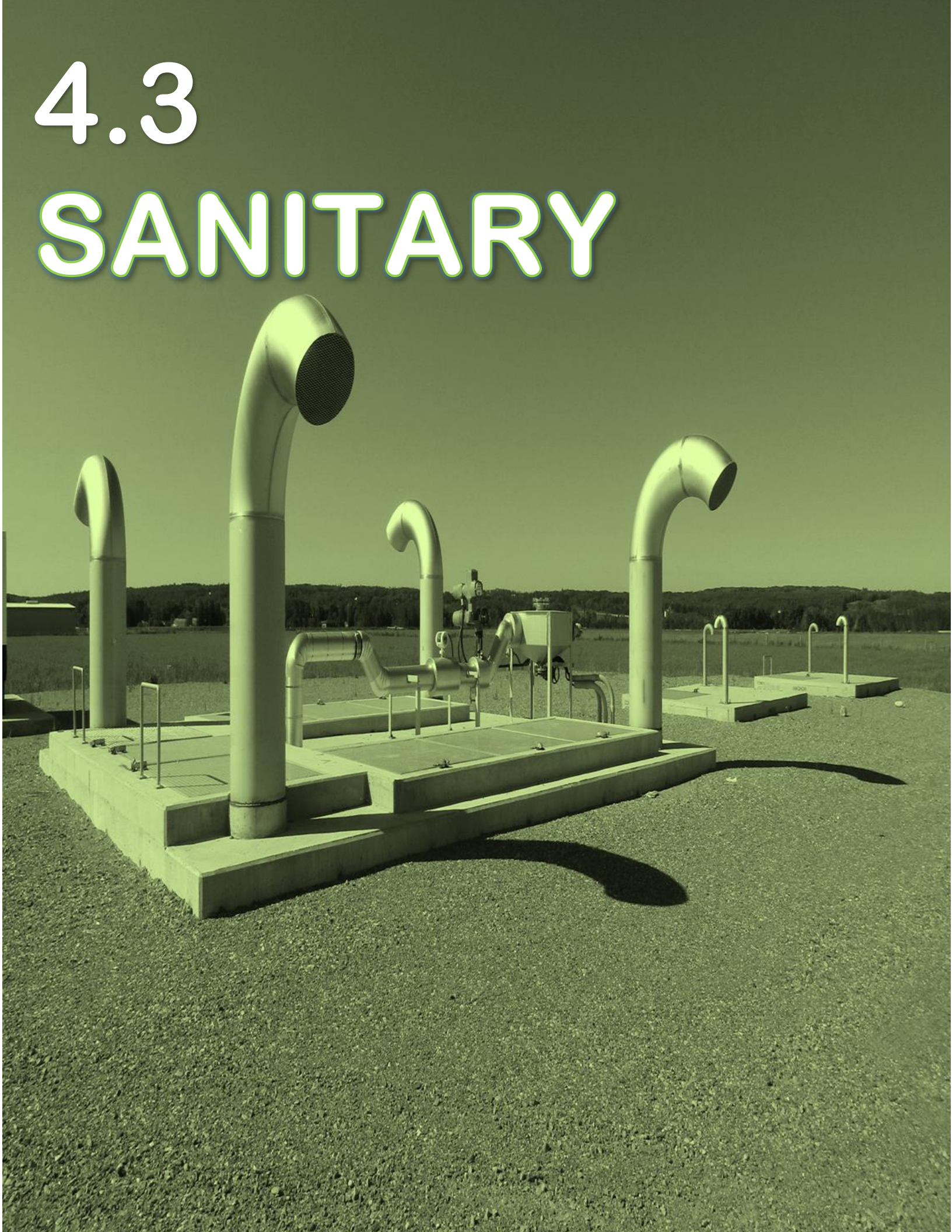


Table 4-7: Water Services Report Card

Infrastructure Condition Rating	Financial Rating	Overall Rating
3.01	2.50	**2.76**
Facility Condition Rating	Financial Rating	Overall Rating
4.00	2.80	**3.40**

4.3 SANITARY



4.3 Sanitary

4.3.1 Inventory Overview

The sanitary (sewer) system collection and treatment system for Temiskaming Shores includes approximately 95.1 km of piping, 1047 maintenance structures and 31 control and specialized valves. The average age of pipe in the system is 44 years old. The age distribution of the sanitary sewer system infrastructure is shown in Figure 4.14 and Figure 4.15.

Table 4-8: Total Replacement Cost for Sanitary Assets

Asset Type	Quantity	Useful Life (Years)	Replacement Cost
Sanitary Sewer	95.1 km	60-100	$ 85,666,950.00
Manholes	1047 units	50	$ 11,156,800.00
Control and Specialized Valves	31 units	15-20	$ 342,300.00
Sanitary Services	3850 units	60-100	$ 10,395,000.00
Wastewater Facilities	16 units	15-75	$ 23,762,887.00
		Total:	**$ 131,323,937.00**

Figure 4.14: Sanitary Collection Infrastructure by Age (%)

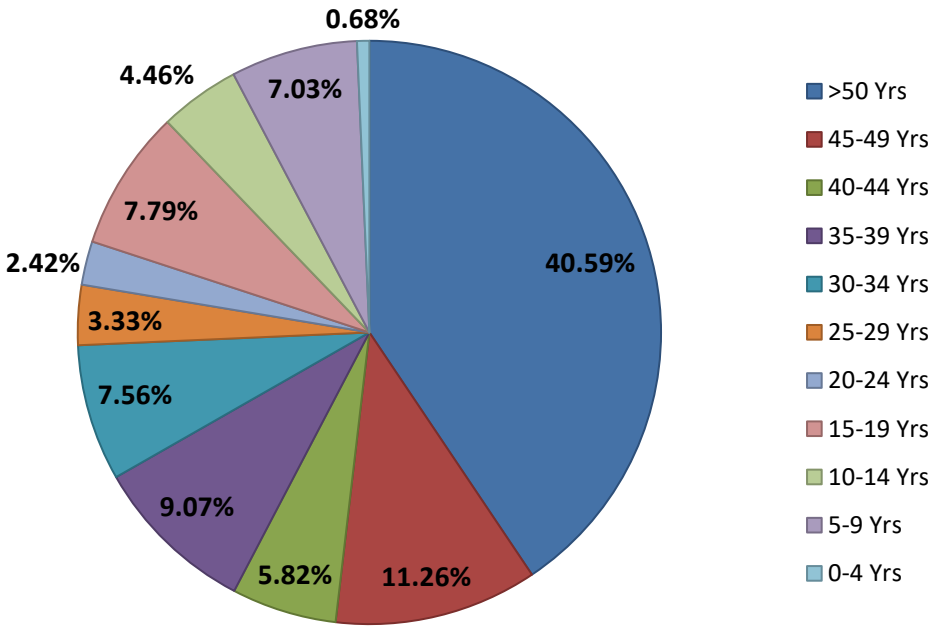
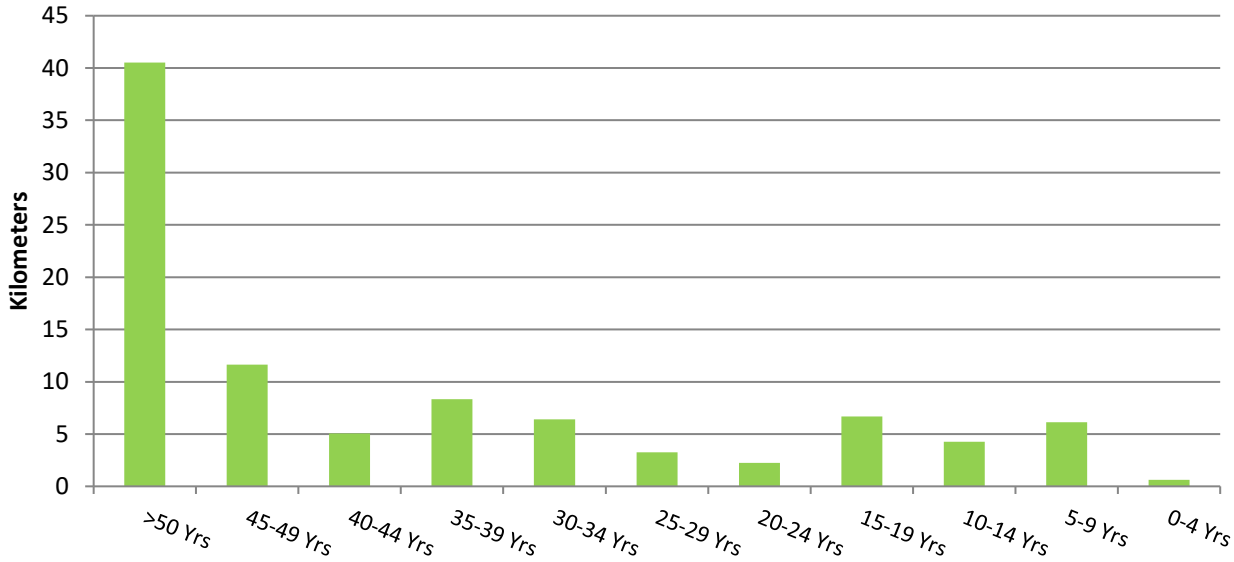


Figure 4.15: Length of Sanitary Collection Infrastructure by Age (Km)



The majority of sanitary sewer pipes are 200 mm diameter comprised of Vitrified Clay or Asbestos Cement material installed over 50+ years ago, as shown in Figures 4.16, 4.17 and 4.18.

Figure 4.16: Length of Sanitary Collection Infrastructure Material by Age (Km)

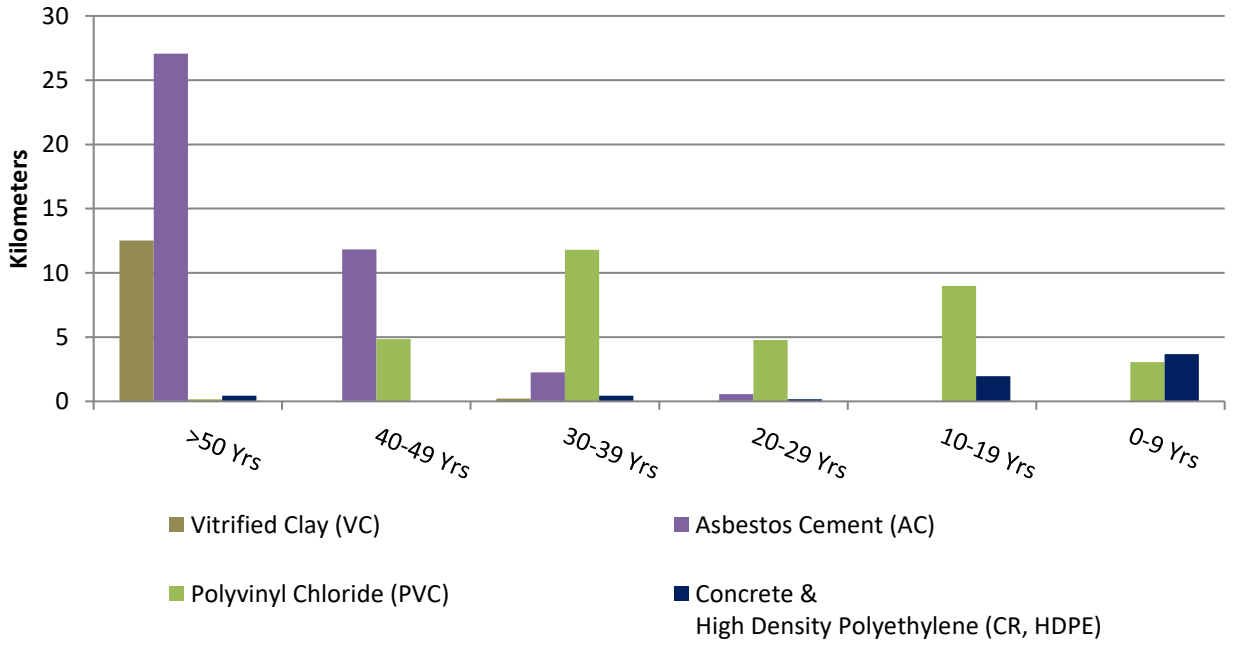


Figure 4.17: Sanitary Collection Infrastructure Material (%)

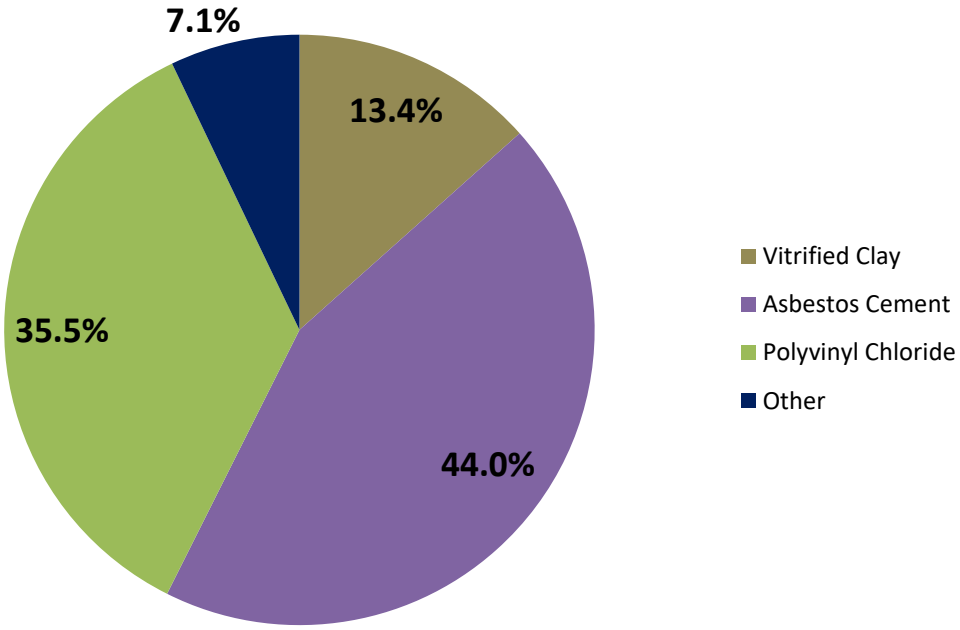
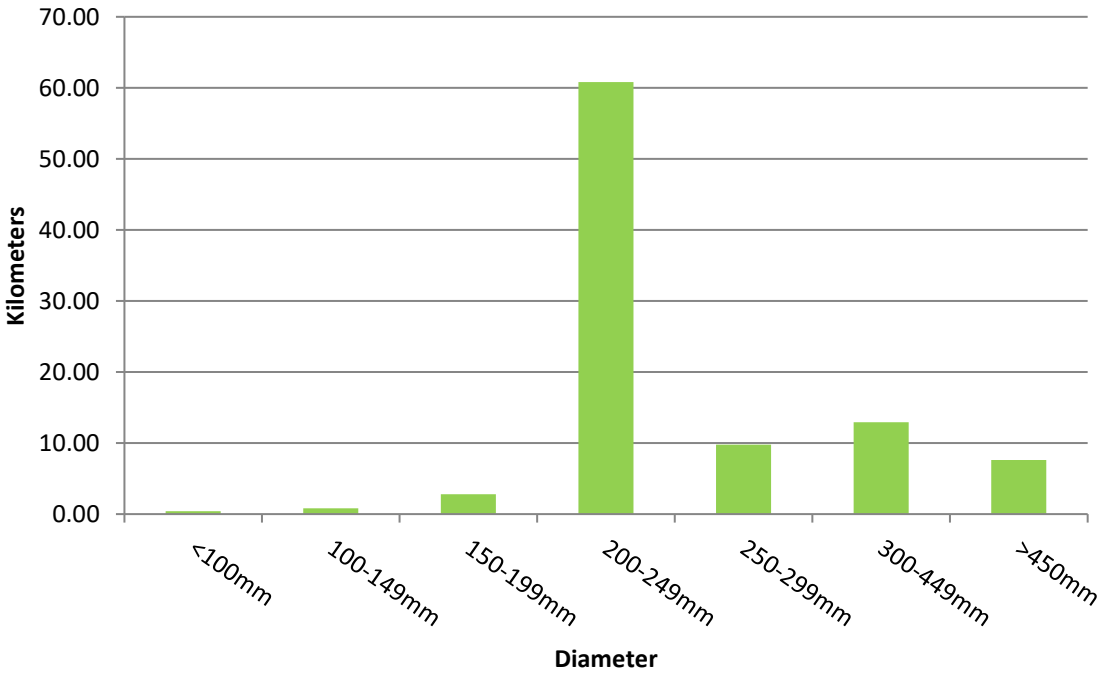


Figure 4.18: Sanitary Collection Infrastructure Diameter (Km)



4.3.2 Sanitary Facilities

The City of Temiskaming Shores provides a complex wastewater treatment system for its residents. There are two wastewater aerated lagoons and one mechanical sewage treatment plant. It's also responsible for 11 sanitary lift/pumping stations located throughout the municipality. The average age of the City's sanitary facilities is 34 years. However, a large percentage of these facilities have received significant maintenance and upgrades since that time. The City's wastewater facilities are currently operated under contract by the Ontario Clean Water Agency.

- The New Liskeard Wastewater Lagoon located at 177304 Bedard Road, is a class 1 facility that provides sewage treatment for residents and businesses in the former town of New Liskeard and Township of Dymond area. There are 7 pumping stations in the collection system that direct sanitary sewage to the lagoon. The New Liskeard lagoon has a rated working capacity of 5,500 m^3/day (average) and continuously discharges to the Wabi River which flows into Lake Timiskaming. This location is at 89% capacity and pumping capacity is sufficient as of 2024.
  Pumping Station Locations:
  - Cedar Street
  - Elm Avenue
  - Jaffray Street (Goodman)
  - Gray Road
  - Montgomery Street
  - Niven Street North
  - Riverside Drive

- The Haileybury Wastewater Treatment Plant is a class 2 extended aeration wastewater treatment plant located at 275 View Street. It serves a population of approximately 4,200 residents within the former town of Haileybury and has an average rated working capacity of 2,728 m^3/day (average). There are 2 pumping stations in the collection system that direct sanitary sewage to the plant. This location is at 70% capacity and pumping capacity is sufficient as of 2024.
  Pumping Station Locations:
  - Brewster Street
  - Farr Drive

- The North Cobalt Wastewater Lagoon located at 543083 Proctors Road, is a class 2 facility that provides sewage treatment for the residents of South Haileybury (North Cobalt). There are 2 pumping stations in the collection system that direct sanitary sewage to the lagoon. The North Cobalt lagoon has a rated working capacity of 1,200 m^3/day (average) and continuously discharges to the Farr Creek which flows into Lake Timiskaming. This location is at 35% capacity and pumping capacity is sufficient as of 2024.
  Pumping Station Locations:
  - Groom Drive
  - Station Street

4.3.3 Risk and Criticality Analytics

The risk and criticality calculation determines the overall risk of the wastewater asset failures. Figure 4.19 and 4.20 provides a representation of the level of risk per kilometer and cost. Figure 4.21 represents the total risk of the wastewater assets.

Note: The level of risk for all environmental facilities will remain in the high risk levels due to social and environmental impacts. Analyzing and determining the consequence and probability of failure of these facilities remains a difficult task for the municipality. However, these facilities are consistently monitored in order to allow the City to prioritize operational and capital projects based on the greatest risk of failure for each facility.

Figure 4.19: Level of Risk – Sewer mains (Km)

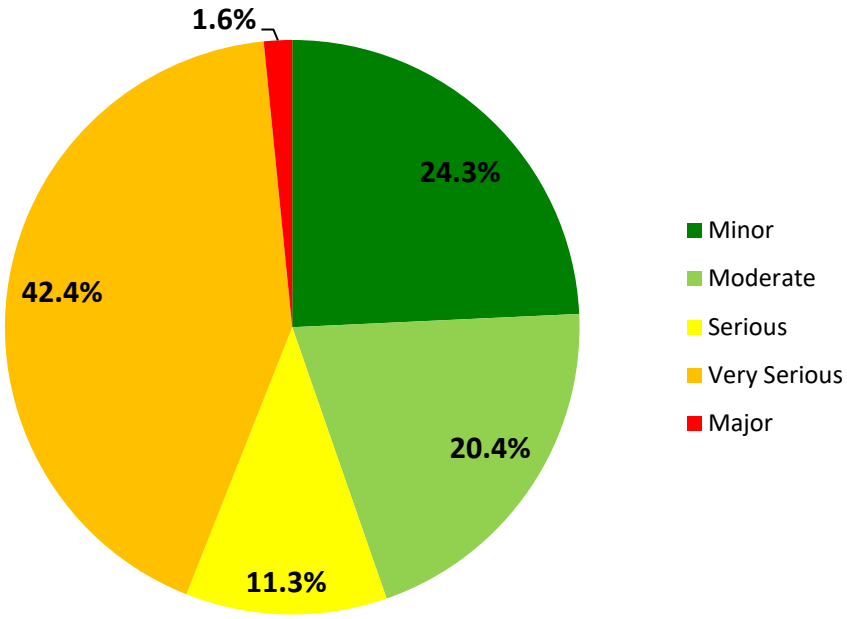
Consequence						
	5	7.45	1.53	0.35	1.69	0.00
	4	0.01	0.00	0.00	2.27	0.00
	3	4.78	0.33	0.37	1.75	0.00
	2	1.86	0.46	1.27	6.19	0.00
	1	23.09	2.60	6.52	32.60	0.00
		1	2	3	4	5
		Probability				

Figure 4.20: Level of Risk – Sewer mains ($)

Consequence						
	5	$ 6,481,730	$ 1,608,250	$ 388,500	$ 1,803,120	$ -
	4	$ 2,700	$ -	$ -	$ 1,021,050	$ -
	3	$ 3,773,770	$ 332,290	$ 370,670	$ 1,771,540	$ -
	2	$ 1,836,450	$ 457,380	$ 1,160,830	$ 5,597,710	$ -
	1	$20,423,180	$ 2,445,060	$ 6,136,980	$31,049,640	$ -
		1	2	3	4	5
		Probability				

*Reference section 7.4.1

Figure 4.21: Total Risk of Sanitary Assets (%)



4.3.4 Lifecycle Activities

Figure 4.22 provides a representation of the overall cost of the lifecycle activities that the City would need to undertake in order to maintain the current level of service for its wastewater assets (10-year forecast). The City's average annual operational requirements for wastewater assets total $1,735,987. The City's annual average total requirements are $9,523,891.

Figure 4.22: Sanitary Lifecycle Cost ($)

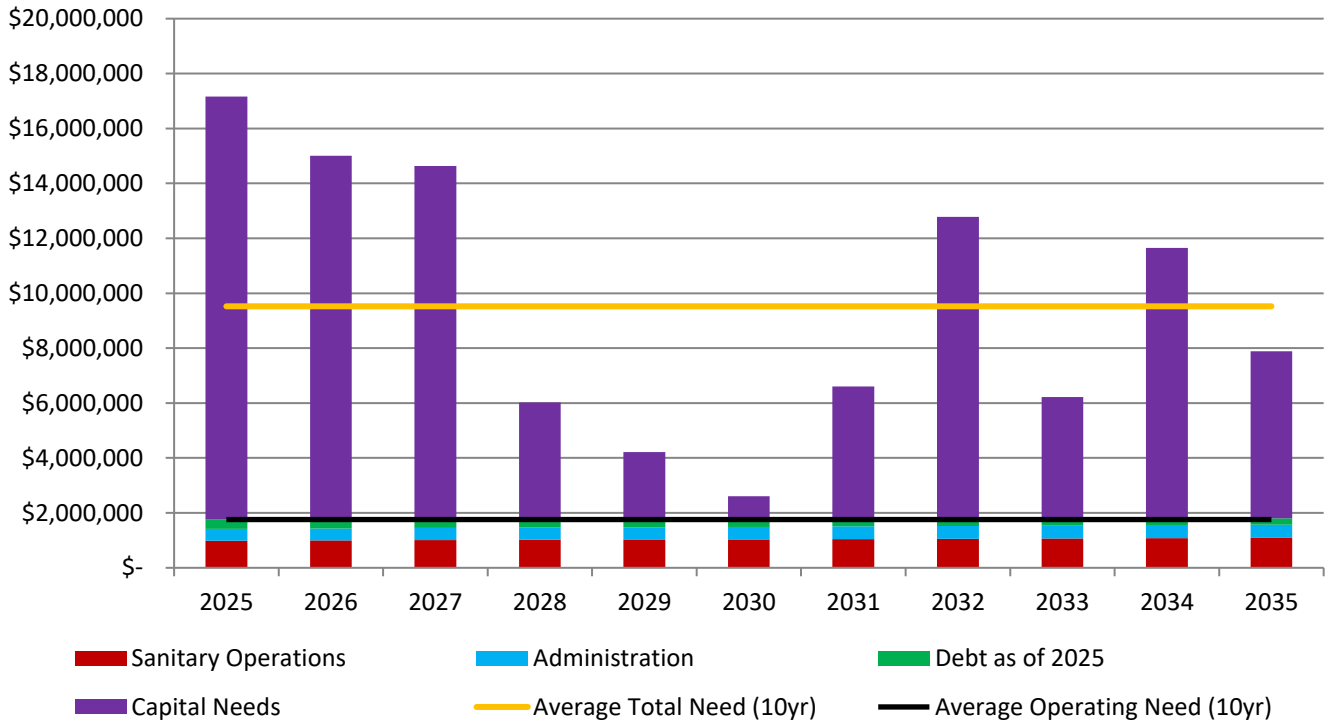
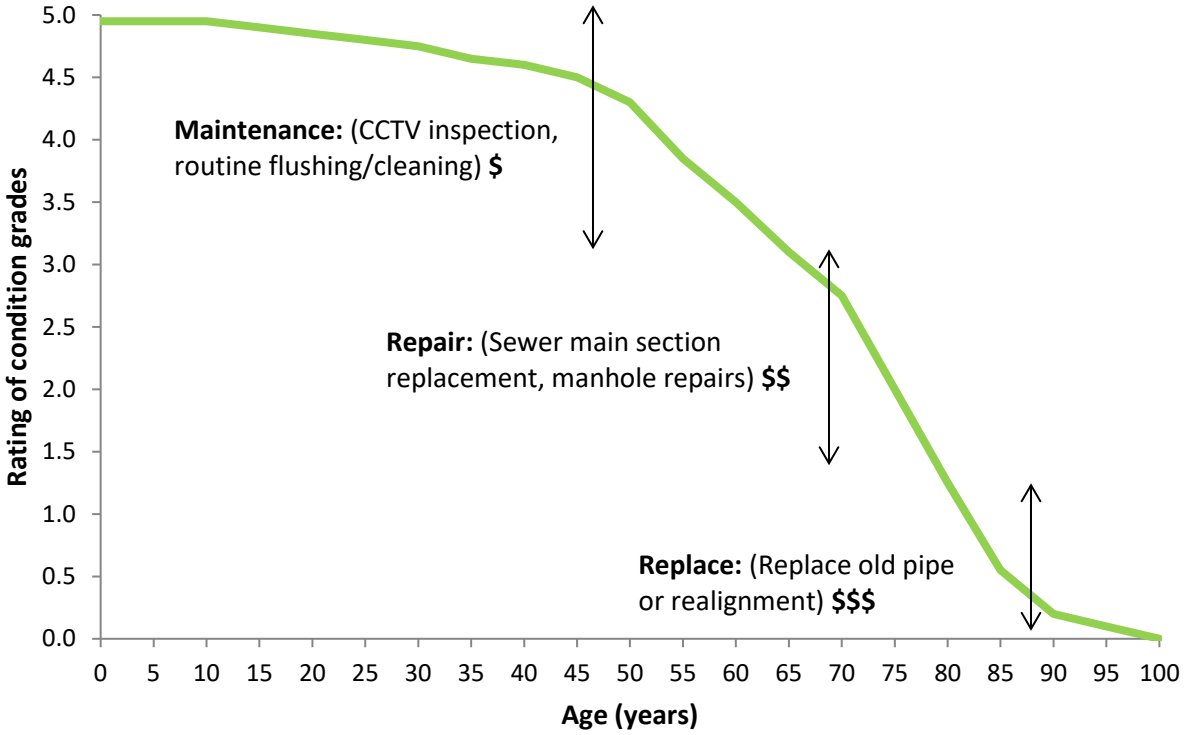


Figure 4.23 is intended to summarize the intervention strategies that are generally appropriate depending on the stage of deterioration/condition of the asset. The selection of the strategy is determined through the analysis in order to come up with the preferred intervention. It's also important to consider the approach in assessing the intervention method, in order to determine which decision can provide the best return on the investment value. A variety of factors can affect the lifespan of the asset to vary from its expected service life. These factors can include but are not limited to:

- Quality of initial construction
- Appropriateness of the materials selected
- Loadings exerted on the pipe from traffic above or natural soil movement
- Soil conditions
- Chemistry of the flow within the pipe

Note: The following lifecycle deterioration rate and strategies example are based on the current recommended and best construction practices and materials for each asset category. Sewer mains are calculated using polyvinyl chloride (PVC) with a life expectancy of 100 years.

Figure 4.23: Sanitary Lifecycle Intervention Strategies



Some operational lifecycle activities for sanitary assets include but are not limited to:

- Sewer flushing and inspections programs
- Sewer main and manhole structure repairs
- Treatment monitoring
- Treatment facility repairs

The overall cost of these options may include wages/labour, materials, contracted/hired costs and other miscellaneous costs related to the lifecycle intervention. These include consultation and design work for rehabilitation and replacement activities.

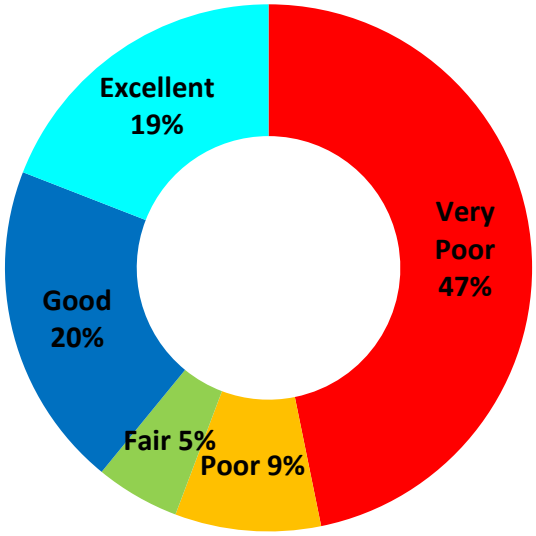
4.3.5 Condition Report Card

It's important to note that no areas of the city are being serviced by combined sewer systems.

Figure 4.24 and table 4-9 shows the average ratings and overall report card grade for the City's sanitary sewer system using a five point system. This initial condition report is age based. Material type and diameter (capacity) of pipe have been considered in the risk analysis. These values may be adjusted as the City developpes a physical condition assessment program, as more information is gathered, or as the City upgrades the asset. *Reference section 4.1.5

Figure 4.24: Sanitary Condition Report Card (%)

Sanitary Collection System



Sanitary Treatment and Pumping Facilities

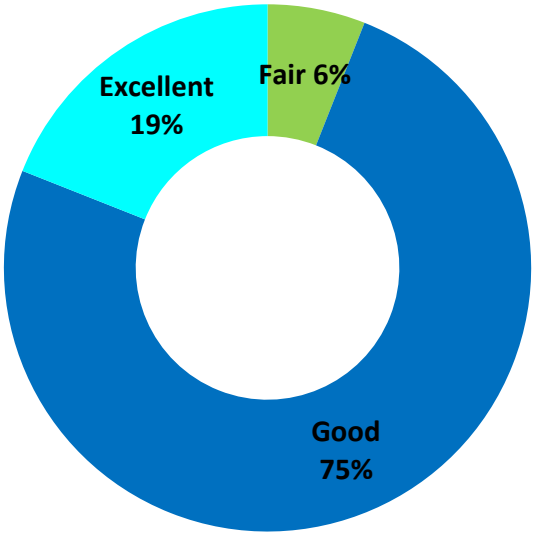


Table 4-9: Sanitary Services Report Card

Infrastructure Condition Rating	Financial Rating	Overall Rating
2.56	2.50	**2.53**
Facility Condition Rating	Financial Rating	Overall Rating
4.13	2.80	**3.47**

4.4 STORMWATER

4.4 Stormwater

4.4.1 Inventory Overview

The stormwater management system for Temiskaming Shores has approximately 64.8 km of stormwater sewer piping and 2,075 maintenance structures located within the infrastructure portfolio. The current average pipe age is 42 years. The age distribution of storm sewer infrastructure installation years is shown in Figure 4.25 and Figure 4.26.

Table 4-10: Total Replacement Cost for Stormwater Assets

Asset Type	Quantity	Useful Life (Years)	Replacement Cost
Storm Sewer	64.8 km	40-80	$ 65,944,900.00
Catchbasins	1912	50	$ 13,075,200.00
Manholes	163 units	50	$ 1,862,380.00
Centerline Culverts	7.8	40-80	$ 9,164,568.00
Entrance Culverts	9.5 km	40-80	$ 9,816,008.00
Ditches	468 units	10-15	$ -
Ponds	1 unit	50	$ 475,000.00
		Total:	**$ 100,338,056.00**

Figure 4.25: Stormwater System Infrastructure by Age (%)

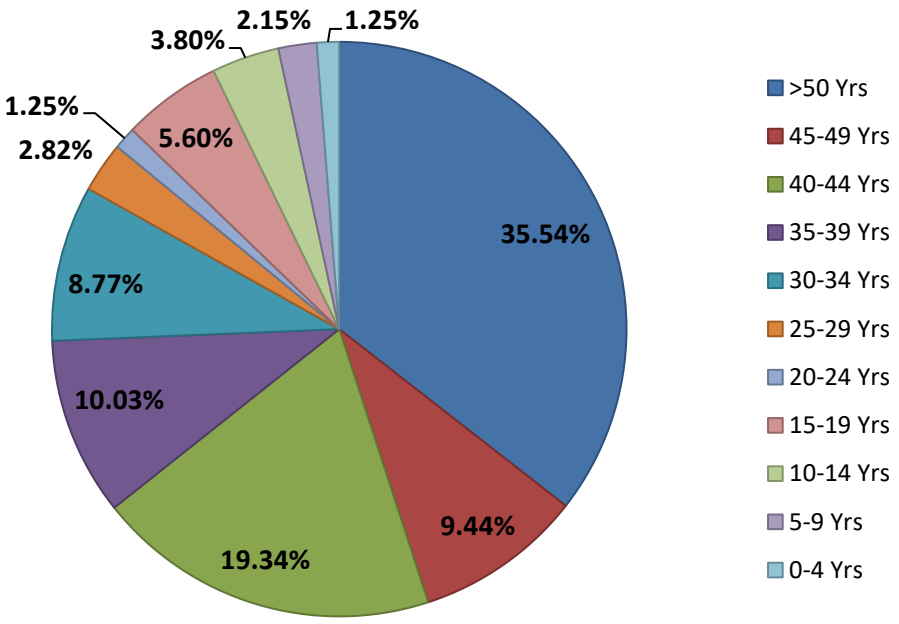
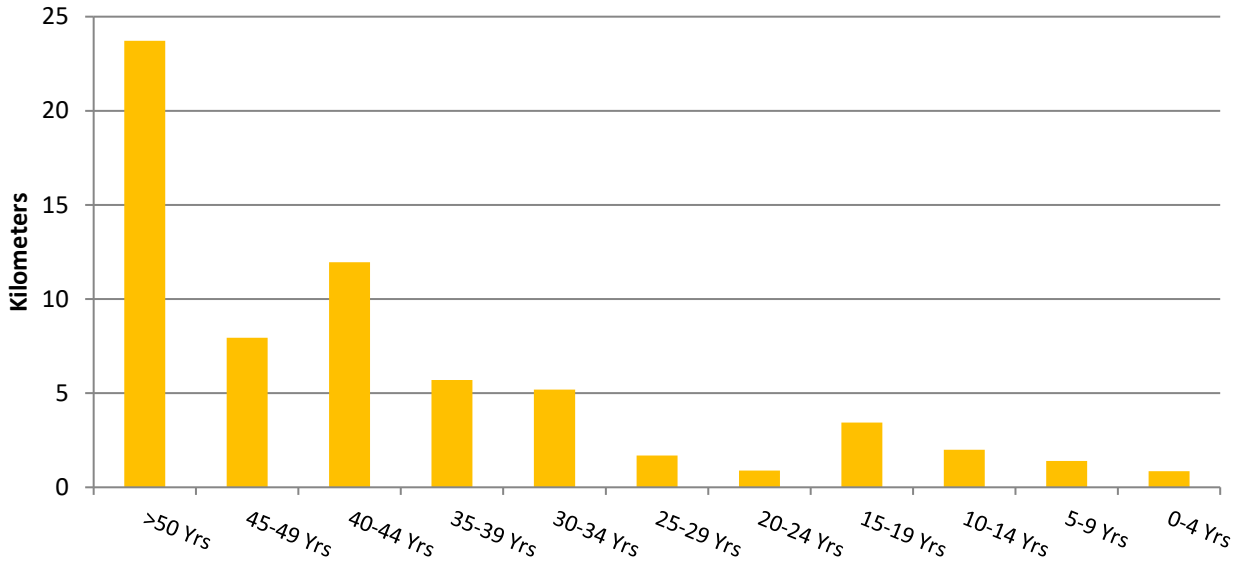


Figure 4.26: Length of Stormwater System Infrastructure by Age (Km)



The majority of storm sewer pipes are Corrugated Steel Pipe with a diameter of 300 to 450 mm and installed over 30+ years ago, as shown in Figure 4.27, 4.28 and 4.29.

Figure 4.27: Length of Stormwater System Infrastructure Material by Age (Km)

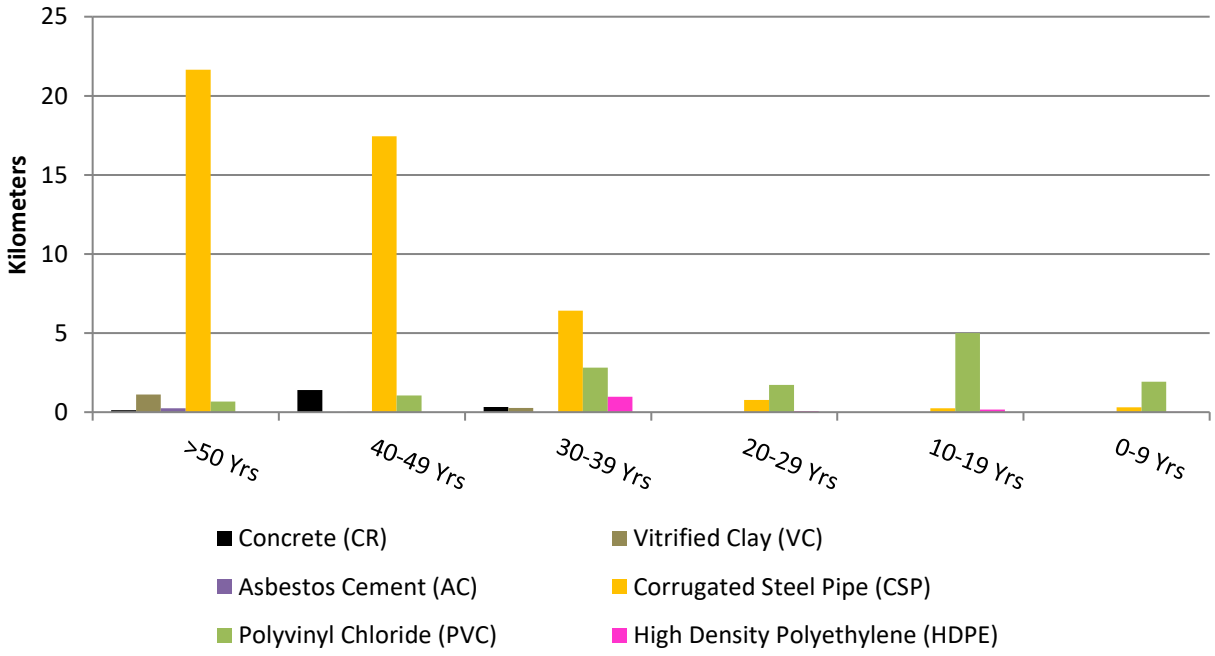


Figure 4.28: Stormwater System Infrastructure Material (%)

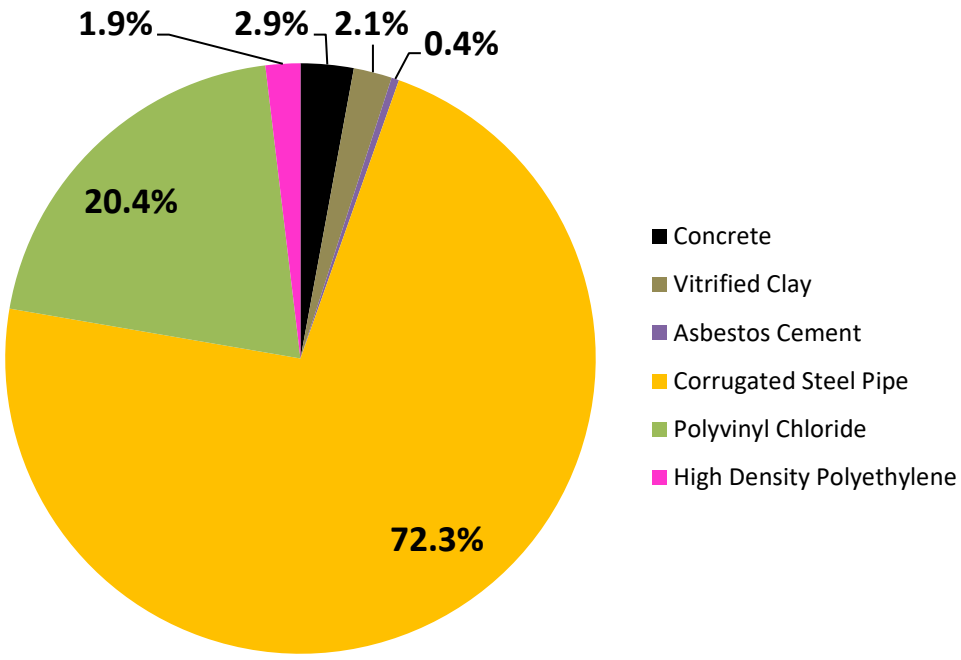
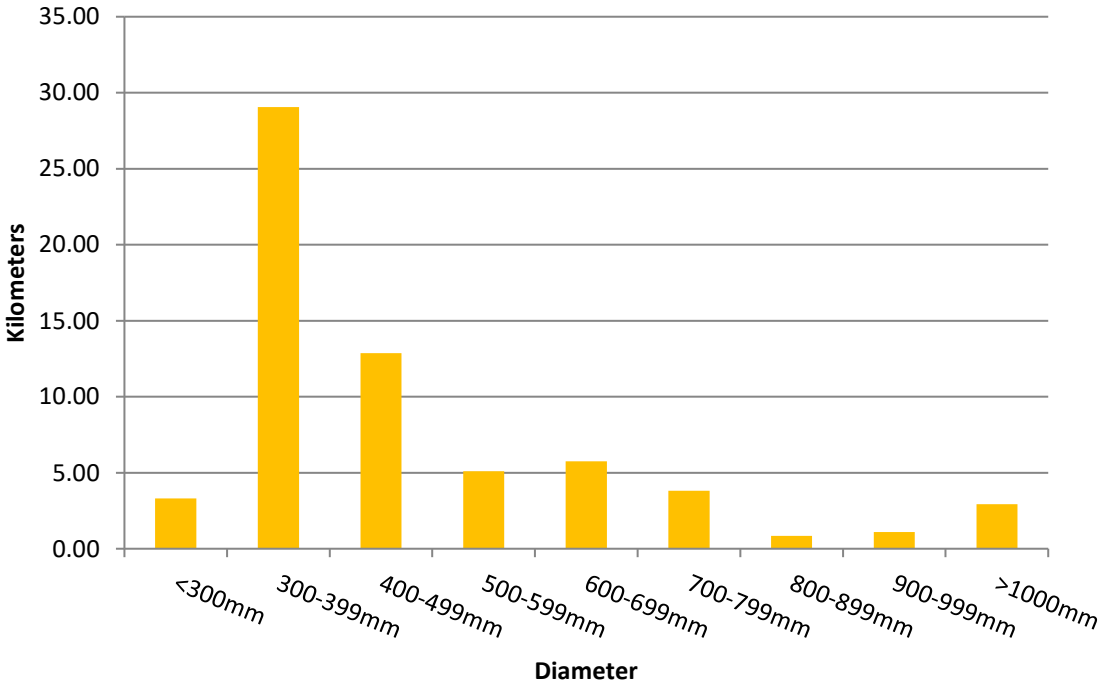


Figure 4.29: Stormwater System Infrastructure Diameter (Km)



4.4.2 Centerline and Entrance Culverts Inventory Overview

The City of Temiskaming Shores has approximately 7.8 km of centerline culverts, 9.5 km of entrance culverts piping and one Storm Water Management System located within its infrastructure portfolio. The current average pipe age is 40 years. The age distribution of storm sewer infrastructure installation years is shown in Figure 4.30 and Figure 4.31.

Note: that the average age of centerline culverts was based on staff knowledge and remains inaccurate, due to a lack of data. The age for entrance culverts isn't calculated.

Figure 4.30: Centerline Culvert Infrastructure by Age (%)

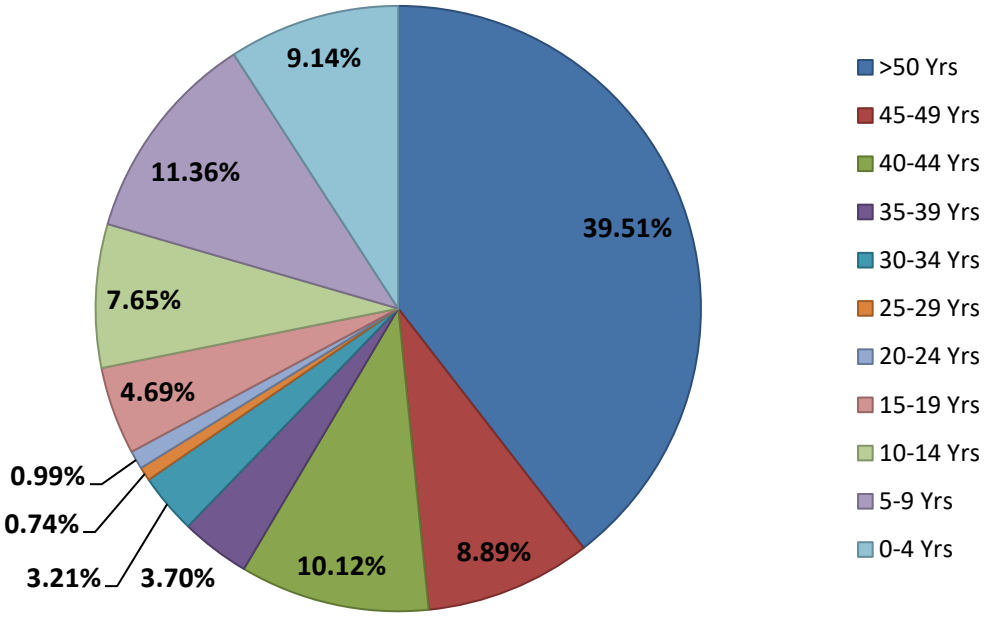
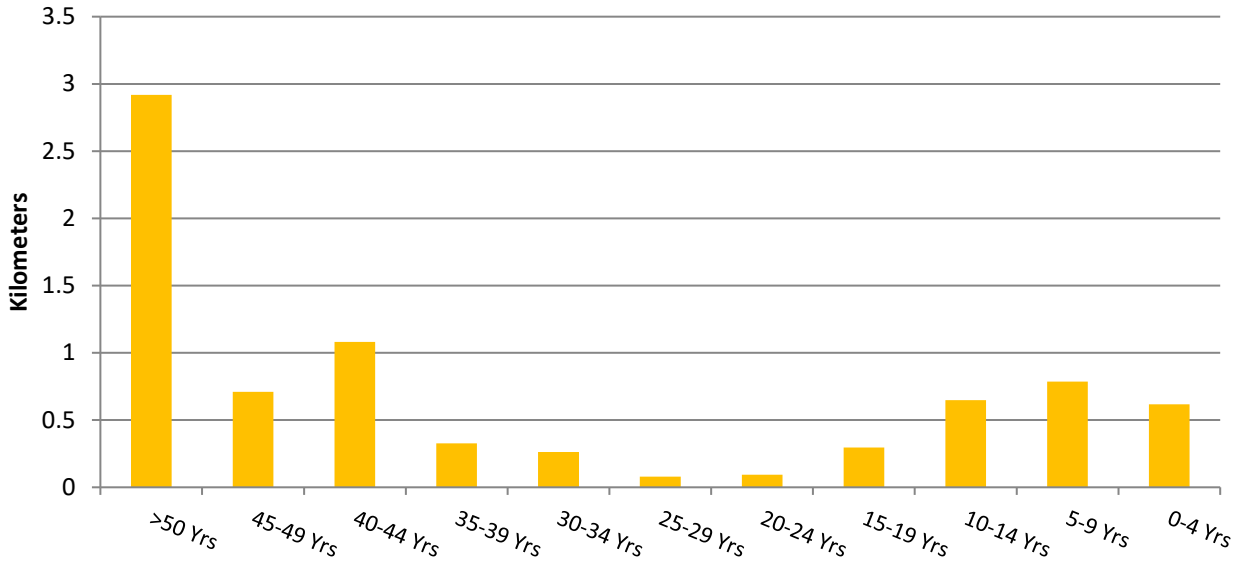


Figure 4.31: Length of Centerline Culvert Infrastructure by Age (Km)



The majority of the culverts are corrugated steel pipe with a diameter of over 1,000 mm and installed over 50+ years ago, as shown in Figure 4.32, 4.33 and 4.34.

Figure 4.32: Length of Centerline Culvert Infrastructure Material by Age (Km)

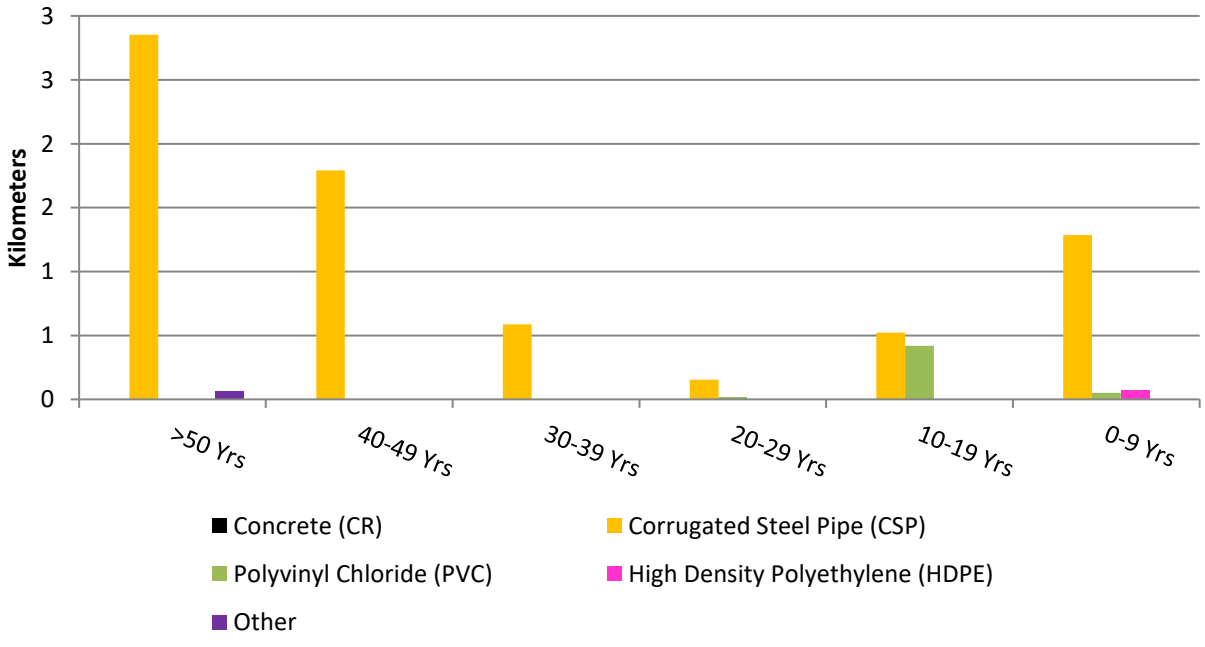


Figure 4.33: Centerline Culvert Infrastructure Material (%)

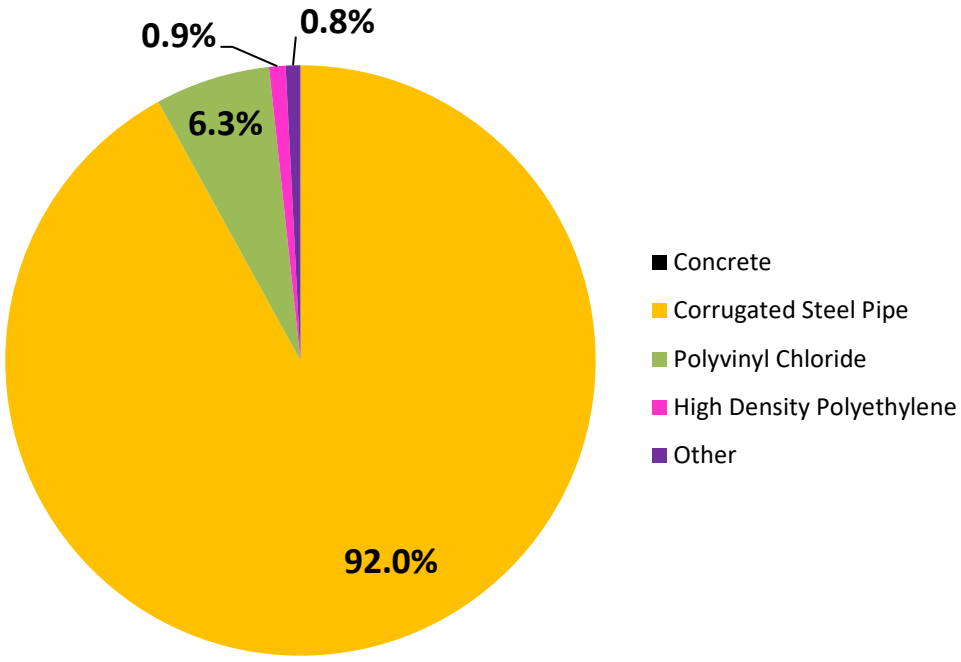


Figure 4.34: Centerline Culvert Infrastructure Diameter (Km)

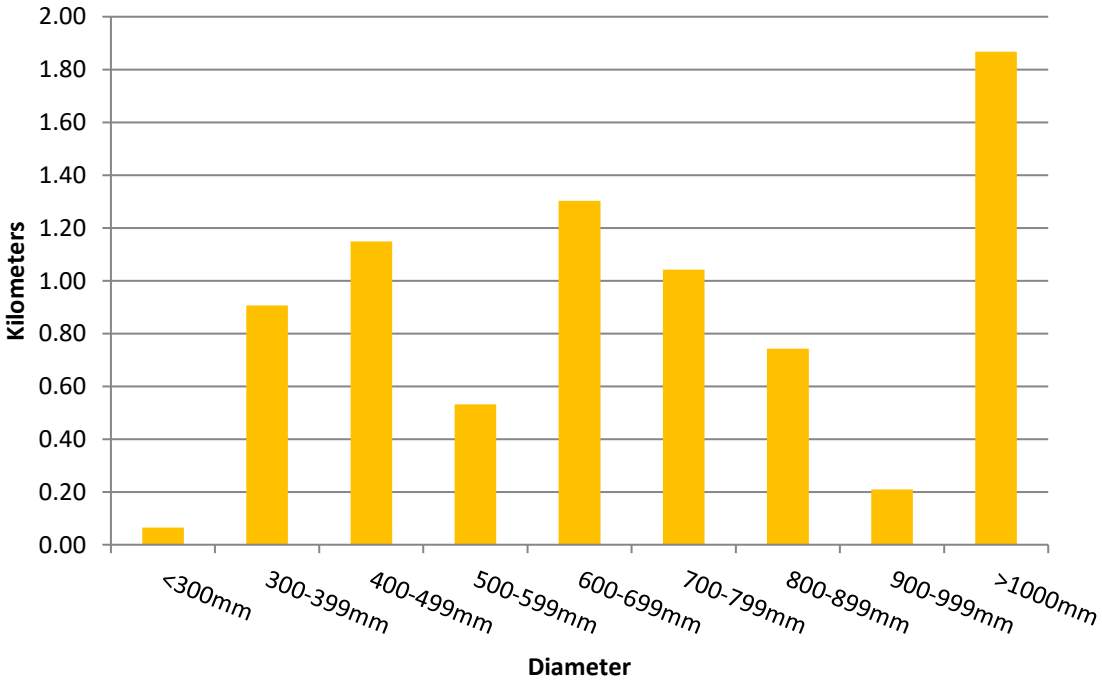


Figure 4.35: Entrance Culvert Infrastructure Material (%)

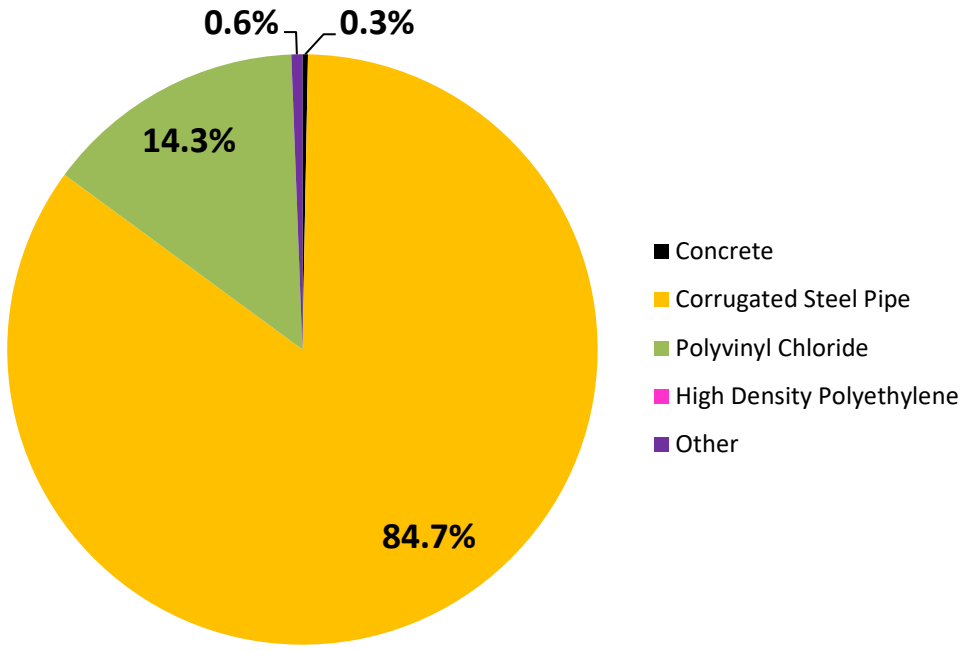
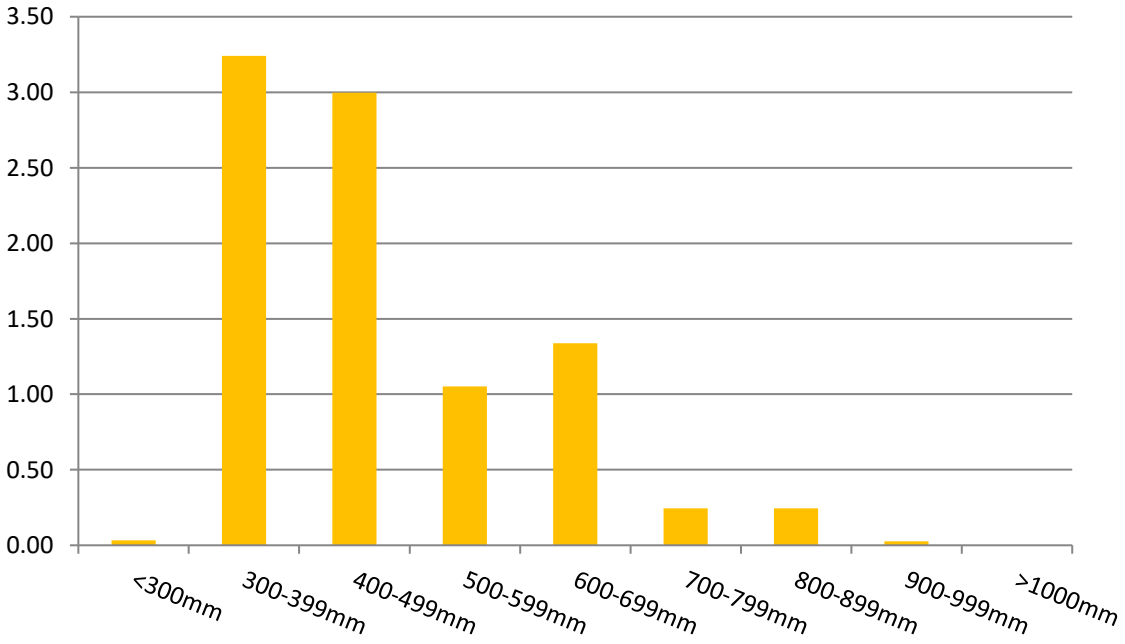


Figure 4.36: Entrance Culvert Infrastructure Diameter (Km)



4.4.3 Risk and Criticality Analytics

The risk and criticality calculation determines the overall risk of storm asset failures. Figure 4.37 and 4.38 provide a representation of the level of risk per kilometer and cost. Figure 4.39 represents the total risk of the storm assets.

Note: Only critical infrastructure will be analysed. Therefore, entrance culverts will be excluded from the Risk and Criticality Analytics.

Figure 4.37: Level of Risk – Stormwater mains & Centerline Culverts (Km)

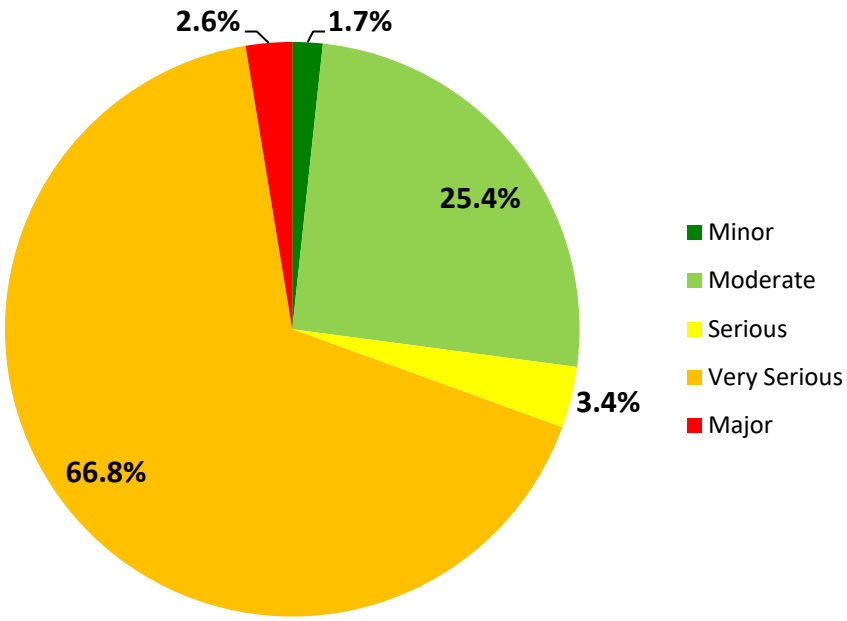
Consequence						
	5	0.69	0.08	1.20	2.45	0.00
	4	1.81	0.04	0.22	5.25	0.00
	3	2.99	0.28	0.43	6.53	0.00
	2	9.06	1.77	1.58	34.85	0.00
	1	1.35	0.00	0.07	1.95	0.00
		1	2	3	4	5
		Probability				

Figure 4.38: Level of Risk – Stormwater mains & Centerline Culverts ($)

Consequence						
	5	$ 983,840	$ 115,830	$ 1,714,570	$ 3,500,640	$ -
	4	$ 2,173,916	$ 40,600	$ 267,508	$ 6,311,324	$ -
	3	$ 3,396,690	$ 322,460	$ 489,230	$ 7,257,870	$ -
	2	$ 8,880,030	$ 1,749,090	$ 1,538,070	$ 34,137,660	$ -
	1	$ 891,660	$ 1,980	$ 46,860	$ 1,289,640	$ -
		1	2	3	4	5
		Probability				

*Reference section 7.4.1

Figure 4.39: Total Risk of Stormwater Mains and Centerline Culverts Assets (%)



4.4.4 Lifecycle Activities

Figure 4.40 provides a representation of the overall cost of the lifecycle activities that the City would need to undertake in order to maintain the current level of service for its stormwater management assets (10-year forecast). The City's average annual operational requirements for storm assets total $300,918. The City's annual average total requirements are $1,134,065.

Figure 4.40: Stormwater Management Lifecycle Cost ($)

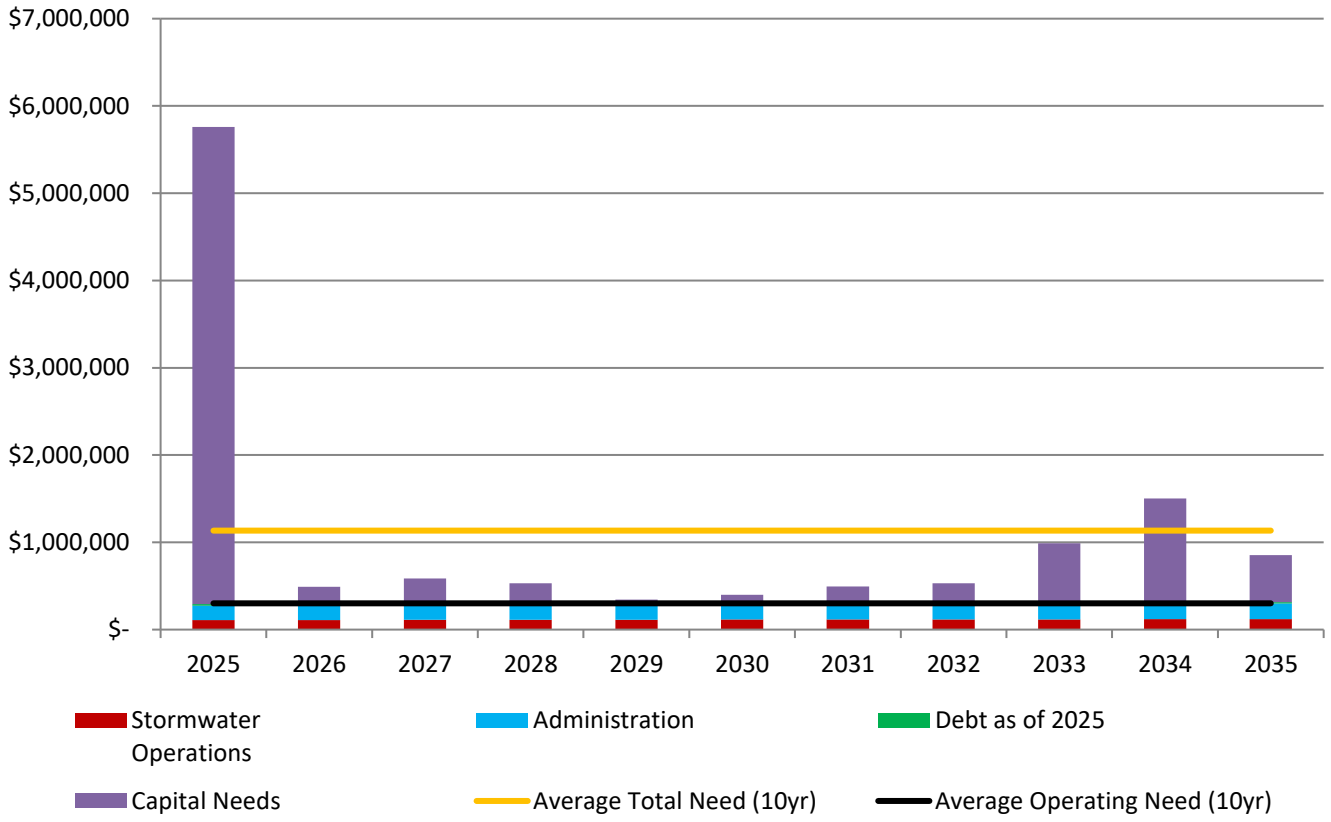
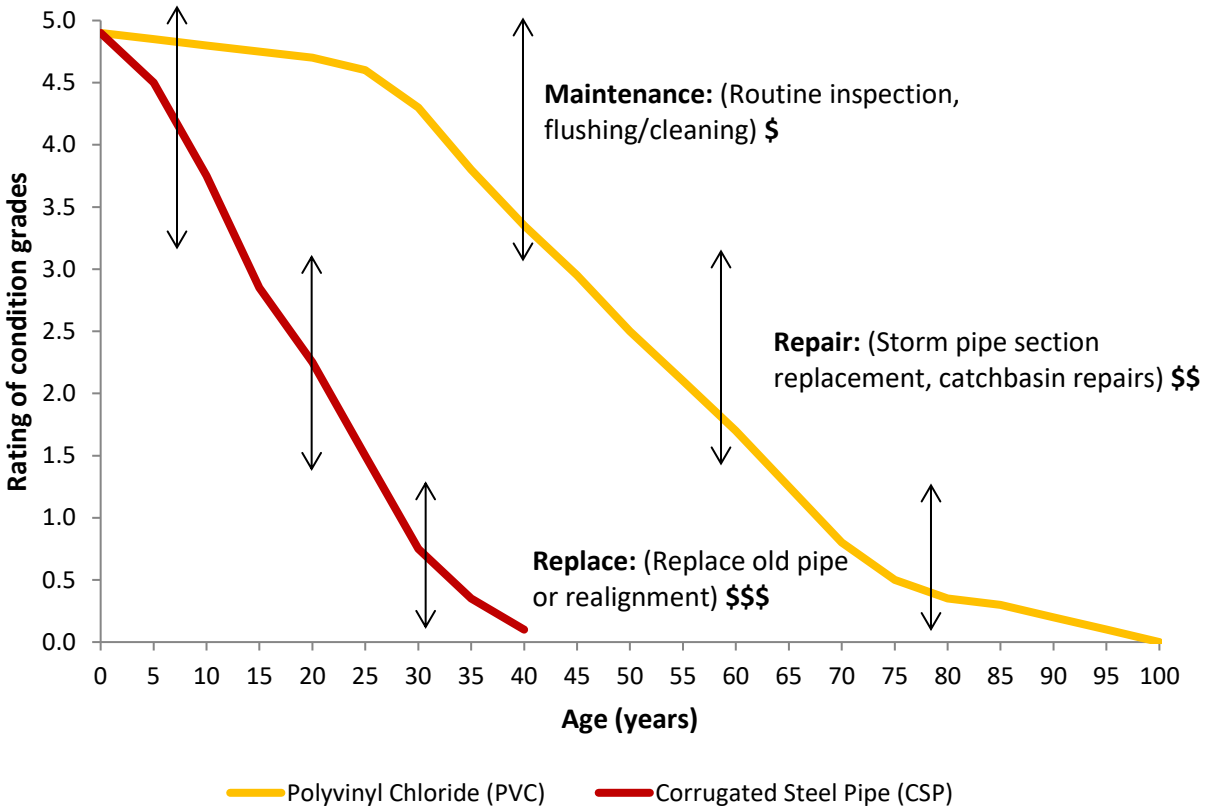


Figure 4.41 is intended to summarize the intervention strategies that are generally appropriate depending on the stage of deterioration/condition of the asset. The selection of the strategy is determined through the analysis in order to come up with the preferred intervention. It's also important to consider the approach in assessing the intervention method, in order to determine which decision can provide the best return on the investment value. A variety of factors can cause the lifespan of the asset to vary from its expected service life. These factors can include but are not limited to:

- Quality of initial construction
- Appropriateness of the materials selected
- Loadings exerted on the pipe from traffic above or natural soil movement
- Soil conditions
- Chemistry of the flow within the pipe

Note: The following lifecycle deterioration rate and strategies example is based on the current recommended and best construction practices and materials for each asset category. Stormwater mains are calculated using polyvinyl chloride (PVC) with a life expectancy of 100 years and Culverts will be calculated using corrugated steel pipe (CSP) with a life expectancy of 40 years.

Figure 4.41: Stormwater and Culvert Lifecycle Intervention Strategies



Some operational lifecycle activity options for storm assets include but are not limited to:

- Stormwater flushing and inspections programs
- Stormwater pipe and structure repairs

The overall cost of these options may include wages/labour, materials, contracted/hired costs and other miscellaneous costs related to the lifecycle intervention such as consultation and design work for rehabilitation and replacement activities.

4.4.5 Condition Report Card

Figure 4.42 and table 4-11 shows the average ratings and overall report card grade for the City's stormwater system using a five point system. This initial condition report is age based. Material type and diameter (capacity) of pipe have been considered in the risk analysis. These values may be adjusted as the City developpes a physical condition assessment program, as more information is gathered, or as the City upgrades the asset. *Reference section 4.1.5

Figure 4.42: Stormwater Condition Report Card (%)

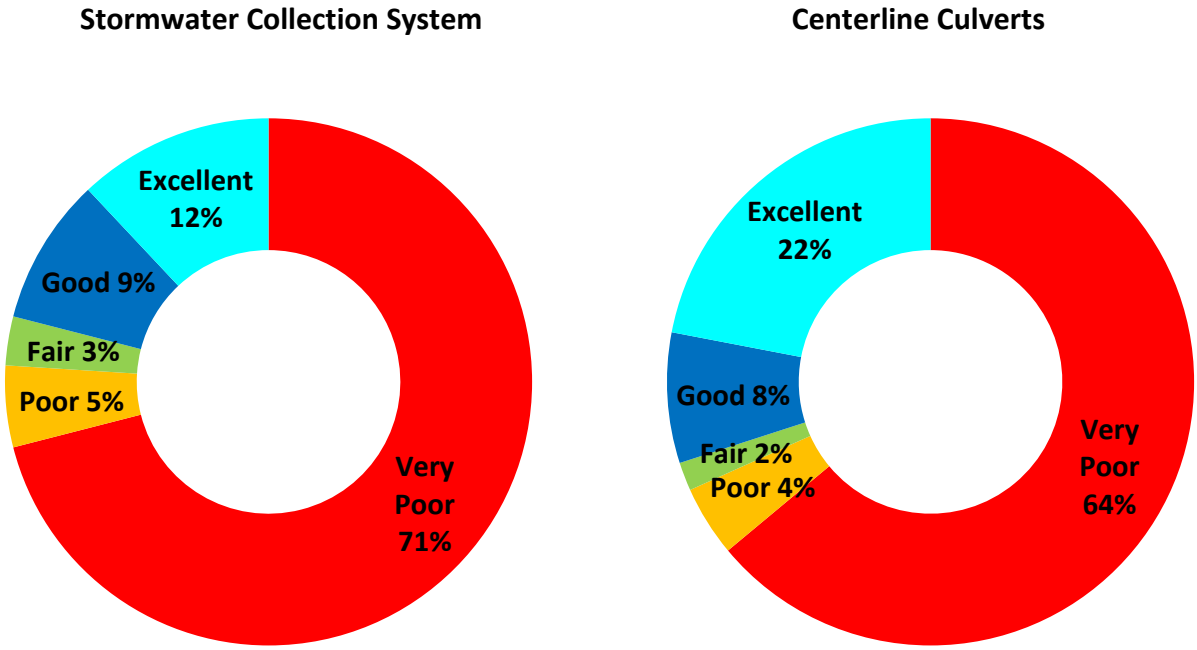
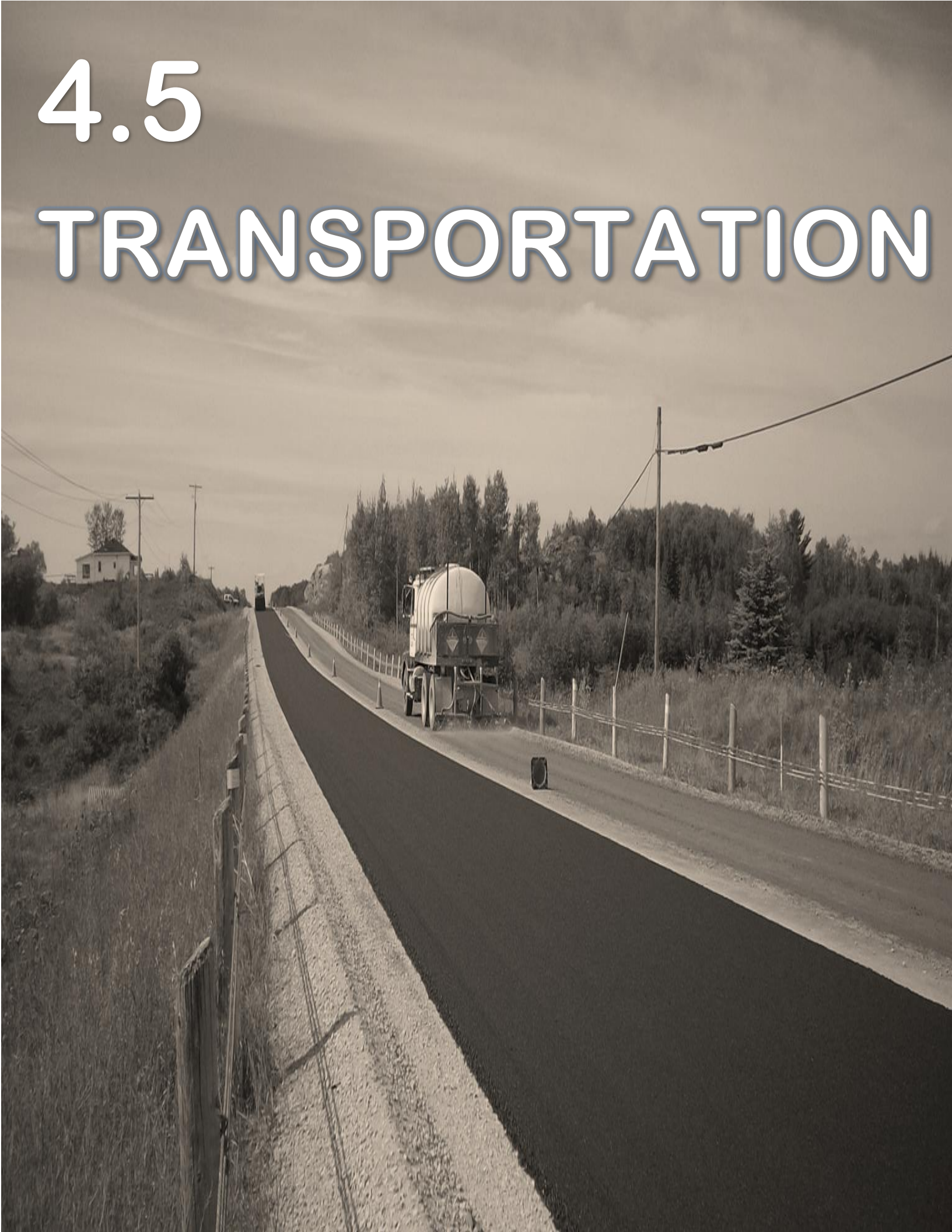


Table 4-11: Stormwater Services Report Card

Stormwater Condition Rating	Financial Rating	Overall Rating
1.86	2.00	**1.93**
Culvert Condition Rating	**Financial Rating**	**Overall Rating**
2.18	2.00	**2.09**

4.5 TRANSPORTATION



4.5 Transportation

4.5.1 Inventory Overview

Table 4-12: Total Replacement Cost for Transportation Assets

Asset Type	Quantity	Useful Life (Years)	Replacement Cost
Paved Roads	211.0 lane km	30-100	$ 50,177,301.00
Surface Treated Roads	30.8 lane km	20-100	$ 1,171,360.00
Gravel Roads	174.8 lane km	10-50	$ 4,364,591.00
Sidewalks	39.2 km	60-80	$ 13,130,936.00
Curb	38.8 km	60-80	$ 8,536,660.00
Bridges	10 units	40-70	$ 21,325,000.00
Large Diameter Culverts	6 units	40-70	$ 3,750,000.00
Street Lights & Traffic Signals	1299 untis	10-20	$ 6,239,726.00
Signs	3351 units	10	$ 276,998.00
Guard Rails	5.6 km	20	$ 121,580.00
		Total:	**$ 109,094,152.00**

4.5.2 Road Inventory Overview

- Road Kilometers: Total length of road
- Lane Kilometers: Considering the number of lanes

The transportation network for Temiskaming Shores has approximately 201 km of roadways. This includes approximately 211 lane kilometres of asphalt surface roadway, 30.8 lane kilometres of surface treated roadway, and 174.8 lane kilometres of gravel surface roadways as identified through the 2023 Roads Review exercise. The surface type and classification of the roads, as recorded in the City's records, is shown in Figure 4.43 and Figure 4.44.

Note: The City reviews the Roads Condition Study every 3 years. The information gathered in the 2020 and 2023 reviews contained complete and accurate information about the road surface type and condition that was correlated with the staff and consultant information and used for the development of this Plan. Although roads are impacted by many variables that result in different useful lives and age; only the average road surface life, age and instrument/visual inspections information has been utilized for this plan.

Figure 4.43: Road Network Surface Type (%)

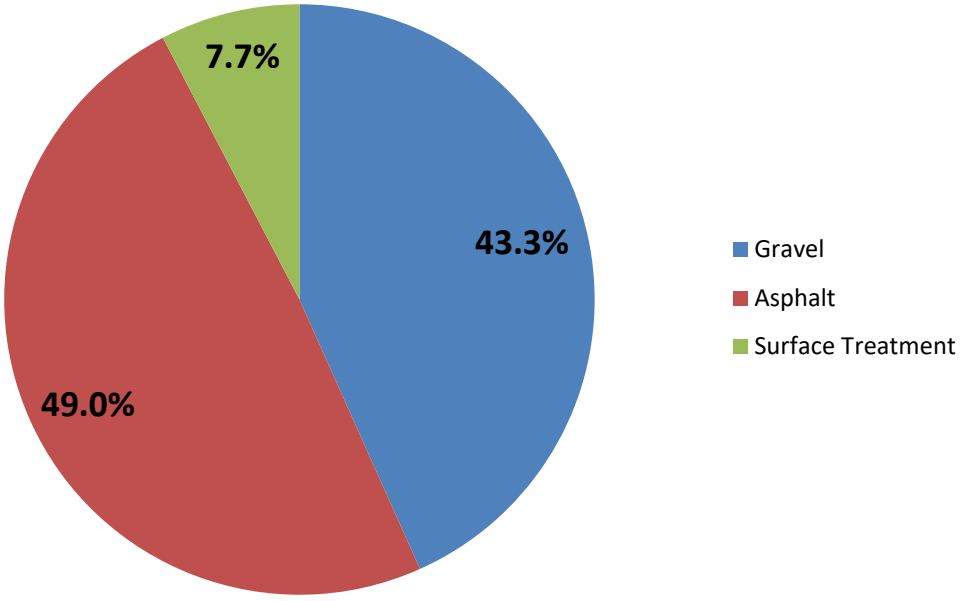
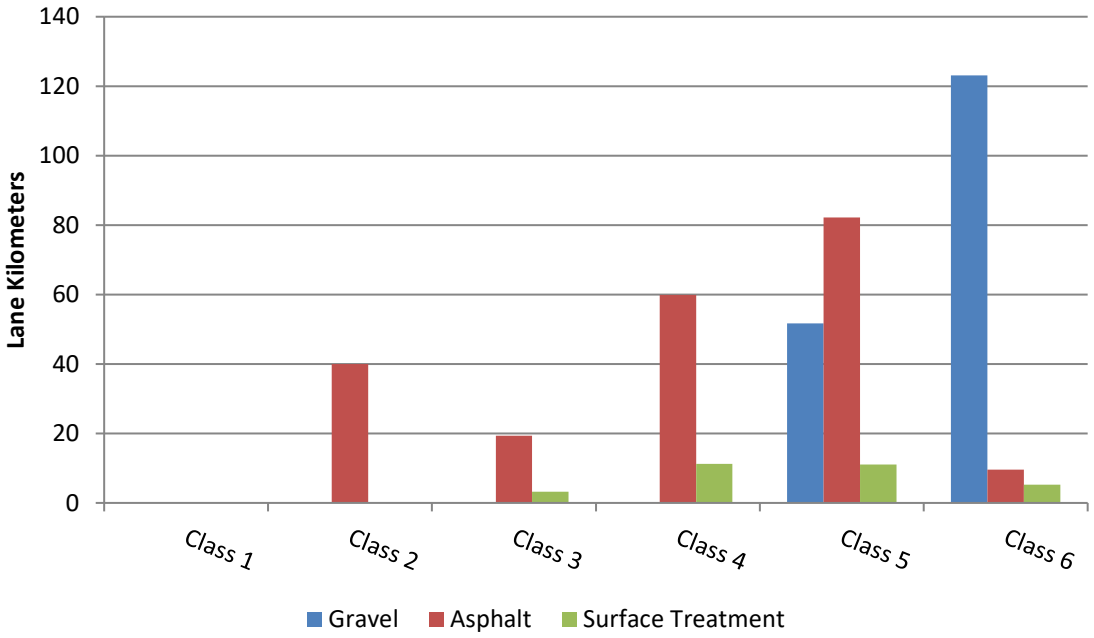


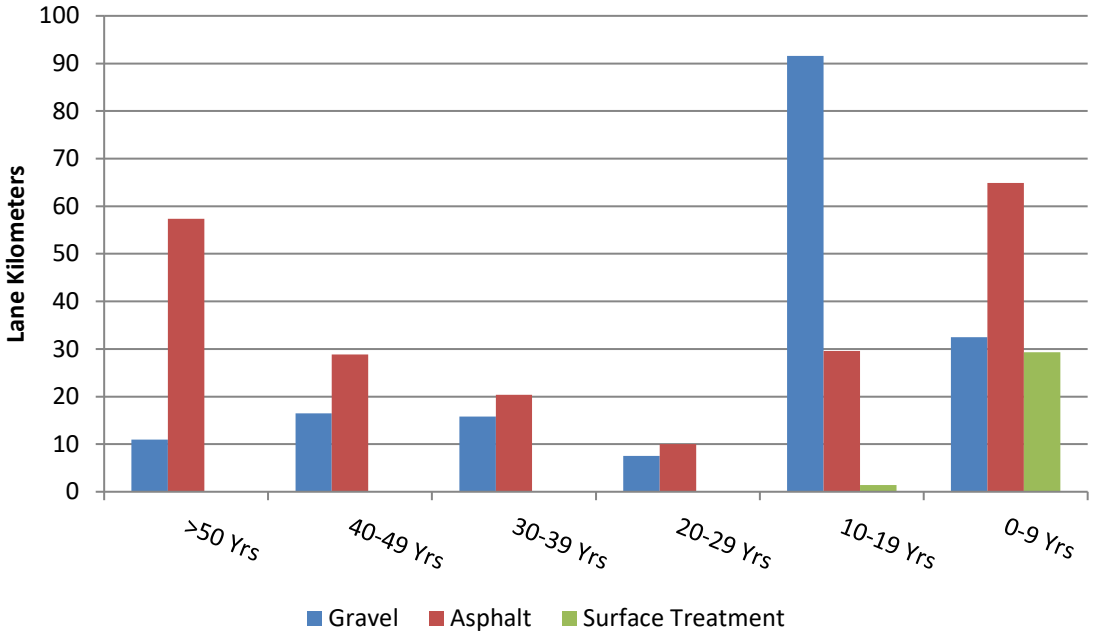
Figure 4.44: Road Network Classification and Material (Lane Km)



*Reference Ontario Regulation 239/02. Minimum maintenance standards for municipal highways

The age distribution of the roadway network is illustrated in Figure 4.45. The majority of the roads were constructed prior to 1963 or over 50 years ago. However, a large percentage of these roads have been resurfaced since that time.

Figure 4.45: Road Network Material by Age (Lane Km)

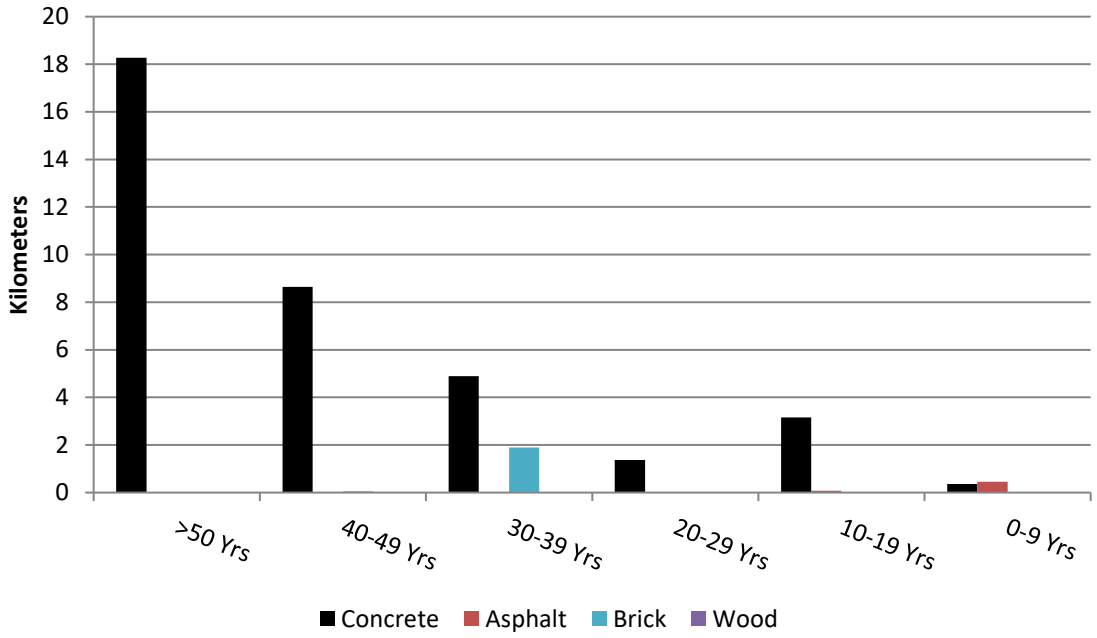


4.5.3 Sidewalk Inventory Overview

The City of Temiskaming Shores has approximately 39.2 km of sidewalks and approximately 38.8 km of concrete curb. The walkway type and age, as recorded in the City's records, is shown in Figure 4.46.

Note: The City reviews the Sidewalk Condition Study every 3 years. The information gathered in the 2021 and 2024 contained complete and accurate information about the sidewalk surface type and condition that was correlated with the staff and consultant information and used for the development of this Plan.

Figure 4.46: Walkway Network Material by Age (Km)



4.5.4 Bridge and Large Diameter Culvert Inventory Overview

There are 16 bridges and large diameter culverts in the City of Temiskaming Shores. The average life expectancy of bridges built prior to 1970 is assumed to be 60 years, and bridges built after 1970 is assumed to be 75 years. Multi-plate culverts average life expectancy is assumed to be 40 years. The average age of City's bridges and culverts is 36 years. Figure 4.47 shows the age distribution for the City's bridges and large diameter culvert installations.

Note: The City of Temiskaming Shores and the Township of Harley are both responsible for Capital investments for two bridges on Uno Park Road. The Township of Harley is also responsible for conducting the OSIM Bridge Inspection report on the same two bridges.

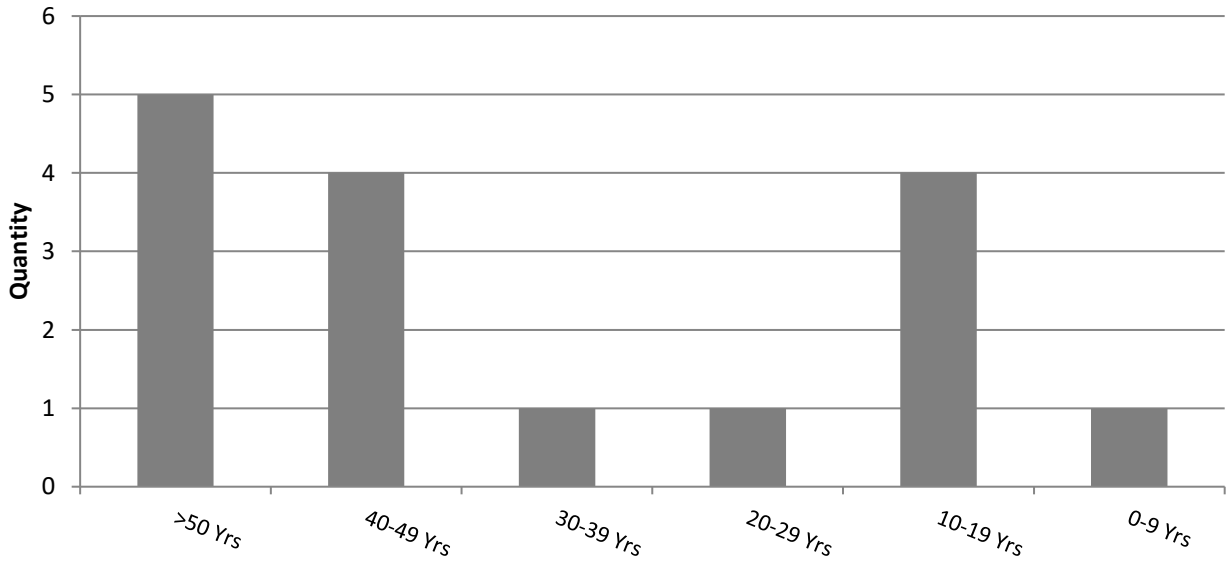
The OSIM Bridge Inspection report contains a summary of findings, recommendations, and prioritization of rehabilitative maintenance for each bridge and large culvert structure in the City of Temiskaming Shores. Therefore, rehabilitative maintenance has also been considered in the overall rating of the structures. Culverts larger than 3m in diameter will be considered "large diameter structures".

A breakdown of the bridge and culvert structures is as follows:

- 1 Concrete box culvert
- 3 Single cell multi-plate culverts
- 1 Double cell multi-plate culvert
- 1 Multi-plate arch corrugated steel pipe (CSP)

- 3 Bailey bridge
- 3 Precast concrete girder (Canadian precast concrete institute)
- 2 Fixed steel girder
- 1 Steel I-girder
- 1 Steel I-girder (pedestrian bridge)

Figure 4.47: Bridges and Large Diameter Culverts by Age



4.5.5 Street Lights and Traffic Signals Inventory Overview

The City of Temiskaming Shores has approximately 978 street lights and poles, 302 decorative lights, 12 decorative poles, 4 sets of traffic signals and 3 pedestrian crossing signals. The oldest street light was installed prior to 1960 and the newest installation was placed in 2023. All of the street light heads were replaced in 2016 with LED's that increased the life expectancy and reduced power consumption. The next step is to replace all the decorative lights with LED heads. Maintenance of the City's street light and traffic signals is currently contracted to a third party vendor.

4.5.6 Traffic Signs Inventory Overview

The City of Temiskaming Shores has approximately 1,000 regulatory signs, 442 warning signs, 786 bylaw signs and 1,123 information signs. In 2017, the City purchased a retroreflectometer to measure the reflection level of its traffic signs. This instrument allows field staff to better detect and replace a sign has failed and surpassed its life expectancy.

4.5.1 Risk and Criticality Analytics

The risk and criticality calculation determines the overall risk of the transportation asset failures. Figure 4.48, 4.49, 4.50 and 4.51 provides a representation of the level of risk per kilometer, structure and cost. Figure 4.52 and 4.53 represents the total risk of the transportation assets.

Note: Only critical infrastructure will be analysed. Therefore, only roads and bridges will be included in the Risk and Criticality Analytics.

Figure 4.48: Level of Risk – Roads (Km)

Consequence						
	5	9.55	3.80	0.00	0.00	0.00
	4	6.19	2.67	2.17	0.00	0.00
	3	12.77	12.10	4.43	6.30	0.00
	2	14.20	48.25	7.76	2.30	0.00
	1	4.67	61.22	1.81	0.91	0.00
		1	2	3	4	5
		Probability				

Figure 4.49: Level of Risk – Roads ($)

Consequence						
	5	$ 9,443,903	$ 3,740,199	$ -	$ -	$ -
	4	$ 2,307,557	$ 1,022,554	$ 891,635	$ -	$ -
	3	$ 5,793,817	$ 4,194,614	$ 1,154,074	$ 2,412,353	$ -
	2	$ 5,336,690	$ 10,271,687	$ 3,077,211	$ 952,345	$ -
	1	$ 970,351	$ 3,633,467	$ 189,768	$ 321,025	$ -
		1	2	3	4	5
		Probability				

Figure 4.50: Level of Risk – Bridges & Large Diameter Culverts (each)

Consequence						
	5	1.00	6.00	0.00	0.00	2.00
	4	0.00	0.00	1.00	1.00	0.00
	3	0.00	2.00	1.00	0.00	0.00
	2	1.00	1.00	0.00	0.00	0.00
	1	0.00	0.00	0.00	0.00	0.00
		1	2	3	4	5
		Probability				

Figure 4.51: Level of Risk – Bridges & Large Diameter Culverts ($)

Consequence						
	5	$ 2,200,000	$ 16,050,000	$ -	$ -	$4,000,000
	4	$ -	$ -	$ 600,000	$ 600,000	$ -
	3	$ -	$ 800,000	$ 450,000	$ -	$ -
	2	$ 125,000	$ 250,000	$ -	$ -	$ -
	1	$ -	$ -	$ -	$ -	$ -
		1	2	3	4	5
		Probability				

*Reference section 7.4.1

Figure 4.52: Total Risk of Roads (%)

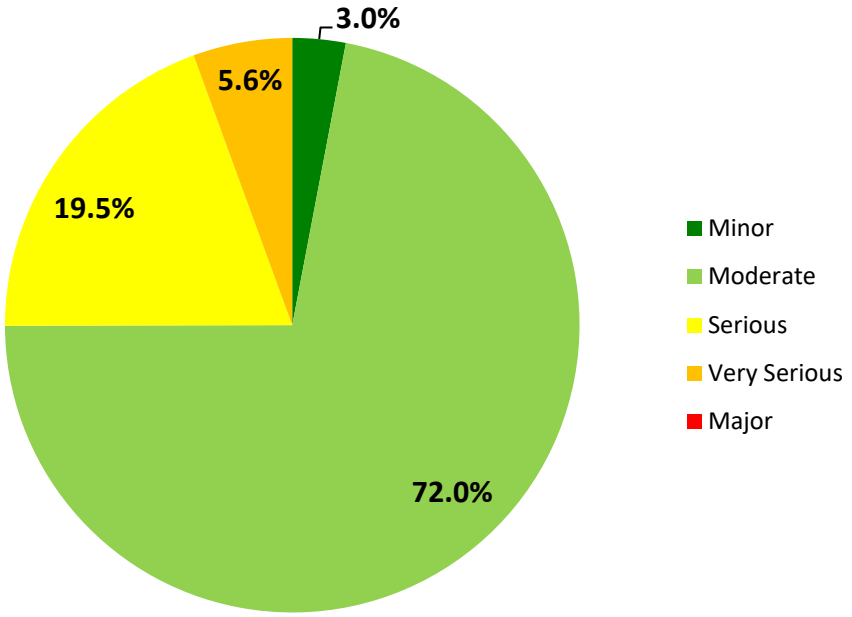
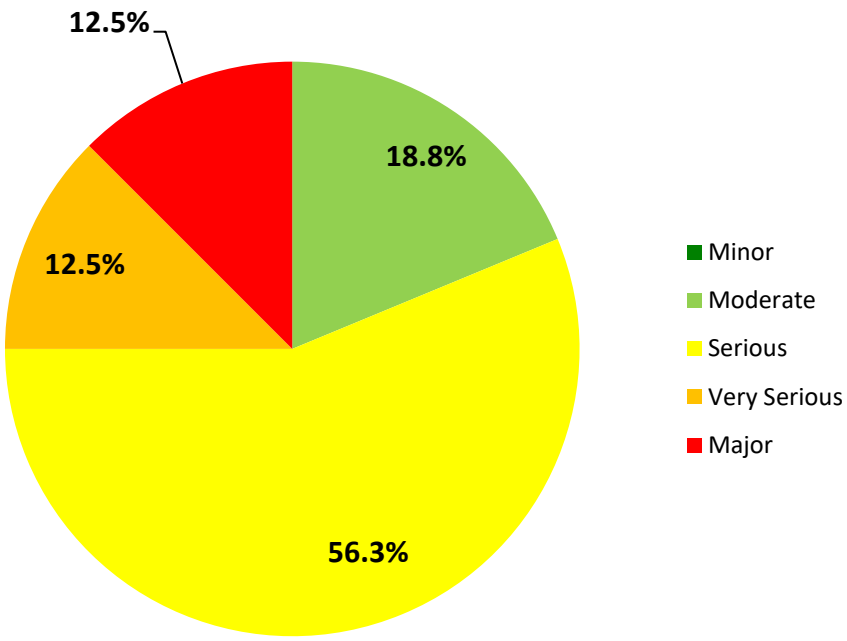


Figure 4.53: Total Risk of Bridges and Large Diameter Culverts (%)



4.5.2 Lifecycle Activities

Figure 4.54 provides a representation of the overall cost of the lifecycle activities that the City would need to undertake in order to maintain the current level of service for its transportation assets (10-year forecast). The City's average annual operational requirements for storm assets total $3,060,833. The City's annual average total requirements are $11,598,941.

Figure 4.54: Transportation Lifecycle Cost ($)

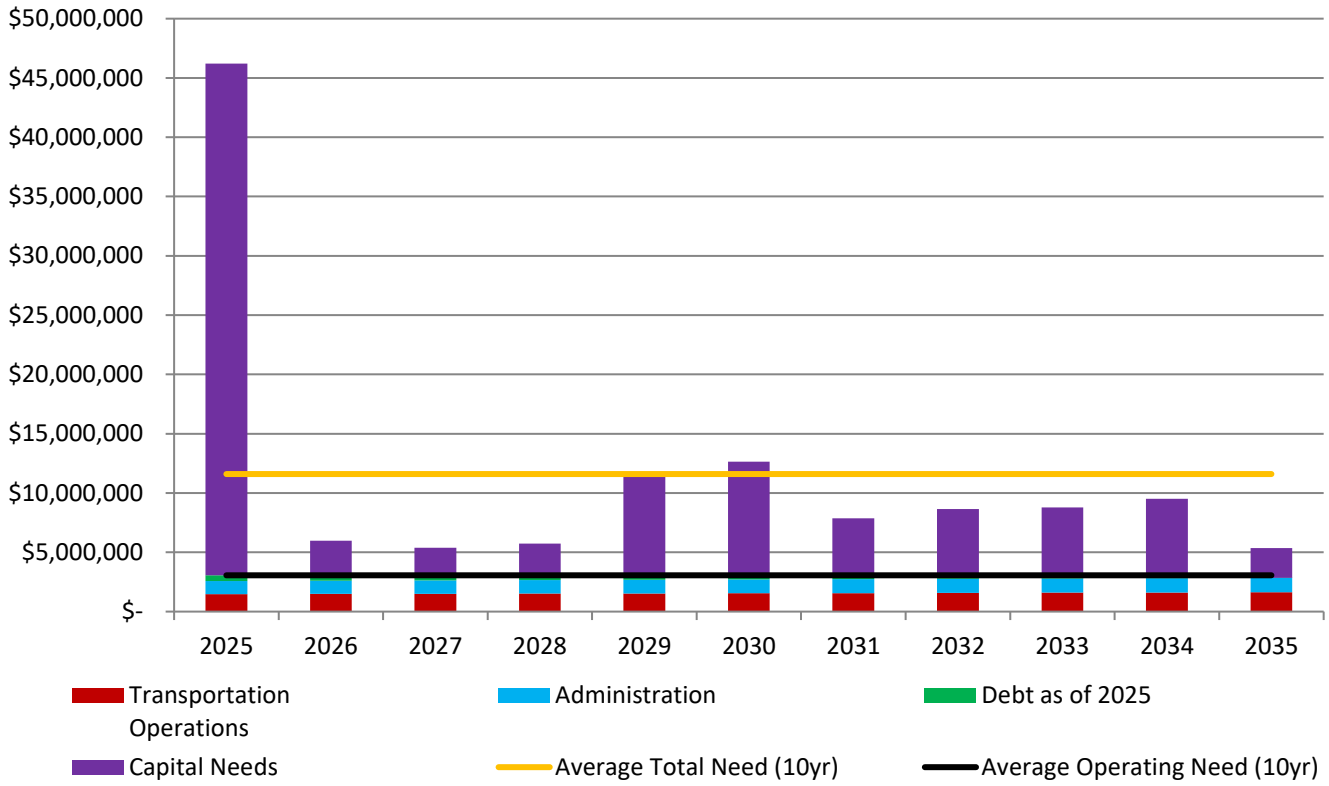
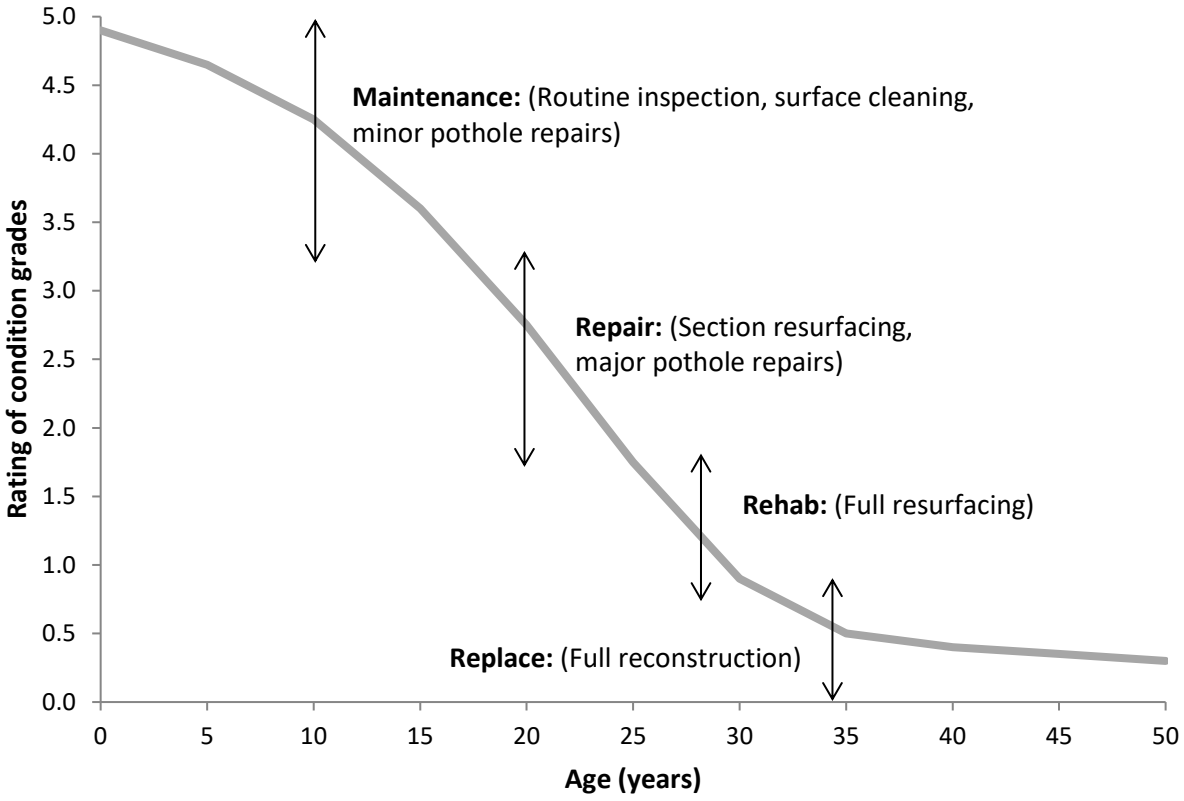


Figure 4.54 and 4.55 is intended to summarize the intervention strategies that are generally appropriate depending on the stage of deterioration/condition of the asset. The selection of the strategy is determined through the analysis in order to come up with the preferred intervention. It's also important to consider the approach in assessing the intervention method, in order to determine which decision can provide the best return on the investment value. A variety of factors can cause the lifespan of the asset to vary from its expected service life. These factors can include but are not limited to:

- Quality of initial construction
- Appropriateness of the materials selected
- Loadings exerted from traffic or natural soil movement
- Surrounding soil conditions

Figure 4.55: Roads (pavement) Lifecycle intervention Strategies

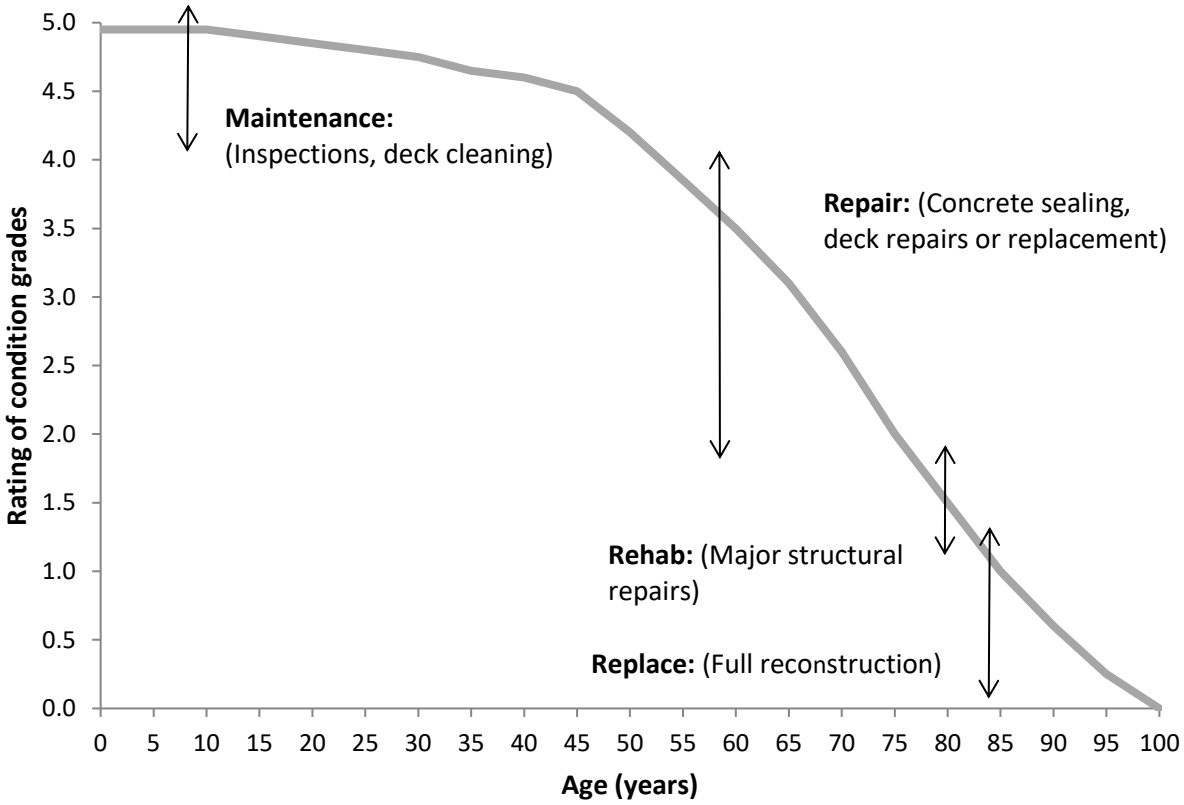


Some operational lifecycle activity options for road assets include but are not limited to:

- Hard top maintenance such as pavement patching and shoulder/curb repairs
- Pavement markings
- Loose top maintenance such as grading, dust control and adding gravel
- Winter control such as snow plowing and removal, sanding/salting and road patrolling
- Sign and guardrail repairs or installation/removal

The overall cost of these options may include wages/labour, materials, contracted/hired costs and other miscellaneous costs related to the lifecycle intervention such as consultation and design work for rehabilitation and replacement activities.

Figure 4.56: Bridges and Large Diameter Culverts Lifecycle Intervention Strategies



Some operational lifecycle activity options for bridge assets include but are not limited to:

- Regulated bi-annual inspections programs
- Deck cleaning
- Structural maintenance such as concrete sealing
- Structural repairs such as deck resurfacing

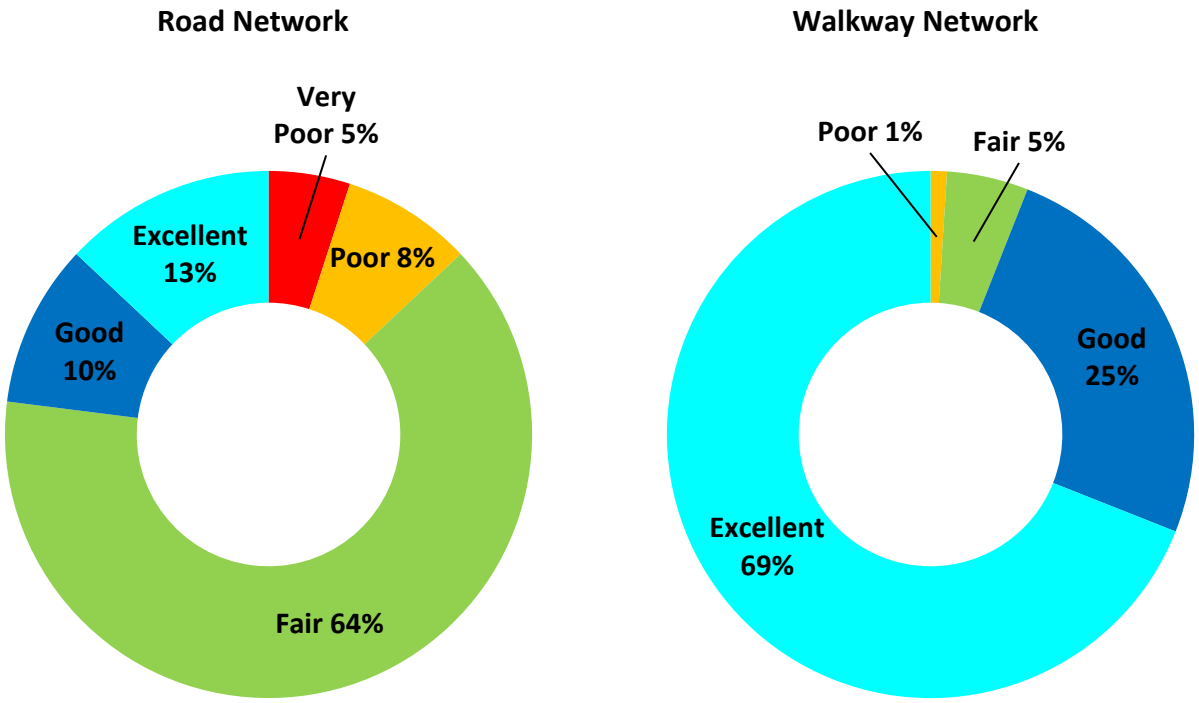
The overall cost of these options may include wages/labour, materials, contracted/hired costs and other miscellaneous costs related to the lifecycle intervention such as consultation and design work for rehabilitation and replacement activities.

4.5.3 Condition Report Card

It's worth noting that the city also has to take infrastructure condition into account before moving forward with road resurfacing projects. A full reconstruction of the road might be preferred in order to maximise the durability and life expectancy of the assets in question.

Figure 4.57 and table 4-13 presents the average ratings and overall report card grade for the City's Transportation network using a five point system. This initial condition report is based on physical inspections. It has considered estimated age, surface and sub-surface material type, network capacity and perceived or reported physical condition in the assessment. These values may be adjusted as appropriate, as more information is gathered, or as the City upgrades the asset. *Reference section 4.1.5

Figure 4.57: Transportation Condition Report Card (%)



Bridges and Large Diameter Culverts

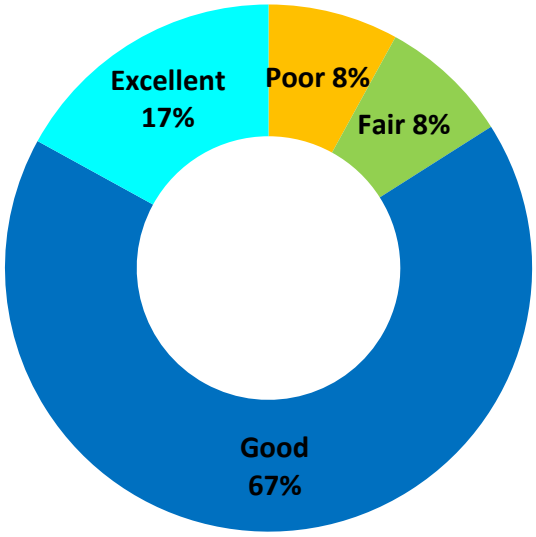
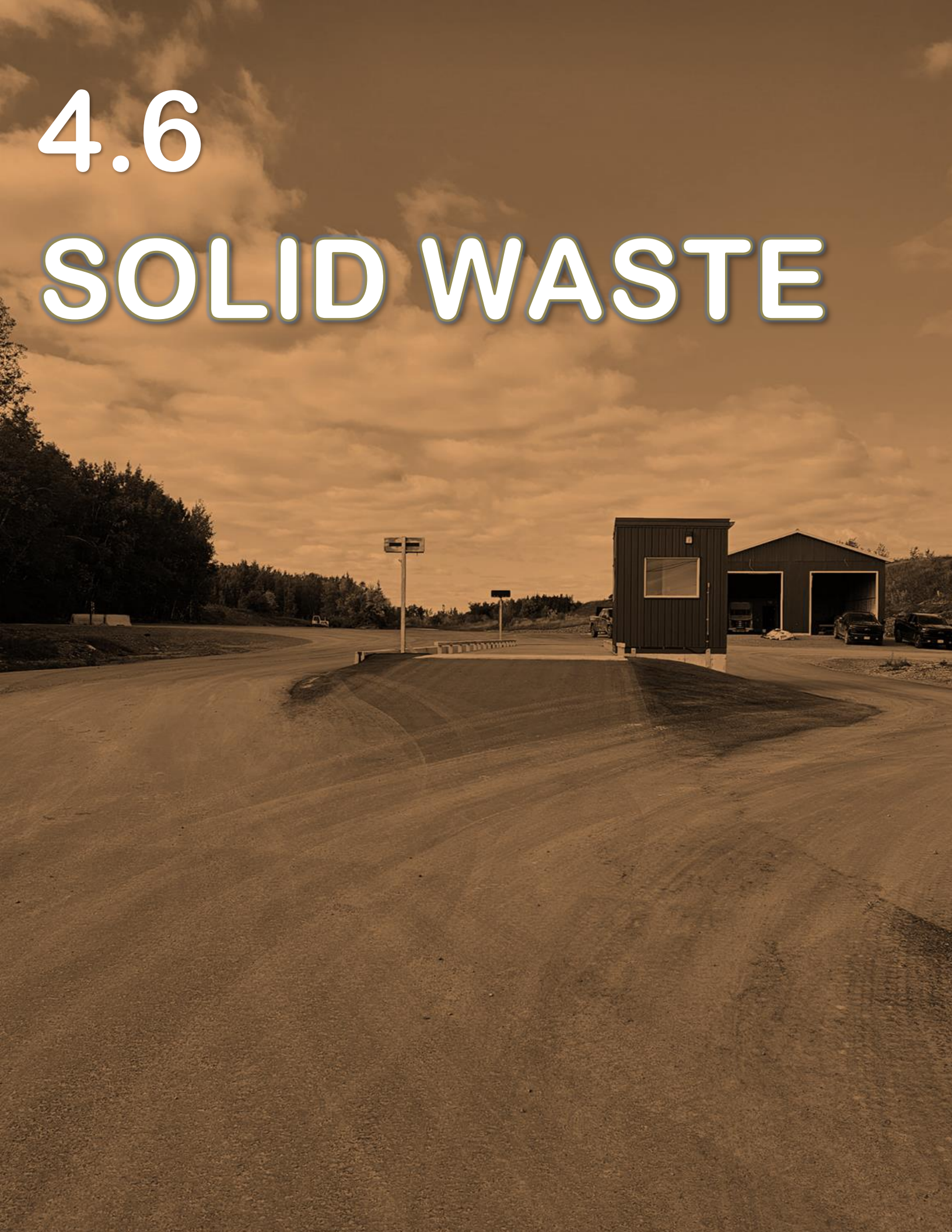


Table 4-13: Transportation Services Report Card

Road Condition Rating	Financial Rating	Overall Rating
3.20	3.40	**3.30**
Walkway Condition Rating	Financial Rating	Overall Rating
4.63	3.40	**4.02**
Bridge Condition Rating	Financial Rating	Overall Rating
2.92	1.50	**2.21**

4.6
SOLID WASTE



4.6 Solid Waste

4.6.1 Inventory Overview

The City of Temiskaming Shores owns various solid waste assets. The City is responsible for curbside waste collection and delivery to the appropriate facility for disposal. Figure 4.58 shows the average age for each asset category.

Note: This service is currently contracted through a third party. Operational assets such as privately owned vehicles or equipment for the collection/delivery of this service are excluded.

Once decommissioned, landfills must be relocated which have undetermined costs, but it's anticipated to be millions of dollars for a new location. Therefore, the replacement cost for the City's landfill is calculated based on current municipal owned assets. The Landfill replacement cost includes two operational buildings and weigh scale not covered by other categories.

***Note:** As of January 2025, all municipalities in Ontario will transition their blue box recycling program to a new collection model. Therefore, the City will no longer be responsible for the collection and processing of recycling materials. All of the City's recycling related assets will be disposed of in consequence of this program.

Table 4-14: Total Replacement Cost for Solid Waste Assets

Asset Type	Quantity	Useful Life (Years)	Replacement Cost
Garbage Bins	4,523 units	10-15	$ 298,518.00
Landfills	1 unit	25-30	$ 3,102,730.00
		Total:	**$ 3,401,248.00**

4.6.2 Waste Disposal Sites Inventory Overview

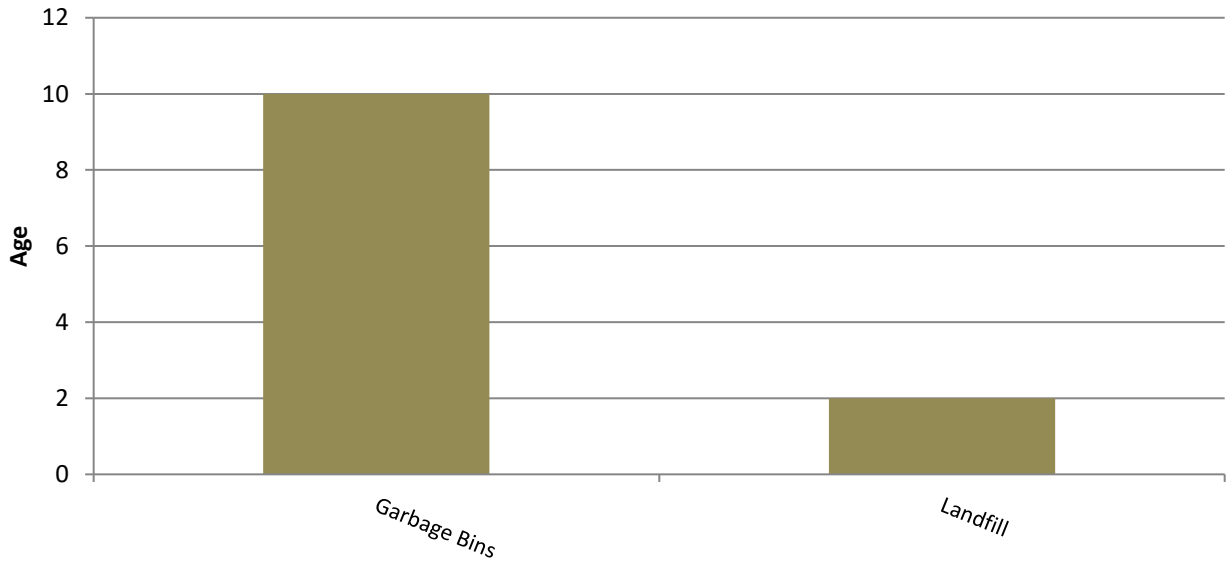
The City of Temiskaming Shores provides one solid waste disposal site for its residents. The City's solid waste is currently serviced and operated under contract by a private contractor.

- As of 2025, the New Liskeard Spoke Transfer Station located at 547 Barr Drive has ceased operations as a central facility that provided temporary recycling waste disposal for collection crews and residents. The City's retained possession of the facility and will be repurposed for municipal operation needs.

- The New Liskeard Landfill located at 70165 Rockley Road, has been in operation since 1916 and ceased acceptance of municipal waste from the general public in 2009 at which time all municipal waste was directed and deposited into the Haileybury Landfill Site. As of 2023, The New Liskeard Landfill has been reconstructed and recommissioned to replace the current decommissioned Haileybury Landfill.

- The Haileybury Landfill located at 544091 Dump Road, has been in operation since 1975 and has ceased to acceptance of municipal waste from the general public in 2023 at which time all municipal waste has been directed to the former and recommissioned New Liskeard Landfill.

Figure 4.58: Solid Waste by Age per Asset Category (Years)



4.6.3 Risk and Criticality Analytics

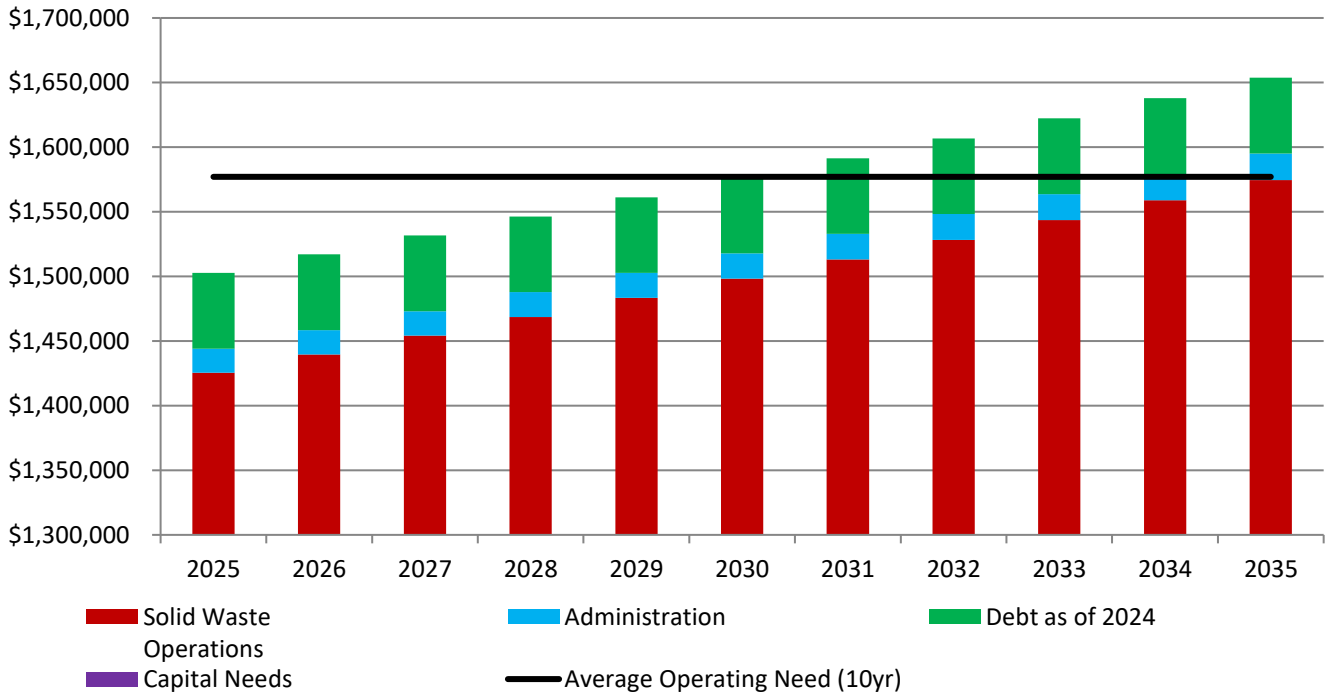
Note: The level of risk for all Solid Waste assets will remain in the high risk levels due to social and environmental impacts. Analyzing and determining the consequence and probability of failure of this service remains a difficult task for the municipality. However, these assets are consistently monitored

in order to allow the City to prioritize operational and capital projects based on the greatest risk of failure for each asset and service.

4.6.4 Lifecycle Activities

Figure 4.59 provides a representation of the overall cost of the lifecycle activities that the City would need to undertake in order to maintain the current level of service for its Solid Waste assets and services (10-year forecast). The City's average annual operational requirements for storm assets total $1,577,079. The City 's has no capital needs forecasted until 2035.

Figure 4.59: Solid Waste Lifecycle Cost ($)



The intervention strategies that are generally appropriate depending on the stage of deterioration/condition of the asset and service. The selection of the strategy is determined through the analysis in order to come up with the preferred intervention. It's also important to consider the approach in assessing the intervention method, in order to determine which decision can provide the most return on the investment value. It's also important to consider the varieties of factors that can cause the lifespan of the asset and service to vary from its expected service life. These factors can include but are not limited to:

- Quality of initial construction
- Appropriateness of the materials selected for the type of structures
- Service volume and service delivery

- Land location and weather conditions

Note: The lifecycle deterioration rate and strategies will be based on the capacity as per design by population utilising the service and by age. For example, the City's landfill was calculated with a designed life expectancy of 25 years before considerations to improve the capacity and/or other improvements of the asset are made.

Some operational lifecycle activity options for Solid Waste assets include but are not limited to:

- Repair or replace collection bins as needed
- Equipment, structural and land repairs
- Modernization upgrades

The overall cost of these options may include wages/labour, materials, contracted/hired costs and other miscellaneous costs related to the lifecycle intervention such as consultation and design work for rehabilitation and major replacement activities.

4.6.5 Condition Report Card

Figure 4.60 and table 4-15 presents the average ratings and overall report card grade for the City's Solid Waste using a five point system. This initial condition report is based on physical inspections. It has considered estimated age, capacity and perceived or reported physical condition in the assessment. These values may be adjusted as appropriate, as more information is gathered, or as the City upgrades the asset. *Reference section 4.1.5

Figure 4.60: Solid Waste Condition Report Card (%)

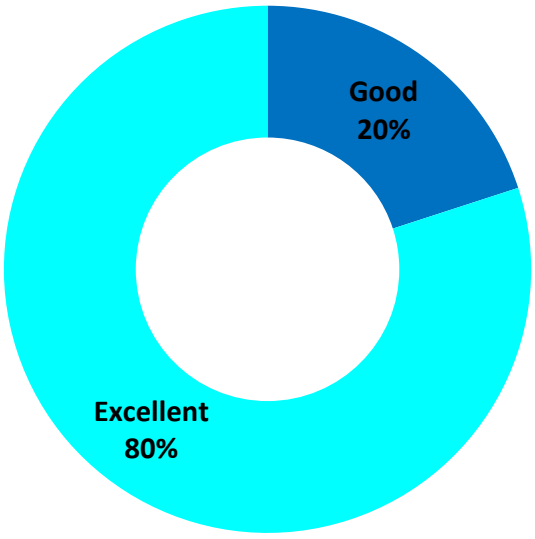
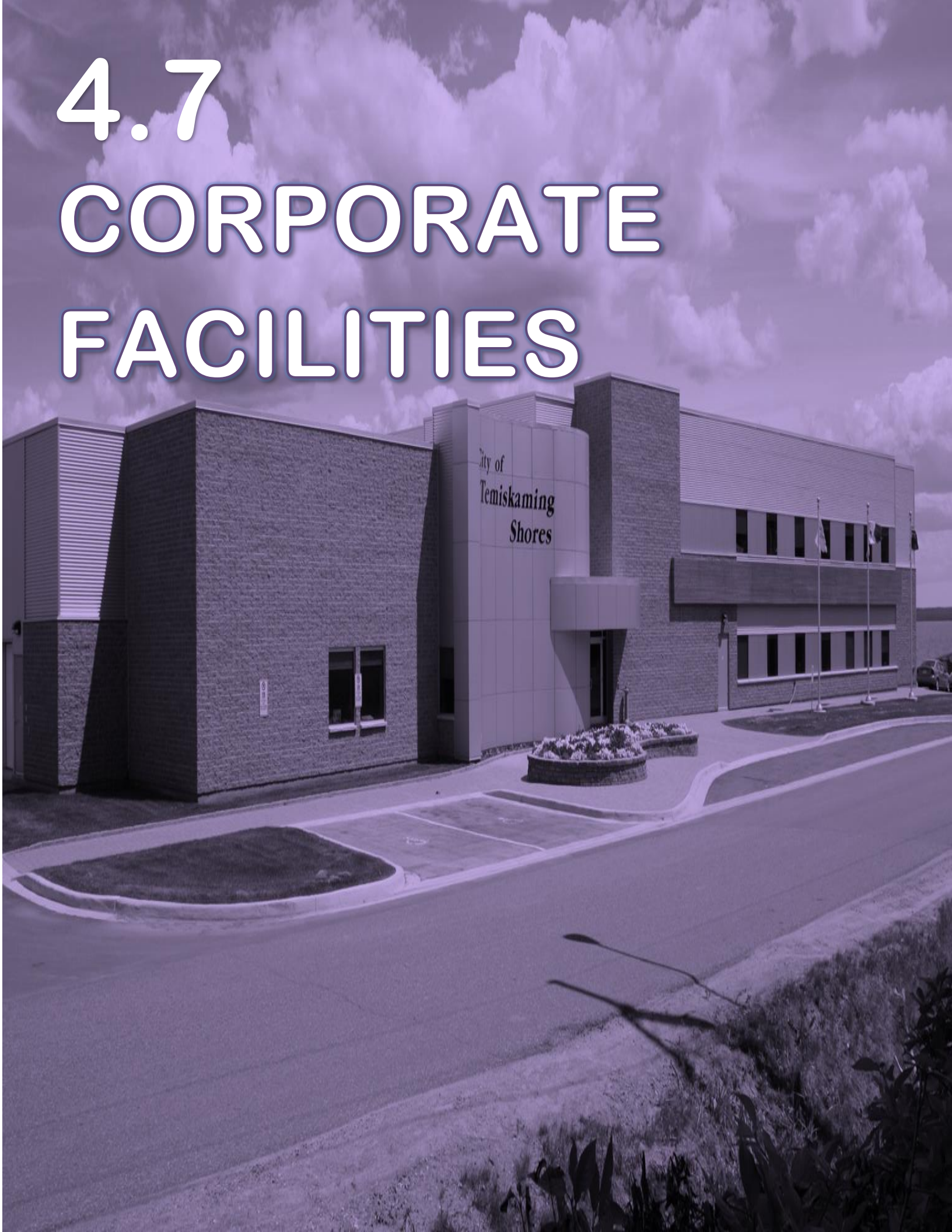


Table 4-15: Solid Waste Report Card

Condition Rating	Financial Rating	Overall Rating
4.80	2.80	**3.80**

4.7 CORPORATE FACILITIES



4.7 Corporate Facilities

4.7.1 Inventory Overview

The City of Temiskaming Shores owns and maintains approximately 61 buildings and facilities ranging from administrative buildings, community centres to small storage buildings with an estimated building footprint of 23,400 square meters. The average age of the City's buildings and facilities is 42 years. Figure 4.60 shows the age distribution for the City's buildings and facilities.

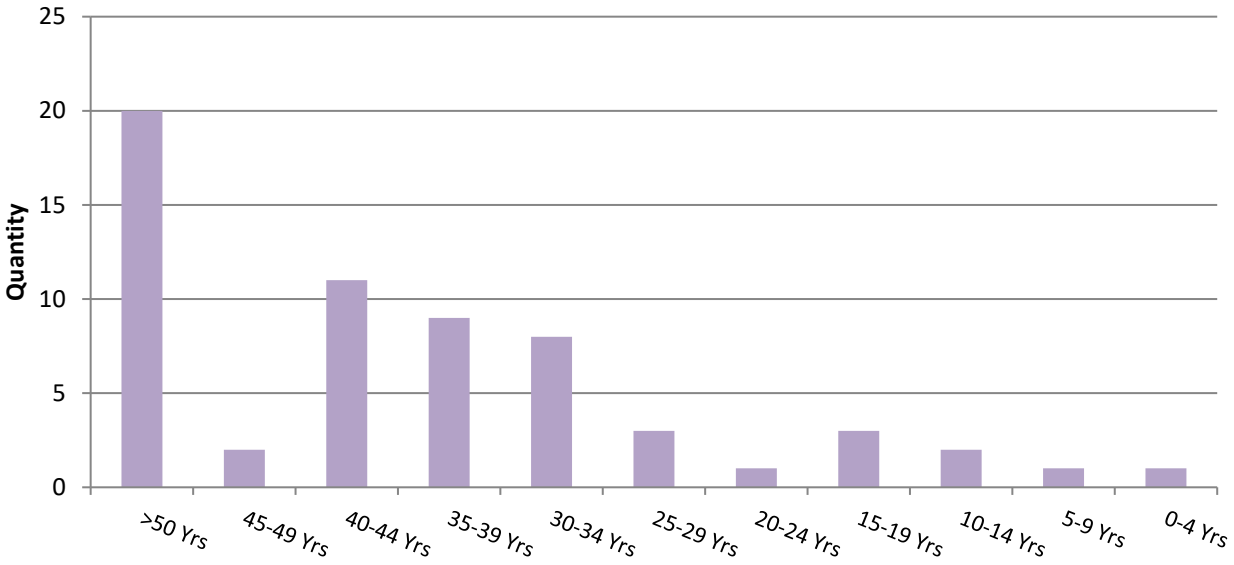
Note: The age is based on the construction/acquisition year of each building and facility. Environmental and solid waste facilities will be listed under the "Water, Sanitary and/or Solid Waste" categories. The replacement values will include the structure and components that relate to the operation of each facility or building. Miscellaneous machinery and equipment assets in storage buildings will be listed under the "Machinery and Equipment" category. The Replacement costs are based on insurance replacement values.

Table 4-16: Total Replacement Cost for Building and Facility Assets

Asset Type	Quantity	Useful Life (Years)	Replacement Cost
Administration Facilities	1 unit	20-75	$ 10,046,562.00
Cemetery Services	7 units	20-75	$ 513,081.00
Fire Services	2 units	20-75	$ 5,758,284.00
Library Facilities	1 unit	20-75	$ 3,279,199.00
Operation Buildings	17 units	20-75	$ 11,014,420.00
Recreation Facilities	26 units	20-75	$ 54,839,220.00
Miscellaneous Buildings/Structures	7 units	20-75	$ 3,783,980.00
		Total:	**$ 89,234,746.00**

The age distribution of the buildings and facilities is illustrated in Figure 4.61. The majority of the buildings and facilities have been constructed over 50 years ago. However, a large percentage of these buildings and facilities have received significant maintenance and upgrades since that time.

Figure 4.61: Buildings and Facilities by Age



4.7.2 Risk and Criticality Analytics

The risk and criticality calculation determines the overall risk of the buildings and facilities asset failures. Figure 4.62 and 4.63 provides a representation of the level of risk per structure and cost. Figure 4.64 represents the total risk of the buildings and facilities assets.

Figure 4.62: Level of Risk – Buildings and Facilities (each)

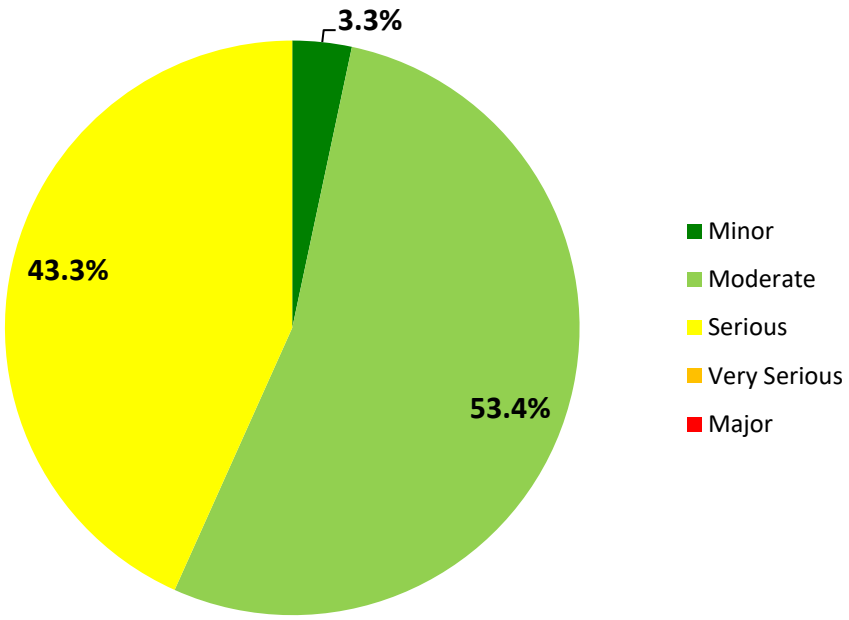
Consequence						
	5	8.00	6.00	0.00	0.00	0.00
	4	4.00	12.00	0.00	0.00	0.00
	3	7.00	8.00	0.00	0.00	0.00
	2	3.00	3.00	1.00	0.00	0.00
	1	2.00	7.00	0.00	0.00	0.00
		1	2	3	4	5
		Probability				

Figure 4.63: Level of Risk – Buildings and Facilities ($)

Consequence						
	5	$39,736,413	$ 40,275,316	$ -	$ -	$ -
	4	$ 1,801,310	$ 5,842,164	$ -	$ -	$ -
	3	$ 673,006	$ 639,334	$ -	$ -	$ -
	2	$ 108,656	$ 76,331	$ 49,616	$ -	$ -
	1	$ 18,000	$ 14,600	$ -	$ -	$ -
		1	2	3	4	5
		Probability				

*Reference section 7.4.1

Figure 4.64: Total Risk of Buildings and Facilities Assets (%)



4.7.3 Lifecycle Activities

Figure 4.65 provides a representation of the overall cost of the lifecycle activities that the City would need to undertake in order to maintain the current level of service for its Buildings and Facilities assets (10-year forecast). The City's average annual operational requirements for storm assets total $1,686,718. The City's annual average total requirements are $9,798,967.

Figure 4.65: Buildings and Facilities Lifecycle Cost ($)

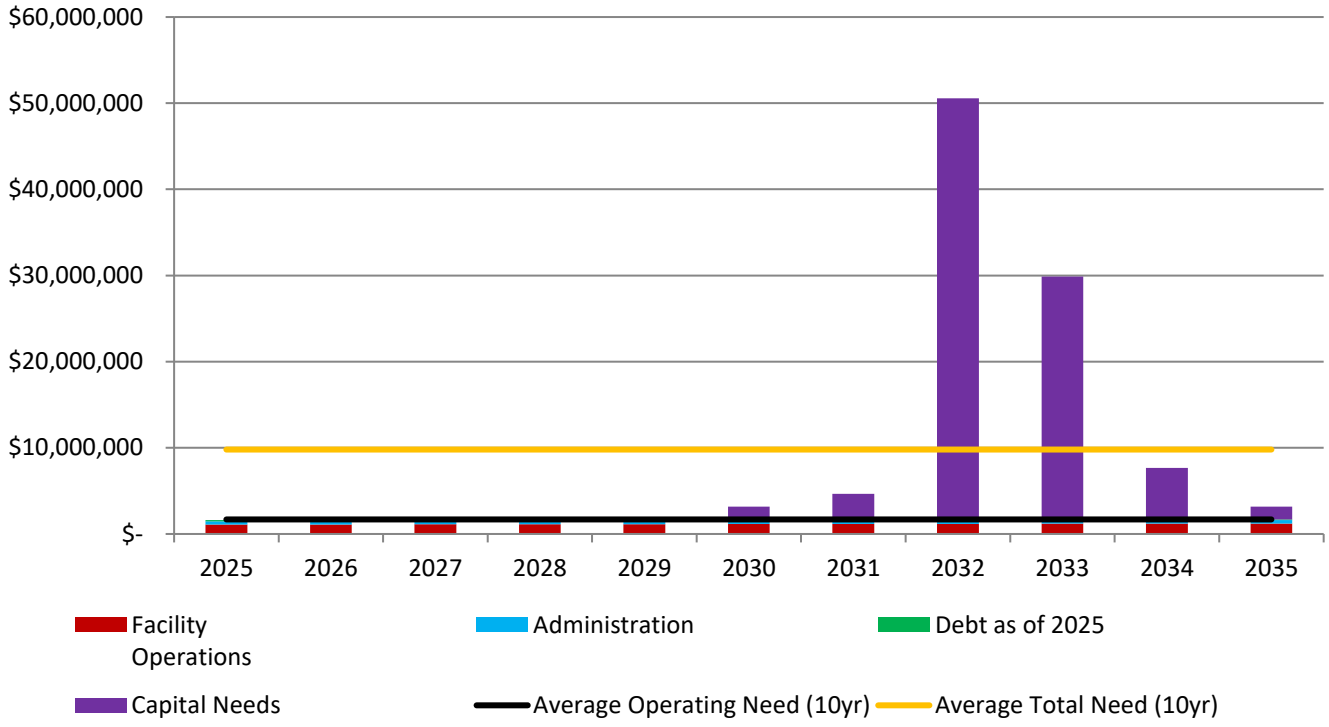
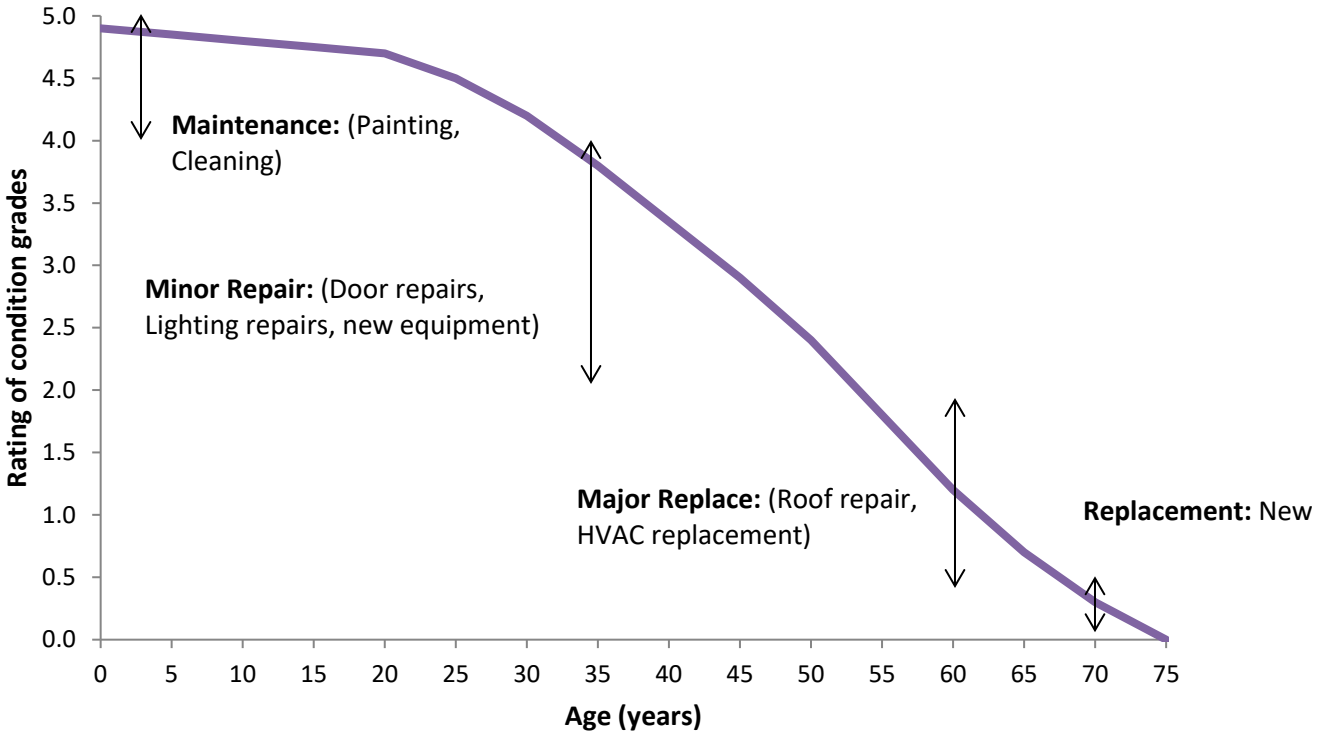


Figure 4.66 is intended to summarize the intervention strategies that are generally appropriate depending on the stage of deterioration/condition of the asset. The selection of the strategy is determined through analysis in order to come up with the preferred intervention. It's also important to consider the approach in assessing the intervention method, in order to determine which decision can provide the most return on the investment value. A variety of factors can cause the lifespan of the asset to vary from its expected service life. These factors can include but are not limited to:

- Quality of initial construction
- Appropriateness of the materials selected for the type of structure
- Traffic volume and service delivery
- Soil and weather conditions
- Legislation (e.g. AODA)

Note: The following lifecycle deterioration rate and strategies example will be based on the current recommended and best construction practices and materials for each asset category. Buildings and Facilities will be calculated with a life expectancy of 75 years before a type of replacement is considered.

Figure 4.66: Buildings and Facilities Lifecycle Intervention Strategies



Some operational lifecycle activity options for building and facility assets include but are not limited to:

- Structural inspections programs
- Equipment and structural repairs
- Modernization upgrades

The overall cost of these options may include wages/labour, materials, contracted/hired costs and other miscellaneous costs related to the lifecycle intervention such as consultation and design work for rehabilitation and major replacement activities.

4.7.4 Condition Report Card

Figure 4.67 and table 4-17 presents the average ratings and overall report card grade for the City's Buildings and Facilities using a five point system. This initial condition report is based on physical inspections and has considered age, building use and perceived or reported physical condition in the assessments. These values may be adjusted as appropriate, as more information is gathered, or as the City upgrades the asset. *Reference section 4.1.5

Figure 4.67: Buildings and Facilities Condition Report Card (%)

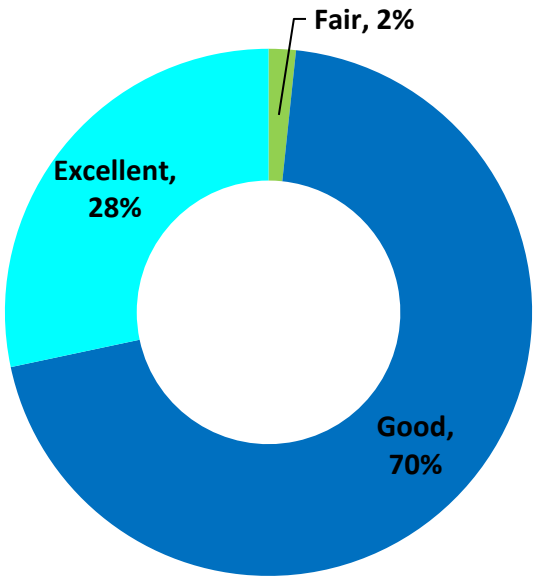
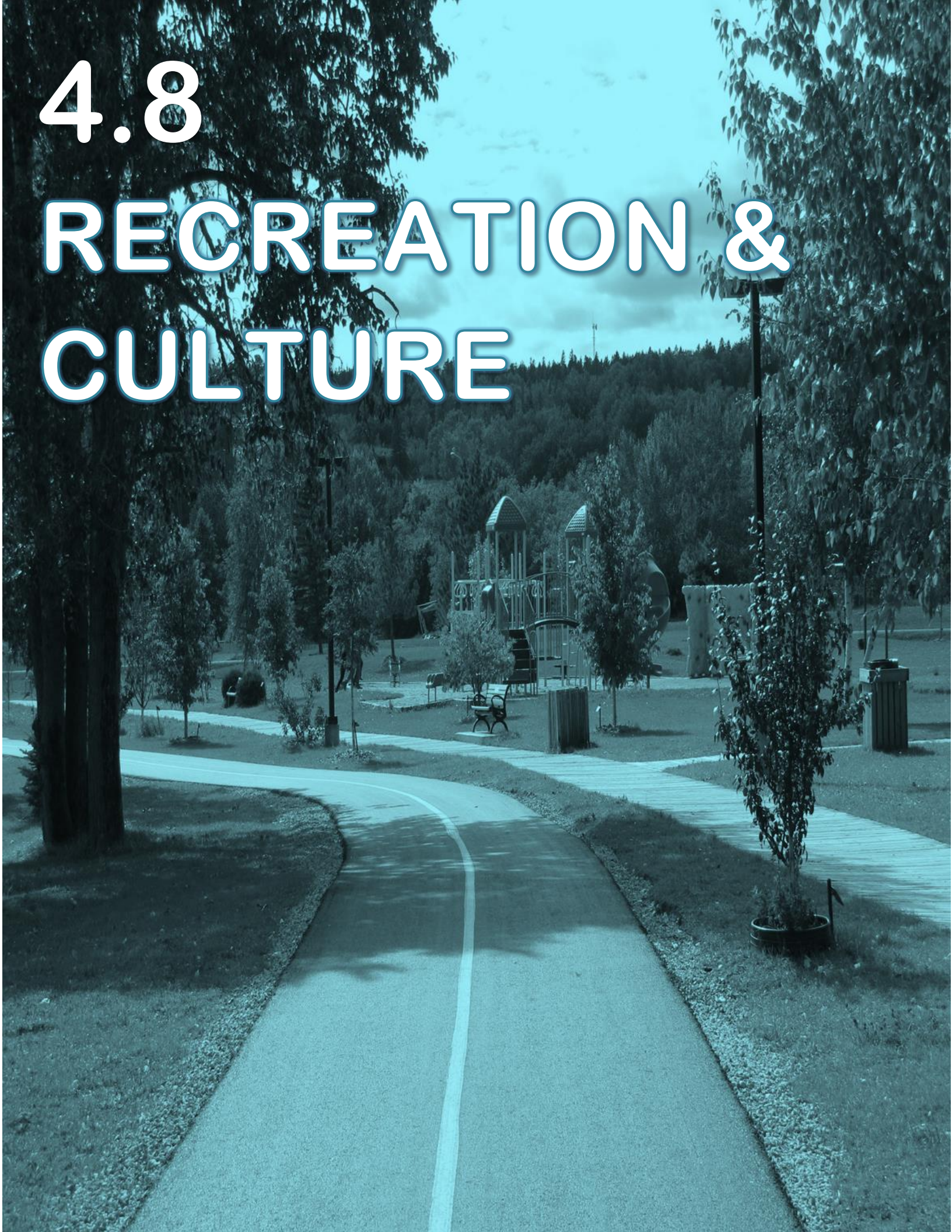


Table 4-17: Buildings and Facilities Report Card

Condition Rating	Financial Rating	Overall Rating
4.26	2.80	**3.53**



4.8 RECREATION & CULTURE

4.8 Recreation and Culture

4.8.1 Inventory Overview

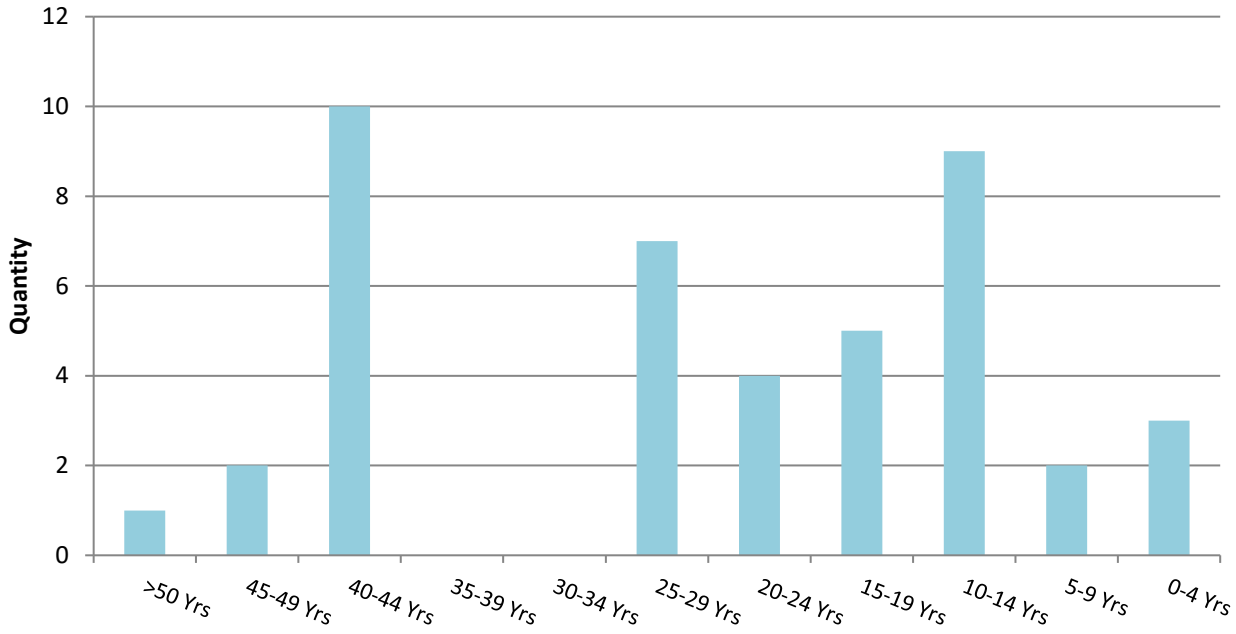
The City of Temiskaming Shores owns and maintains a wide range of parks, marinas and green spaces for a variety of recreational activities spanning a total area of more than 56 hectares. Figure 4.68 shows the average age distribution for the City's Recreation and Culture assets.

Note: The age is based on the construction/acquisition year of each asset. Some recreation and cultural facilities will be listed under the "Corporate Facilities" category. The replacement values will include the any component that relate to the operation of each asset type. Land Improvements include but are not limited to picnic shelters, monuments/status, street benches and memorial trees.

Table 4-18: Total Replacement Cost for Recreation and Culture Assets

Asset Type	Quantity	Useful Life (Years)	Replacement Cost
Active Trails	17.8 km	20-30	$ 2,463,836.00
Natural Trails	2.0 km	20-30	$ 29,547.00
Sport Fields	5 units	20-30	$ 2,184,000.00
Sport Courts	7 units	10-25	$ 447,000.00
Playgrounds	13 units	10-25	$ 850,500.00
Skate Parks	1 unit	10-30	$ 400,000.00
Splash Pads	1 unit	10-30	$ 722,000.00
Dog Parks	1 unit	30-50	$ 90,000.00
Outdoor Rinks	2 units	10-50	$ 200,000.00
Marinas and Wharfs	4 units	10-50	$ 1,533,702.00
Land Improvements	-	N/A	$ 617,500.00
		Total:	**$ 9,538,085.00**

Figure 4.68: Recreation and Culture Assets by Age



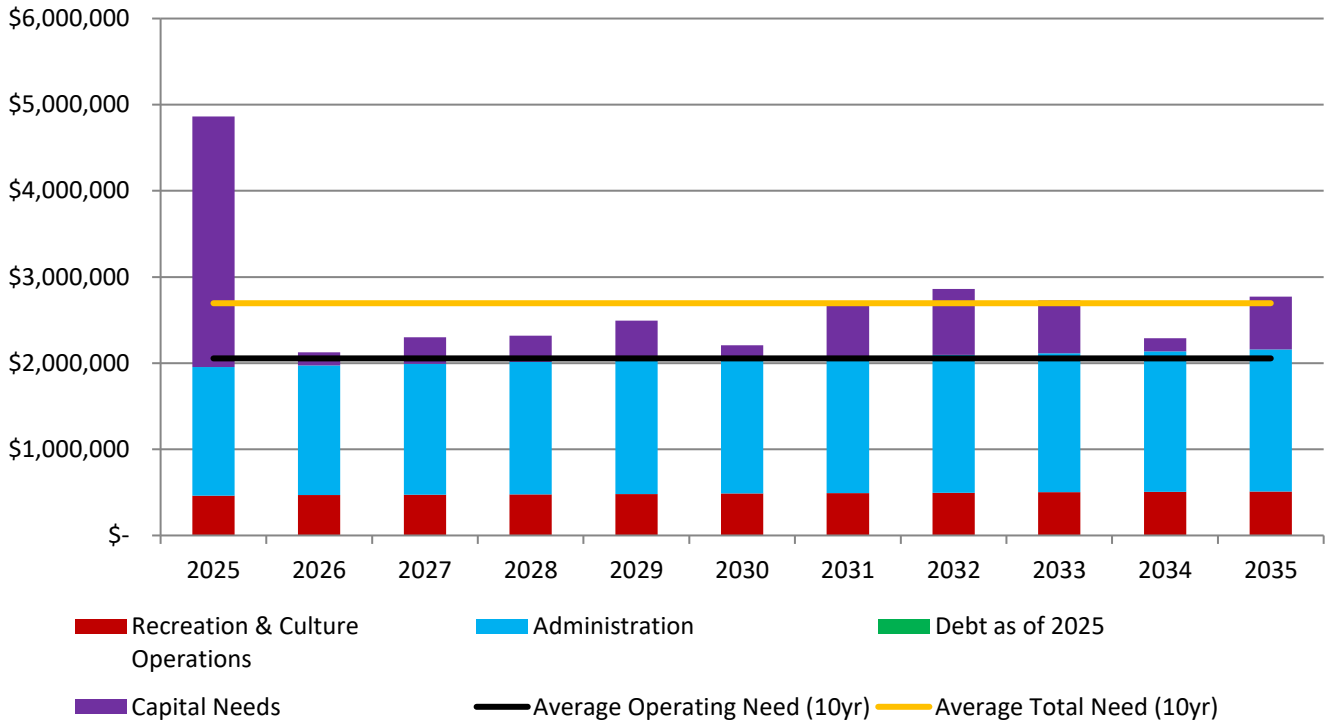
4.8.2 Risk and Criticality Analytics

Note: The level of risk for all Recreation and Culture assets under this category will remain in the low risk levels due to lower social and environmental impacts. However, these assets are consistently monitored in order to allow the City to prioritize operational and capital projects based on the greatest risk of failure for each asset and service.

4.8.3 Lifecycle Activities

Figure 4.69 provides a representation of the overall cost of the lifecycle activities that the City would need to undertake in order to maintain the current level of service for its Recreation and Culture assets and services (10-year forecast). The City's average annual operational requirements for storm assets total $2,055,021. The City's annual average total requirements are $2,695,449.

Figure 4.69: Recreation and Culture Lifecycle Cost ($)



The intervention strategies that are generally appropriate depend on the stage of deterioration/condition of the asset and service. The selection of the strategy is determined through analysis in order to come up with the preferred intervention. It's also important to consider the approach in assessing the intervention method, in order to determine which decision can provide the best return on the investment value. A variety of factors can cause the lifespan of the asset and service to vary from its expected service life. These factors can include but are not limited to:

- Quality of initial construction
- Appropriateness of the materials selected for the type of structures or land
- Service volume and service delivery
- Land location and weather conditions
- Legislation

Note: The lifecycle deterioration rate and strategies are based on the capacity as per design by population utilising the service and by age. For example, the City's playgrounds are calculated with a designed life expectancy of 25 years before considerations for improvements or as needed based demand.

Some operational lifecycle activity options for Recreation and Culture assets include but are not limited to:

- Small structure replacements
- Equipment, structural and land repairs
- Modernization upgrades

The overall cost of these options may include wages/labour, materials, contracted/hired costs and other miscellaneous costs related to the lifecycle intervention such as consultation and design work for rehabilitation and major replacement activities.

4.8.4 Condition Report Card

Table 4-19 presents the average ratings and overall report card grade for the City's Recreation and Culture assets using a five point system. This initial condition report is based on physical inspections and has considered age, asset use and perceived or reported physical condition in the assessment. These values may be adjusted as appropriate, as more information is gathered, or as the City upgrades the asset. *Reference section 4.1.5

Figure 4.70: Recreation and Culture Condition Report Card (%)

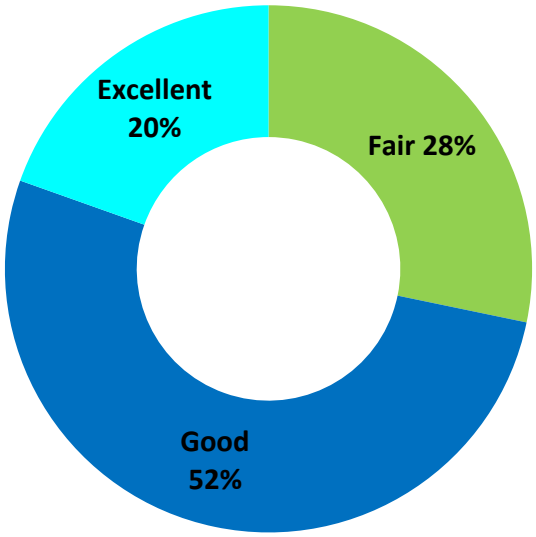


Table 4-19: Recreation and Culture Report Card

Condition Rating	Financial Rating	Overall Rating
3.91	2.50	**3.21**

4.9 CORPORATE FLEET

4.9 Corporate Fleet

4.9.1 Inventory Overview

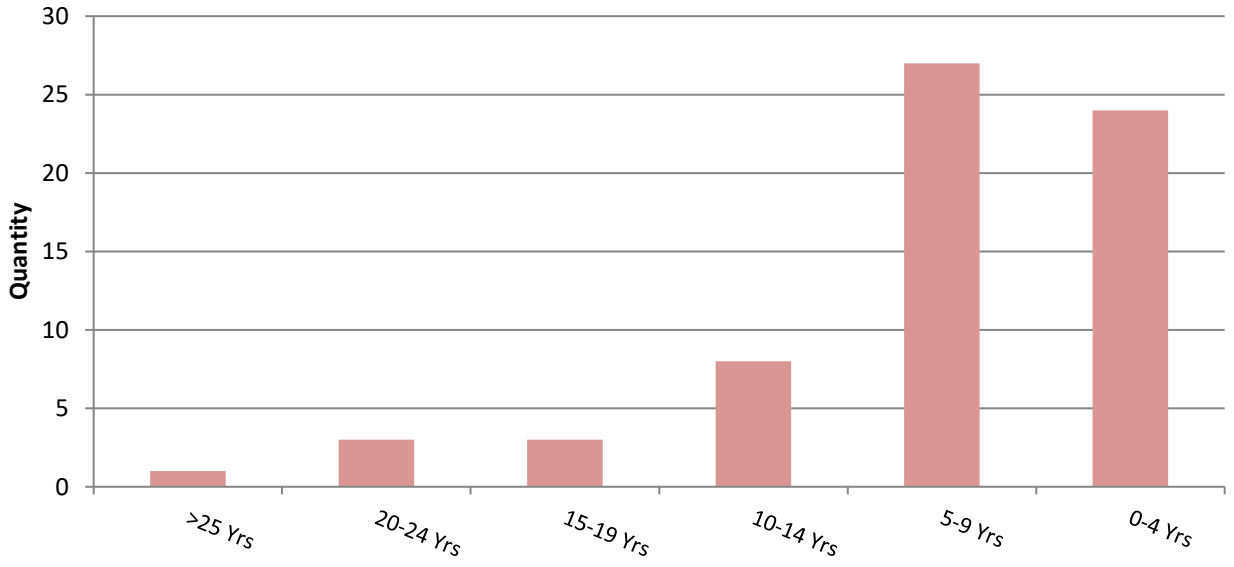
The City of Temiskaming Shores owns 66 fleet assets. The average age of the City's Fleet is 7 years. Figure 4.71 shows the age distribution for the City's fleet.

Note: Trailers, mowers and similar assets will be listed under the "Machinery and Equipment" category. The City's transit units are currently serviced by City staff if possible and operated under contract by a private third party. Some of the smaller fleet units are currently leased under a municipal fleet program. They are still accounted for at full replacement value.

Table 4-20: Total Replacement Cost for Fleet Assets

Asset Type	Quantity	Useful Life (Years)	Replacement Cost
Light Vehicles	24 units	10-25	$ 1,344,000.00
Medium Vehicles	2 units	10-12	$ 140,000.00
Heavy Vehicles	25 units	10-12	$ 7,357,000.00
Emergency Vehicles	9 units	10-15	$ 4,440,000.00
Transit	6 units	10	$ 1,957,174.00
		Total:	**$ 15,238,174.00**

Figure 4.71: Fleet Units by Age



4.9.2 Risk and Criticality Analytics

The risk and criticality calculation determines the overall risk of the Fleet asset failures. Figure 4.72 and 4.73 provides a representation of the level of risk per structure and cost. Figure 4.74 represents the total risk of the Fleet assets.

Figure 4.72: Level of Risk – Fleet (each)

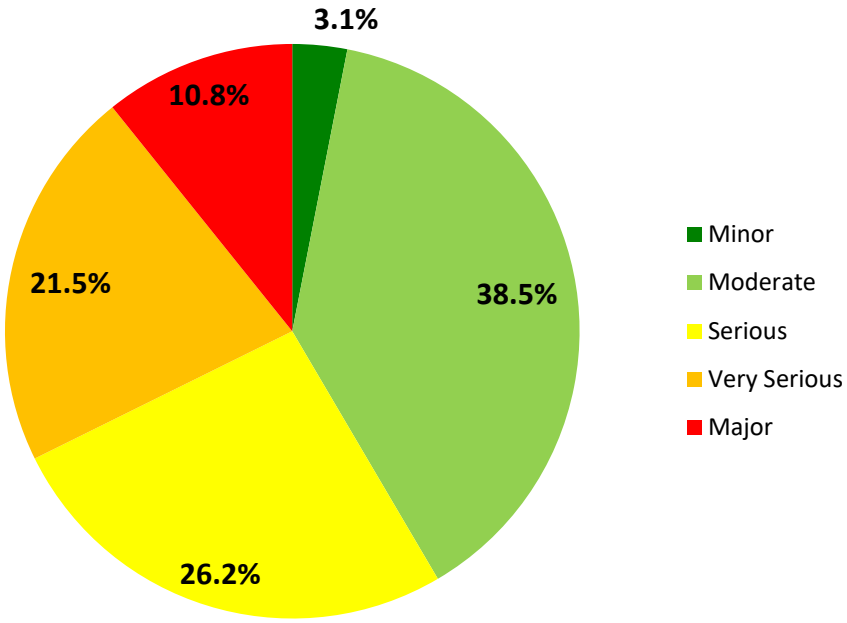
Consequence						
	5	0.00	0.00	0.00	0.00	0.00
	4	0.00	2.00	0.00	2.00	7.00
	3	0.00	7.00	0.00	1.00	9.00
	2	0.00	2.00	0.00	1.00	9.00
	1	2.00	13.00	1.00	2.00	7.00
		1	2	3	4	5
		Probability				

Figure 4.73: Level of Risk – Fleet ($)

Consequence						
	5	$ -	$ -	$ -	$ -	$ -
	4	$ -	$ 140,000	$ -	$ 385,000	$2,969,587
	3	$ -	$ 446,000	$ -	$ 185,000	$3,519,000
	2	$ -	$ 120,000	$ -	$ 185,000	$3,404,587
	1	$ 76,000	$ 702,000	$ 134,000	$ 386,000	$2,416,000
		1	2	3	4	5
		Probability				

*Reference section 7.4.1

Figure 4.74: Total Risk of Fleet Assets (%)



4.9.3 Lifecycle Activities

Figure 4.75 provides a representation of the overall cost of the lifecycle activities that the City would need to undertake in order to maintain the current level of service for its Fleet assets (10-year forecast). The City's average annual operational requirements for storm assets total $2,201,192. The City's annual average total requirements are $3,586,480.

Figure 4.75: Fleet Lifecycle Cost ($)

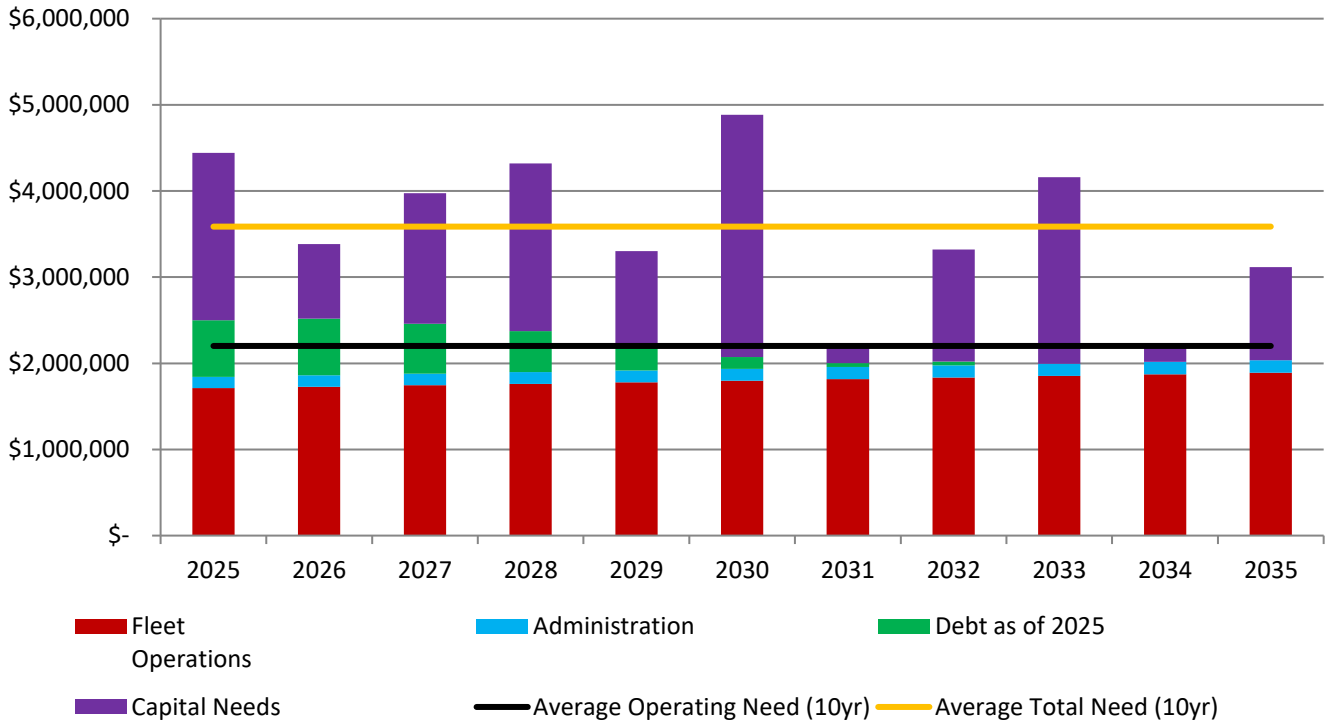
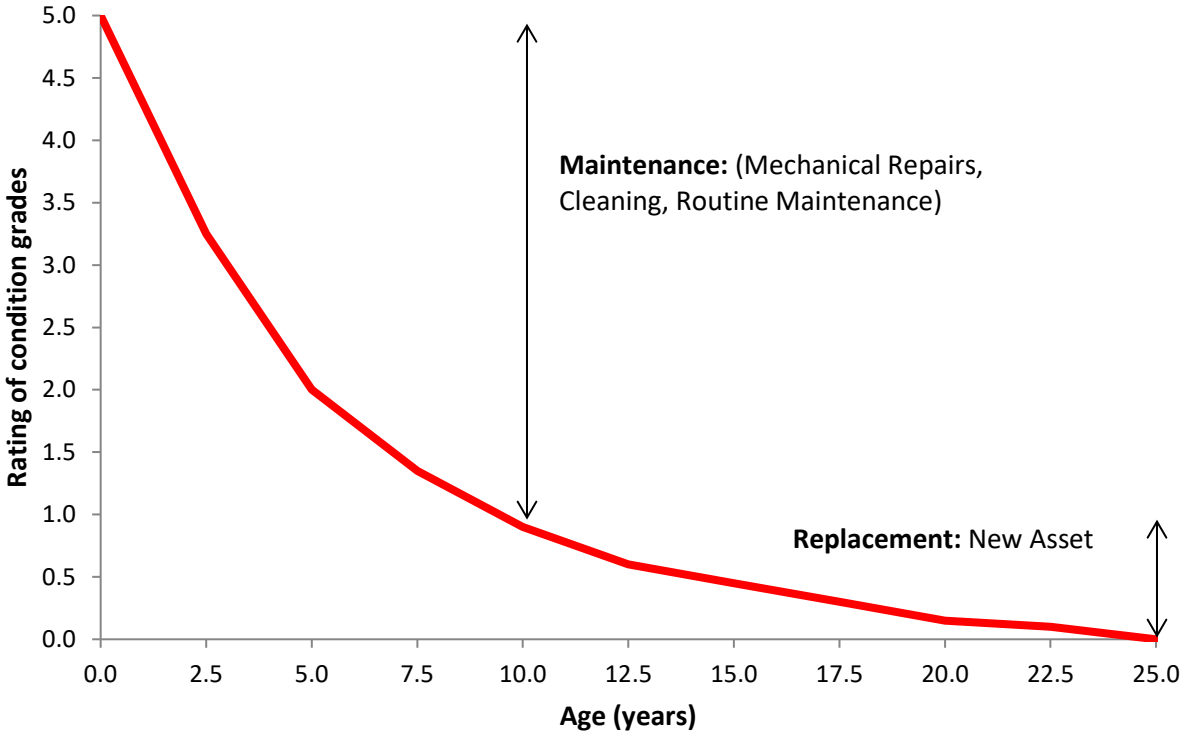


Figure 4.76 is intended to summarize the intervention strategies that are generally appropriate depending on the stage of deterioration/condition of the asset. The selection of the strategy is determined through analysis in order to come up with the preferred intervention. It's also important to consider the approach in assessing the intervention method, in order to determine which decision can provide the best return on the investment value. A variety of factors can cause the lifespan of the asset to vary from its expected service life. These factors can include but are not limited to:

- Quality at initial purchase
- Type of asset and its designed purpose
- Frequency of use
- Quality of repairs as needed

Note: The following lifecycle deterioration rate and strategies example will be based on the current recommended industry deterioration rates for each asset category. Fleet will be calculated with a maximum life expectancy of 25 years before a type of replacement is considered. However, small fleet assets could be calculated with a life expectancy of 10 years.

Figure 4.76: Fleet Lifecycle Intervention Strategies



Some operational lifecycle activity options for Fleet assets include but are not limited to:

- Mechanical inspections and repairs
- Routine maintenance such as fluid and tire changes
- *Possible aesthetic maintenance such as washing and cleaning*

The overall cost of these options may include wages/labour, materials, contracted/hired costs and other miscellaneous costs related to the lifecycle intervention.

4.9.4 Condition Report Card

Figure 4.77 and table 4-21 presents the average ratings and overall report card grade for the City's Fleet using a five point system. This initial condition report is age based. These values may be adjusted as the City developpes a physical condition assessment program, as more information is gathered, or as the City upgrades the asset. *Reference section 4.1.5

Figure 4.77: Fleet Condition Report Card (%)

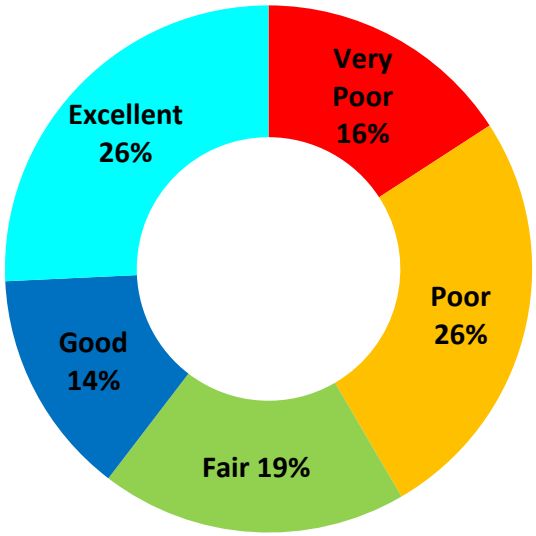
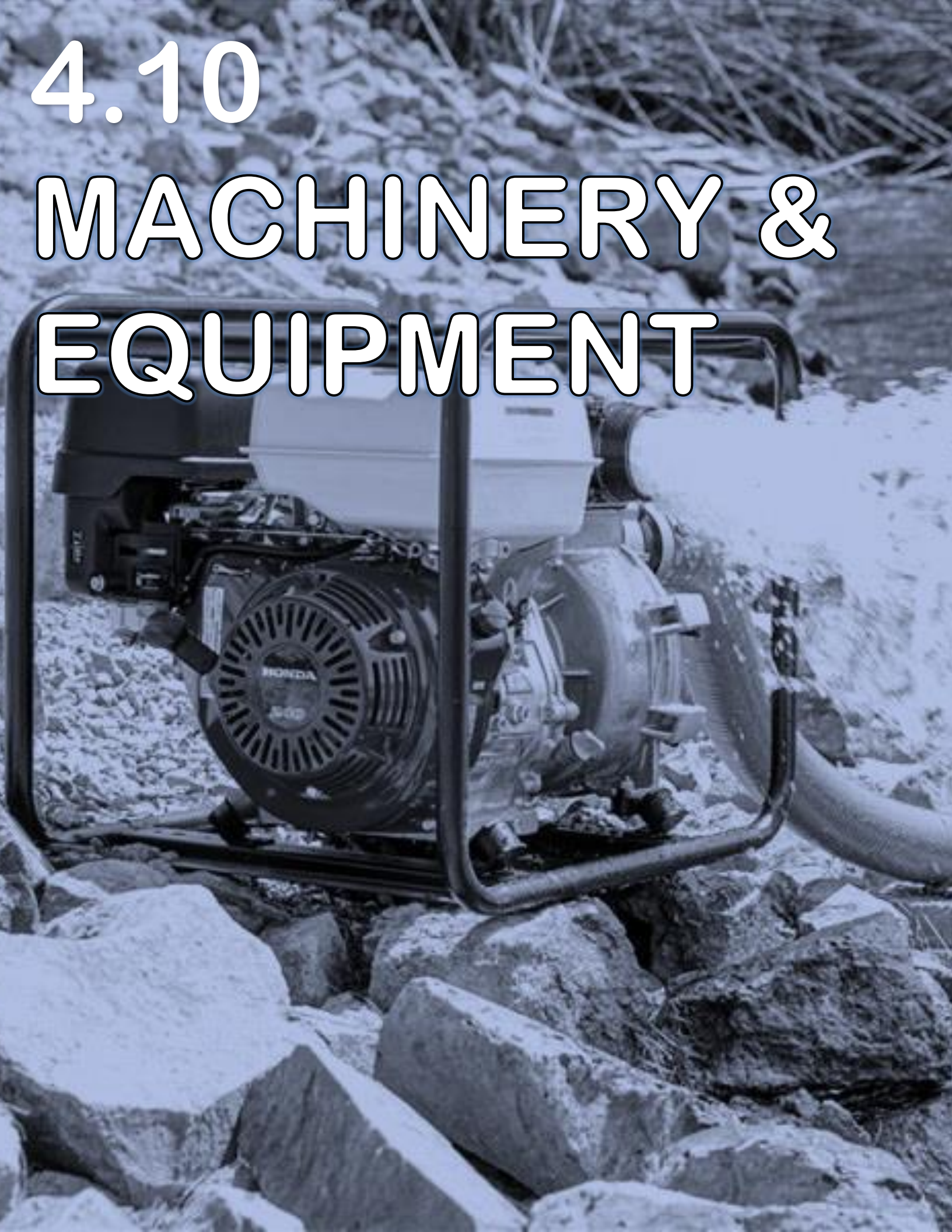


Table 4-21: Fleet Report Card

Condition Rating	Financial Rating	Overall Rating
3.09	3.50	**3.30**

4.10 MACHINERY & EQUIPMENT



4.10 Machinery and Equipment

4.10.1 Inventory Overview

The City of Temiskaming Shores owns a variety of miscellaneous Machinery and Equipment assets.

Note: Most assets listed aren't attributed to the operation or contents of certain buildings, facilities or location.

Table 4-22: Total Replacement Cost for Machinery and Equipment Assets

Asset Type	Quantity	Useful Life (Years)	Replacement Cost
Environmental Services	pooled	5-10	$ 855,573.00
Transportation Services	pooled	5-10	$ 615,400.00
Leisure Services	pooled	5-10	$ 942,328.00
Fire Services	pooled	5-10	$ 664,240.00
Other	pooled	5-10	$ 135,000.00
		Total:	**$ 3,212,541.00**

Note: Some Machinery and Equipment assets don't have a recorded acquisition year. Therefore, an age table won't be provided for these assets as it would be inaccurate.

4.10.2 Risk and Criticality Analytics

Note: The level of risk for most Machinery and Equipment assets under this category will remain in the low risk levels due to lower social and environmental impacts. However, these assets are consistently monitored in order to allow the City to prioritize operational and capital projects based on the greatest risk of failure for each asset and service.

4.10.3 Lifecycle Activities

The overall cost of the lifecycle activities that the City would need to undertake in order to maintain the current level of service for its Machinery and Equipment assets and services is undetermined. The City's current average annual requirements for Machinery and Equipment assets are mostly "on an as-needed basis".

The intervention strategies remain the same and are generally appropriate depending on the stage of deterioration/condition of the asset and service. The selection of the strategy is determined through the analysis in order to come up with the preferred intervention. It's also important to consider the approach in assessing the intervention method, in order to determine which decision can provide the most return on the investment value. A variety of factors can cause the lifespan of the asset and service to vary from its expected service life. These factors can include but are not limited to:

- Quality at initial purchase
- Type of asset and its designed purpose
- Frequency of use
- Quality of repairs as needed

Note: The lifecycle deterioration rate and strategies will be based on staff recommendations and by age. These assets will be calculated with a life expectancy of 5 to 10 years before considerations for improvements or as needed based on demand.

Some operational lifecycle activity options for Recreation and Culture assets include but are not limited to:

- Mechanical inspections and repairs
- Routine maintenance
- *Possible aesthetic maintenance such as washing and cleaning*

The overall cost of these options may include wages/labour, materials, contracted/hired costs and other miscellaneous costs related to the lifecycle intervention.

4.10.4 Condition Report Card

Figure 4.78 and table 4-23 presents the average ratings and overall report card grade for the City's Machinery and Equipment using a five point system. This initial condition report is based on physical inspections and has considered age (if known), asset use and perceived or reported physical condition in the assessment. These values may be adjusted as appropriate, as more information is gathered, or as the City upgrades the asset. *Reference section 4.1.5

Figure 4.78: Machinery and Equipment Condition Report Card (%)

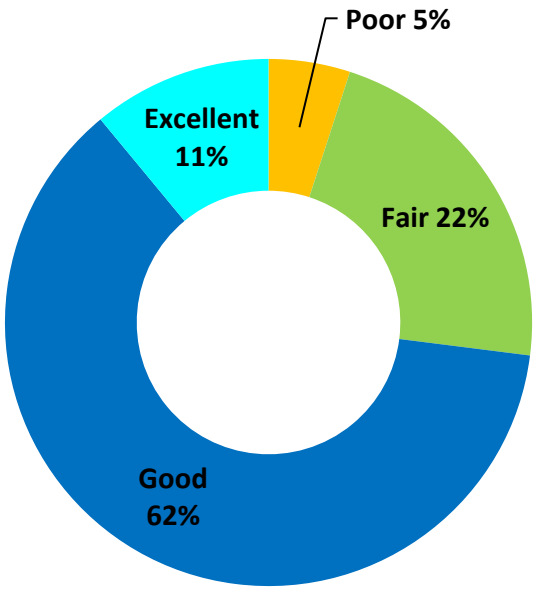


Table 4-23: Machinery and Equipment Report Card

Condition Rating	Financial Rating	Overall Rating
3.78	3.8	**3.79**

5.0 - 6.0
LEVELS OF SERVICE

Current Levels of Service

5.1 Introduction

Levels of service are high level indicators, comprised of many factors that, as listed below, establish defined quality thresholds at which municipal services should be supplied to the community. They support the organization's strategic goals and are based on customer expectations, statutory requirements, standards, and the financial capacity of a municipality to deliver those levels of service.

Levels of Service are used:

- to inform customers of the proposed type and level of service to be offered;
- to identify the costs and benefits of the services offered;
- to assess suitability, affordability and equity of the services offered;
- as a measure of the effectiveness of the asset management plan; and
- as a focus for the AM strategies developed to deliver the required level of service.

In order for a municipality to establish a level of service, it is important to review the key factors involved in the delivery of that service, and the interactions between those factors. In addition, it's important to establish some key performance metrics and track them over an annual cycle to gain a better understanding of the current level of service supplied.

Within this Asset Management Plan, key factors affecting level of service will be outlined below and some key performance indicators for each asset type will be outlined for further review. This will provide a framework and starting point from which the City can determine future desired levels of service for each infrastructure class.

The City of Temiskaming Shores target Levels of Service have been linked to Council's vision, goals and objectives for infrastructure assets as presented in Section 2, *Asset Management Policy,* of this Plan and include the key factors listed below.

5.2 Key Factors that Influence Level of Service

- Strategic and Corporate Goals
- Legislative and Regulatory Requirements
- Expected Asset Performance
- Community Expectations
- Available of Finances

5.2.1 Strategic and Corporate Goals

Infrastructure levels of service can be influenced by strategic and corporate goals. Strategic plans provide direction to an organization, and helps determine how to allocate resources, ensuring alignment to the strategic priorities and objectives. It identifies priorities and guides municipal tax expenditures into the future. A community's vision is dependent upon infrastructure, and the assets will ultimately affect the levels of service provided or those levels that it aspires to deliver.

5.2.2 Legislative and Regulatory Requirements

Infrastructure levels of service are directly influenced by many legislative and regulatory requirements. For instance, the Safe Drinking Water Act, the Minimum Maintenance Standards for municipal highways, Ontario Building Code, and the Accessibility for Ontarians with Disabilities Act are all legislative requirements that dictate minimum service levels.

5.2.3 Expected Asset Performance

Levels of service can be affected by current asset condition, and performance and limitations regarding safety, capacity, and the ability to meet regulatory and environmental requirements. In addition, the design life of the asset, the maintenance items required, the rehabilitation or replacement schedule of the asset, and the total costs, are all critical factors that will affect the level of service that can be provided.

5.2.4 Community Expectations

Levels of services are directly related to the general public's expectations. For example, the public will have a qualitative opinion on what an acceptable road looks like, and a quantitative one on how long it should take to travel between two locations. Infrastructure costs are projected to increase dramatically in the future, therefore it is essential that the public is not only consulted, but also be educated, and ultimately make choices with respect to the service levels that they wish to pay for.

5.2.5 Available Finances

Financial capacity will ultimately control all aspects of desired service levels. Ideally, funds must be sufficient to achieve corporate goals, meet legislative requirements, address the asset's life cycle needs, and meet community expectations. Levels of service will be dictated by availability of funds or elected officials' ability to increase funds, or the community's willingness to pay.

5.3 Key Performance Indicators

Performance measures or key performance indicators (KPI) that track levels of service should be specific, measurable, achievable, relevant, and time bound (SMART). Many good performance measures can be established and tracked through software products. In this way, through automation, results can be reviewed on an annual basis and adjustments can be made to the overall asset management plan, including the desired level of service targets.

In establishing measures, a good rule of thumb to remember is that maintenance activities ensure the performance of an asset and prevent premature aging, whereas rehab activities extend the life of an asset. Replacement activities, by definition, renew the life of an asset. In addition, these activities are constrained by resource availability (in particular, finances) and strategic plan objectives. Therefore, performance measures should not just be established for operating and maintenance activities, but also for the strategic, financial, and tactical levels of the asset management program. This will assist all levels of program delivery to review their performance as part of the overall level of service provided.

This is a very similar approach to the "balanced score card" methodology, in which financial and nonfinancial measures are established and reviewed to determine whether current performance meets expectations. The "balanced score card", by design, links day to day operations activities to tactical and strategic priorities in order to achieve an overall goal, or in this case, a desired level of service.

Level of Indicator Municipal Structure

Strategic	Council & City Manager
Tactical	Department Directors and Managers
Operational	Departmental Divisions

As a note, a caution should be raised over developing too many performance indicators that may result in data overload and lack of clarity. It is better to develop a select few that focus in on the targets of the asset management plan.

Outlined below for each infrastructure class is a suggested service description, suggested service scope, and suggested performance indicators. These should be reviewed and updated in each update of the Asset Management Plan.

Core Values

Accessibility – Services are available and accessible for customers who require them.

Reliability – Services are provided with minimal service disruption and are available to customers in line with needs and expectations.

Safety – Services are delivered such that they minimize health, safety and security risks.

Regulatory – Services meet regulatory requirements of all levels of government.

Affordability – Services are suitable for the intended function (fit for purpose).

Sustainability – Services are designed to be used efficiently and long-term plans are in place to ensure that they are available to all customers into the future.

5.3.1 Water Service Delivery

- To provide clean and safe drinking water through a distribution network of water mains and pumps.

5.3.2 Sanitary Service Delivery

- To provide removal of waste water through a collection network of sanitary sewer mains.

5.3.3 Stormwater Service Delivery

- To provide removal of storm water through a collection network of storm sewer mains and catch basins.

5.3.4 Transportation Service Delivery

- To provide the ability of movement of people and goods.
- To provide access to residential, commercial, and industrial properties and other community amenities.
- To provide and encourage recreational use, such as walking, cycling, or special events such as parades.

5.3.5 Solid Waste Service Delivery

- To provide of clean, safe, economic and efficient disposal and/or recycling of waste.

5.3.6 Facilities and Recreational Service Delivery

- To provide adequate quality, functional and safe recreational areas, facilities.

5.3.7 Municipal Fleet

- To provide economic and efficient services to assist with the delivery of other services as noted above.

5.3.8 Performance Indicators

Strategic Indicators	▪ Percentage of total reinvestment compared to asset replacement value ▪ Completion of strategic plan objectives

Financial Indicators	▪ Annual revenues compared to annual expenditures ▪ Annual replacement value depreciation compared to annual expenditures ▪ Total cost of borrowing compared to total cost of service or reserve levels ▪ Revenue required to maintain annual network growth
Tactical Indicators	▪ Percentage of network in need of rehabilitated / reconstructed ▪ Value of rehabilitated or reconstructed projects ▪ Overall condition index as a percentage of desired condition index ▪ Annual adjustment in condition indexes ▪ Annual percentage of network growth ▪ Percentage of assets where the condition is rated poor or critical ▪ Percentage of network replacement value spent on operations and maintenance
Operational Indicators	▪ Percentage of network inspected within last year ▪ Operating and maintenance costs for various assets as needed ▪ Number of notices and advisories issued ▪ Number of customer requests received annually ▪ Percentage of customer requests responded to within 24 hours

5.3.9 Legislative Performance Measures Analysis

Service	Description	Performance Measures (by O.Reg 588/17)	2022	2023	2024
Water	The City's drinking water system provides all of its drinking water to the communities of North Cobalt, Haileybury, New Liskeard and Dymond and also can provide fire protection within these communities. See appendix B for the City's water distribution map.	Percentage of properties connected to the municipal water system.	**67.0%**	**67.0%**	**67.0%**
		Percentage of properties where fire flow is available.	**50.1%**	**50.1%**	**50.1%**
	A boil water advisory is a public health advisory issued by governmental or other health authorities to consumers when a community's drinking water is or could be contaminated by pathogens. Advisories are typically lifted within 24 to 48 hours, once the laboratory results have confirmed that the water is free from contamination and safe to drink. Note that regulations and standards are subject to change, impacting procedures and reporting.	The number of connection-days per year where a boil water advisory notice is in place compared to the total number of properties connected to the municipal water system.	**17 / 3,850**	**20 / 3,850**	**25 / 3,850**
		The number of connection-days per year due to water main breaks/repairs compared to the total number of properties connected to the municipal water system.	**109 / 3,850**	**93 / 3,850**	**97 / 3,850**

Service	Description	Performance Measures (by O.Reg 588/17)	2022	2023	2024
Sanitary	The City's sanitary system provides the collection and disposal of wastewater to the communities of North Cobalt, Haileybury, New Liskeard and Dymond. See appendix B for the City's wastewater collection system map.	Percentage of properties connected to the municipal wastewater system.	**66.9%**	**66.9%**	**66.9%**
	A combined sewer system collects rainwater runoff, domestic sewage and industrial wastewater into one pipe. The City **does not** have this type of system within it's sanitary and storm network.	The number of events per year where combined sewer flow in the municipal wastewater system exceeds system capacity compared to the total number of properties connected to the municipal wastewater system.	-	-	-
	Sewer overflows can occur in almost every sanitary system even though systems are intended to collect and contain all the sewage that flows into them. The main cause for overflows occur when too much rainfall or snowmelt infiltrates the sanitary system or by blockages. Some excess water can also inflow through roof drains connected to sewers and broken or badly connected service lines and mains. This excess in flow can surpasse the systems capacity resulting in overflows. Large objects can also infiltrate the system causing blockages resulting in overflows.	The number of connection-days per year due to wastewater backups compared to the total number of properties connected to the municipal wastewater system. (Sewer Mains only)	**3 / 3,850**	**1 / 3,850**	**2 / 3,850**
	The City currently has some controled preventative measures to avoid and minimize the risk of overflows within the sanitary system. This has been achieved by the implementation of a proper operation inspection and maintenance program, upsizing the pipe diameter or treatment plant if needed when a reconstruction occurs and by emergency bypassing at lift stations and treatment plants to surrounding rivers and lakes. Emergency bypassing/overflow is an event where raw sewage can bypass all treatment processes with the exception of partial disinfection before being discharged to the environment. This method can prevent damages to treatment plants and to the collection system. However, this method should and is only considered as a last measure of protection.	The number of effluent violations per year due to wastewater discharge compared to the total number of properties connected to the municipal wastewater system.	**1 / 3,850**	**13 / 3,850**	**10 / 3,850**

Service	Description	Performance Measures (by O.Reg 588/17)	2022	2023	2024
Stormwater	The City's storm management system provides the collection and disposal of surface water to the communities of North Cobalt, Haileybury, New Liskeard and Dymond. See appendix B for the City's storm collection system map. (Note as per designed capacity).	Percentage of properties in municipality resilient to a 100-year storm.	**95 % (Pending study for confirmation)**		
		Percentage of the municipal stormwater management system resilient to a 5-year storm.	**100 % (Pending study for confirmation)**		

Service	Description	Performance Measures (by O.Reg 588/17)	2022	2023	2024
Roads	The City's road network provides the means of transportation to the communities of North Cobalt, Haileybury, New Liskeard and Dymond. See appendix B for the City's road network and classes.	Number of lane-kilometres of each of arterial roads, collector roads and local roads as a proportion of square kilometres of land area of the municipality.	**Arterial = 62.6 Lkm** **Collector = 71.2 Lkm Total Land = 178.1 km²** **Local = 282.9 Lkm**		
	Refer to section 4.5.3 for condition rating Refer to section 6.3.3 for condition analysis strategies	For paved roads in the municipality, the average pavement condition index value.	**62**	**60**	**60**
		For unpaved roads in the municipality, the average surface condition (e.g. excellent, good, fair or poor).	**Good**	**Good**	**Good**

Service	Description	Performance Measures (by O.Reg 588/17)	2022	2023	2024
Bridges	The City has many different types of bridges that support many traffic types. The majority of the City's bridges can support heavy transport vehicles, motor vehicles, pedestrians and cyclists.	Percentage of bridges in the municipality with loading or dimensional restrictions.	**10%**	**10%**	**10%**
	Refer to section 4.5.3 for condition rating Refer to section 6.3.3 for condition analysis strategies	For bridges in the municipality, the average bridge condition index value.	**71.7**	**70.3**	**69.4**
		For structural culverts in the municipality, the average bridge condition index value.	**59**	**58.2**	**55.1**

5.3.10 Corporate Performance Measures Analysis

Service	Description	Performance Measures	Current (2024 Avg)
Solid Waste	The City is responsible for domestic waste collection and delivery to local facilities for further processing and disposal. Waste is collected bi-weekly as per the schedule.	Number of major late/missed pickup events per day-year	0
	To maximize recyclable materials and move to reduced or zero waste	Average annual waste collected (weighted as of 2024)	33,432 cu yd
Corporate Facilities	The City has many different types of buildings and facilities that provide essential and community services.	Number of unplanned facility shut downs per year	1 / 67
		Meet maintenance and cleaning planning schedules	100%
		Total facility energy consumption per year (including environmental facilities)	15,885 GJ
Recreation & Culture	The City has many different types of green spaces, parks, and recreation structures available to the community.	Frequency of maintenance and inspection effectiveness as per service level standards	95%
Corporate Fleet	The City's fleet provides essential services to the community. Maximizing equipment capital and maintenance investment is key.	Desired maximum annual average out of service days per unit.	14
		Asset replacement targets set by useful life expectancy	65%
Machinery & Equipment	The City's machinery and equipment provides essential services to the community. Maximizing equipment capital and maintenance investment is key.	Asset replacement targets set by useful life expectancy	90%

5.4 Data Collection

To appropriately record, track and monitor Levels of Service, the City will continue with or initiate programmes to collect the following types of information in addition to using discrete asset identifiers:

5.4.1 Water Services

1. Date of break or water quality incident
2. Location of break or water quality incident
3. Cause of break or water quality incident
4. Estimated water loss
5. Pipe characteristics (diameter, material, installation year)
6. Time taken to respond to the incident
7. Time taken to return water mains back to service

5.4.2 Sanitary Services

1. Date of blockage
2. Location of blockage
3. Cause of blockage
4. Pipe characteristics (diameter, material, installation year)
5. Time taken to respond to the incident
6. Time taken to return sewer back to service
7. CCTV inspection or pipe condition rating

5.4.3 Stormwater Services

1. Date of blockage or "*flooding on road"* incident
2. Location of blockage / flood (road and location on road)
3. Rainfall depth for discrete events
4. Time taken to respond to the incident
5. Time taken to return road back to service
6. Pipe characteristics (diameter, material, installation year)
7. CCTV inspection or pipe condition rating

5.4.4 Road Network

1. Road name inclusive of location (from/to)

2. Physical road characteristics (surface material, installation year)
3. Provincial road classification
4. Maintenance performed on the road (task and the date most recently resurfaced)
5. Pavement condition survey resulting in a Pavement Condition Index (PCI)
6. Average Annual Daily Traffic (AADT) if measured or reported
7. Annual operating costs for hard surface roads

5.4.5 Bridges

1. Bridge name, location & provincial bridge file number
2. Bridge characteristics (construction type, material, installation year)
3. Maintenance conducted on bridge (task and the date most recently repaired)
4. Bridge Condition Index (BCI) as per OSIM inspection
5. Average Annual Daily Traffic (AADT) report as per OSIM inspection
6. Detour route based on OSIM inspection
7. Bi-annual appraisal reports

5.4.6 Buildings and Facilities

1. Building name, location and intended use.
2. Building characteristics (construction type, material, contents and age)
3. Maintenance conducted on buildings (task and the date most recently repaired)
4. Annual operating costs
5. Structural condition inspection and reports

5.4.7 Street & Traffic Control Lighting

1. Pole location (GPS co-ordinates and number)
2. Pole material /condition
3. Luminaire characteristics (arm length, bulb type and wattage, installation year)
4. Luminaire condition
5. Maintenance conducted on light (task and the date most recently repaired)
6. Annual operating costs for lighting (Hydro consumption)

5.4.8 Other Asset Groups

6. Location and number

7. Characteristics (type, material and approximate age)
8. Maintenance conducted on asset (task and the date most recently repaired)
9. Annual operating costs if required
10. Condition inspection and reports if conducted

Proposed Levels of Service

6.1 Introduction

Asset management planning sets short and long-term strategic goals of its assets and infrastructure networks. Proposed levels of service will examine how the City can best serve the public in the future. In order to achieve the overall goals established by the municipality, the asset management plan needs to integrate the current and past assessments and future financial, operational and capital plans.

The City's goal is to move away from reactive to proactive planning-based strategies. It's important to assess all levels of maturity when considering planned maintenance or repair. Assuring public buy-in will also be considered to assure needed change for long-term strategies. Forecasted or proposed levels of service come with several uncertainties that can impact the timing and cost of planned work. Inconsistencies in external funding also poses challenges when considering major repair or replacement of assets. The challenges that arise from uncertainties will need to be balanced between cost and risk trade-offs to avoid a drastic decrease in levels of service. Refer to Section 8 "Financial Strategy" for further information on how the following proposed levels of service will be funded and supported.

6.1.1 Unpredictability

The following provides examples on the considerations that municipal staff and council will consider when determining the overall proposed levels of service. Note that section 7.4 explains the City's approach on individual asset risk assessment.

Economics & Climate Change:

Uncertainty in weather patterns continues to introduce new challenges when considering asset improvements. Capacity performance in stormwater and transportation networks during significant weather events draws resources at a higher rate than anticipated. Therefore, emergency relief funds and preparedness plans must be introduced in the planning process to insure adequate levels of services during these events. These events can also introduce abnormal asset performance in short or long-term form. Economics and demographics surrounding global and local conditions such as aging population, health pandemic or financial recession may also impose signification strain on the City's capacity to operate at full capacity as planned.

Legislation and Regulations:

Although new or updated legislation from all levels of government is usually communicated in advance, it important to note that significate changes to forecasted strategies may need to be reconsidered because of new changes in legislations.

Aging Assets:

Aging assets in core infrastructure is one of the biggest challenges that municipalities face. Lifecycle activity investments, supporting new technologies and innovations to develop higher efficiency and cost reductions continue to be the City's higher considerations.

Human Resources:

Staff capacity to meet service expectations set by these levels of service also play a vital role in the organization. Overworked or understaffed conditions can have profound consequence on the delivery of services. This may delay planned and unplanned work. A reduction or cut in services may also take place to deploy staff time to more critical services. The City will insure that staff time and work load is always at reasonable levels dependent on current status.

Proposed Levels of Service Trade-offs:

These considerations form the fundamental discussions that will need to occur while establishing proposed levels of service. Table 6-1 provides several examples of concepts for these discussions related to potential trade-offs.

Table 6-1: Service Trade-off Options

Proposed Change	Example	Cost	Risk	Impact
Decrease level of service	Lower average condition index for roads	Short term cost savings May increase overall lifecycle cost	Public Safety	↓
			Service to the Customer	↓
			Organizational Reputation	↓
Change level of service metric	Use % (Poorer constant)	May decrease	Organizational Reputation	↑
Adding enhancements or new levels of service	Dedicated bicycle pathways	Increase to construction costs or operating costs	Public Safety	↑
			Service to the Customer	↑
			Organizational Reputation	↑

Long term forecasting must also consider the performance indicators and measures as mentioned in section 5.3.8 & 9.

6.1.2 Proposed Level of Service Framework

The proposed levels of service may differ from the current levels of service. The following tables outline the City's forecasted levels of service and framework. The overall technical assessment is subject to unplanned cost and risk events that may not always represent the level of service provided to the public. Refer to section 8 for further information on funding strategies. ***The forecasted trend will demonstrate the results for the next 10 years if the current methods and strategies stay the same as of 2025.***

Community Expectations:

The community expectations will be classified into two categories (Reliable & Safe and Affordable). Reliability and Safety identifies the asset's fiscal performance, therefore is it delivering its services as designed and attended. Affordability identifies the capacity or health of the financial support that each asset will require to deliver its services as attended.

Current Performance Status:

The current performance defines the condition (health) of the overall assets by category in its current state (2025). The community expectations can be measured by the (Needs Improvements, Meets Expectations, Exceeds Expectations) status. "Needs Improvements" means that some or most areas need significant improvement. "Meets Expectations" means that some or most areas are adequate and occasionally needs improvements or exceeds expectations. "Exceeds Expectations" means that some or most areas perform very well.

Proposed Performance Status:

The proposed performance defines the forecasted condition (health) of the overall assets by category until 2035. The community expectations can be measured by the (Expected to Decline, Expected to say the Same, Expected to Improve) status. The proposed community expectations will be a result of how the City staff and public perceives the outcome of the challenges on obtaining the require funding and results of each asset over time.

6.1.3 Proposed Level of Service Status

The City's drinking water system is heavily dependent on the following to forecast the outcome of its service to the public:

- **A drinking-water works permit (DWWP):** A permit to establish or alter a drinking-water system requirements as outlined in the Safe Drinking Water Act.
- **An accepted operational plan:** The Drinking-Water Quality Management Standard (DWQMS) will be the standard upon which operational plans will be based. The plan will document an operating authority's quality management system (QMS).

- **An accredited operating authority**: A third-party audit of an operating authority's QMS will be the basis for accreditation.
- **A Financial Plan:** This must be prepared in accordance with the prescribed requirements in the Financial Plans Regulation, including an indication that the drinking water system is viable.
- **A permit to take water (PTTW):** Requirements as outlined in the Ontario Water Resources Act.

The considerations to achieve long-term sustainability will include a change in the service level metrics. The public works department environmental division that's responsible for the municipality's water distribution and treatment system will implement a phase in approach for addressing the long-term affordability concerns and consequences. Information can be found in the City's developed 2021-2030 plan "Water & Wastewater System Financial Plan" and "Ontario Clean Water Agency Temiskaming Shores Operation Plans".

Service	Community Expectations	Current Performance	Forecasted Performance	Trend
Water	Reliable & Safe	Meets Expectations	Expected to stay the Same	⇔
	Affordable	Needs Improvements	Expected to Decline	⇓
			Achievable Long-term Sustainability	NO

The City's sanitary system is heavily dependent on the following to forecast the outcome of its service to the public:

- **Environmental Compliance Approval (ECA):** A permit to establish, dispose or alter a wastewater treatment plants.
- **Environmental Protection Act (EPA):** Requirements as per environmental risks.
- **An accepted operational plan:** The plan will document an operating authority's quality management system (QMS).
- **An accredited operating authority**: A third-party audit of an operating authority's QMS will be the basis for accreditation.
- **A Financial Plan:** This must be prepared in accordance with the prescribed requirements in the Financial Plans Regulation, including an indication that the sanitary system is viable.
- **Effluent Monitoring:** Requirements as outlined in the Ontario Water Resources Act.

The considerations to achieve long-term sustainability will include a change in the service level metrics. The public works department environmental programs responsible for the municipality's sanitary (wastewater) collection and treatment system. This area will implement a phased in approach for addressing the long-term affordability concerns and consequences. Information can be found in the City's developed 2021-2030 plan "Water & Wastewater System Financial Plan" and "Ontario Clean Water Agency Temiskaming Shores Operation Plans".

Service	Community Expectations	Current Performance	Forecasted Performance	Trend
Sanitary	Reliable & Safe	Meets Expectations	Expected to stay the Same	⟺
	Affordable	Meets Expectations	Expected to stay the Same	⟺
			Achievable Long-term Sustainability	YES

The City's stormwater system is heavily dependent on the following to forecast the outcome of its service to the public:

- **Water Discharge:** Location of water discharge from networks.
- **An accepted operational plan:** The plan will document a strategy to mitigate the impacts of flooding and exposure of risk.
- **A Financial Plan:** This must be prepared in accordance with the prescribed requirements in the Financial Plans Regulation, including an indication that the stormwater system is viable.

The considerations to achieve long-term sustainability will include a change in the service level metrics. The public works department transportation division that's responsible for the municipality's stormwater collection system will implement a phase in approach for addressing the long-term asset condition and affordability concerns and consequences. A stormwater management plan will be developed to address these concerns.

Service	Community Expectations	Current Performance	Forecasted Performance	Trend
Stormwater	Reliable & Safe	Needs Improvements	Expected to Decline	↓
	Affordable	Needs Improvements	Expected to Decline	↓
			Achievable Long-term Sustainability	NO

The City's transportation network is heavily dependent on the following to forecast the outcome of its service to the public:

- **Minimum Maintenance Standards (MMS):** Road maintenance requirements as outlined in the regulation.
- **An accepted operational plan:** The plan will document a strategy to ensure MMS are met or exceeded.
- **A Financial Plan:** This must be prepared in accordance with the prescribed requirements in the Financial Plans Regulation, including an indication that the transportation network is viable.

The considerations to achieve long-term sustainability will include a change in the service level metrics and possible enhancements to existing assets. The public works department transportation division that's responsible for the municipality's road network will implement a phase in approach for addressing the long-term affordability concerns and consequences. A transportation master plan will be developed to address these concerns. The annual winter operation plans will only be considered.

Service	Community Expectations	Current Performance	Forecasted Performance	Trend
Transportation	Reliable & Safe	Meets Expectations	Expected to Improve	
	Affordable	Meets Expectations	Expected to stay the Same	
			Achievable Long-term Sustainability	YES

The City's solid waste is heavily dependent on the following to forecast the outcome of its service to the public:

- **Environmental Compliance Approval (ECA):** A permit to establish, dispose or alter a landfill sites.
- **Environmental Protection Act (EPA):** Requirements as per environmental risks.
- **An accepted operational plan:** The plan will document a waste disposal management program.
- **A Financial Plan:** This must be prepared in accordance with the prescribed requirements in the Financial Plans Regulation, including an indication that the solid waste services are viable.
- **Leachate Monitoring:** Requirements as outlined in the Ontario Water Resources Act in conjunction with the Contaminant Attenuation Zones (CAZ).

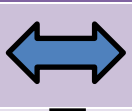
The considerations to achieve long-term sustainability will include a change in the service level metrics and possible enhancements to existing services. The public works department environmental program that's responsible for the municipality's solid waste services will implement operational programs to address long-term sustainability.

Service	Community Expectations	Current Performance	Forecasted Performance	Trend
Solid Waste	Reliable & Safe	Meets Expectations	Expected to Improve	
	Affordable	Meets Expectations	Expected to stay the Same	
			Achievable Long-term Sustainability	YES

The City's corporate facilities is heavily dependent on the following to forecast the outcome of its service to the public:

- **Accessibility for Ontarians with Disabilities Act (AODA):** Standards to eliminate barriers for people with disabilities.
- **Building Code:** Requirements on construction and maintenance standards.
- **Environmental Impact Assessment:** Net-zero energy readiness standards.
- **An accepted operational plan:** The plan will document a maintenance management program.
- **A Financial Plan:** This must be prepared in accordance with the prescribed requirements in the Financial Plans Regulation, including an indication that the building and facility services are viable.

Considerations to achieve long-term sustainability will include a possible change in all three levels of proposed change. The recreation department that's responsible for the municipality's corporate facilities operations in conjunction with corporate services will implement a phased in approach for addressing long-term affordability concerns and consequences. A Municipal Energy & Greenhouse Gas Reduction plan and Age Friendly Community plan have been developed to address these concerns. The development of a building and facility capital plan will also be considered for development. Note that some recreation facility assessment will be included in the "Temiskaming Shores Recreation Master Plan".

Service	Community Expectations	Current Performance	Forecasted Performance	Trend
Corporate Facilities	Reliable & Safe	Meets Expectations	Expected to stay the Same	
	Affordable	Needs Improvements	Expected to Decline	
			Achievable Long-term Sustainability	YES

The City's recreation & culture department is heavily dependent on the following to forecast the outcome of its service to the public:

- **Accessibility for Ontarians with Disabilities Act (AODA):** Standards to eliminate barriers for people with disabilities.
- **Environmental Impact Assessment:** Natural impacts such as soil erosion, damage to vegetation, noise disturbance.
- **An accepted operational plan:** The plan will document a maintenance management program.
- **A Financial Plan:** This must be prepared in accordance with the prescribed requirements in the Financial Plans Regulation, including an indication that the recreation & culture services are viable.

The considerations to achieve long-term sustainability will include a possible change in all three levels of proposed change. The recreation department that's responsible for the municipality's recreation & culture will implement a phase in approach for addressing the long-term affordability concerns and consequences. A Recreation Master plan has been developed to address these concerns in the "Temiskaming Shores Recreation Master Plan" and "Temiskaming Shores Active Transportation Plan.

Service	Community Expectations	Current Performance	Forecasted Performance	Trend
Recreation & Culture	Reliable & Safe	Meets Expectations	Expected to stay the Same	⟷
	Affordable	Meets Expectations	Expected to stay the Same	⟷
			Achievable Long-term Sustainability	YES

The City's corporate fleet is heavily dependent on the following to forecast the outcome of its service to the public:

- **Highway Traffic Act:** Regulation under this act.
- **Environmental Impact Assessment:** Natural impacts such as soil erosion, damage to vegetation, noise disturbance.
- **An accepted operational plan:** The plan will document a maintenance management program.
- **A Financial Plan:** This must be prepared in accordance with the prescribed requirements in the Financial Plans Regulation, including an indication that the fleet operations are viable.

The considerations to achieve long-term sustainability will include a change in the service level metrics and possible enhancements to existing assets. The public works department transportation division that's responsible for the municipality's corporate fleet will implement a phase in approach for addressing the long-term affordability concerns and consequences. This service will also be included in the transportation master plan that will be developed to address these concerns. The annual winter operation plans will only be considered.

Service	Community Expectations	Current Performance	Forecasted Performance	Trend
Corporate Fleet	Reliable & Safe	Meets Expectations	Expected to Improve	↑
	Affordable	Meets Expectations	Expected to stay the Same	⟷
			Achievable Long-term Sustainability	YES

The City's machinery & equipment is heavily dependent on the following to forecast the outcome of its service to the public:

- **An accepted operational plan:** The plan will document a maintenance management program.
- **A Financial Plan:** This must be prepared in accordance with the prescribed requirements in the Financial Plans Regulation, including an indication that the city's machinery and equipment are viable.

The considerations around long-term sustainability for machinery and equipment will heavily depend on the asset itself. All departments will have some form of responsibly towards addressing the long-term affordability concerns and consequences. No plan will be considered for development as it maybe addressed in other plans as mentioned above.

Service	Community Expectations	Current Performance	Forecasted Performance	Trend
Corporate Fleet	Reliable & Safe	Meets Expectations	Expected to stay the Same	⟺
	Affordable	Meets Expectations	Expected to stay the Same	⟺
			Achievable Long-term Sustainability	YES

Conclusion:

The City will aim to involve the community in discussions and the achieve the final result. A 2024 community strategic plan has been developed to engagement the public that will ensure that future iterations of the AMP reflects the value and priorities of the community, while also balancing affordability considerations.

7.0
ASSET MANAGEMENT STRATEGY

Asset Management Strategy

7.1 Introduction

7.1.1 Approach

An Asset Management Strategy can be broken down into six types of planned actions:

Non-infrastructure solutions

- Actions or policies that impact the total lifecycle cost or lifespan of individual assets or asset networks.

Operations & maintenance activities

- Standard Operating Procedures and regularly scheduled inspections and maintenance.

Renewal / rehabilitation activities

- Significant repairs that improve assets' condition and extend the useful lifespan.

Replacement activities

- Activities at the end of assets' useful lifespan. Assets can be replaced with similar infrastructure, alternative infrastructure or non-infrastructure solutions to meet or adjust the service needs.

Disposal activities

- Activities related with the removal and safe disposal of assets upon completion of the service life, the replacement, or when otherwise no longer needed by the City.

Expansion activities

- Activities required to extend service, meet growth demands, or increase the levels of service provided.

In addition to the planned actions, the Asset Management Strategy addresses the procurement methods, and provides an overview of risks associated with the Strategy.

7.1.2 Asset Replacement Strategy Overview

The Asset Management Strategy considers the estimated unit replacement cost to forecast the capital investment required on five-year intervals in the 10 year time horizon between 2025 and 2035. Replacement costs were calculated using 2024 dollars with an inflation rate of 2 percent. Where the

per unit replacement cost estimate was less than the replacement cost cited in the Public Sector Accounting Board (PSAB) 3150 registry, the greater value was used.

For the initial 10 year period, infrastructure replacement has been optimized between the road network, water system, sanitary sewer system, and storm water system. Since the road network requires the most frequent capital interventions, it was used as the basis for driving the strategy. If the buried infrastructure was within 10 years of its estimated Service Life when the road was scheduled to be rehabilitated or replaced, the capital replacement of the buried asset would be accelerated to correspond with the road intervention. The objective of this coordination of effort is to minimize disruptions to the public, while reducing overall costs by bundling activities.

To forecast the cost for replacing assets, a variety of assumptions were made as outlined in the following sections. The estimated unit costs were compared with recent, local construction costs and compared with the replacement cost estimates recorded in the City's PSAB registry and surrounding municipalities. The larger total replacement cost has been applied. This decision was made assuming that a higher value would provide a greater tolerance for errors in the estimates. Moving forward, the City will track infrastructure investments to improve the accuracy and reliability of unit replacement cost estimates as well as enable the inclusion of unpredictable cost allocations such as non-capital (operations and maintenance) expenditures in the Plan.

The replacement value of municipal assets will be divided into two categories.

- Hard Costs are the tangible expenses directly related to the physical construction like materials and labor as described in the following tables.
- Soft Costs are indirect or contractual miscellaneous costs related to the replacement of materials such as (mobilization, engineering design and oversite, traffic control, temporary services and testing). These costs can be more difficult to estimate and can vary significantly depending on the project scope and complexity. The soft costs can amount to ten percent **(10%)** based on past municipal projects. While these costs can be substantial and influence overall project feasibility, they have been excluded for consistency and comparability across asset classes. As such, future financial planning may require adjustments to account for these additional costs where applicable.

7.1.2.1 Water

The following assumptions were made in estimating the per unit replacement cost (2024):

- The replacement cost estimate includes:
  - ✓ Excavation, supply and installation of pipe as per Table 7-1. Includes Earth excavation, Granular, Pipe and Removals
  - ✓ Supply and installation of Hydrants and Valves
  - ✓ Excavation, supply and installation of water services as per Table 7-1 to property line (Length of existing lines are known).

- Water main average depth of 2.5 to 3.0 m.

Table 7-1 below shows the cost to replace each asset category in the City of Temiskaming Shores.

Table 7-1: Replacement Cost for Water Infrastructure

Asset Component	Unit Cost
Water Mains under 100mm	$ 660 /m
Water Mains 100mm	$ 910 /m
Water Mains 150mm	$ 1,030 /m
Water Mains 200mm	$ 1,070 /m
Water Mains 250mm	$ 1,130 /m
Water Mains 300mm	$ 1,216 /m
Water Mains 450mm	$ 1,456 /m
Main & Service Water Valves	$ 100 - $6,000 each
Hydrants	$ 8,000 each
Specialized Valves	CPI
Water Facilities	CPI

*Note – Water main Pipe diameter that are less than 150 mm will be replaced with 150 mm water mains. CPI (refer to the construction price index)

7.1.2.2 Sanitary

The following assumptions were made in estimating the per unit replacement cost (2024):

- The replacement cost estimate includes:
  - ✓ Excavation, supply and installation of pipe as per Table 7-2. Includes Earth excavation, Granular, Pipe and Removals
  - ✓ Supply and installation of maintenance hole structures.
  - ✓ Excavation, supply and installation of 125mm sanitary sewer services to property line (15 m or 50 foot lot frontage is assumed as an overall City average).
- Sanitary main average depth of 2.8 to 3.0 m.

Table 7-2 below shows the cost to replace each asset category in the City of Temiskaming Shores.

Table 7-2: Replacement Cost Sanitary Infrastructure

Asset Component	Unit Cost
Sanitary Mains under 200mm	$ 660 /m
Sanitary Mains 200mm	$ 960 /m
Sanitary Mains 250mm	$ 990 /m
Sanitary Mains 300mm	$ 1,010 /m

Sanitary Mains 375mm	$ 1,030 /m
Sanitary Mains 450mm	$ 1,060 /m
Sanitary Mains 525mm	$ 1,160 /m
Manholes (depth)	$ 3,800 /m
Specialized Valves	CPI
Wastewater Facilities	CPI

*Note – Sanitary main Pipe diameters less than 200 mm will be replaced with 200 mm sanitary sewer mains. CPI (refer to the construction price index)

7.1.2.3 Stormwater

The following assumptions were made in estimating the per unit replacement cost (2024):

- The replacement cost estimate includes:
  - ✓ Excavation, supply and installation of pipe as per Table 7-3. Includes Earth excavation, Granular, Pipe and Removals
  - ✓ Supply and installation of maintenance hole structures and catch basins.
- Stormwater main depth of 2.5 to 3.5 m.

Table 7-3 below shows the cost to replace each asset category in the City of Temiskaming Shores.

Table 7-3: Replacement Cost Stormwater Infrastructure

Asset Component	Unit Cost
Storm Mains under 300mm	$ 660 /m
Storm Mains 300mm	$ 960 /m
Storm Mains 350mm	$ 990 /m
Storm Mains 450mm	$ 1,020 /m
Storm Mains 600mm	$ 1,150 /m
Storm Mains 750mm	$ 1,160 /m
Storm Mains 800mm	$ 1,234 /m
Storm Mains 900mm	$ 1,234 /m
Storm Mains 1000mm and greater	$ 1,430 /m
Catch Basins (depth)	$ 3,200 /m

*Note – Pipe diameters less than 300 mm will be replaced with 300 mm stormwater mains.

7.1.2.4 Roads Network

The capital forecast for the Road Network assumed that the short-term needs (investments for the first 10 years) would follow the interventions identified in the review of the Roads Needs Study. The long-term forecast was developed utilizing the public sector accounting board (PSAB) records being integrated with the results from the Roads Needs Study. There is some degree of risk for duplication of

costs; however, this is considered a minor risk in that the accuracy of such a forecast typically decreases as the time horizon increases.

The following assumptions were made in estimating the per unit replacement cost for the long-term forecast (2024):

Asphalt Surface

- The replacement cost estimates assumes that all existing asphalt areas will be replaced with asphalt.
- Asphalt depth is assumed at 90 mm for Class 2 and 50mm for Class 3 to 6.
- Price is for removal, supply, haul, place and compaction of asphalt only.

Surface Treatment

- The replacement cost estimates assume that all existing surface treatment areas will be replaced with surface treatment.
- Surface treatment application is assumed to be double prime treatment at first application followed by a third application after year three if needed.
- Price is for removal, supply, haul, place and compaction of Class 2 aggregate and emulsion.

Gravel

- The replacement cost estimates assume that all existing gravel areas will be replaced with gravel.
- Granular application is assumed to be 75 mm in depth.
- Price does not include pulverizing or grading of existing surface.
- Price does not include re-grading of roadside ditches prior to placement of granular material.
- Price is for supply, haul, place and compaction of Granular “A” aggregate.

Sidewalks

- The replacement cost estimates assumes that all existing sidewalks will be replaced with the same surface material type.
- Price is for removal and place of sidewalk materials.

Bridges and Large Diameter Culverts

- The replacement cost estimates are based on the city’s initial construction cost with the addition of the inflation rates.

Table 7-4 below shows the cost to replace each asset category in the City of Temiskaming Shores.

Table 7-4: Replacement Cost Transportation Infrastructure

Asset Component	Unit Cost
Asphalt 90mm	$ 90.36 /m²
Asphalt 50mm	$ 52.54 /m²
Surface Treatment	$ 10 /m²
Gravel	$ 6.70 /m²
Sidewalk – (Concrete or Brick)	$ 220 /m²
Curb – (Concrete)	$ 220 /m
Bridges & Large Dia. Culverts	CPI
Streetlights	$ 2,500 – 9,950 each
Guard Rails	$ 20 – 30 /m
Street Signs	$ 15 – 60 each

*Note - CPI (refer to the construction price index)

7.1.2.5 Other Asset Groups

The following assumptions were made in estimating the per unit replacement cost:

- Assets under "Corporate Facilities" and some "Recreation and Culture" are based on the City's initial construction cost or the replacement insured value of the structure with the addition of the inflation rates and the approximate value of its contents.
- Assets under "Solid Waste", "Corporate Fleet", "Machinery and Equipment" and some "Recreation and Culture" are based on the initial purchase of each unit with the addition of the inflation rates or the approximate value of a new equivalent unit.

7.2 Non-Infrastructure Solution

7.2.1 New Data Collection Strategies

Data Collection Preparation

A meeting should be arranged shortly prior to, or as part of the new data collection project, in order to determine what information is to be updated or augmented, what information is currently available and what the condition is of that information. To facilitate this, an initial data review should be conducted of available data related to the collection exercise. Sources of information should include but not be limited to:

- Infrastructure master plans
- Water & sewer models
- Engineering as-built or record drawings
- Planning studies
- Paper maps
- AutoCAD drawings or GIS files/databases
- Inspection reports
- Imagery

These data-sources should be integrated into a single source appropriate for the data collection exercise. It is generally good practice to house this information in a database. If municipal staff or a third party are performing the data collection using a digital collector (GPS, tablet etc.), where possible, the database should be loaded onto this device so that updates can be made directly. The data schema and populated database should be reviewed prior to commencement of collection and be returned for review and quality assurance and control after collection. A data gap analysis will then be performed that will assess the level of effort required to complete the inventory and identify any assumptions to be made. It is important to note that the completeness and accuracy of the inventory is based on the available existing information, municipal staff knowledge and the visibility of above ground assets. If possible and acceptable, some data may be synthesized based on existing data, but must be flagged as such in the database. Only after all available data-sources have been exhausted should field collection be considered.

Field Data Collection

After all pertinent and available information has been compiled, verified and audited (with appropriate reporting), a field data collection task may be necessary to determine additional or still missing information. A meeting will be held to determine the level of detail required and final use of the information. This will include confirmation and sign-off of the proposed data-model, as well as a detailed list of assets to be collected and what information about those assets is to be collected

(overall schema). Sign-off will also be obtained if any special access is required on-site as well as any safety equipment and tools that are required.

The City will ensure that all data collection members are aware of their duties and responsibilities. It is vital that appropriately trained field staff be used, particularly if inspections requiring sign-off are required. Inspection forms will be pre-populated if possible. Each field crew member will be responsible for the entirety of their work. A small pilot area should be completed and submitted for comment if required.

Once all field data has been collected, it will be compiled within the agreed upon schema and quality assurance and control, standardization and normalization. Once this is complete, the database will be reviewed at a follow up meeting to discuss the results and further requirements.

7.2.2 Data Management Strategies

Information that is collected by the Municipality represents a significant investment of staff time and resources. Proper information and data management processes and procedures are vital to an organisation's ability actively and effectively make use of available resources to provide an appropriate level of service to their customers as well as prepare required reports for auditing and financial purposes such as the Public Sector Accounting Board (PSAB) 3150 reporting. It is therefore critical that this information be regularly maintained to ensure the integrity of the information and allow for improved decision making and management of the municipality's assets. The ability to rely on information is expected to become even more crucial as future provincial and federal funding programs become contingent on the accuracy of collected data.

While the City of Temiskaming Shores has a wealth of information available, the development of this Plan has highlighted the need for a more robust and streamlined data management strategy. At its core, a proper data management strategy can be broken down into four primary questions:

- What data should I be collecting and why?
- How should I store this information once collected?
- How often should I review my collected data and how should I maintain it?
- Are there any software / hardware applications available to me that will not only allow me to collect, store and maintain this information but also allow me to use this information to answer questions?

To effectively manage the infrastructure data, the Municipality will adopt a Data Management Policy in line with the following policy statement:

> *It should become the policy of the Municipality to manage their data effectively and efficiently. This should be done through the use of appropriate computerized applications and databases and the collection and storage only of information that has an immediate use and / or answers an immediate business need as required of the Municipality.*

This data will be maintained on a regular schedule for each individual dataset by general agreement or Government mandate.

Metadata defining what data has been collected is available and describing the data in terms of what it represents and how current it is will also be provided.

Once an appropriate data model has been determined and agreed upon, the City will create a schedule to determine who will be responsible for each primary data set, how often this information will be reviewed and how often new collections will be done. This information should be recorded as part of the asset information as metadata so that users know how current the information is.

It should be noted that some information may be acquired from other agency sources such as the Canadian GeoBase (http://geobase.ca). This is a free data source that includes the National Road Network which is maintained by the Federal and Provincial governments. Sources such as this may be used to reduce the time required to maintain key datasets.

7.2.3 Information Storage Strategy

How information is stored is as important if not more so than the information itself. The reason for this is that information storage often dictates not only how easily or quickly information may be accessed and used, but also how it is used in terms of formatting etc.

It is recommended that the City adopt a relational database model for the storage of collected information. Ideally, the City would be able to house all information within a single database structure. Practically though, certain key systems such as finance and taxation are required to be contained within their own systems. This does not preclude however the ability to link information between applications.

The primary advantages of storing information using a database model are that agreed upon data standards are enforced and the duplication of information is reduced or eliminated ensuring that municipal staff use the same information. Examples of this would include street name lists, address lists, assessment roll numbers, etc.

7.2.4 Software / Hardware Strategy

Software and hardware are often seen and promoted as “solutions.” However, they should really be viewed as tools to assist in providing core functions required by municipal staff.

Databases

As discussed above, database technology is strongly recommended to assist in the storage and retrieval of information. Common applications such as MS Excel can link to a database to retrieve information and provide statistical and empirical evidence and graphs. Databases also excel as interacting with each other such that information can be passed from one system to another relatively easily. Lastly, databases often act as what is termed a “back end” to front facing applications such as

finance and taxation systems, asset and customer management systems, maintenance management systems and geographic information systems (GIS).

As discussed above, it is recommended that the City consider a detailed review of enterprise database applications such as Microsoft SQL Server, Oracle, MySQL, PostgreSQL or similar products.

Asset Management

Asset management has become a major concern in recent years for several reasons. Municipalities are aware that much of their above and below ground infrastructure is in decline. Financial responsibilities have required municipalities to make due with less. Provincial and Federal funding is now being linked to a municipality's ability to show evidence of need (PSAB 3150 reporting).

Asset Management applications take the information that is collected and provided about an asset and assist with the decision making process to allow staff to determine what course of action to take regarding an asset and when.

Maintenance Management

A maintenance management system can assist with the tracking of work performed against specific assets. The detail to which activity is tracked may include costing, and time / resources required and when an activity is performed. This information may be aggregated at regular intervals to assist with establishing a base line for how well an asset is performing.

7.2.5 Neighbouring Municipalities

Municipalities working together can present significant opportunities and benefits. The City of Temiskaming Shores currently works with the surrounding Townships for the maintenance, operational and capital costs associated with boundary roads.

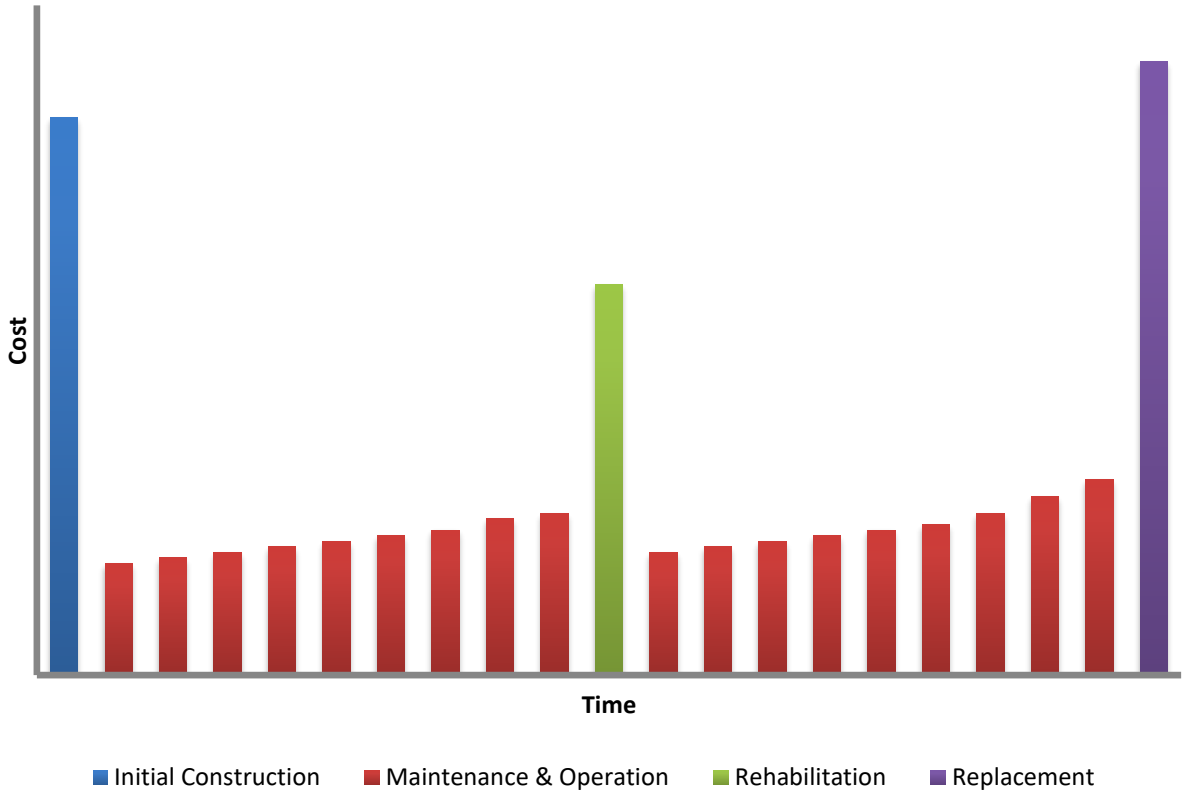
- Township of Hudson – 50% cost for Pipeline Road
- Township of Harley – 50% cost for Uno Park Road + 50% cost for 2 bridges
- Township of Harris – 50% cost for Sale Barn Road

7.3 Lifecycle Management

Lifecycle cost is the is the total cost of an asset throughout its life including planning, design, construction, operation, maintenance, renewal, replacement and disposal costs.

Figure 7.1, illustrates how costs typically accumulate over an asset's life.

Figure 7.1: Accumulation of Costs Over an Asset's life



7.3.1 Maintenance and Operation Activities

The City realizes the benefits of lower-cost treatment methods such as preventive maintenance and light rehabilitation activities. However, more costly treatments such as heavier rehabilitation and full reconstruction may become necessary.

Allowing the assets to deteriorate further, triggers the need for heavier rehabilitation strategies. Although heavy rehabilitation and full reconstruction is typically less cost-effective than maintenance and light rehabilitation in the short term, it's still preferable to apply this type of strategy to lower the maintenance cost in the long term.

The City of Temiskaming Shores currently has several infrastructure condition monitoring, assessment programs and maintenance programs in place, including:

Water System Maintenance and Programs

The entire water system is inspected on an annual basis. Each year, the pipes are flushed and inspected. Defects or underperformance of the system are recorded and coded to correspond with Safe Drinking Water Act standards. Once complete, this will form the benchmark for comparing asset condition.

Sanitary and Stormwater System Maintenance and Programs

The entire Sanitary and Storm Sewer systems are inspected under a seven year program. Each year, a selection of the pipes are flushed and inspected. Defects are recorded and coded to correspond with Pipeline Assessment Certification Program standards. Once complete, this will form the benchmark for comparing asset condition. Moving forward, it is recommended that consideration be given to prioritizing the inspection according to the expected deterioration of the system.

Transportation System Maintenance and Programs

The City abides by the Ministry's minimum maintenance standards, which specifies the frequency that roads and sidewalks need to be patrolled and how issues, including pothole, winter maintenance, etc., are addressed based on the road classification.

The Roads Needs Study is completed every 3 years utilizing internal and external resources. The last Roads Needs Study review was completed in 2023. The study reviews the road network, breaks down sections consistent in their characteristics, and records a variety of performance and condition details for each. This information is used to identify the capital and maintenance needs of the system, the timing for the interventions, and the road priority.

The Province of Ontario legislates that every bridge be inspected under the Ontario Structure Inspection Manual (OSIM) every 2 years. From this inspection, a Bridge Condition Index (BCI) is developed that helps to schedule bridge maintenance and upkeep. Safety concerns are to be addressed immediately. The last OSIM Inspection was carried out in 2024.

Building and Facility Maintenance and Programs

The City abides by all requirements under the Ontario Building Code, Canadian Safety authority standards and other standards or guidelines that may apply during inspections, construction and maintenance activities. All municipal buildings and facilities are inspected each year and repaired as needed. Building maintenance is performed in-house by the maintenance staff and completion of this work helps to identify and schedule future projects and form asset condition ratings for each structure.

Fleet Maintenance and Programs

Municipal fleet and equipment are inspected and maintained at regulars intervals to meet Ontario regulatory requirements. Fleet maintenance is performed in-house by the mechanic staff, however in certain cases can be outsourced if the repairs require specific technical expertise. Maintenance records will help to identify and schedule future replacement of units.

The costs associated with the operations and maintenance of these activities, have been included in the overall operational cost of each asset category.

7.3.2 Rehabilitation and Replacement Activities

As the City increases the availability of condition data, the Plan will be revised to reflect this information. By monitoring condition data over time, the City will improve their ability to forecast deterioration and identify trends.

Understanding that the information driving the replacement activities is based on asset age, where appropriate, the City will augment the Plan with asset inspections to determine if renewal / rehabilitation are possible prior to replacement of the assets.

Priority projects identified within the City's Renewal/Rehabilitation Activities are shown in following section.

7.3.3 Calculating Asset Condition

The condition calculation determines the overall condition of asset failure. The analytic can become a documented approach to determining capital priorities. A municipality could than compare priorities across asset types and categories. The City will be introducing some age based and/or assessment-based condition analytics, to supplement professional judgement.

Note: The Asset represented as follows are visual examples of condition rating and can be a misinterpretation of the current asset over the course of this document's development or revision process.

Table 7-5: Condition Ratings Option 1

Age Based Rating		
Condition	**Useful Life Remaining**	**Final Score**
Failed	0% - 19%	1
Poor	20% - 39%	2
Fair	40% - 59%	3
Good	60% - 79%	4
Excellent	80% - 100%	5

Condition Index Rating			
Condition	**Score Range**	**Final Score**	**Intervention Strategy (Roads)**
Failed	0 - 39	1	Reconstruction
Poor	40 - 57	2	Rehabilitation
Fair	58 - 74	3	Resurface
Good	75 - 85	4	Preventative Maintenance
Excellent	86 - 100	5	Corrective Maintenance

Examples:

Excellent to Good
(Golf Course Road Bridge)

Fair
(Armstrong Street Bridge)

Poor to Failure
(Firstbrooke Line Road Bridge)

Excellent to Good
(Wilson Road Culvert)

Fair
(McLean Road Culvert)

Poor to Failure
(River Road Culvert)

Excellent to Good
(Georgina Avenue Asphalt)

Fair
(Dawson Point Road Asphalt)

Poor to Failure
(Albert Street Asphalt)

Table 7-6: Condition Ratings Option 2

Condition Assessment Rating Scale		
Rating	**Condition**	**Description**
4.8-5.0	Excellent	No visible defects, new or near new condition, may still be under warranty if applicable
4.0-4.7	Good	Good condition, but no longer new, may have some slightly defective or deteriorated component(s), but is overall functional
3.0-3.9	Adequate	Moderately deteriorated or defective components; but has not exceeded useful life
2.0-2.9	Marginal	Defective or deteriorated component(s) in need or replacement; exceeded useful life
1.0-1.9	Poor	Critically damaged component(s) or in need of immediate repair; well past useful life

Maintenance and Administrative Facility Conditional Assessment	SCORE
Inspection Area	
Substructure	
Foundations: Walls, columns, pilings other structural components	
Basement: Materials, insulation, slab, floor underpinnings	
Shell	
Superstructure/structural frame: columns, pillars, walls	
Roof: Roof surface, gutters, eaves, skylights, chimney surrounds	
Exterior: Windows, doors, Power Operators and all finishes (paint, masonry)	
Shell appurtenances: Balconies, fire escapes, gutters, downspouts	
Interiors	
Partitions: Walls, interior doors, fittings such as signage	
Stairs: Interior stairs and landings, Guards, Railings	
Finishes: Materials used on walls, floors and ceilings	
This component covers all interior spaces, regardless of use	
Conveyance (Elevators and Escalators)	
Elevators	
Lifts: any other such fixed apparatuses for the movement of goods or people	
Plumbing	
Fixtures	
Water distribution	
Sanitary Waste	
Rain water drainage	
HVAC (Heating, ventilation, and air conditioning)	
Energy supply	
Ventilation systems	
Heat Generation and distribution systems	
Cooling generation and distribution systems	
Testing, balancing, controls and instrumentation	
Chimneys and vents	
Fire Protection	
Fire Dampers	
Sprinklers	
Standpipes	
Hydrants, Pumps, Valves, Panels and other fire protection specialties	
Electrical	
Electrical service and distribution	
Lighting & branch wiring (interior and exterior)	
Communications and security	
Other electrical systems (lighting protection, generators, exit signs and emergency lighting)	
Equipment/Fare Collection	
Equipment related to the function of the facility, including maintenance or vehicle service equipment	
For clarity, includes items valued above $10,000 and related to facility function	
Site	
Roadways/driveways and associated signage, markings and equipment	
Parking lots and associated signage, markings and equipment	
Pedestrian areas and associated signage, markings, and equipment	
Site development such as fences, walls, and miscellaneous structures	
Site Utilities	
Overall Assessment Score	

7.4 Risk Management

The City's overall Asset Management Strategy is founded on available data, anticipated service levels, growth expectations and other assumptions. Assumptions in these items introduce some unavoidable risk that the overall strategy may change over time as the City gathers and develops more complete data and processes.

Recognizing these uncertainties, the City is developing strategies to address each source of risk so that the Asset Management Strategy can evolve over time. Risk mitigation strategies for each of the following are discussed below:

- Data quality
- Levels of Service
- Growth – expected vs. actual
- Assumptions

Data quality

The data provided and collected for the report for only reflect a very high level of the asset components, and did not accurately reflect the service life of the necessary components of the assets (i.e. a water treatment plant was assessed at a facility level and did not have age, conditional, performance, or maintenance data for any of the facilities components, i.e. SCADA system, pumps, etc.). Given the high level of the data, significant risk exists in the component asset life reaching the end of their respective service lives before the facility has reached the end of the facility life. This introduces significant difficulty in establishing a yearly budget that accurately reflects the required asset replacement / rehabilitation cost required.

Strategy to address:

It is suggested an inspection program of assets be established to build the existing database. With a newly built database, the report should be reviewed to assess if the new data produces significant changes to the asset management strategy.

Levels of Service

The levels of service present a risk, since no previous levels of service were established for the City. Levels of Service have never been measured in previous years and the expectation of each level of service has not been established. Adjustment is expected in the early years of levels of service to better reflect the level of commitment from the City, but risk exists if a level of service is set at a higher expectation then what is possible at the current levels of funding.

Strategy to address:

It is suggested that to address this source of risk, the targets established in the first year of utilizing the Levels of Service should be reviewed along with the cost to provide the levels of service. If the cost of the level of service is too high to maintain the target should be adjusted or alternative strategies to accomplish the level of strategy should be investigated.

Growth Levels

Growth forecasts are not guaranteed, and while effort must be made to ensure that services are provided if the growth is met, growth can be greater or lesser than the expected forecast. This can potentially create a surplus or deficit of funding available.

Between the 2016 Census and the 2021 Census the City of Temiskaming Shores experienced negative population growth of -2.9% from 9,920 to 9,634. Between the 2016 and 2021 Census the City of Temiskaming Shores also experience some changes in the age-composition of its population. Therefore, an increase or decrease to the population or to the average age of residents may result in changing service needs and demands.

Strategy to address:

It is suggested that the growth of the City should be reviewed on a yearly basis to determine if the forecast is accurate, and if possible the budgets should be adjusted accordingly. The City should consider conducting a review / study of current and future housing, commercial construction and labour force needs every two to three years.

Assumptions

Assumptions have been made in the report to fill data gaps and have been noted where undertaken. As with any assumption, risk exists in that the assumption may not account for a large enough percentage of the assets and could potentially result in unexpected costs if not corrected (i.e. year of installation assumed, when the asset is past its expected service life, degradation of an asset's effect on surrounding assets).

Strategy to address:

It is suggested that an inspection program be developed utilizing the information provided to eliminate the largest assumptions. The new findings should then be used to adjust the report findings, correcting the asset management strategy if required.

7.4.1 Calculating Asset Risk

The risk or criticality calculation determines the overall risk of asset failure. The risk/criticality analytic can become a documented approach to determining capital priorities. A municipality could than compare priorities across asset types and categories. The City will be introducing some risk/criticality assessments based on analytics, to supplement professional judgement.

The City's risk/criticality formula is provided below:

Asset Risk/Criticality = Probability of Failure (PoF) + Consequence of Failure (CoF)

The assessment of PoF will be dependent upon the condition and age of the asset, whereas CoF will be assessed based on analytics established by the municipality. The City will use weighted averages for its PoF and CoF using a scale out of 5 points each as the PoF was determined to be more important to the calculation.

The City's risk/criticality weighted average example is provided below:

(80% x PoF Rating) + (20% x CoF Rating) = Risk Rating (100%)

Table 7-7: Probability and Consequence of Failure Ratings

Asset	Condition / Age	Condition Qualitative	PoF Rating	PoF Qualitative	Weighting
Asset 1	5	Excellent	1	Rare	80%
Asset 2	4	Good	2	Unlikely	80%
Asset 3	3	Fair	3	Possible	80%
Asset 4	2	Poor	4	Likely	80%
Asset 5	1	Very Poor	5	Almost Certain	80%

Consequence of Failure Rating (Water)

Asset	Detail	Value	CoF Rating	CoF Qualitative	Weighting
Asset 1	Pipe Diameter	Less than 100mm	1	Minor	20%
Asset 2		100 to 150mm	2	Moderate	20%
Asset 3		150 to 200mm	3	Serious	20%
Asset 4		200 to 300mm	4	Very Serious	20%
Asset 5		300mm and Over	5	Major	20%

Consequence of Failure Rating (Sanitary)

Asset	Detail	Value	CoF Rating	CoF Qualitative	Weighting
Asset 1	Pipe Diameter	Less than 200mm	1	Minor	20%
Asset 2		200 to 250mm	2	Moderate	20%
Asset 3		250 to 300mm	3	Serious	20%
Asset 4		300 to 350mm	4	Very Serious	20%
Asset 5		350mm and Over	5	Major	20%

Consequence of Failure Rating (Stormwater and Culverts)

Asset	Detail	Value	CoF Rating	CoF Qualitative	Weighting
Asset 1	Pipe Diameter	Less than 250mm	1	Minor	20%
Asset 2		250 to 500mm	2	Moderate	20%
Asset 3		500 to 700mm	3	Serious	20%
Asset 4		700 to 1000mm	4	Very Serious	20%
Asset 5		1000mm and Over	5	Major	20%

Consequence of Failure Rating (Roads)

Asset	Detail	Value	CoF Rating	CoF Qualitative	Weighting
Asset 1	Road Classification	Class 6	1	Minor	20%
Asset 2		Class 5	2	Moderate	20%
Asset 3		Class 4	3	Serious	20%
Asset 4		Class 3	4	Very Serious	20%
Asset 5		Class 2 and 1	5	Major	20%

Consequence of Failure Rating (Bridges and Large Diameter Culverts)

Asset	Detail	Value	CoF Rating	CoF Qualitative	Weighting
Asset 1	Replacement Value	Up to $100k	1	Minor	20%
Asset 2		$101k to $300k	2	Moderate	20%
Asset 3		$301k to $500k	3	Serious	20%
Asset 4		$501k to $700k	4	Very Serious	20%
Asset 5		$701k and Over	5	Major	20%

Consequence of Failure Rating (Corporate Facilities)

Asset	Detail	Value	CoF Rating	CoF Qualitative	Weighting
Asset 1	Replacement Value	Up to $10k	1	Minor	20%
Asset 2		$11k to $50k	2	Moderate	20%
Asset 3		$51k to $200k	3	Serious	20%
Asset 4		$201k to $1M	4	Very Serious	20%
Asset 5		$1M and Over	5	Major	20%

Consequence of Failure Rating (Corporate Fleet)

Asset	Detail	Value	CoF Rating	CoF Qualitative	Weighting
Asset 1	Replacement Value	Up to $50k	1	Minor	20%
Asset 2		$51k to $100k	2	Moderate	20%
Asset 3		$101k to $150k	3	Serious	20%
Asset 4		$151k to $200k	4	Very Serious	20%
Asset 5		$200k and Over	5	Major	20%

8.0

FINANCIAL STRATEGY

Financial Strategy

8.1 Introduction

The financial strategy is the final component of the plan, and it provides the needs/plan to move forward with the Asset Management Strategy that was provided previously in this report.

This section will not present detailed information on the budgeting process as it pertains to the current and proposed levels of service established by the municipality but rather aims to highlight major components of the process to understand short- and long-term financing. The City has and will develop financial reports and plans to establish funding allocations to support its services.

Financing infrastructure has become an increasingly critical challenge. To ensure the continued delivery of adequate and affordable services to residents, the City of Temiskaming Shores along with provincial and federal governments must explore improved practices and innovative approaches to infrastructure funding. While it is reasonable that those who benefit from municipal infrastructure should contribute to its cost, questions remain about equitable cost distribution for example, determining responsibility for the rehabilitation of arterial roads that traverse major urban centers.

Prior to the introduction of Ontario Regulation 588/17, *Asset Management Planning for Municipal Infrastructure*, municipal accounting practices often failed to account for the full replacement costs of depreciating assets. This led to significant fiscal pressures when assets reached the end of their service life. The adoption of standards set by the Public Sector Accounting Board (PSAB) has addressed this gap, bringing greater awareness to the scale of the infrastructure deficit. While asset management systems are essential tools in addressing this challenge, innovative financing mechanisms and diversified revenue streams are equally vital. This strategy adheres to PSAB Section PS 3150 by supporting accurate accounting and comprehensive reporting of tangible capital assets. It's important to recognize which levels of government are responsible for providing different programs and services. Some programs and services that are jointly funded. Below is a generalized overview of the responsibilities of each level of government.

Municipal government has the responsibility for:

- Building and Land Development (building permits and fees)
- Family and Community Support Services
- Protective Services (Policing, Fire and EMS)
- Public Health & Social Services
- Local Road Maintenance and Improvement
- Recreation Facilities, Parks and Structures
- Transit
- Utilities (water, sanitary, wastewater)
- Waste Collection
- Municipal Property Tax

Provincial government has the responsibility for:

- Municipalities
- Employment Programming
- Highways
- Hospitals/Health
- Justice
- Provincial Parks
- Landlord and tenant support
- Schools
- Provincial Policing
- Post-secondary Education
- Provincial Property Tax
- Immigration
- Work Safety Enforcement

Federal government has the responsibility for:

- Airports
- Borders and Passports
- Broadcasting and Telecommunications
- Child Benefits
- Employment Insurance
- Fisheries, Oceans and National Parks
- Income Tax
- International Support (embassies)
- Immigration
- Mortgages
- Federal Policing
- National Defense and Veteran Affairs
- Postal Service
- Student Loans

8.2 Financial Indicators

In Canada, the oversight of financial reporting standards is the responsibility of the Accounting Standards Oversight Council (AcSOC). AcSOC provides strategic input and oversight for two independent boards: the Public Sector Accounting Board (PSAB) and the Accounting Standards Board (AcSB). PSAB is responsible for setting accounting standards for public sector entities, including federal, provincial, territorial, and municipal governments. AcSB, on the other hand, is responsible for setting accounting standards for the private sector.

In 2009, the Public Sector Accounting Board (PSAB) issued Statements of Recommended Practices (SORP) which provide guidance on how public sector bodies should report on indicators of financial condition. This information helps municipalities better understand, for example, the risk facing a municipality in maintaining its current programs and services it currently, as well as the policy and operational decisions it must make in light of its financial health.

The indicators are the following:

- **Sustainability**

  Sustainability measures the ability of the municipality to maintain its existing programs and services, including maintaining its financial obligations to its residents and ratepayers, without increasing its debt or raising taxes relative to its economy that it operates. This may include the revision of Annual Surplus or Deficits, Financial Assets to Liabilities and Net Debt to Provincial GDP.
- **Flexibility**

  Flexibility describes the extent to which a municipality can change its debt burden or raise taxes within its economy. Increasing debt and taxation reduces flexibility and the municipality's ability to respond to changing circumstances. This may include the revision of Debt Servicing Costs to Revenues, Own Source of Revenue to Provincial GDP and Net Book Value of Tangible Capital Assets to Cost of Tangible Capital Assets.
- **Vulnerability**

  Vulnerability indicators can measure the amount municipalities are dependent on sources of revenue outside their control and its exposure to risk which might affect the municipality's ability to meet its commitments. The lower the municipality's own source revenue is, the more it relies on fiscal decisions of others such as provincial and federal aid. This may include the revision of Senior Government Funding to Total Revenues.

The Financing strategy outlines the suggested approach to funding the lifecycle management strategy of its assets that is proposed to be adopted by the municipality. Long term and forecasted financial planning and policies around one strategy can have a significant impact on other plans and strategies in operating and capital budgets. The following financing strategies should be carefully considered by the municipality:

- Use of Grants & Contributions
- Rate Sensitivity
- Debt Levels
- Infrastructure Funding Gap
- Reserve & Reserve Funds
- User Fees
- Asset Management Policies
- Taxation
- Global market changes

Some of these factors may have a greater impact based on terms and conditions. When creating a plan that spans 5 to 10 years, it's important to consider variables such as inflation rates, debt terms, rate of return on investment and projected municipal growth. The City may need to expand their asset base to meet increased demand. Accordingly, anticipated expansion requirements will be integrated into the City's overall financing strategy.

Table 8-1 represents various funding sources within financing strategies. The initial capital purchase or construction cost typically represents a substantial investment, often supported by external funding sources, though not in all cases. Ongoing costs to operate, maintain and monitor assets are generally funded through the annual operating budget mostly consisting of taxation and user fees. Major repair and disposal costs also need to be considered when ultimately acquiring and/or replacing the assets.

Table 8-1: Financing Methods

Asset Lifecycle	Financing Methods
Purchase, Install, Initial Construction	Charges, Reserves, Taxation, User Fees, Grants (Funding), Other
Operate, Maintain, Monitor	Taxation, User Fees
Major Repair, Disposal	Charges, Reserves, Taxation, User Fees, Grants (Funding), Other

8.3 Municipal Budgets

The budgets consider both costs (expenditures) and available funding (revenues), which are broken into two components: operating and capital budgets.

Operating Budget:

The operating budget is developed annually and includes personnel, facility, equipment and material costs. Each department is responsible for preparing its budget. The budget reflects anticipated adjustments to service levels, incorporating projected revenues, expenditures, inflation and service demand growth.

Capital Budget:

The capital budgets are developed each year to plan for major projects, purchases, improvements to facilities, infrastructure and equipment. Each department proposes their capital budget based on risk, strategic priorities and end of life. The capital budget funding allocation is generally split between external funding and grants while the other half is mainly derived from current year taxation and some reserve funds as required. Debt financing is also considered for significant capital expenditures when required funding is beyond the municipality's available cash flow. The City ensures compliance with the annual repayment limit as provided by the province.

8.4 Internal Revenue Sources

Most municipalities and the public are familiar with a variety of internal and external revenue sources. Developing the framework on how to utilize and optimize the use of the various funding sources is critical to the budget process. The following describes a few of the revenue sources currently used by municipalities:

- **General Operating Revenues (Tax levy):** Rural municipalities, towns and smaller cities mainly rely on local taxes, user fees and grants rather than on borrowing, due to having less borrowing capacity compared to larger cities.

- **Earmarked User Fees:** An earmarked user fee is dedicated to a specific project; for example, water and sanitary charges for environmental infrastructure, disposal fees for solid waste facilities, and admission charges for recreational complexes.

- **Reserves:** Reserves are funds set aside by municipalities for specific future needs, such as capital projects, operational stability, or risk mitigation. They provide financial flexibility and support long-term sustainability without over-reliance on debt or sudden tax increases. Using reserves to fund capital is a strategic approach to relying solely on long-term debt. This approach offers a predictable and flexible funding source, demonstrates responsible fiscal management and helps maintain stable tax rates.

- **Special Assessments and Local Improvement Charges:** A special assessment is a specific charge added to the existing property tax to pay for improved capital facilities that border them. The charge is based on a specific capital expenditure in a particular year but may be spread over a number of years.

- **Development Charges:** Municipalities have the ability to charge a discretionary development fee to assist in financing the capital costs of new development. Development charges are more common in larger municipalities. Developers are generally responsible for on-site services, such as local roads, sidewalks and street lighting. Historically, development charges have financed “hard” services, such as water supply, sewage treatment, trunk mains and roads. The City of Temiskaming Shores does not currently have a Development Charge By-Law.

8.5 External Revenue Sources

- **Grants (Funding):** Municipalities often rely on funding from provincial and federal governments to support major capital projects. These funding programs are subject to annual review and may change in response to shifting priorities or fiscal constraints. As part of their review processes, upper levels of government assess the fiscal challenges faced by municipalities, which can affect the amount and type of funding allocated.

  Geographic location, economic conditions, and demographic factors also influence outcomes, as municipalities with greater need or strategic importance may receive a larger share of

available funds. In recent years, many grant programs have introduced stricter eligibility criteria, including the requirement for municipalities to have a council-approved asset management plan in place.

Other financing instruments have been made available to municipalities. The federal government's initiative to provide grants to municipalities from federal gas tax revenue is one example of a financing instrument. It involves the direct participation of the private sector in a venture controlled by the public sector. The public sector's role is to facilitate, regulate, and guarantee provision of an asset and the private sector's role is to design, finance, build and operate the asset in a formalized partnership agreement.

The City has accessed funding for large-scale capital projects and remains committed to pursuing all available funding opportunities. While these grants are typically short-term and not guaranteed from year to year, they remain a key tool for supporting large infrastructure investments and reducing the financial burden on local taxpayers.

- **Borrowing (Debt):** Municipalities may engage in both short-term and long-term borrowing. Short-term borrowing may be used to finance capital expenditures or to maintain cash flow throughout the year.

- **Fundraising/Partnerships:** At times, community groups or local organizations may take an active role in fundraising to support specific municipal projects. These efforts are most commonly associated with improvements to recreational facilities, such as parks, sports fields, or playground equipment. Municipalities welcome and value these partnerships, recognizing the important role they play in supporting community initiatives. However, because these contributions are not guaranteed, they are considered a supplementary not a primary source of funding.

8.6 Temiskaming Shores Financial Strategy

The City has identified revenue sources that will support the Asset Management Plan (AMP) developed through this report. The following provides a description of the major revenue sources identified by the City to support the AM Strategy. These sources include:

- **Municipal Transfer to Capital and/or Reserves:** The City currently allocates a portion of its general tax levy to fund its annual capital program. This contribution is built into the current tax rate, and the City intends to maintain a consistent allocation going forward. In addition, the use of reserve funds supports long-term financial sustainability, helps to manage risk, and provides funding flexibility.

- **Canada Community-Building Fund (CCBF, formerly known as Federal Gas Tax Fund) and Provincial Gas Tax:** Both the CCBF and Provincial Gas Tax are established as permanent sources of funding for municipalities. The CCBF is predictable, long-term and stable, and helps municipalities address their infrastructure deficit. Municipalities that operate public transit services are eligible to receive the Provincial Gas Tax funding which is based on two cents per

litre of provincial gas tax revenue collected. This funding supports the expansion and improvement of public transit services across the province. The City's 2025 CCBF allocation was $631,029 and the Provincial allocation for 2024/25 was $153,617.

While both programs are established as permanent, the actual funding amounts can vary annually based on factors such as fuel consumption levels and government budget allocations.

- **Ontario Community Infrastructure Fund (OCIF):** The OCIF assistance grant provides annual funding to small, northern and rural municipalities across the province for repairing roads, bridges, water and wastewater infrastructure. The City's allocation for 2025 was $616,399.

- **Ontario Municipal Partnership Fund (OMPF):** OMPF is the province's primary general assistance grant to municipalities aimed at supporting local priorities and services. The program primarily targets small, northern and rural municipalities across the province recognizing the unique challenges they face. The City's allocation for 2025 is $3,803,100.

- **Assessment Growth:** Assessment growth refers to the increase in a municipality's property tax base resulting from new development, property improvements, or changes in property classification. While growth forecasts help guide long-term planning, they are not guaranteed. Actual growth can vary sometimes falling short of or exceeding expectations which may lead to budget surpluses or shortfalls.

  Another consideration is updated property assessments provided by the Municipal Property Assessment Corporation (MPAC). It's important to understand that while property assessment values determine the distribution of taxes among properties, they do not directly increase the City's total tax revenue only the overall growth in assessment base does.

  At this time, assessment growth is not incorporated into the annual operating budget. This is due to its unpredictability, the potential for timing delays, and the likelihood of adjustments such as assessment reductions and write-offs. As a result, the City takes a cautious approach and does not rely on projected growth revenue to fund ongoing services or commitments. The average total net growth between 2017-2024 was $8.5M.

- **Municipal Taxation:** The primary source of municipal funding is property taxation. Property taxes are levied on properties within the municipality's boundary. Funds are allocated across departmental operations and capital budgets through a structured budget process. The City's budget cycle typically begins in the fall of each fiscal year. The City maintains a system of internal controls to ensure assets and services are protected, and that all transactions are properly authorized, recorded and publicly reported. Property tax revenue supports the majority of municipal services and programs not covered by user fees, service charges, or other external funding sources.

- **Borrowing (Debt):** The remainder of the capital program, especially significantly large infrastructure projects, may be financed through debt. These large projects are usually

contingent upon approved federal and provincial funding programs. Debt would be the last means to be considered for infrastructure funding.

When considering debt financing, the City must account for the following:

- The annual repayment limit imposed by the province
- Whether internal debt limits need to be derived or updated
- If existing debt strategies need to be revised
- The impact of debt on future operating costs

The Province of Ontario limits municipal debt based on a maximum percentage of revenues that may be used to service the debt costs annually. Debt servicing costs include interest and principal payments and are currently limited to 25 percent (25%) of the municipality's net own source revenues. The Province of Ontario calculates the annual repayment limit (ARL) for municipalities, based on the municipality's calculation of revenues and debt servicing costs. For the year 2025, the City's ARL statement indicates that it has a repayment limit of $4,198,270.

As the City nears its maximum borrowing limit, the ability to borrow further debt to finance infrastructure investments is more restrictive at which point the City should look to maximize available capital grants from federal and provincial governments.

- **Services Charges (Service/User fees):** In order to project rate impacts on either taxation or user fees, the City will follow lifecycle activities associated with levels of service that it has currently agreed to and considered in this report. Service charges are generally determined based on projected demand and consumption.

  For example, water and sewer rates generate revenue for water and sanitary infrastructure upgrades. The rate structure in place includes annual increases which help fund infrastructure needs outlined in this report.

8.7 Funding Analysis

The City of Temiskaming Shores is a diversified municipal government institution that provides a wide range of services to its citizens. It's important to note that some services may not directly support the municipality's infrastructure but are crucial for its longevity and sustainability. Municipal services are provided by departments, and their activities are reported in these service areas:

General Government Services: The Corporate Services department is responsible for economic development programs, IT services, adopting bylaws, adopting administrative policy, levying taxes, ensuring effective financial management, monitoring performance and ensuring that high quality municipal service standards are met. The City also administers and maintains three cemeteries within the municipality.

Protection Services: Police services, including law enforcement, crime prevention, and the maintenance of peace, order, and public safety are provided through a contractual agreement with the Ontario Provincial Police (OPP). Fire protection services are provided by a volunteer Fire Department, which provides fire suppression, fire prevention and education programs to residents. The City enforces by-laws and offers animal control and property standards.

Transportation and Environmental Services: The Public Works department is responsible for the delivery of municipal services related to planning, design, construction, maintenance and repair of roads and stormwater assets. Other responsibilities may include snow removal, roadway signage and maintaining all municipal vehicles and equipment. The Environmental Services department is responsible for municipal services related to planning, design, construction, maintenance and repair of water and wastewater assets, operation of treatment facilities, as well as solid waste disposal and diversion services.

Health and Social Services: The City supports the delivery of public health and social services through partnerships with external agencies. Public health services are delivered by the Northeastern Public Health Unit (NEPH) (formerly the Timiskaming Health Unit), while land ambulance services are provided through the District of Timiskaming Social Services Administration Board (DTSSAB). Social and family services such as general assistance, childcare and social housing are also delivered through DTSSAB. Although these services are not administered directly by the City, they are supported financially.

Recreation and Cultural Services: The Recreation department is responsible for providing, facilitating the development of, and maintaining high quality parks, buildings and facilities, and cultural services, including library services.

Library Services: Public library boards are local boards appointed by council who govern the public library and ensure community needs are met. They are accountable to the municipality are receive funding from municipal tax dollars. They provide access to resources, programming and opportunities for participatory learning and leisure.

Planning and Development: The Planning and Development division is responsible for preparing land use plans, by-laws and policies for sustainable development of the City and for reviewing and approving new development.

The following analysis will highlight the City's financial scenarios that the municipality must undertake for the next 10-years to sustain its delivery of its proposed levels of service.

Table 8-2: Historical Operating Expenditures for Services ($,000)

Service Area	2015	2016	2017	2018	2019	2020	2021	2022	2023
General Government	$ 2,665	$ 2,653	$ 2,280	$ 2,585	$ 3,520	$ 2,924	$ 3,427	$ 3,155	$ 2,842
Protection to Persons & Property	$ 4,534	$ 4,213	$ 4,401	$ 4,244	$ 4,034	$ 3,761	$ 4,027	$ 3,868	$ 4,448
Transportation	$ 4,873	$ 4,494	$ 4,356	$ 4,472	$ 4,935	$ 4,448	$ 5,043	$ 5,112	$ 5,871
Environmental	$ 4,415	$ 4,628	$ 4,696	$ 4,847	$ 5,249	$ 5,033	$ 5,370	$ 5,721	$ 6,182
Health Services	$ 1,648	$ 1,874	$ 1,750	$ 1,719	$ 1,348	$ 1,760	$ 1,873	$ 1,995	$ 2,065
Social and Family Services	$ 1,346	$ 1,320	$ 1,276	$ 1,334	$ 1,277	$ 1,169	$ 1,099	$ 1,135	$ 1,121
Recreation & Culture	$ 2,592	$ 2,759	$ 2,922	$ 2,771	$ 2,847	$ 2,490	$ 2,708	$ 3,054	$ 3,312
Planning & Development	$ 1,507	$ 1,244	$ 1,564	$ 1,328	$ 1,616	$ 936	$ 1,099	$ 2,426	$ 1,940
Total:	**$ 23,580**	**$ 23,185**	**$23,245**	**$23,300**	**$24,826**	**$ 22,521**	**$ 24,646**	**$ 26,466**	**$ 27,781**

The historical operating expenditures represent the annual cost needed to sustain the municipality's levels of service. The City has seen an increase of 16% in operating expenditures (approximately 4.2 million dollars) in the past 9 years. This aligns with the municipality's average annual increase of 2% to the tax levy.

Note that although some service areas may be directly related to specific asset groups outlined in this plan. It's important to consider all operational requirements to reflect the true cost and the City's approach to servicing its residents and ratepayers.

Table 8-3: Historical Capital and Debt Expenditures ($,000)

Category	2015	2016	2017	2018	2019	2020	2021	2022	2023
Capital Expenditures	$ 9,397	$ 7,823	$ 11,256	$ 5,280	$ 3,694	$ 4,627	$ 4,235	$ 13,345	$ 8,138
Long-term Debt Repayment	$ 685	$ 739	$ 794	$ 1,058	$ 1,323	$ 1,295	$ 1,477	$ 1,663	$ 1,710
Total:	**$ 10,082**	**$ 8,562**	**$ 12,050**	**$ 6,338**	**$ 5,017**	**$ 5,922**	**$ 5,712**	**$ 15,008**	**$ 9,848**

The historical capital expenditures represent the annual investment towards major projects. The City has invested an average of 7.5 million dollars in the past 9 years towards capital assets with support from external funding. The long-term debt repayment represents the annual expense towards repayment of debt for past capital and major projects.

Table 8-4: Historical Funding Sources ($,000)

Category	2015	2016	2017	2018	2019	2020	2021	2022	2023
Operating Revenues	$25,747	$ 26,282	$ 26,756	$ 27,085	$ 28,698	$ 27,646	$ 28,581	$ 30,254	$ 30,320
Capital Revenues	$ 5,189	$ 5,386	$ 5,309	$ 1,173	$ 789	$ 1,658	$ 2,423	$ 3,979	$ 1,650
Debt Issued	$ 709	$ 1,235	$ 6,150	$ 2,354	$ 914	$ 1,695	$ 3,941	$ 596	$ 635
Sub-total:	**$31,645**	**$ 32,903**	**$ 38,215**	**$ 30,612**	**$ 30,401**	**$ 30,999**	**$ 34,945**	**$ 34,829**	**$ 32,605**
Reserves Available	$ 3,293	$ 3,899	$ 5,863	$ 6,614	$ 7,687	$ 9,667	$ 14,697	$ 10,365	$ 8,019
Total:	**$34,938**	**$ 36,802**	**$ 44,078**	**$ 37,226**	**$ 38,088**	**$ 40,666**	**$ 49,642**	**$ 45,194**	**$ 40,624**

The City is committed to building healthier reserves to ease pressure on funding capital projects, reduce the need to incur new debt as well as for unplanned emergency circumstances as approved by council.

Figure 8.1: Overall Financing Historical Reporting

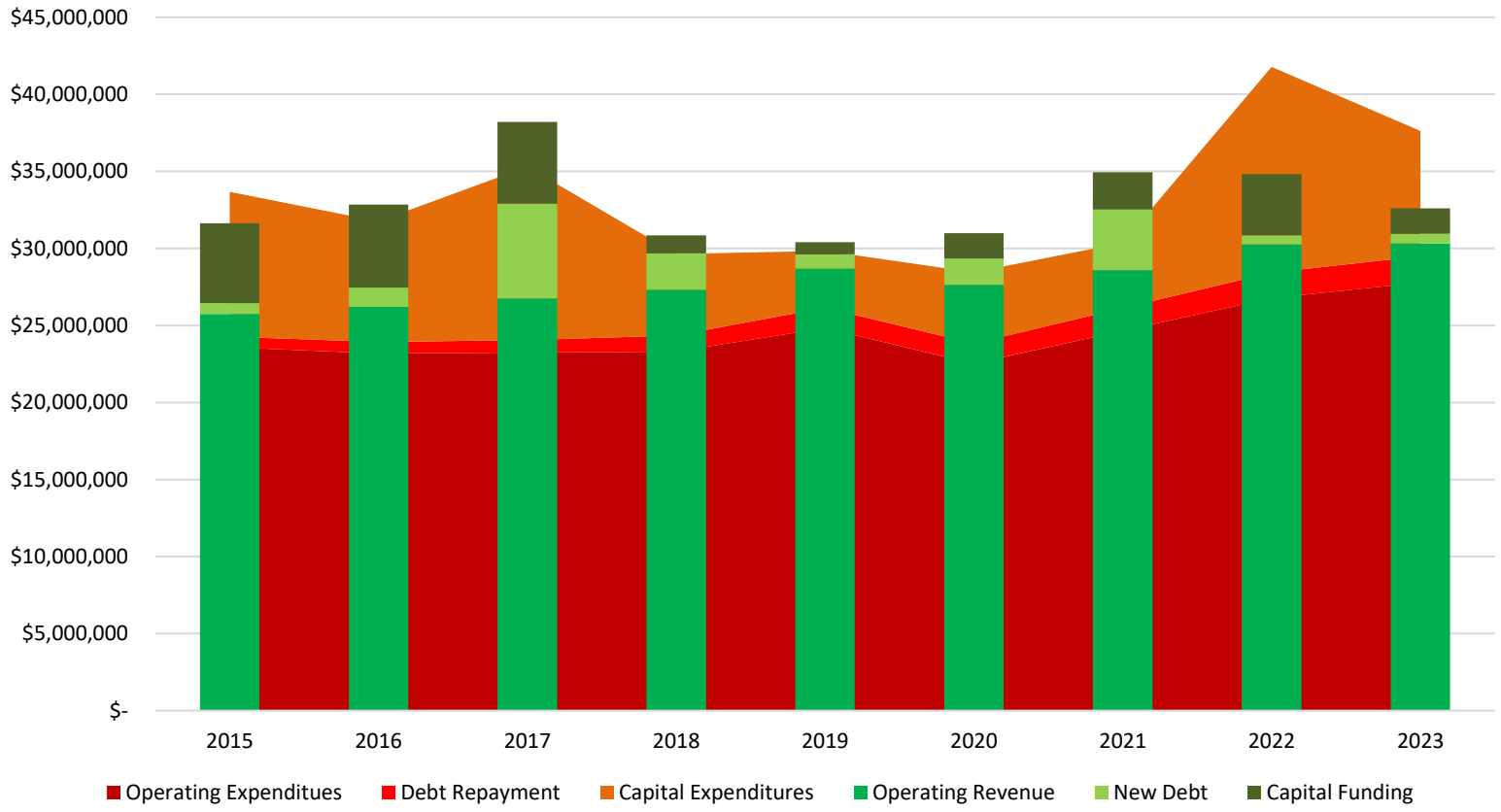


Table 8-2,3,4 and Figure 8.1 represent the overall cost of the lifecycle activities that the City undertook from 2015 to 2023 in order to maintain its historical levels of service. Forecasting modelling will be based on the 2015-2023 budgets.

Figure 8.2: Overall Financing Forecast Reporting

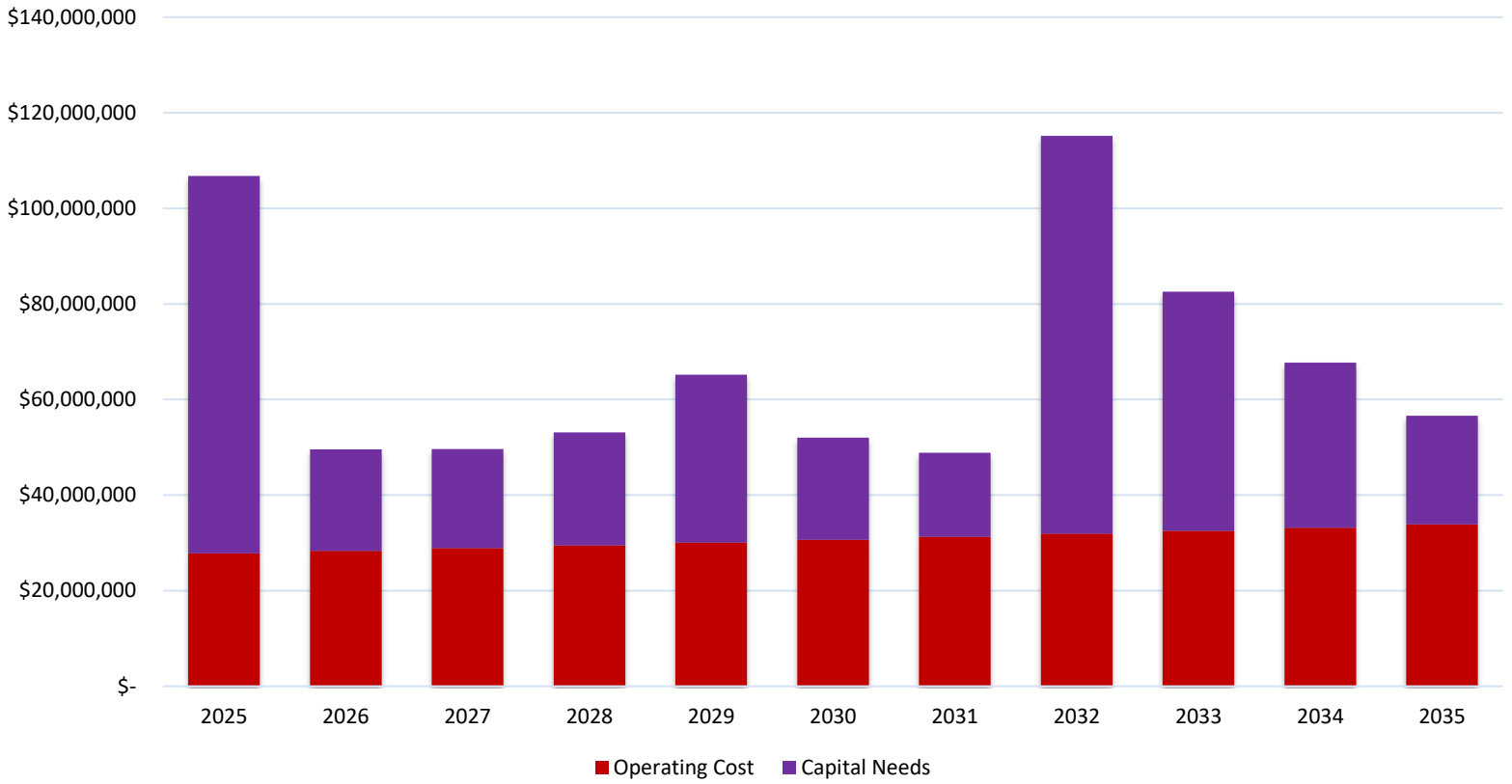


Figure 8.2 represents the funding forecast for the City's proposed levels of service for 2025 to 2035. The funding forecast will represent an average **2%** annual increase for both revenues and expenditures.

Note: That future capital investments are not built into this illustration to reduce backlog as there are several uncertainties especially in terms of external funding, debt capacity and unplanned emergencies. Please refer to table 8-5 (Minimum Capital Investment per Year) for projected minimum capital spending.

Figure 8.3: Overall Financing Forecast Need

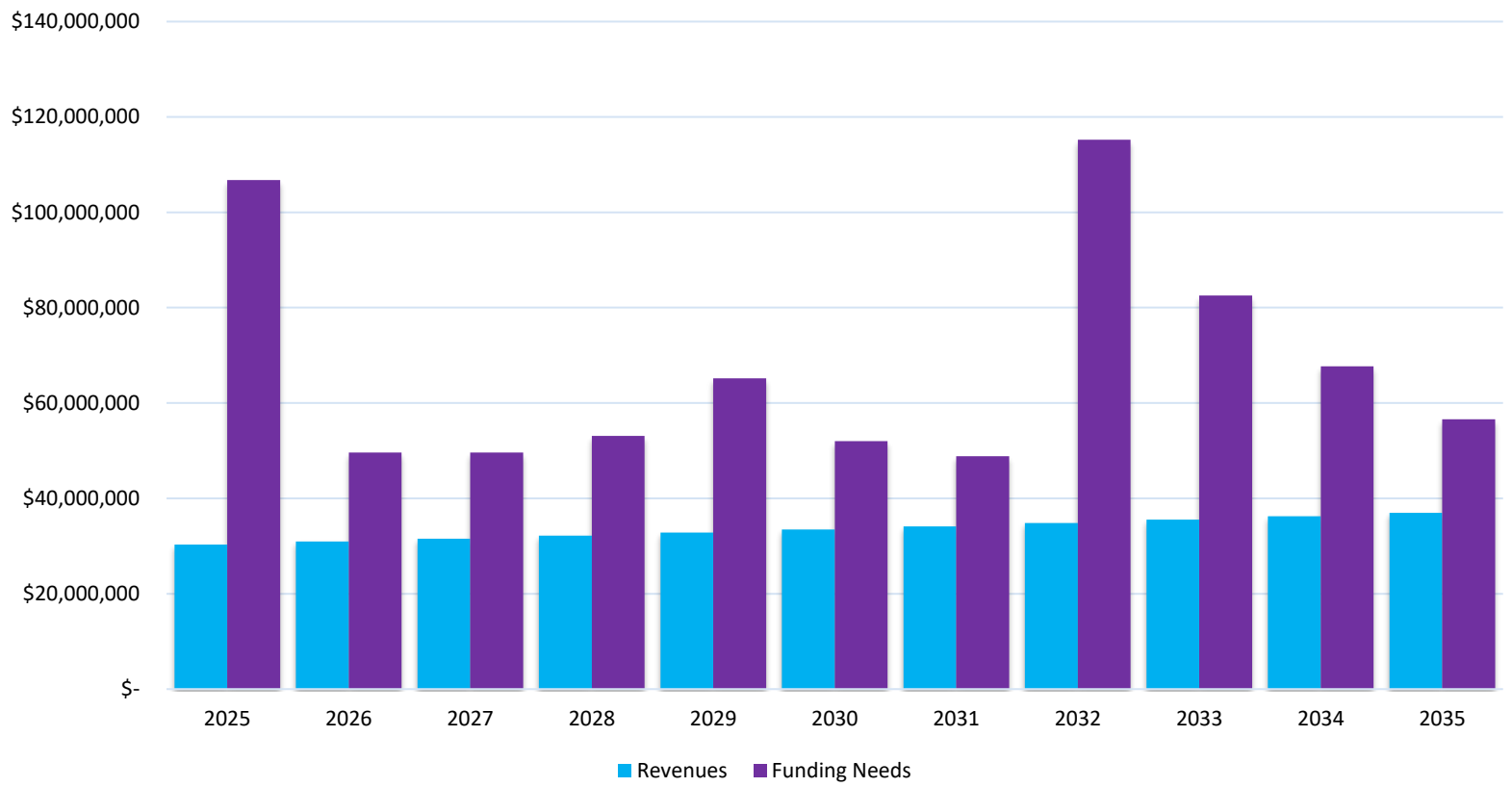


Figure 8.3 represents the forecasted municipal revenues to the funding needs based of end of life of each asset group and operational costs to sustain the City's asset condition backlog for 2025 to 2035.

Figure 8.4: Overall Financing Forecast Backlog

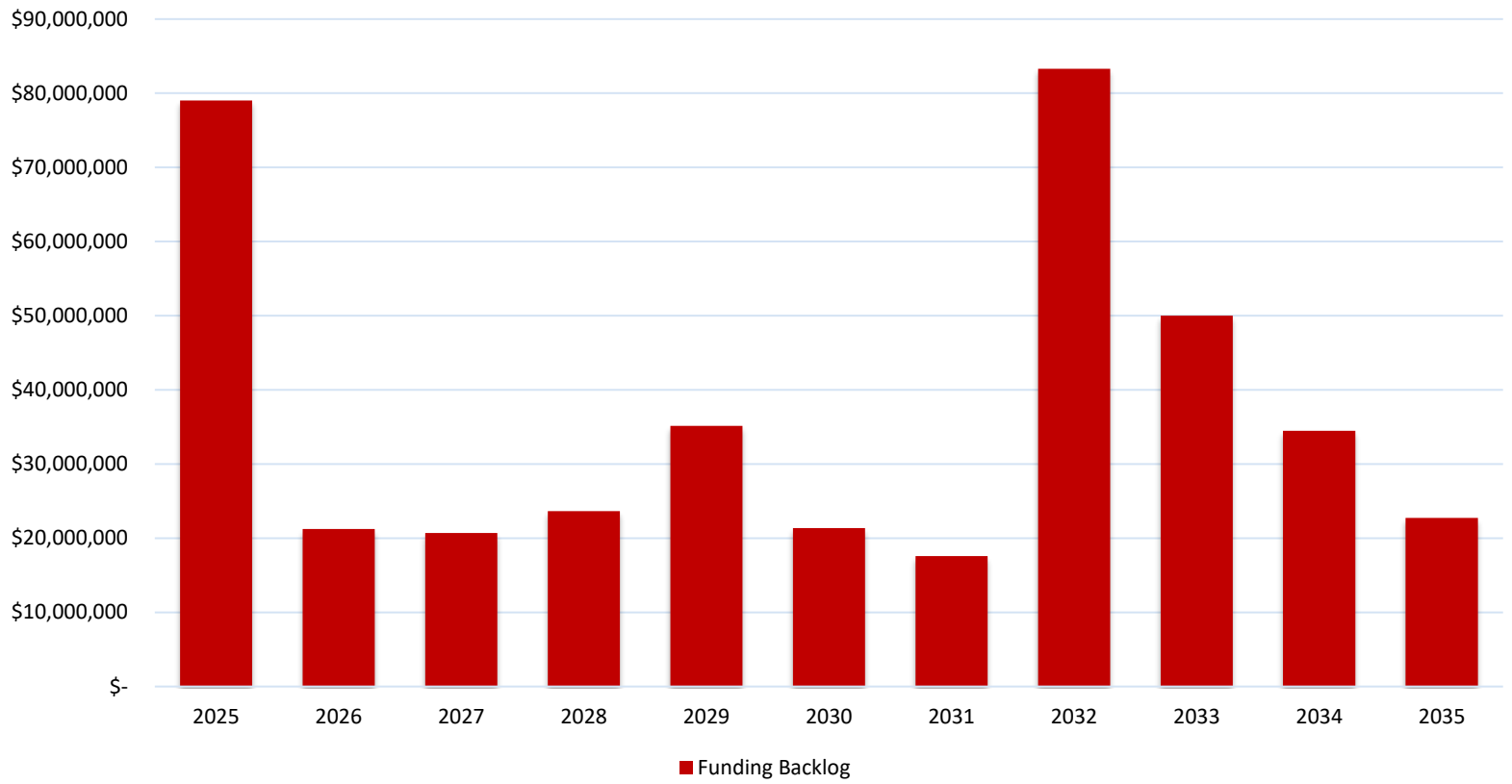


Figure 8.4 represents the funding forecast backlog to achieve excellent asset conditions for 2025 to 2035. To achieve excellence status, the City is forecasting an overall backlog of $409M over the course of 10 years. The City will require other sources of revenue such as provincial and federal government funding or cost containment strategies in order to reduce its backlog.

Expenditure and Revenue Forecast:

The following table demonstrates the estimated annual minimum operating and capital funding requirements relative to the forecasted budgetary restraints of the municipality to sustain the proposed levels of service for 2025 to 2035. Two scenarios can arise when implementing the minimum funding.

Scenario 1: The municipality and relative categories will acquire and utilize all the minimum funding towards capital investments per year.

Scenario 2: The municipality and relative categories will acquire and utilize none or a portion of the minimum funding and differ the remaining amount to a future year to support major assets replacements and/or projects of significant value.

The minimum capital reinvestment requirements take into consideration statistical parameters that utilize the condition, estimated service lives, replacement costs and lifecycle probability as mentioned in this plan. The minimum funding can then be used to develop short-term and long-term replacement financial strategies that can be achievable for the municipality.

Note: The replacement costs outlined in this strategy are based on direct capital costs and do not incorporate soft costs such as design, engineering, permitting, project management, or environmental assessments. While these costs can be substantial and influence overall project feasibility, they have been excluded for consistency and comparability across asset classes. As such, future financial planning may require adjustments to account for these additional costs where applicable.

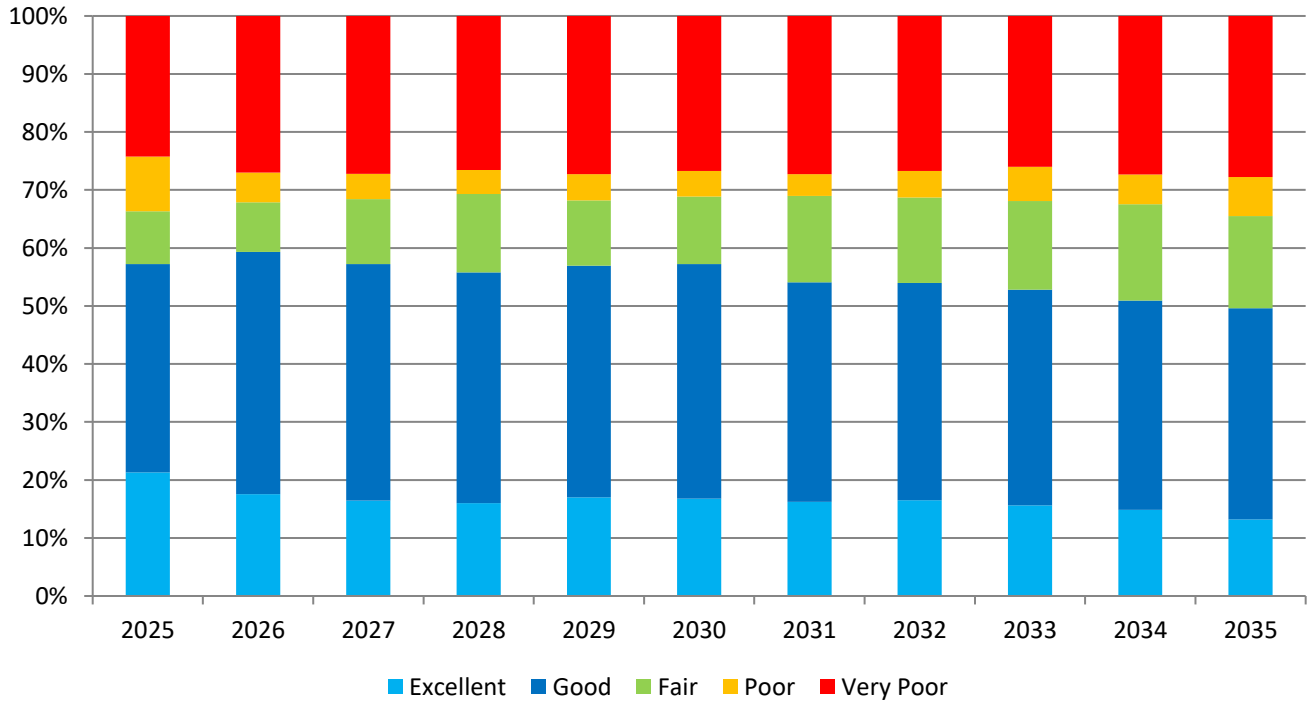
Table 8-5: Minimum Annual Investment per Year ($)

Asset Category	Minimum Lifecycle Cost Requirement	Minimum Capital Investment	Capital Investment Needs (backlog)
Water	$2,326,548	$104,000 to $587,000	$9,710,432
Sanitary	$1,735,987		$7,614,306
Stormwater	$300,918	$150,000	$803,055
Transportation	$3,060,833	$500,000	$8,232,024
Solid Waste	$1,577,079	$40,000	-
Corporate Facilities	$1,686,718	$250,000	$8,064,180
Recreation & Culture	$2,055,021	$150,000	$434,926

Corporate Fleet	$2,201,192	$200,000	$1,165,169
Machinery & Equipment	$30,000	$30,000	-
Total:	**$ 14,974,296**	**$ 1,907,000**	**$36,024,092**

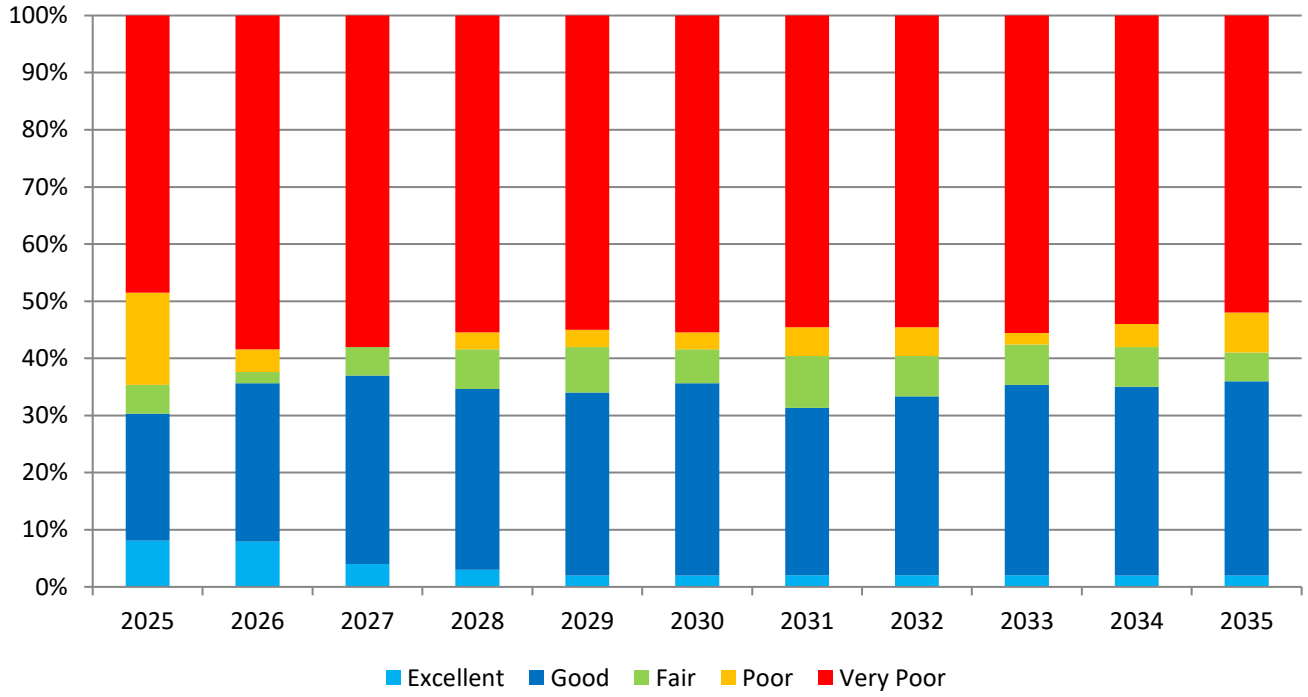
The following figures demonstrates the overall effects on the asset condition for the next 10 years based on budget scenarios with a 2% inflation rate for all service areas if the minimum investments aren't achieved.

Figure 8.5: Overall Asset Condition Forecast Reporting



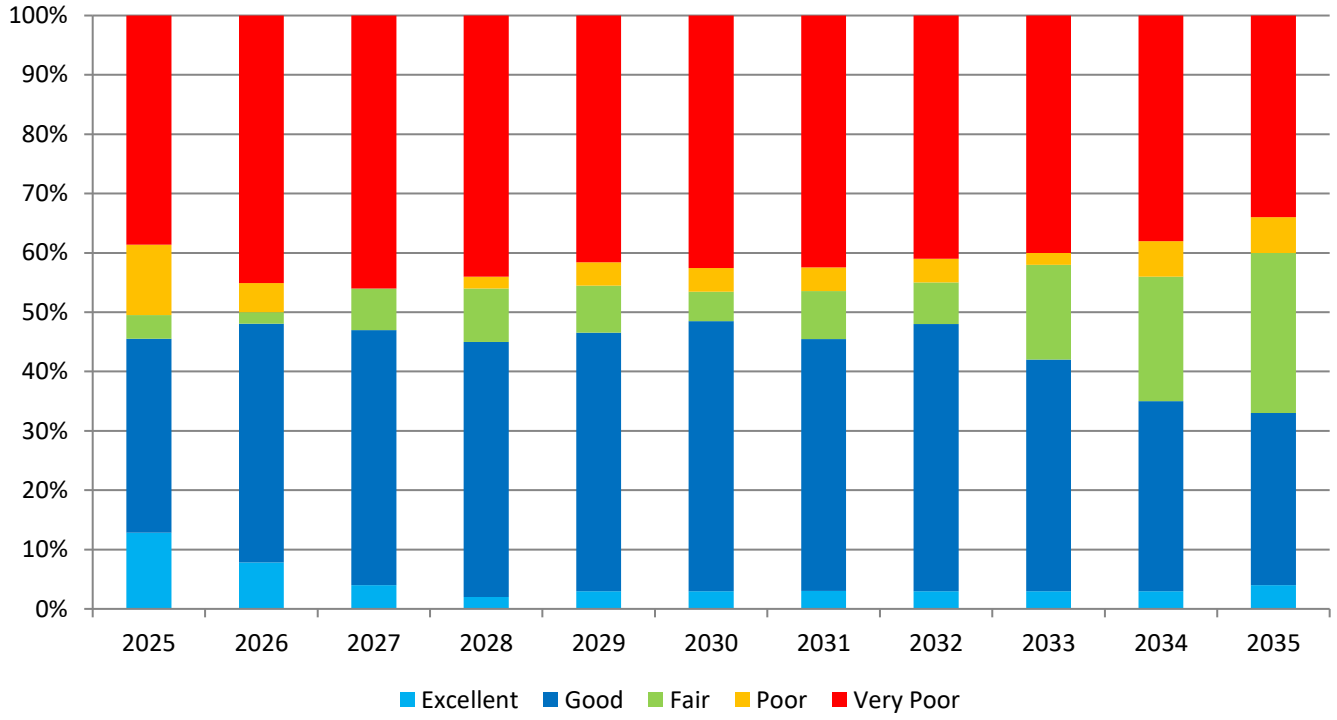
The estimated outcome of the City's overall assets physical condition if minimum capital reinvestment isn't achieved will forecast a decrease in condition rating from 3.09 to 2.93 by the year 2035 for a **total decrease of 5.2%.**

Figure 8.6: Water Condition Forecast – Budget Scenario



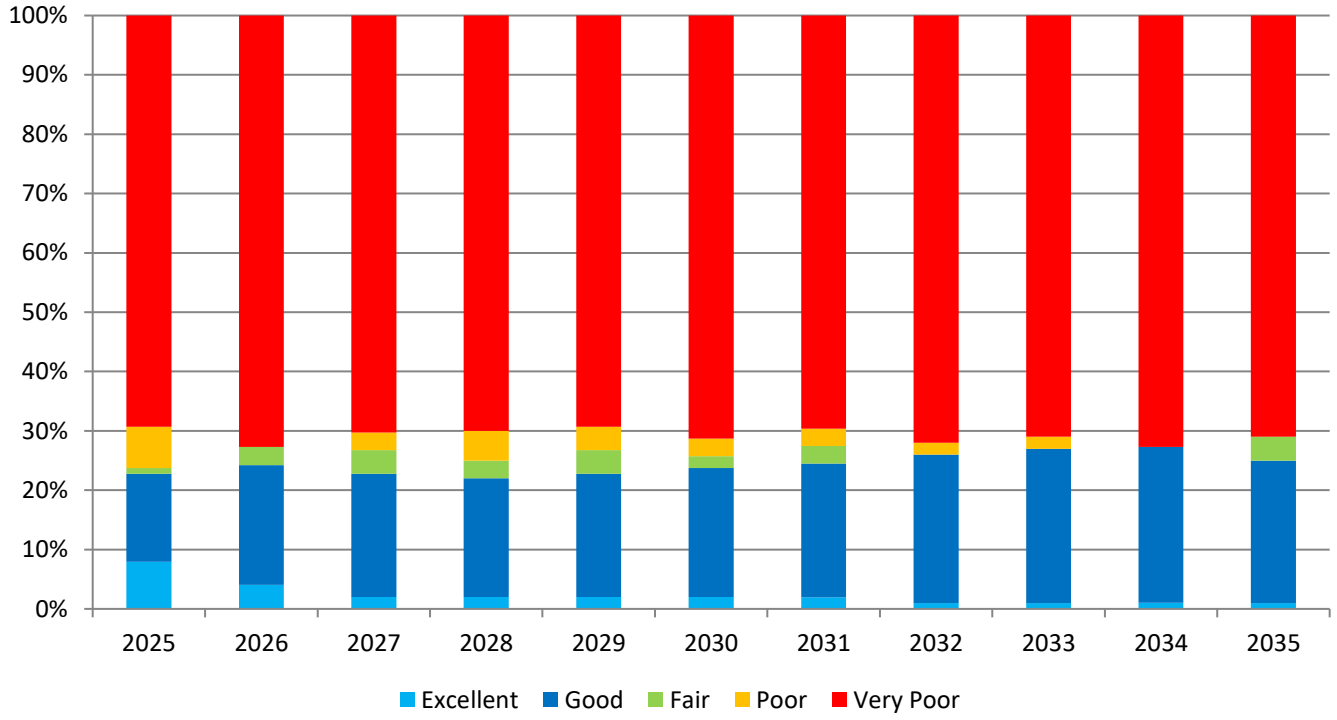
The estimated outcome of the City's overall water assets physical condition if minimum capital reinvestment isn't achieved will forecast a decrease in condition rating from 2.76 to 2.52 by the year 2035 for a **total decrease of 9.1%.**

Figure 8.7: Sanitary Condition Forecast – Budget Scenario



The estimated outcome of the City's overall sanitary assets physical condition if minimum capital reinvestment isn't achieved will forecast a decrease in condition rating from 2.53 to 2.20 by the year 2035 for a **total decrease of 7.4%.**

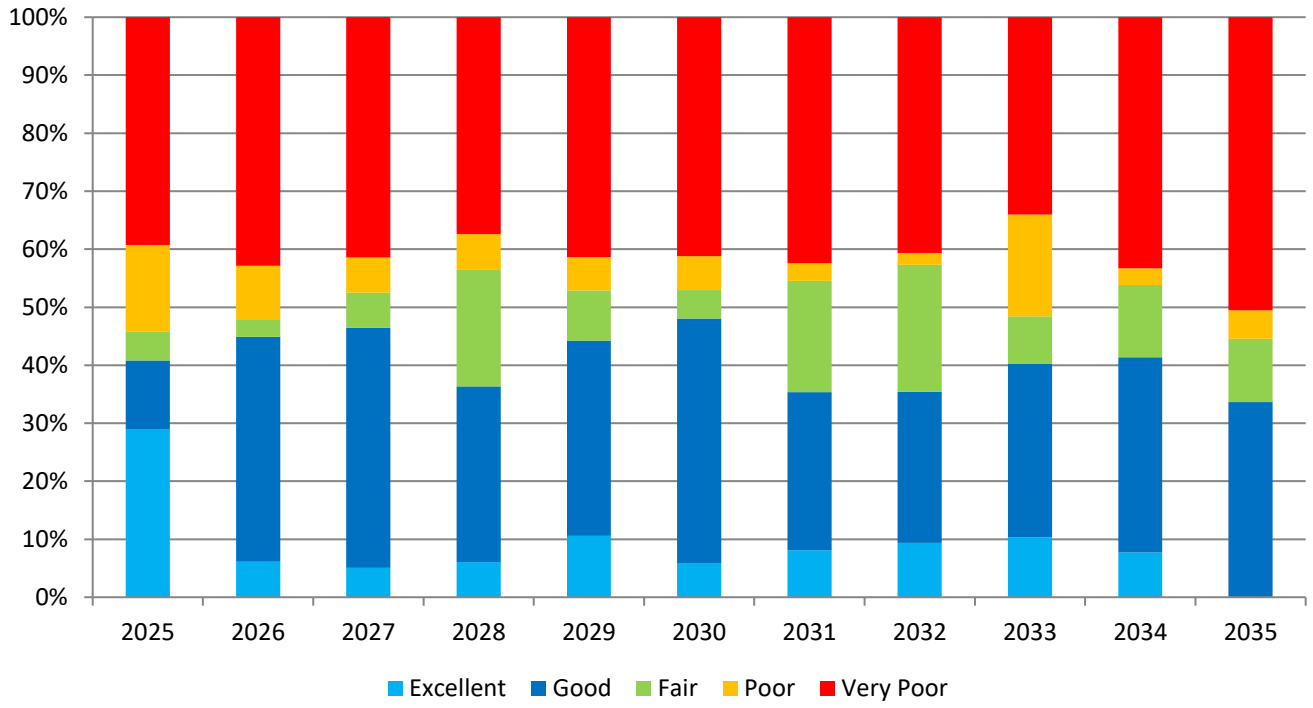
Figure 8.8: Stormwater Condition Forecast – Budget Scenario



The estimated outcome of the City's stormwater assets physical condition if minimum capital reinvestment isn't achieved will forecast a decrease in condition rating from 1.93 to 1.60 by the year 2035 for a **total decrease of 17.1%.**

The estimated outcome of the City's centerline culvert assets physical condition if minimum capital reinvestment isn't achieved will forecast a decrease in condition rating from 2.09 to 1.89 by the year 2035 for a **total decrease of 10.1%.**

Figure 8.9: Transportation Condition Forecast – Budget Scenario

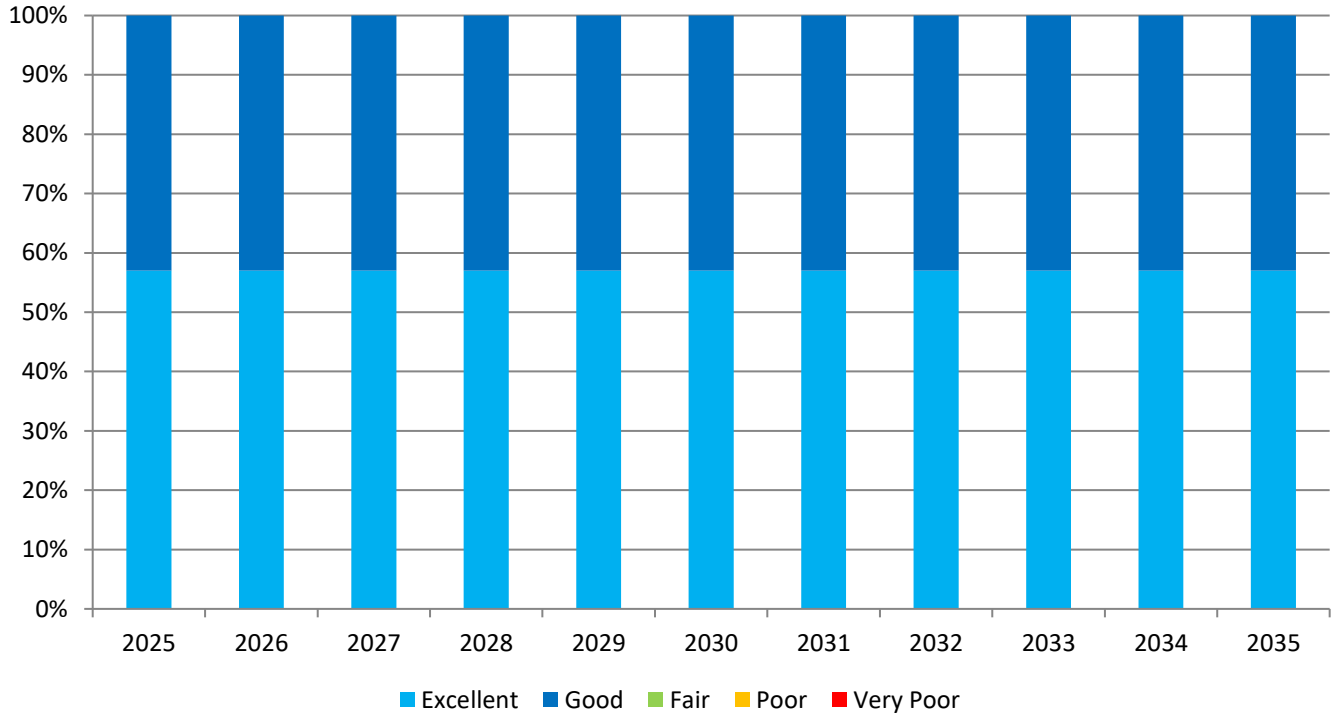


The estimated outcome of the City's roadway assets physical condition if minimum capital reinvestment isn't achieved will forecast a decrease in condition rating from 3.30 to 3.00 by the year 2035 for a **total decrease of 9.5%.**

The estimated outcome of the City's walkway assets physical condition if minimum capital reinvestment isn't achieved will forecast a decrease in condition rating from 4.02 to 3.83 by the year 2035 for a **total decrease of 4.8%.**

The outcome of the City's bridge assets physical condition relative to the funds allocated will forecast a decrease in condition rating from 2.21 to 2.15 by the year 2035 for a **total decrease of 2.7%.**

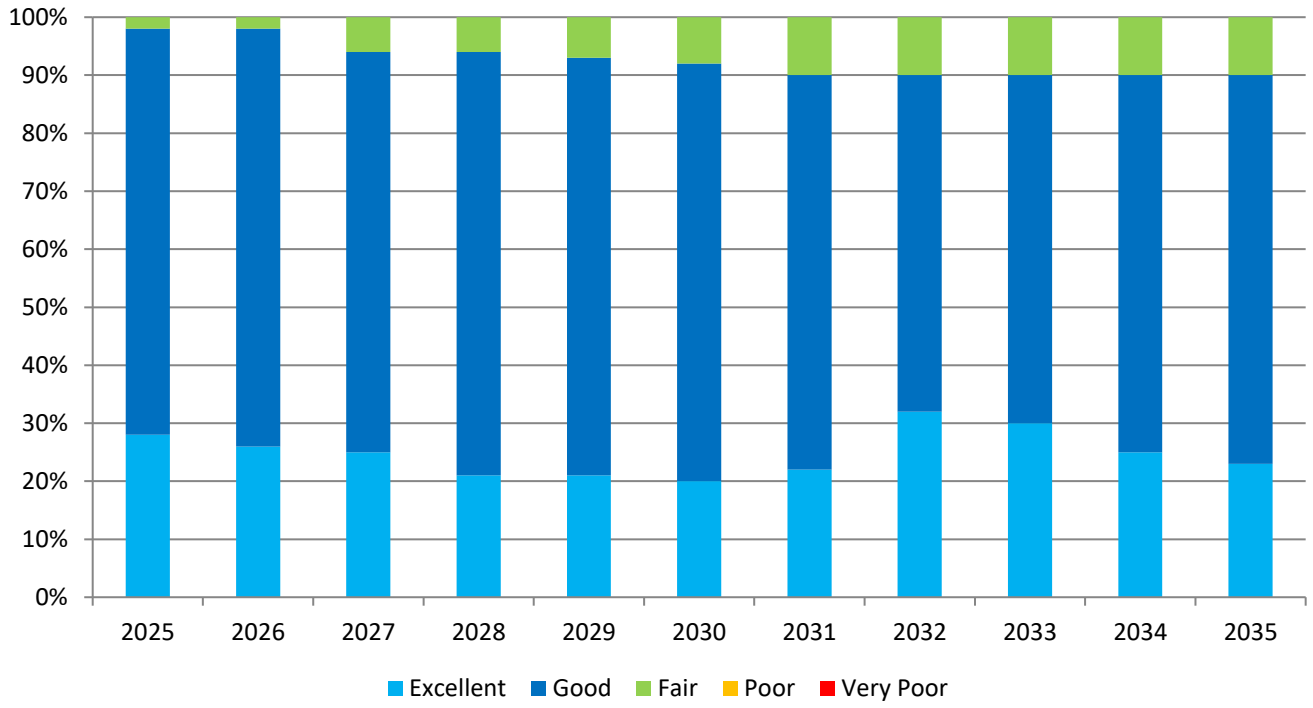
Figure 8.10: Solid Waste Condition Forecast – Budget Scenario



The estimate outcome of the City's solid waste assets physical condition if minimum capital reinvestment isn't achieved will forecast a constant condition rating of 3.80 by the year 2035 for a **total of 0%.**

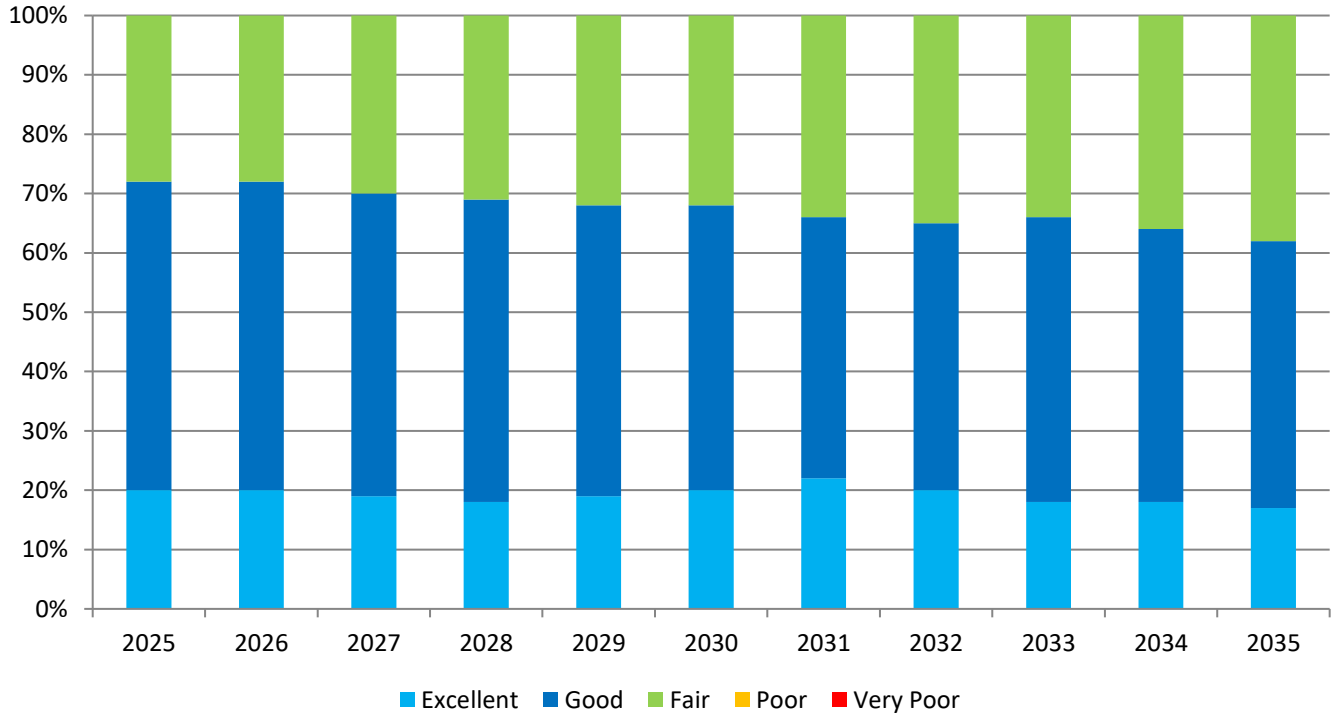
Note: that the Solid Waste category has seen a significant investment in 2023 due to the opening of a new landfill site and closure of former landfill site. This resulted in this category to be reclassified.

Figure 8.11: Corporate Facilities Condition Forecast – Budget Scenario



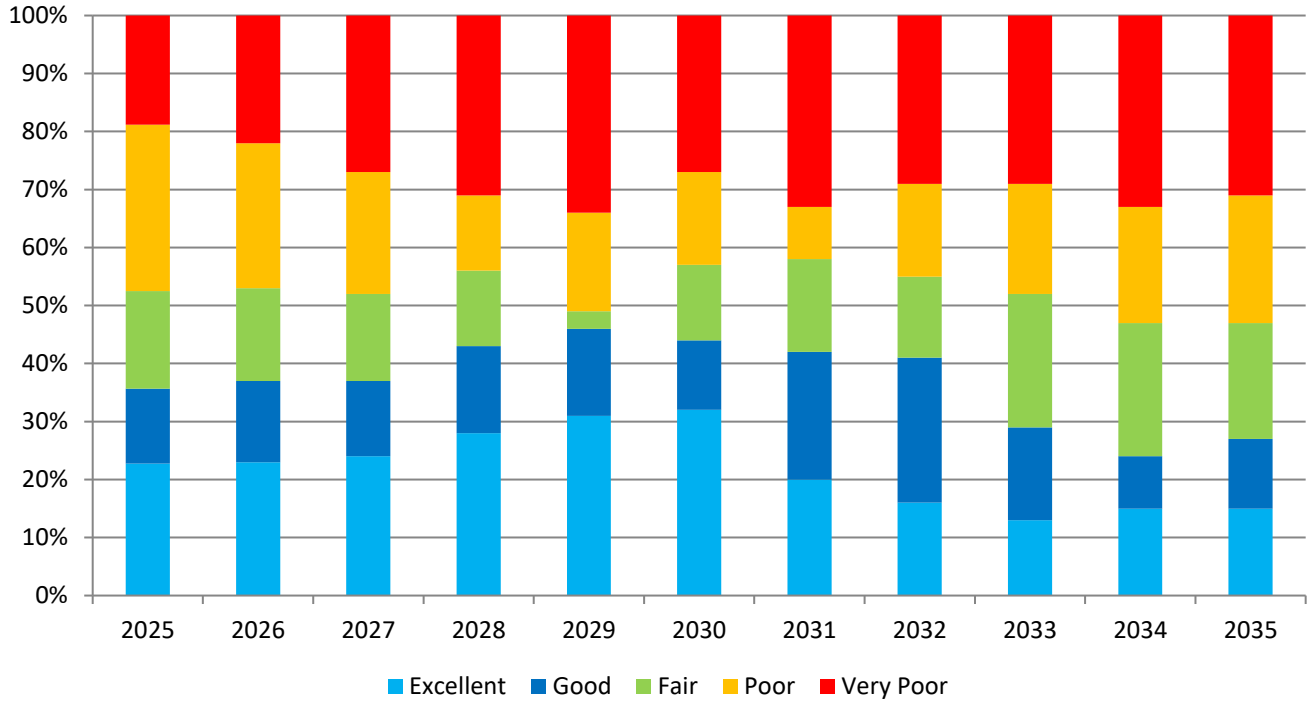
The estimated outcome of the City's corporate facility assets physical condition if minimum capital reinvestment isn't achieved will forecast a decrease in condition rating from 3.53 to 3.26 by the year 2035 for a **total decrease of 8.0%.**

Figure 8.12: Recreation & Culture Condition Forecast – Budget Scenario



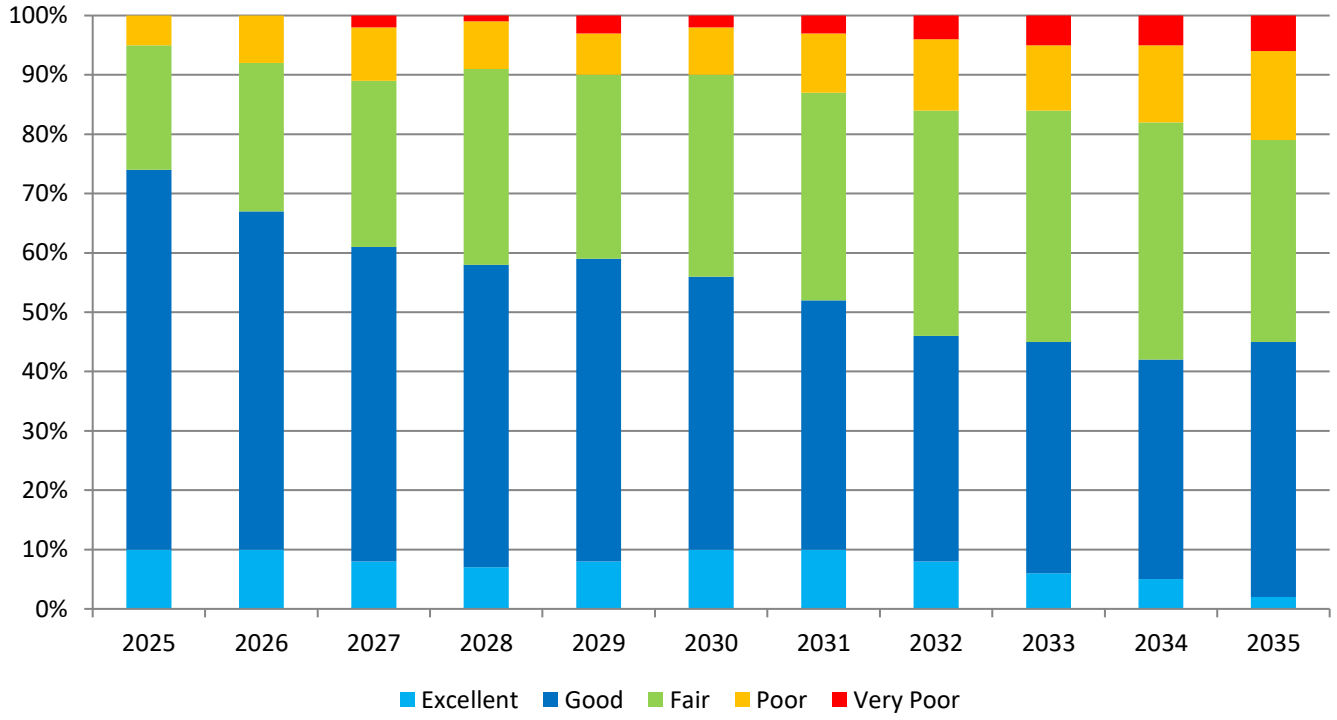
The estimated outcome of the City's recreation & culture assets physical condition if minimum capital reinvestment isn't achieved will forecast a decrease in condition rating from 3.31 to 2.80 by the year 2035 for a **total decrease of 16.7%.**

Figure 8.13: Corporate Fleet Condition Forecast – Budget Scenario



The estimated outcome of the City's corporate fleet assets physical condition if minimum capital reinvestment isn't achieved will forecast a decrease in condition rating from 3.22 to 3.04 by the year 2035 for a **total decrease of 5.6%.**

Figure 8.14: Machinery & Equipment Condition Forecast – Budget Scenario



The estimated outcome of the City's machinery & equipment assets physical condition if minimum capital reinvestment isn't achieved will forecast a decrease in condition rating from 3.79 to 3.39 by the year 2035 for a **total decrease of 11.1%.**

8.8 Recommendations

It is recommended that the municipality pursue the implementation of a corporation-wide multi-year capital budget. This would provide a broader planning horizon, which would provide perspective and awareness of future projects outside of traditional short-term plans. To manage the funding gap, it is recommended that a gradual increase to the tax levy and user fees continue to be implemented to reach sustainability. The focus will be to improve financial reporting capabilities and improve integration between the AMP activities and the City's budget development process. For the next AMP update, a more in-depth analysis of soft costs is recommended for incorporation in the plan.

Conclusion

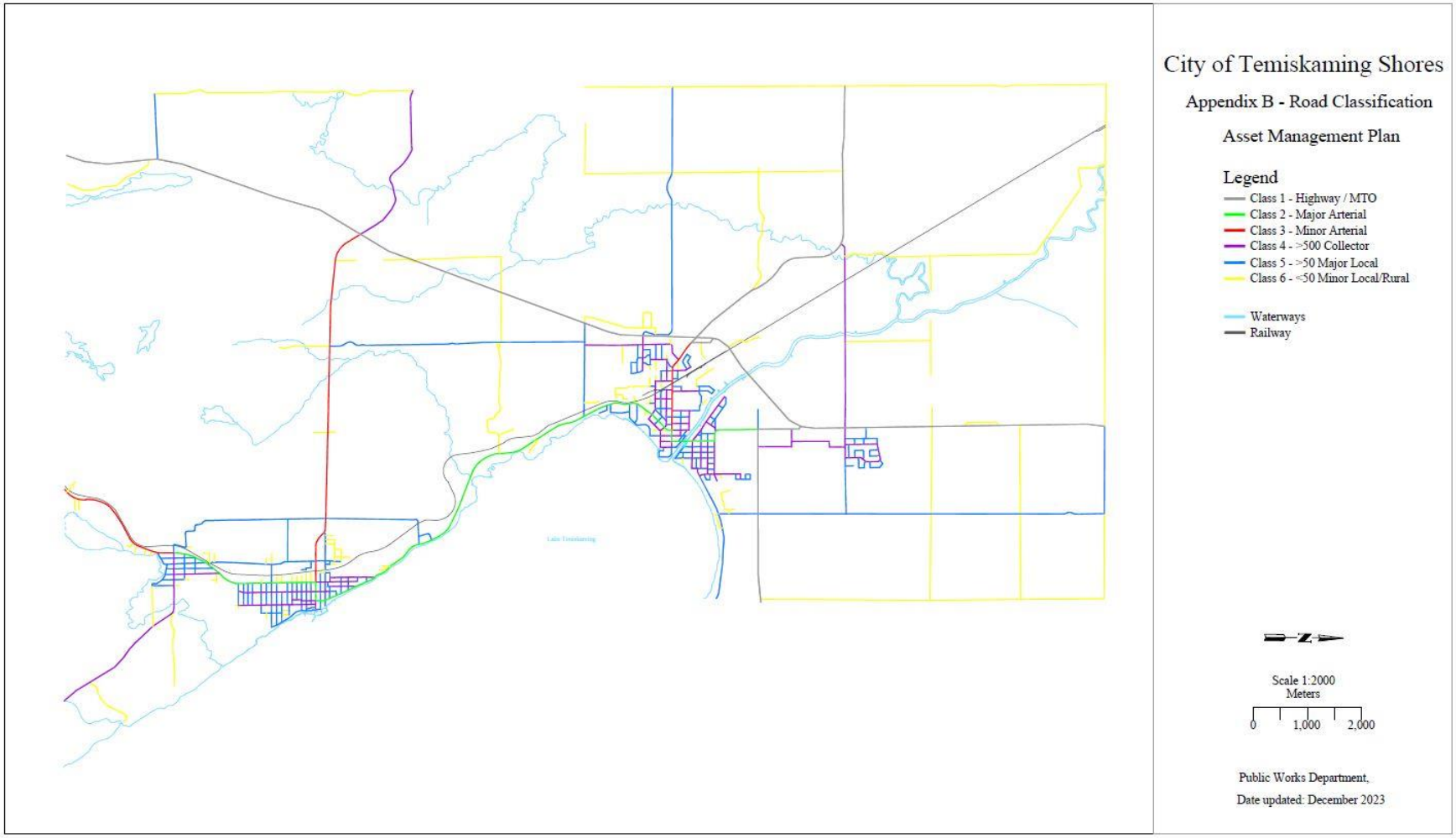
This plan is intended to be a living document and will continually be revised to include updated asset data inventories, levels of service metrics and life cycle activities to better reflect the needs of the municipality. The 2025 municipal asset management plan will become the City's plan for the effective and efficient management of its assets. The City may require a phase in approach AMP with recommendations that may take several years to achieve. The municipality's goal will be to strengthen alignment with strategic plans and master plan initiatives. To also improve confidence in asset data, strategies and decision support. Community engagement and communication strategies surrounding the AMP will be developed that will be critical for the future AMP iterations and to ensure that the desired levels of service reflect the values and priorities of the community, while also balancing affordability considerations. The City will use the annual AMP review to look back and project forward, celebrate successes and learn from efforts made.

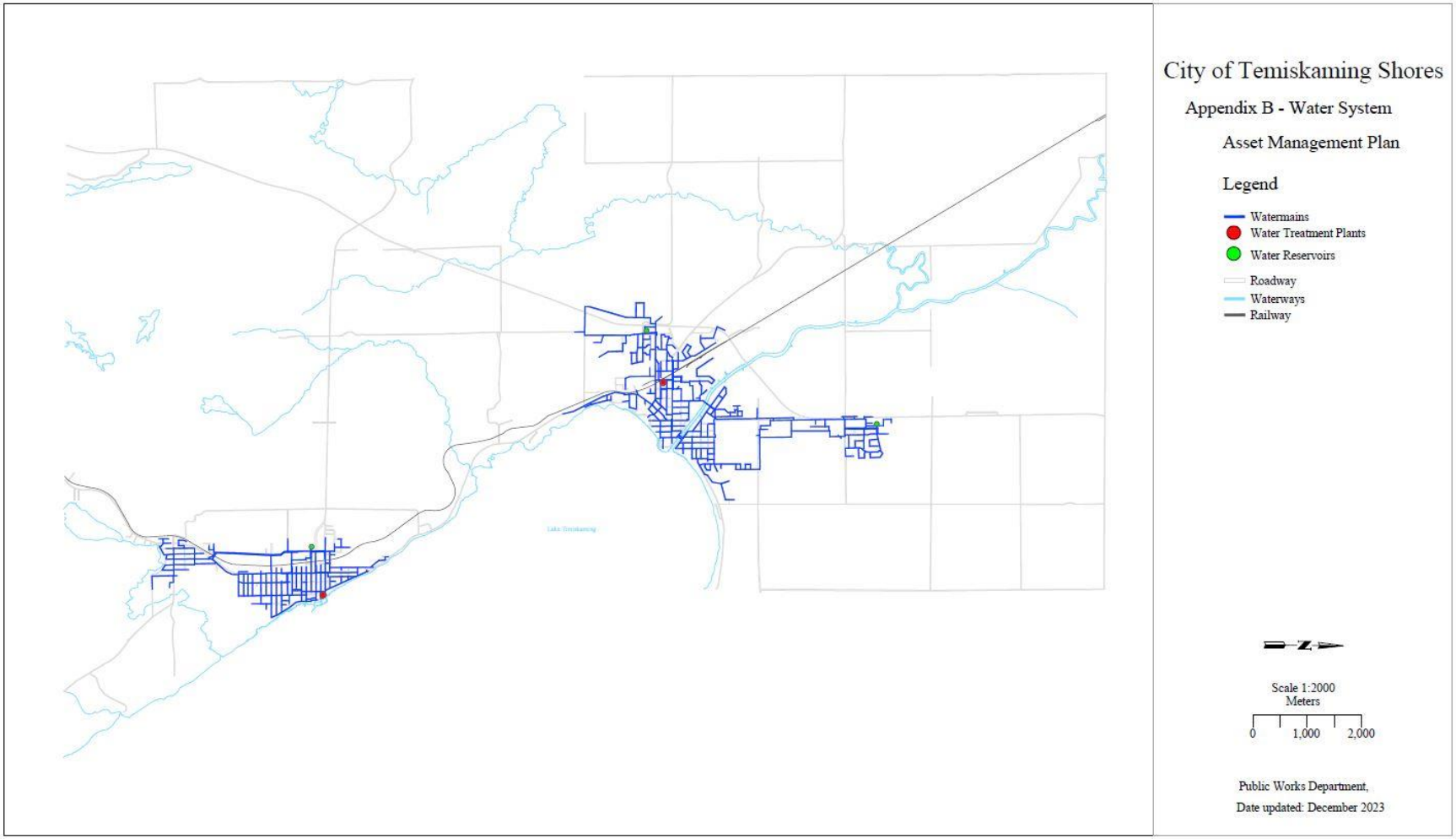
This AMP will remain current until replaced by an updated plan. The next major AMP review is scheduled for 2030 and every 5 years following. This long-term and consistent approach will be able to determine if further adjustments are required.

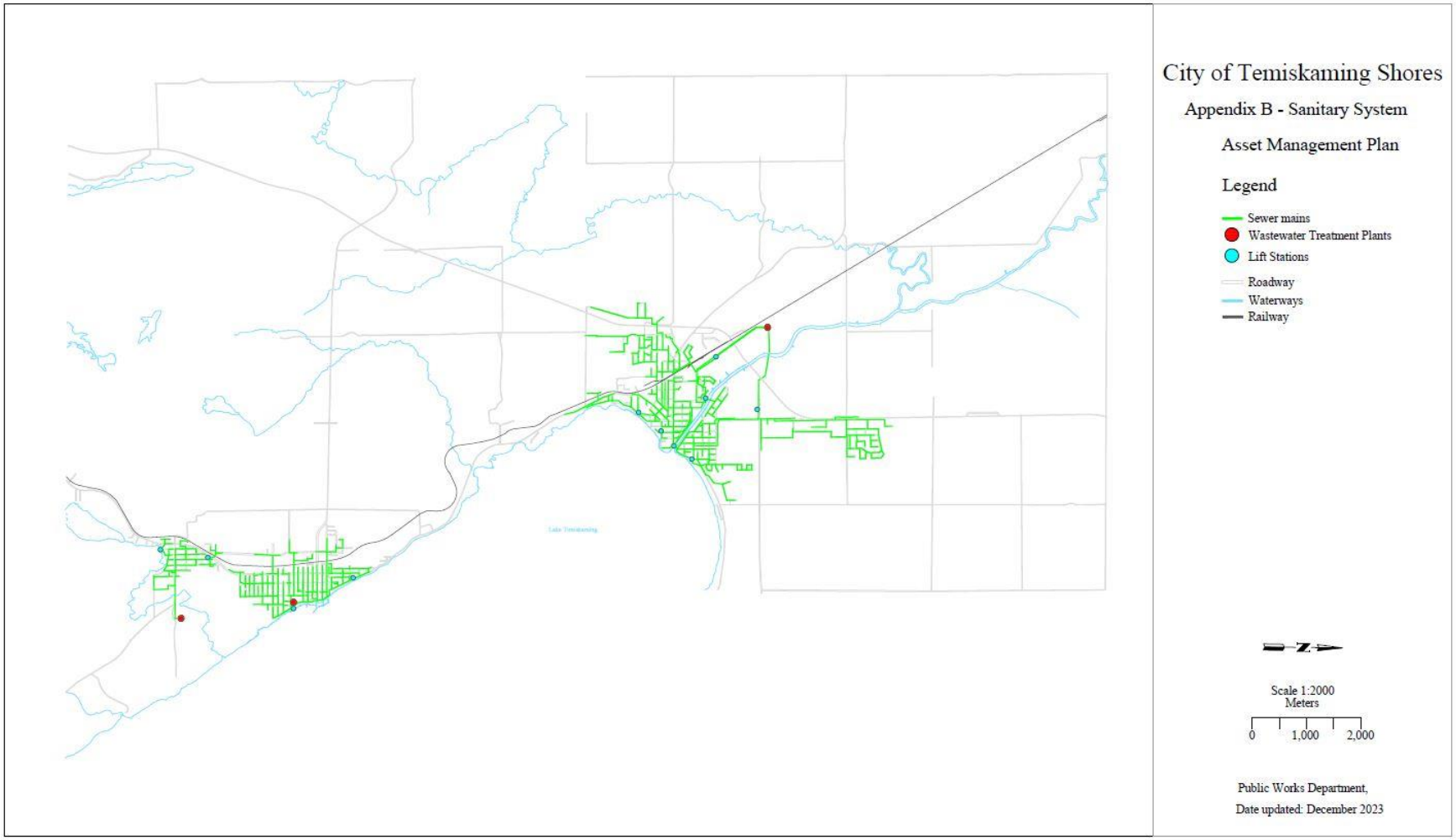
Appendix A

Glossary of Terms	
Term	**Definition**
Capital Cost	The total cost needed to bring a project to a commercially operable status.
Core Infrastructure Assets	• water asset that relates to the collection, production, treatment, storage, supply or distribution of water. • wastewater (sanitary) asset that relates to the collection, transmission, treatment or disposal of wastewater. • stormwater management asset that relates to the collection, transmission, treatment, retention, infiltration, control or disposal of stormwater. • Transportation asset that relates to the conveyance of traffic.
Lane Kilometers	A kilometer-long segment of roadway that is a single lane in width.
Level of Service	What people experience from the municipality's infrastructure. For example, bridges without load restrictions can offer a relatively higher level of service compared to bridges that do not allow heavy freight vehicles.
Lifecycle Activities	Activities undertaken with respect to a municipal infrastructure asset over its service life, including constructing, maintaining, renewing, operating and decommissioning, and all engineering and design work associated with those activities.
Operational Cost	The cost of resources used by an organization just to maintain its existence.
Service Life	The total period during which a municipal infrastructure asset is in use or is available to be used.
Risk Analysis	A technique used to identify and assess factors that may jeopardize the success of a project.
Provincial Road Classifications	• Class 1 roads (highway), is merely a high speed road connecting 2 or more cities. Normally, highways are under provincial or federal control. • Class 2 and 3 roads (arterial) are usually constructed to move traffic from one end of the city to the other. (Average daily traffic counts dictate the class, that modifies the maintenance standards.) • Class 4 roads (collector) have the function to collect traffic from local streets and discharge them onto other collector or arterial roads. • Class 5 and 6 roads (local) serve primarily to provide access to the traffic emanating from the properties and discharge them onto collectors. Class 6 roads can also be found with a gravel surface. (Average daily traffic counts dictate the class, that modifies the maintenance standards.)

Appendix B


City of Temiskaming Shores
Appendix B - Road Classification
Asset Management Plan
Legend
Class 1 - Highway / MTO
Class 2 - Major Arterial
Class 3 - Minor Arterial
Class 4 - >500 Collector
Class 5 - >50 Major Local
Class 6 - <50 Minor Local/Rural
Waterways
Railway
Scale 1:2000
Meters
0
1,000
2,000
Public Works Department,
Date updated: December 2023


City of Temiskaming Shores
Appendix B - Water System
Asset Management Plan
Legend
Watermains
Water Treatment Plants
Water Reservoirs
Roadway
Waterways
Railway
Scale 1:2000
Meters
0
1,000
2,000
Public Works Department,
Date updated: December 2023


City of Temiskaming Shores
Appendix B - Sanitary System
Asset Management Plan
Legend
Sewer mains
Wastewater Treatment Plants
Lift Stations
Roadway
Waterways
Railway
Scale 1:2000
Meters
0
1,000
2,000
Public Works Department,
Date updated: December 2023


City of Temiskaming Shores
Appendix B - Storm System
Asset Management Plan
Legend
Storm mains
Ponds
Roadway
Waterways
Railway
Scale 1:2000
Meters
0
1,000
2,000
Public Works Department,
Date updated: December 2023

Dymond
Haileybury
New Liskeard

City of • Ville de
Temiskaming
Shores