2024
CORPORATE ASSET MANAGEMENT PLAN

May 2024

York Region

Strong, caring, safe communities.

Working together to serve our thriving communities - today and tomorrow.

Chairman & CEO
Wayne Emmerson

A MESSAGE FROM YORK REGION CHAIRMAN AND CEO AND MEMBERS OF REGIONAL COUNCIL

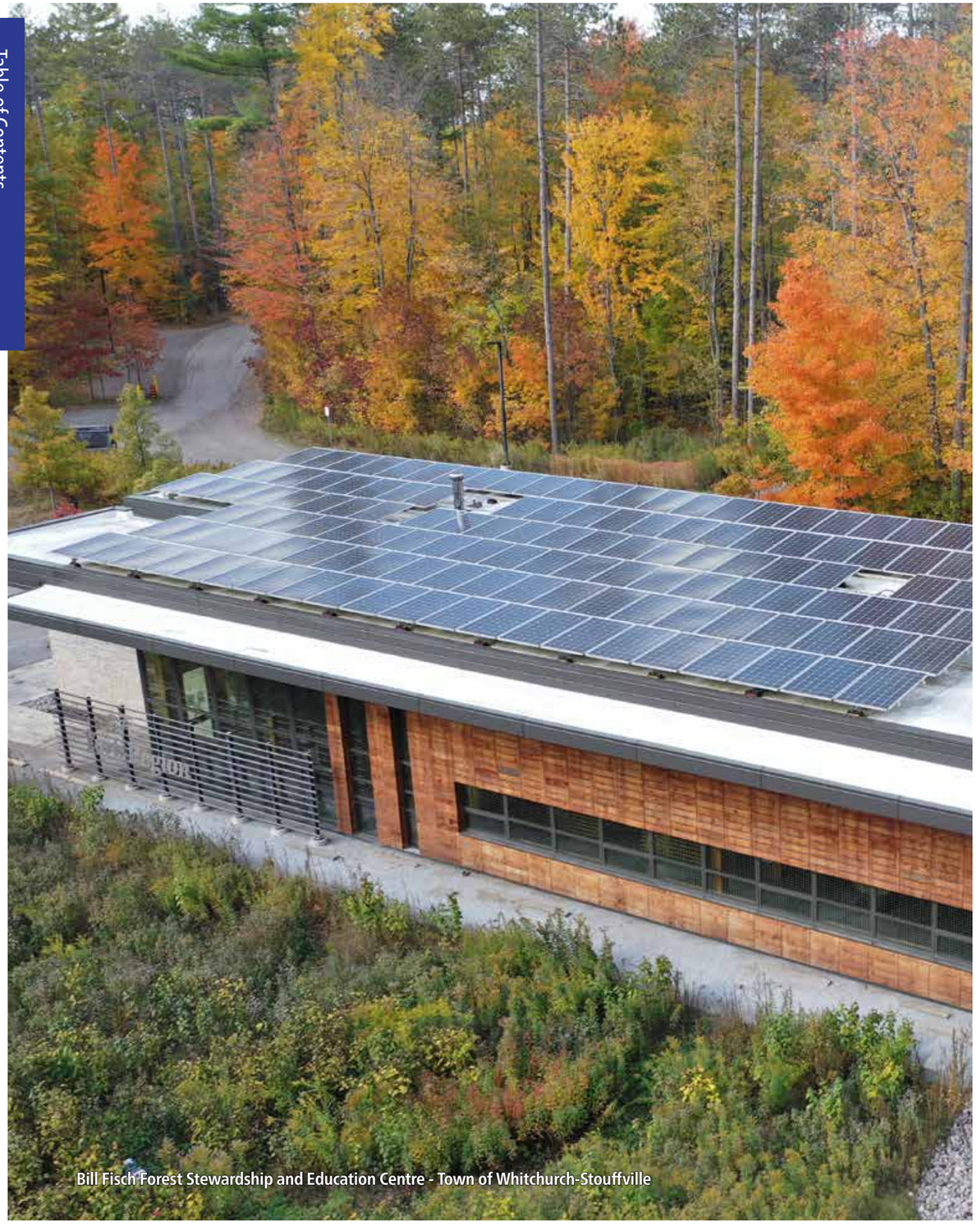
The Regional Municipality of York provides a variety of programs and services to more than 1.2 million residents and 55,600 businesses. Regional owned and operated assets are essential to providing these services and contribute to the high quality of life enjoyed by our residents.

York Region owns and manages over $25 billion worth of infrastructure assets, including buildings, facilities, roads, fleet vehicles, information technology and living assets like street trees. These assets play a critical role in delivering the programs and services that enhance the quality of life across York Region.

While many Regional assets are relatively new and in good condition, others will require rehabilitation or replacement in the coming years. Understanding the replacement cost, condition and proportion of the remaining life cycle of the Region's assets provides insight into potential risk and the potential need for renewal.

The Corporate Asset Management Plan outlines assets currently owned and managed on behalf of the community and how they support the services delivered by the Region. The plan identifies what efforts and infrastructure strategies are needed in the future and how to financially manage the planned assets throughout all lifecycle phases.

Through this plan, Regional Council remains committed to sustaining Regional infrastructure and lowering the risk of service disruptions in a manner that is respectful and accountable to York Region taxpayers today and in the future.



Bill Fisch Forest Stewardship and Education Centre - Town of Whitchurch-Stouffville

Table of Contents

Executive Summary **5**
- Assets worth over $25 billion across 13 service areas provide important services 6
- 92% of assets are in fair or better condition 6
- Service area portfolio summary (Assets worth over $25 billion across 13 service areas provide important services) 7
- Levels of service reflect commitments to customers and others 8
- Asset management strategies balance costs, risks, and levels of service 8
- Financial plans in 2023 expect enough funding to meet most needs 9
- Continuously improving asset management 10
- Corporate Asset Management Plan will evolve as conditions change 11

Introduction **13**

Alignment with Regional Direction **17**
- ***2.1*** Vision 17
- ***2.2*** Strategic plan 18
- ***2.3*** Growth management 19
- ***2.4*** Master plans, capital plans and asset management plan 20
- ***2.5*** Regional fiscal strategy 21
- ***2.6*** Coordinated procurement and other activities 21

Asset Management Planning at York Region **23**
- ***3.1*** Corporate Asset Management Policy 23
- ***3.2*** Governance 23
- ***3.3*** Legislation and standards 25
- ***3.4*** Service areas 26
- ***3.5*** Levels of service 27

Overview of York Region Assets **45**
- ***4.1*** State of infrastructure 45
- ***4.2*** Asset age and condition by service area 48

Strategies for Managing Asset-Enabled Services **51**
- ***5.1*** Corporate Asset Management Strategy 51
- ***5.2*** Lifecycle management strategies 53
- ***5.3*** Managing risk 55
- ***5.4*** Measuring asset management maturity 56
- ***5.5*** Priorities to improve level of maturity 57
- ***5.6*** Continuous improvement plan 60
- ***5.7*** A corporate-wide management system 65

Financial Summary **67**
- ***6.1*** Fiscal strategy and background 67
- ***6.2*** Lifecycle spending 68
- ***6.3*** Fiscal strategy considerations 72

Overview of Service Area Plans **75**

8. Conclusion and Next Step **249**

9. Appendix **251**

York Region Paramedic Services Ambulance Bay - 80 Bales Drive East, Town of Whitchurch-Stouffville.

Executive Summary

Residents and businesses across York Region rely on services provided by public assets, including roads, buses, watermains and green spaces, for work, travel and quality of life.

This Corporate Asset Management Plan explains how York Region will continue to provide services in a safe, reliable and cost-effective manner, today and into the future, by caring properly for the assets that deliver them.

The Plan follows the requirements of the Infrastructure for Jobs and Prosperity Act, 2015 and related regulations. It describes:

- State of infrastructure by asset category
- Current and proposed levels of service
- Lifecycle activities to achieve levels of service, including actions that may be needed to address climate change impacts
- Estimated costs to provide both levels of service over the next 10 years and availability of needed funding
- Estimated costs to meet growth needs over the same period and availability of funding
- How we are continuously improving asset management planning across the organization

Updating the previous 2018 Corporate Asset Management Plan, this document explains what has changed, where asset management is now across Regional government and where it needs to go. As well as meeting provincial requirements, the Plan also aligns with the Region's Vision, Strategic Plan, Official Plan, internal policies and industry best practices on asset management.

This Plan outlines how the Region will continue to meet the needs of its 1.2 million residents and more than 50,000 businesses in ways that manage risks while being affordable today and into the future.

Key terms in asset management

Asset: A physical structure, vehicle, piece of equipment, or other object used to deliver a service.

Asset portfolio: Group of assets used by a service area to deliver its services. For example, the roads portfolio includes Regional roads, bridges, culverts, streetlights, traffic signals and multi-use paths. For the Region as a whole, the portfolio is all assets it owns or co-owns.

Asset class: A group of similar assets, such as all transit vehicles or all water valves.

Infrastructure: A system of fixed assets that together provide a service. For example, wastewater infrastructure is made up of trunk sewers, pumping stations and treatment plants. Some definitions, such as the one used in the State of Infrastructure Report, also include standalone and/or mobile assets such as buses.

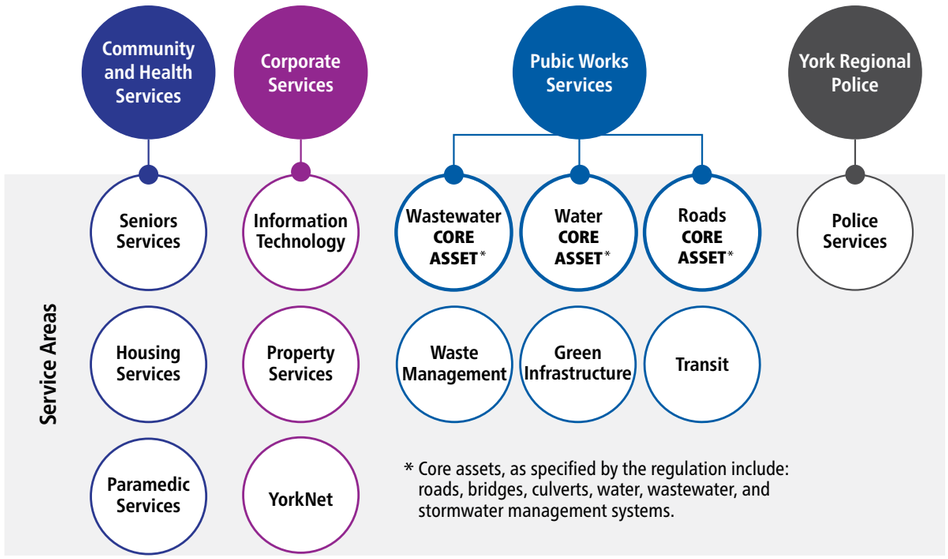
Renewal: Action to continue providing service as an asset ages either through major work to rehabilitate it or by replacing it with a new asset. This is distinct from ongoing operation and maintenance, which also includes repairs.

Assets worth over $25 billion across 13 service areas provide important services

This Plan reports on 13 service areas:

At the end of 2022, the estimated cost to replace all Regional assets was $25.3 billion, an increase of $10.7 billion over the previous five years. Overall growth reflects new assets added to the base, inflation, and more refined methods of estimating costs, including the use of third-party expertise to assess value of some asset types. An increase of $6.3 billion from 2021 to 2022 was largely driven by the last two factors.

Figure 1:13 asset-enabled services



92% of the Region's assets are in fair or better condition

Many of the Region's assets have been in service for a short time and overall grades for most of these assets range from fair to very good and have been regularly reported to Council since 2013. For further grading detail, see Appendix C.

The grade is made up of three elements that examine the reliability of an asset, whether there is enough capacity to meet demand and the asset's condition. Table 1 provides individual grades by service area with arrows showing the trend to 2024. Grades can be stable (flat arrow), improving (up arrow) or declining (down arrow). This Plan includes measures to manage all assets, including the 8% graded below fair.

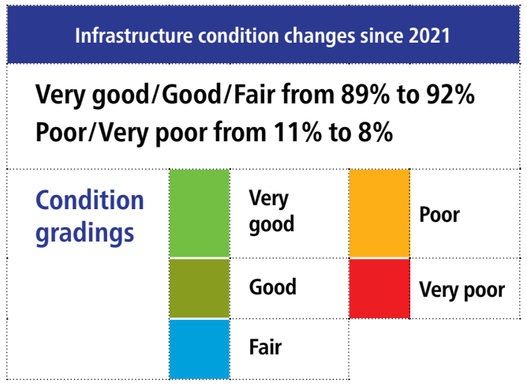


Table 1: 2022 service area portfolio summary

The following table provides a summary of the 2022 replacement costs, grades, trends and future outlook by service area. The overall service area portfolio grades are based on asset reliability, capacity and condition metrics. These metrics are subject to change as a result of continuous improvement efforts.

Service Area	Overall Grade and Trend	Replacement Cost ($ M)	Grade and Trend (→) to 2024		
			Reliability	Capacity	Condition
Wastewater Services	A →	$8,727.6	A →	A →	A →
Roads Services	B →	$5,648.0	A →	B →	B →
Water Services	A →	$3,883.5	A →	A →	B →
Transit Services	B →	$2,182.9	A →	B ↗	B →
Green Infrastructure Services	B →	$1,810.1	A →	B →	B →
Housing Services	B →	$1,186.0	B →	B →	C ↗
Property Services	A →	$1,025.3	A →	n/a*	A →
York Regional Police Services	B →	$460.4	A →	B →	B →
Waste Management Services	B →	$236.0	B →	A →	B →
YorkNet	A →	$72.0	A →	A →	A →
Information Technology Services	B →	$68.4	A →	B →	C →
Paramedic Services	A →	$35.6	A →	A →	B →
Seniors Services	B →	$13.7	B ↗	A →	B →

* For Property Services, capacity refers to ability to accommodate Regional staff. In 2022, the service area was assessing the impacts of a hybrid work model on needs.

Proposed levels of service

The term "proposed levels of service" is used throughout this Plan to align with the wording in O.Reg. 588/17. It is important to note that all "proposed" levels of service metrics in the Plan have been reflected in annual budgets, master plans or other Council reports.

Corporate Asset Management Plan

The Corporate Asset Management Plan is aligned with the Region's Vision and Strategic Plan, which sets priorities according to the four areas of focus: Economic Vitality, Healthy Communities, Sustainable Environment and Good Government.

Levels of service reflect commitments to customers and others

The Region measures how well service is delivered by defining levels of service and measuring performance against them. Levels of service are shaped by the expectations and needs of those who use services and may also be set out in law and/or industry standards.

In line with provincial requirements, the Region uses two types of levels of service:

- **Customer levels of service** are qualitative statements that describe the intended purpose of a service. To understand what customers expect and are experiencing, the Region regularly surveys residents
- **Technical levels of service** that use numerical values. An example is the percentage of collected wastewater treated prior to returning to the environment

Under O. Reg. 588/17, municipalities had to set and report the current levels of service for core assets – water, wastewater and roads – by July 1, 2022. The Region's 2018 Corporate Asset Management Plan fulfilled that requirement. This Plan meets the deadline of July 1, 2024 for non-core assets.

Proposed levels of service are metrics a service area intends to deliver over the next 10 years. O. Reg. 588/17 requires municipalities to set and report their proposed levels of service for all assets by July 1, 2025. This Plan fulfills this requirement.

By defining or accepting a level of service, the Region aims to allocate the necessary financial, technical and/or staff capacity to meet it.

Asset management strategies balance costs, risks, and levels of service

The Corporate Asset Management Strategy helps the Region meet its level of service commitments with available financial resources while managing risk. Guided by the Corporate Asset Management Policy, the strategy provides a framework to ensure consistency while allowing for differences among service areas' asset portfolios.

For service areas, asset lifecycle strategies set out activities and timing to manage assets in line with the overall corporate strategy and policy. The lifecycle strategy relies on addressing such issues as:

- Whether the need for new assets can be reduced or eliminated by managing demand or improving performance of existing assets
- Considering how to minimize costs throughout a new asset's lifecycle by looking at ongoing operation and maintenance needs and decommissioning costs as well as up-front costs
- Whether it is more cost-effective to rehabilitate an asset or replace it when it is no longer able to provide the required level of service

Throughout this process, an important focus is understanding risks to service and implementing methods to manage them.

Financial plans in 2023 expect enough funding to meet most needs

The Financial Summary, developed in line with the provincial regulation, estimates the asset-related costs to maintain current levels of service and to meet proposed levels of service as reflected in annual budgets, master plans and other Council reports over the next 10 years (2023-2032).

These financials are then compared to resources provided in the 10-year Capital Plan and the 2023 operating budget and forecast.

The analysis found that over the 10-year period:

- For existing assets, total capital-related cost to deliver current levels of service is expected to be $4.0 billion, while the funding set out in the 2023 budget was $3.8 billion, resulting in a difference of $0.2 billion
    - The $0.2 billion difference is comprised of $161 million attributable to Roads, $21 million to Property Services, $9 million to Green Infrastructure and $5 million to Senior Services
- The $4.6 billion allocated to growth-related assets in the 10-year capital plan is expected to be adequate to meet both current and proposed levels of service
- Asset-related operating needs are expected to be in line with funding, which is projected to rise from $820 million in the 2023 budget to roughly $1.1 billion by 2032

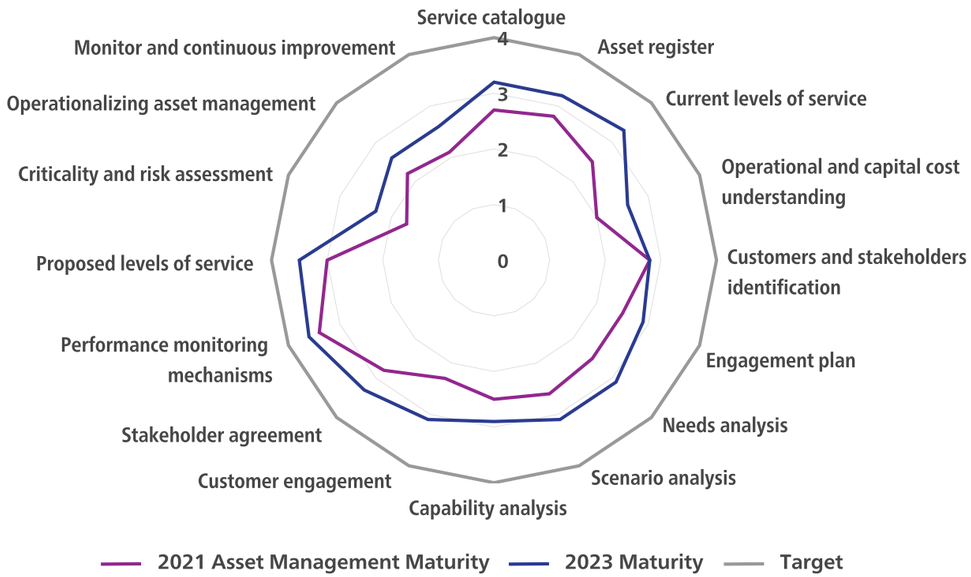
The Regional Fiscal Strategy has been key to ensure funding, including reserves, is enough to keep assets in a state of good repair and renew them when needed. Asset replacement reserves, which may also be used for major asset rehabilitation, totaled $2.3 billion as of December 31, 2023. Given the major costs to achieve proposed levels of service, building reserves must be continued over the 10-year period and beyond.

York Region Offices - 17150 Yonge Street, Town of Newmarket

Continuously improving asset management

The Region regularly assesses the maturity of its asset management program and looks for opportunities to improve. Maturity in 16 categories is assessed, with scores running from a low of zero to a maximum of four. The results point to strengths and areas for improvement.

Figure 2: York Region's asset management maturity



The graph above brings together results for all 13 service areas. The purple inner line shows ratings in 2021, while the blue line shows 2023 rating. Between 2021 and 2023, the overall score improved from two-and-half out of four (63%) to three out of four (75%). Specific results for each service area are included in the discussions that begin on page 76 of the Plan.

This Plan outlines goals and actions in five priority areas to improve level of maturity before the Plan's next update:

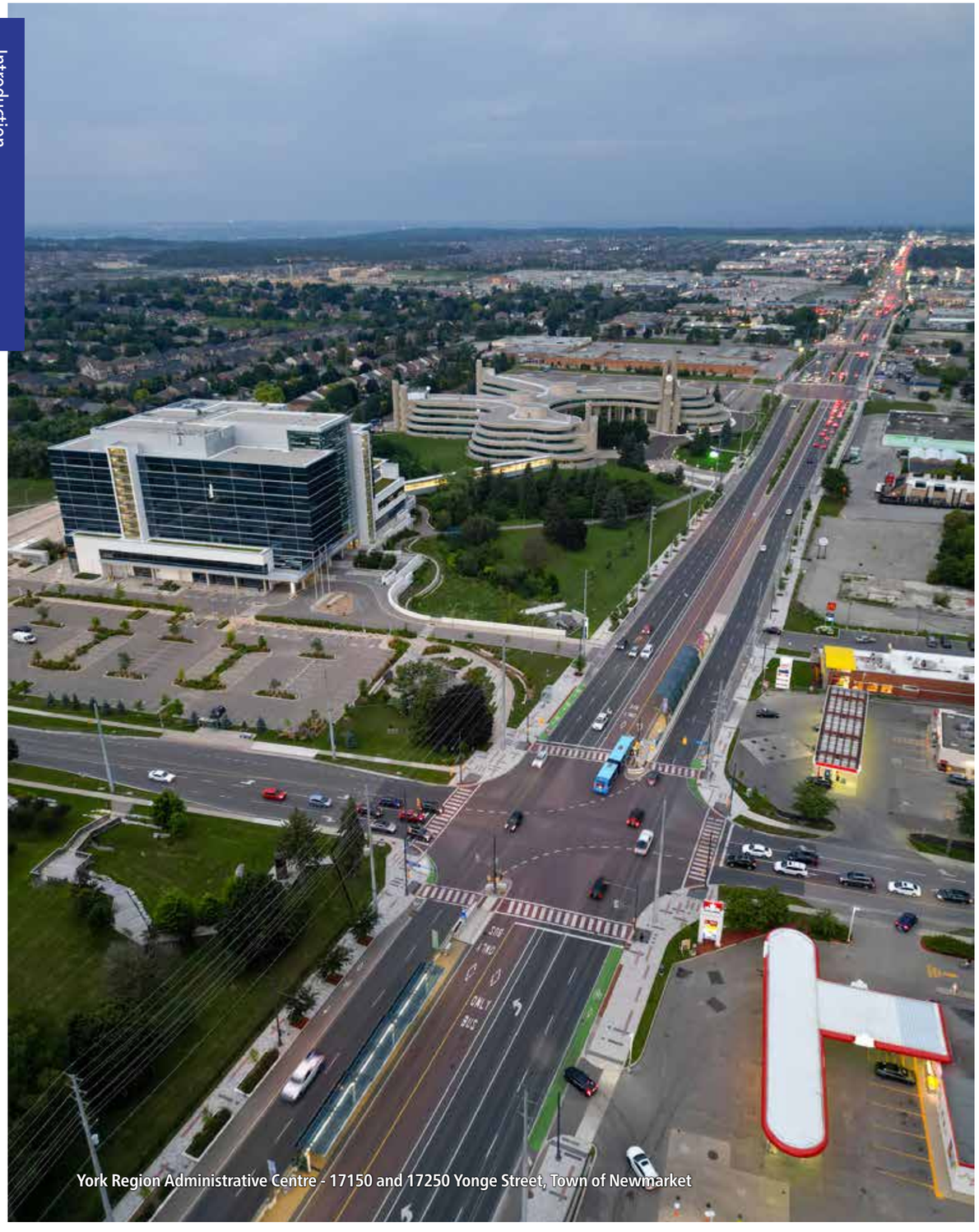
Figure 3: Strategic asset management priorities

Asset management continually evolves, which calls for continuous improvement efforts. The table in Section 5.6 outlines 2025-2028 actions to advance practices and improve asset management maturity across the organization. Maturity levels are measured every two years.

As the practices of service areas continue to mature, the Corporate Asset Management team will monitor how well the Region's maturity tool is capturing progress. It will remain open to broadening its maturity tool or adopting an internationally recognized assessment, such as those offered by the Asset Management Council or the Institute of Asset Management.

Corporate Asset Management Plan will evolve as conditions change

In line with O. Reg. 588/17, Regional Council will get updates through an annual Corporate Asset Management Progress Report starting in 2025. This Progress Report will also incorporate information that was previously captured in the annual State of Infrastructure Report. It should be noted that the 2024 budget outlined potential impacts on the Region's fiscal outlook as a result of recent provincial measures that will increase capital spending needs while decreasing revenues. This work was done after the tabling of the 2023 budget on which this Plan is based. As a result of new and updated information, status of information contained in this plan may have changed. Additionally, the Corporate Asset Management Progress Report will be used to inform Corporate Strategic Plan metrics.



York Region Administrative Centre - 17150 and 17250 Yonge Street, Town of Newmarket

Introduction

1.1 Introduction

The Regional Municipality of York (York Region) provides services to residents and businesses using assets including roads, buses, watermains, sewers, buildings and living assets like street trees.

As the Region continues to grow, we need to make sure we can continue to meet customer expectations about service levels by maintaining existing assets in a good state of repair and ensuring sufficient resources for future assets.

This is achieved through effective asset management that strikes the right balance of levels of service, cost and risk. The goal is to provide the levels of service that customers and others expect over time at the lowest cost while keeping risk within acceptable limits.

This means caring for existing and future assets and, in today's world, embracing new ideas, approaches and types of assets. Being open to innovation is key to making sure the Region can continue to deliver services sustainably now and into the future. Boxes throughout this Plan highlight innovative Regional practices and approaches to asset management.

This Corporate Asset Management Plan explains how the Region will manage its assets effectively and sustainably over the next 10 years. It summarizes:

- Current state of Regionally-owned assets
- Current and proposed levels of service
- A strategy for managing assets and related costs

The Plan complies with the provincial Infrastructure for Jobs and Prosperity Act, 2015 and Ontario Regulation 588/17 under the act. The regulation is referred to as O. Reg. 588/17 in the balance of this Plan.

York Region's asset management starts by aligning with Vision, Regional Council's long-term blueprint for strong, caring, safe communities. This translates to action over each four-year term of Regional Council through the Strategic Plan. Section 2 provides details on these documents and other guidance, including infrastructure master plans and the Regional fiscal strategy, that set the direction for asset management.

Section 3 provides details on asset management planning at York Region, including the Corporate Asset Management Policy that sets out principles the Region follows in its asset management activities. The section also discusses the governance structure and framework for asset management, legislative requirements, and levels of service.

York Region partners

To deliver services, the Region often works in concert with its nine local municipal partners – the towns of Aurora, Newmarket, East Gwillimbury, Georgina and Whitchurch-Stouffville, Township of King, and cities of Markham, Richmond Hill and Vaughan.

The Region is directly responsible for policing, public health, paramedic and senior services, social and community services, arterial roads and bridges, and public transit. It delivers drinking water to local municipal systems and conveys wastewater from them, and shares responsibility for solid waste management. It owns or co-owns assets needed to deliver these services.

An overview of existing assets, including replacement cost and current condition, is provided in Section 4.

Section 5 discusses strategies for managing assets. Strategic planning starts with corporate-wide principles, processes and goals to help achieve greater consistency and clarity. At the service area level, more detailed information about assets, performance, risk and expectations help shape the best lifecycle strategies for individual assets and infrastructure.

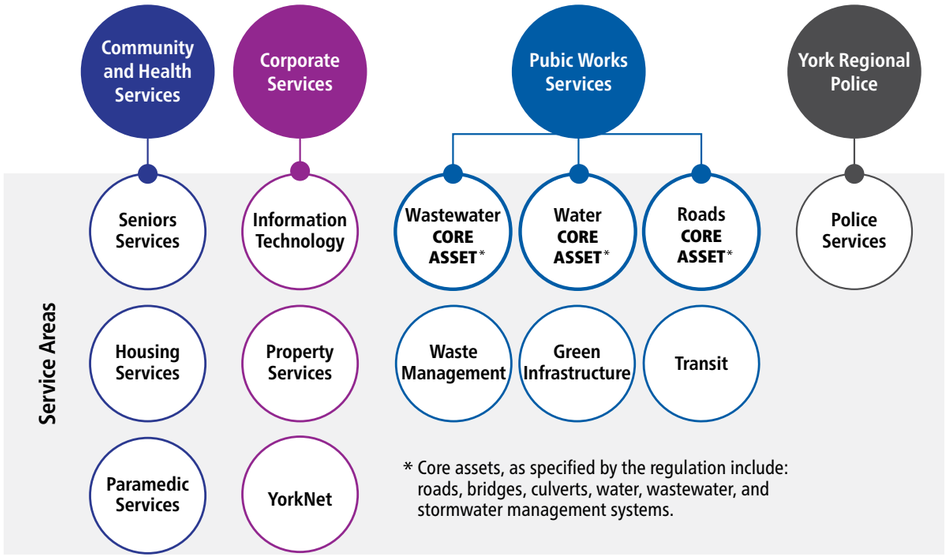
The Region's financial capacity to deliver this Plan is outlined in Section 6. The financial outlook was reasonably healthy when the 2023 Budget and 10-year Capital Plan, which underlie this Plan, were approved by Regional Council. The balance of this Plan, starting on page 76, discusses individual service areas.

This Plan is will be reviewed at least every four years to allow the Region to respond to changing conditions.

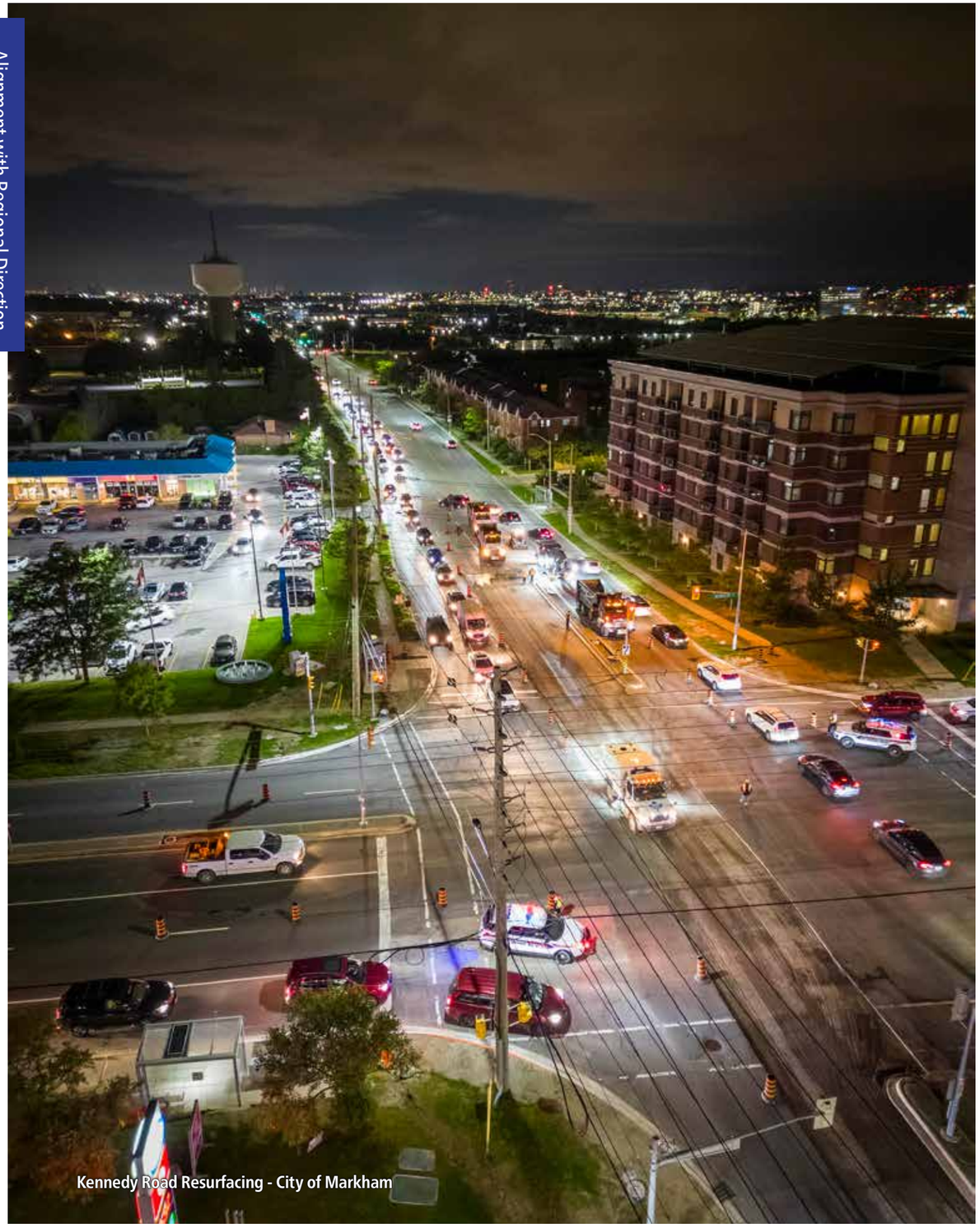
Progress will be reported annually to Regional Council, as required by O. Reg. 588/17, in a document integrating annual state of infrastructure reporting. The Corporate Asset Management Plan will be adjusted as needed to reflect changing conditions. In particular, the 2024 budget set out potential impacts on the Region's fiscal picture resulting from recent provincial measures that will increase capital spending needs and decrease revenues. This work was done after the 2023 budget on which this Plan is based. As a result, this Plan may need to change.

This Plan covers the assets used by 13 service areas, including those delivering "core services" as defined by provincial regulation.

Figure 4: 13 asset-enabled services



Queensville Sideroad West Bridge Inspection - Town of East Gwillimbury



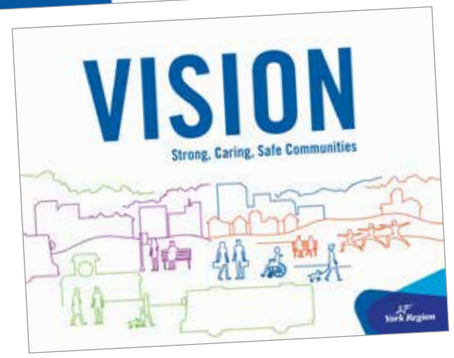
Kennedy Road Resurfacing - City of Markham

Alignment with Regional Direction

2.1 Vision

The Corporate Asset Management Plan aligns with the Region's Vision and its four areas of focus: economic vitality, healthy communities, sustainable environment and good government.

Reflecting Regional Council's commitment to strong, caring, safe communities, Vision guides corporate planning activities. It ensures staff work in the same direction regardless of their role or function within the organization. The Region's Corporate Strategic Plan, multi-year budget and other plans align with the Vision.



York Region's Vision and its four areas of focus: economic vitality, healthy communities, sustainable environment and good government.

2.2 Strategic plan

To maintain focus on Vision, the Region sets priorities over each four-year term of Regional Council through the Corporate Strategic Plan. The Region's multi-year budget and departmental plans align with the Strategic Plan to ensure resources go toward achieving priorities. The Strategic Plan reports progress annually.

Areas of Focus	Priority	Objectives
ECONOMIC VITALITY	Foster Economic Prosperity	• Attract and retain businesses, grow employment opportunities and attract a skilled workforce • Invest in a safe, effective transportation system that connects people, goods and services
HEALTHY COMMUNITIES	Support Community Wellbeing	• Protect and promote residents' well-being • Support safe communities • Sustain and increase affordable housing choices
SUSTAINABLE ENVIRONMENT	Drive Environmental Stewardship	• Deliver and promote environmentally sustainable services • Enhance and preserve green space
GOOD GOVERNMENT	Efficiently Delivery Trusted Services	• Improve customer experience by leveraging digital transformation • Delivery fiscally sustainable services • Attract and retain a skilled workforce

Centre Street - City of Vaughan

2.3 Growth management

Population growth drives the need for infrastructure. Impacts can be complex, not only in regards to the rate of growth, but the widespread geographical contribution which affects costs and ability to deliver services. An important role for York Region Planning is working to ensure that growth and infrastructure are aligned.

Table 2 shows expected population and employment for the Region by 2051, according to the Regional Official Plan. In the south, urban boundaries will expand considerably in the cities of Markham and Vaughan. Major growth is also forecast in the north, particularly in the Town of East Gwillimbury, where a significant amount of new land will be brought into the urban boundary.

Table 2: Forecast level and distribution of population and employment in York Region by 2051[1]

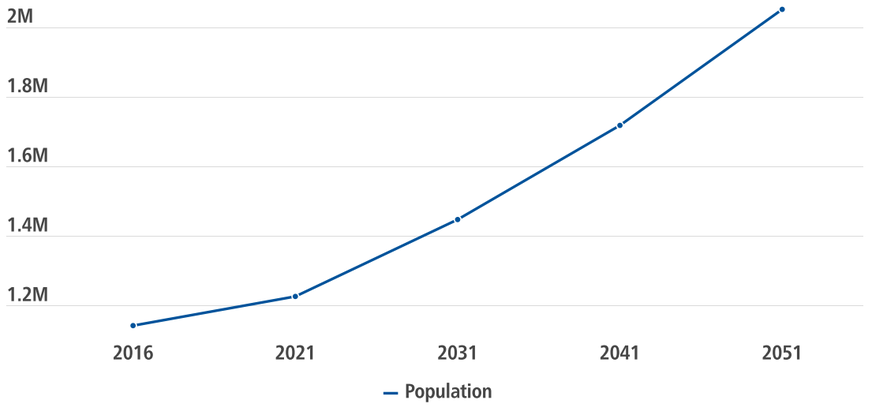
Local Town or City	Population	Employment	% Population change 2021	% Employment change 2021
Aurora	85,800	41,600	34%	41%
East Gwillimbury	128,600	44,300	260%	318%
Georgina	70,500	20,700	44%	120%
King	66,400	18,300	135%	83%
Markham	618,000	302,200	77%	59%
Newmarket	118,500	58,100	31%	22%
Richmond Hill	320,400	122,600	54%	47%
Vaughan	576,200	354,400	73%	45%
Whitchurch-Stouffville	103,500	28,400	101%	67%
York Region	2,087,900	990,600	73%	54%

[1] Source: 2022 Regional Official Plan

The Regional Official Plan (2022), outlines the approach to accommodate future population growth and asset development while addressing the needs of existing residents and businesses. It establishes a set of policies and directives that inform decisions related to economic, environmental and community planning. It serves as a framework for guiding planning decisions and ensuring capital development in the Region is sustainable and consistent with the community's needs and values. The graph (York Regional Official Plan 2022 - Section 2.2 Integrated Growth Management, Table 1 - Page 16 (20/175)) shows York Region's population increase from 2016 and forecast to 2051.

The Region's planning role changed because of the More Homes Built Faster Act, 2022. After full enactment in early 2024, there will no longer be a Regional Official Plan approved by Regional Council and Council will no longer approve local municipalities' official plans or secondary plans.

Figure 5: York Region population actual and forecast growth



2.4 Master plans, capital plans and asset management plan

To ensure assets are available when and where needed, the Region prepares and periodically updates master plans for major infrastructure. These include transportation, water and wastewater, housing and solid waste.

The master plans, which reflect extensive public consultation, set out proposals to address present and expected capital needs and performance gaps as the Region grows. Plans generally require investing in new and/or expanded assets. Increasingly, they acknowledge the need to look at the full lifecycle of each asset and determine the most cost-effective approach from the start. As Section 5 explains, this could include non-infrastructure solutions to reduce the amount of new capital investment needed.

Asset management plans incorporate master capital plans and similar plans in other service areas as well as the Region's growth management direction. Asset management plans focus on services to customers, including expected changes in demand for service, required lifecycle activities and cost. A 100-year outlook is used in lifecycle cost studies, reflecting the long periods of time such assets as roads and watermains are in service.

2.5 Regional fiscal strategy

The Regional Fiscal Strategy aims to achieve long-term financial sustainability by managing capital plans, reducing debt reliance, and saving for the future. It is built on the principle of fairness across generations. Other key principles are meeting the needs of growth in ways that are affordable and keeping the Region's infrastructure in a state of good repair.

Under the strategy, Regional Council allocates funds to reserves for future asset rehabilitation and replacement, which together are referred to as renewal. Before 2013, the Region's annual contribution to tax levy asset replacement reserves increased by 1% of the previous year's tax levy. That same year, Council approved a phased increase so that contributions would reach 2% by 2017. Since then, planned contributions have increased at an average annual rate of 4.3%. Additionally, half of the Region's supplementary tax revenues are allocated to these reserves annually.

Although asset replacement reserves reached roughly $2.3 billion by the end of 2023, they must continue growing to meet expected long-term needs. Section 6 discusses this and other financial aspects of asset management planning in more detail.

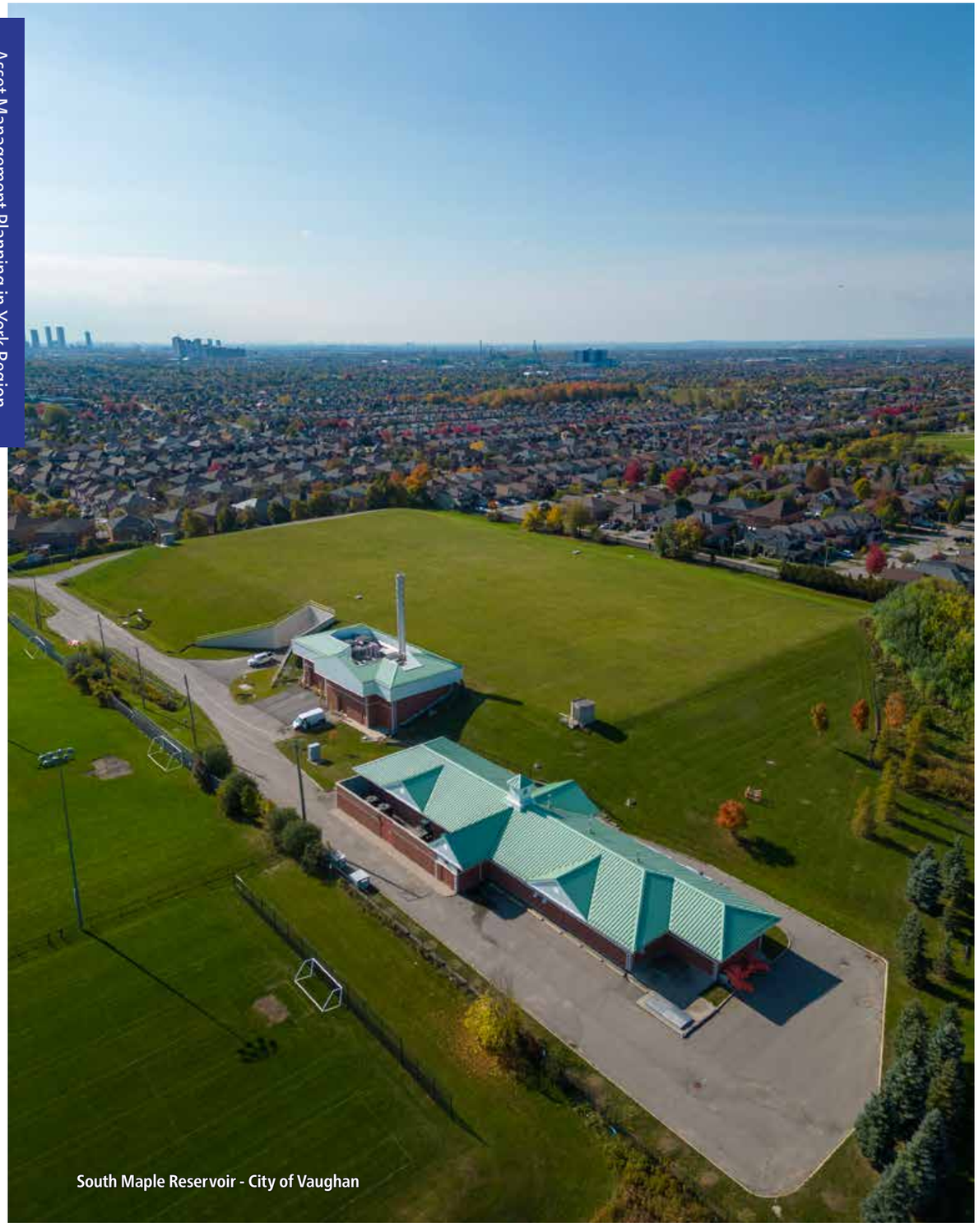
2.6 Coordinated procurement and other activities

Coordinated procurement of goods and services helps to minimize service disruption and reduce costs through economies of scale. As allowed under the procurement bylaw, the Region works closely with its nine local municipalities, the provincial government, utility companies, the private sector and other entities on cooperative purchasing. Examples include:

- Joint purchasing and contract delivery for capital projects where Regional, local and other projects can be undertaken together, for example doing road work and water/sewer work at the same time
- Jointly purchasing goods and/or services, such as the recent combining of electric bus purchases for York Region Transit and the Toronto Transit Commission

Similarly, the Region and partners enter into agreements for such activities as clearing snow or maintaining traffic signals where having one party instead of two or more deliver the service is more cost-effective.

Keele Street Culvert Replacement - City of Vaughan



South Maple Reservoir - City of Vaughan

Asset Management Planning at York Region

3.1 Corporate Asset Management Policy

The Corporate Asset Management Policy (Appendix A) provides clear goals for asset management across Regional service areas. The process begins by aligning legislative requirements and customer expectations with the Regional Vision, Strategic Plan and Fiscal Strategy. The aim is a consistent, coordinated and affordable approach that results in sustainable services.

The policy, updated with this plan, includes minor modifications to the objectives. The following objectives shall guide asset management practices within the Region:

- Adopt and advance industry-leading asset management practices that align with established standards and legislation
- Provide defined levels of service which are balanced against considerations of costs and risks
- Align asset management plans with the Regional Budget, Fiscal Strategy, Climate Change Action Plan and Environmental Social Governance (ESG) Framework
- Demonstrate financially sustainable life cycle management by appropriately balancing cost, risk, and performance to achieve full value from assets
- Improve evidence-based decision-making from in-service asset data related to expenditures, operations and maintenance
- Ensure organizational accountability and transparency by engaging customers to provide input into asset management planning; and
- Identify and implement adaptation and mitigation opportunities to ensure climate change resiliency

Policy Statement

York Region aims to establish consistent, coordinated, and sustainable asset management practices across all regional service areas to minimize risks and deliver the services necessary to meet customer expectations.

3.2 Governance

Figure 6 shows governance arrangements for asset management planning at York Region.

Figure 6: Asset management governance

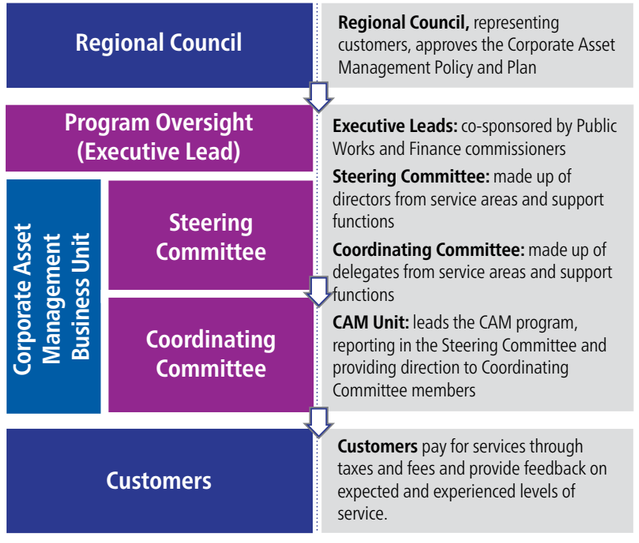
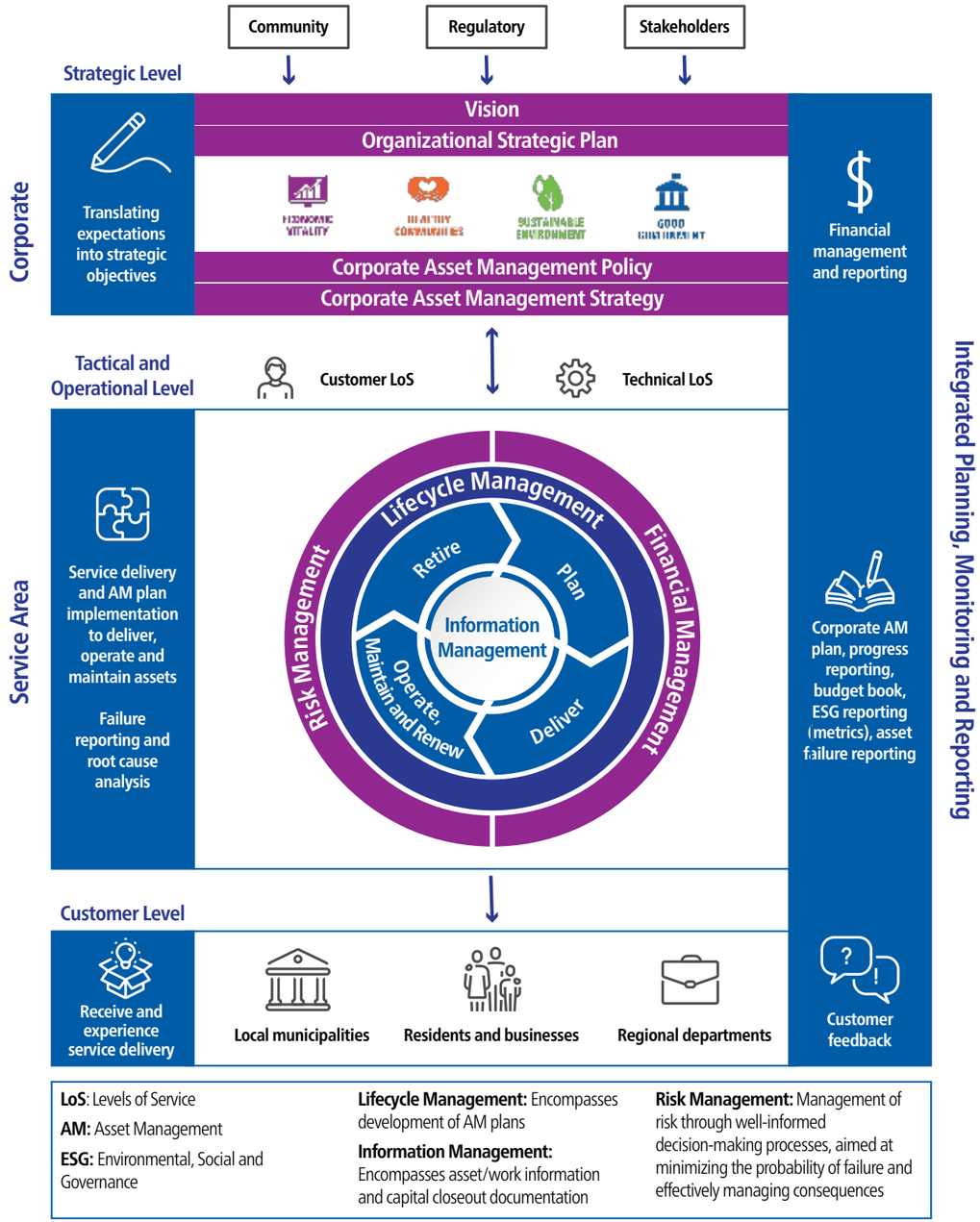


Figure 7: Corporate Assessment Management Framework



LoS: Levels of Service
AM: Asset Management
ESG: Environmental, Social and Governance

Lifecycle Management: Encompasses development of AM plans
Information Management: Encompasses asset/work information and capital closeout documentation

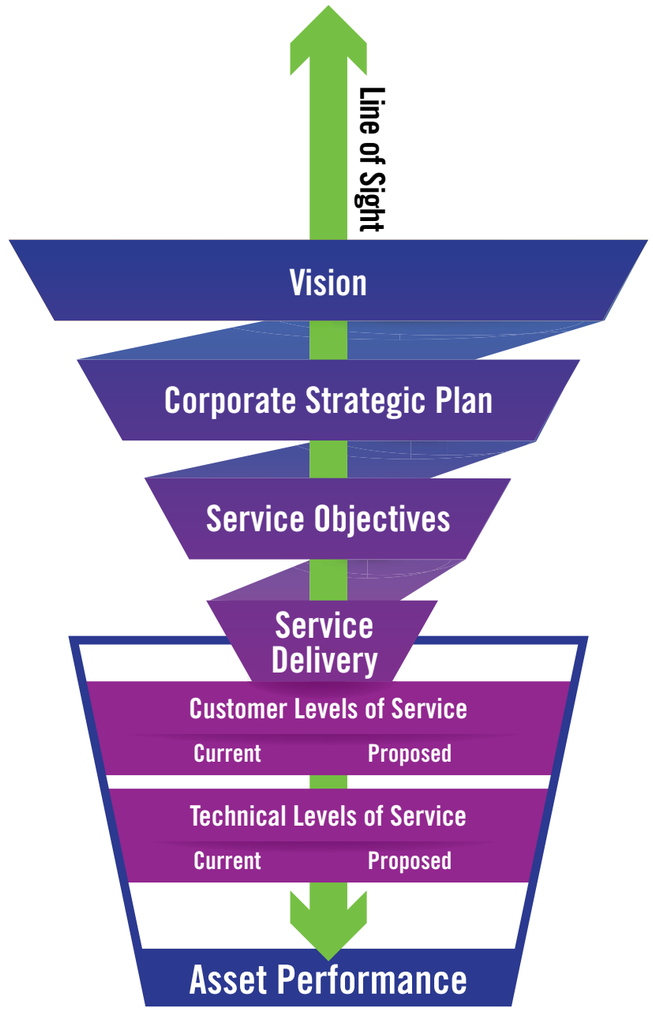
Risk Management: Management of risk through well-informed decision-making processes, aimed at minimizing the probability of failure and effectively managing consequences

3.3 Legislation and standards

Asset management planning at York Region takes into account a wide range of legislative and regulatory requirements, as well as voluntary ISO standards established by the International Organization for Standardization.

Key guidance for the Region's asset management comes from the provincial Infrastructure for Jobs and Prosperity Act, 2015 and its associated regulation, O. Reg. 588/17. Appendix P provides a complete list of legislation and ISO standards followed by the Region.

Figure 8: Translating service goals and objectives into levels of service



3.4 Service areas

Table 3: Service area asset portfolio summary

Service Group	Service Area	Assets
Community and Health Services	Housing Services	Affordable housing units including low, mid and high rise apartment developments, townhouse developments, emergency and transitional housing shelters, and community centres.
	Paramedic Services	Ambulance and emergency response equipment, and support vehicles. Paramedic Response Stations are included under Property Services.
	Seniors Services	Land improvements and leasehold improvements to long-term care facilities, program machinery and equipment. Long-term care facilities are included under Property Services.
Corporate Management Services	Information Technology Services	Computer information technology hardware including a data centre, voice and data technologies, end-user devices.
	Property Services	Corporate facilities encompass administrative offices, mixed-use facilities, and enhancements to leased office spaces. Additionally, this category includes provincial offences court facilities, public health facilities, long-term care facilities, transportation road yard facilities and Paramedic Response Stations.
	YorkNet	Region's fibre assets including acquisition/construction, maintenance, renewal and disposal.
Public Works	Green Infrastructure Services	The urban forest including street trees, growing medium and planters, the York Regional Forest including trails and structures, ponds and drainage, and a forestry stewardship centre including outbuildings.
	Waste Management Services	A materials recovery facility including process equipment, transfer stations, household hazardous waste depots, community environmental centres, facilities, and co-ownership of an energy from waste facility.
	Wastewater Services	Water resource recovery facilities, wastewater treatment lagoon, equalization tanks, air management facilities, wastewater pumping stations, sanitary forcemains, trunk sewers, maintenance holes and chambers.
	Water Services	Water treatment plants, groundwater wells, elevated tanks, pumping stations, storage reservoirs, transmission mains and water chambers.
	Roads Services	Paved roads in urban and rural environments including stormwater infrastructure, bridges, culverts, traffic signals, roadside assets, road maintenance facilities, vehicles and equipment. Also includes Corporate fleet vehicles.
	Transit Services	Fleet for conventional, rapid, and mobility on request transit service, facilities such as terminals and garages, including machinery and equipment, transit stops including platforms and shelters, rapidway assets, and technology systems for dispatch, customer relationship management and maintenance.
York Regional Police Services	York Regional Police Services	Facilities, a fleet of motor vehicles, marine vessels and other equipment, information technology and telecommunications assets and specialized equipment.

Detailed discussions of each service area begin on page 76.

3.5 Levels of service

Staff measure how well service is delivered by defining what are called levels of service and measuring performance against them. Levels of service are shaped by the expectations and needs of those who use services, and may also be set out in law and/or industry standards.

Levels of service are a critical input into asset management because they define what an asset should deliver. They also allow staff to make sure that service goals line up with high-level corporate objectives (see Figure 8).

By defining or accepting a level of service, the Region is making a commitment and must ensure it has the financial, technical and/or staff capacity to achieve the level of service.

In line with provincial requirements, the Region uses two types of levels of service:

Customer levels of service are qualitative statements that describe the intended purpose of a service. They can cover a service's scope, quality and/or reliability. An example of a customer level of service statement is "provide healthy, resilient street trees and landscape plantings that contribute to the Region's canopy cover target". To understand what customers expect and are experiencing, the Region regularly surveys residents and provides mechanisms for direct public feedback. Survey questions cover preferences, needs, opinions and satisfaction levels with a variety of services.

Technical levels of service use numerical values to measure service. An example is the total area of the street tree canopy in hectares.

Under O. Reg. 588/17, municipalities had to set and report the actual or ***current levels of service*** for core assets by July 1, 2022 (the table in the previous section indicates core services). The Region's 2018 Corporate Asset Management Plan fulfilled that requirement. This Plan meets the deadline of July 1, 2024 for non-core assets.

Proposed levels of service are the service levels a service area intends to deliver over the next 10 years. A proposed level of service may require higher spending depending on the extent it differs from the current level. The Financial Strategy and service area sections of this Plan provide more details. O. Reg. 588/17 requires municipalities to set and report their proposed levels of service for all assets by July 1, 2025. This Plan fulfills that requirement.

Table 4 summarizes customer and technical levels of service for all service areas. Additional details can be found in the service area sections of the plan.

Proposed levels of service

The term "proposed levels of service" is used throughout this Plan to align with the wording in O.Reg. 588/17. It is important to note that all "proposed" levels of service metrics in the Plan have been reflected in annual budgets, master plans or other Council reports.

Factors that affect levels of service

External and internal factors can affect the Region's ability to maintain service levels. These include:

1. **Climate change:**

York Region is already feeling climate change impacts through higher average temperatures, more climate volatility and more extreme weather events. Unpredictable rain, snow and ice storms have extended road maintenance seasons, caused power outages, strained the capacity of sewers and damaged or destroyed trees. In 2022, Council approved the York Region Climate Change Action Plan, which sets out the path to lessen impacts and adapt to change. The box below describes a broad-based project to protect Regional assets across all service areas from flooding. The sections starting on page 76 outline actions in specific service areas.

2. **Population and economic growth:**

A larger population and growing economy increase demand for services. This increase causes additional wear and tear on existing assets, requiring more frequent maintenance or rehabilitation and potentially shortening service life. In addition, new assets may need to be acquired, existing ones expanded, or both. Similarly, lower demand than anticipated can also increase costs.

3. **Regulatory changes:**

Changes in senior government regulation affect service delivery by setting more demanding technical levels of service, putting in place more processes, and/or requiring changes to existing or planned assets.

4. **New technology:**

New tools and technologies can make it easier to measure most technical levels of service, identify deteriorating assets, and allow the Region to renew assets without disrupting service. They can be important in increasing service quality, reducing cost and achieving or exceeding an asset's expected service life.

Any proposed future level of service with cost impacts would be put forward for Regional Council approval as part of the annual budget process.

5. **State of emergency:**

The pandemic in 2020 led to disruptions in work patterns, the utilization of regional services, the demand for Personal Protective Equipment, and supply chain and procurement practices.

Climate change project will focus on protecting assets in high-risk flood zones

A Regional project is underway to improve how it protects infrastructure from flooding, which is likely to become a greater threat because of climate change. Twenty high-risk zones for flooding and the Regional assets within each will be identified on a geospatial map. For each zone the project will then:

- Rank flooding risks to built assets
- Analyze potential impacts on trees and other green infrastructure
- Recommend changes to better adapt to flooding risk in the five zones ranked highest for both likelihood of flooding and severity of impacts

Recommendations are likely to cover many aspects of asset management, including asset design, selection, operation and maintenance, retrofits and changes in levels of service. They may also take a broader view to consider how green infrastructure, including urban trees, forest tracts, water features and landscaping, can also reduce flooding risk and manage its impacts, as well as how these assets might themselves need to change as part of climate change response.

To further refine recommendations, the project will outline the costs associated with various actions.

Table 4: York Region's current and proposed level of service over the next 10 years

Current performance data is based on the latest year that it is available (2020-2023).

		Technical Level of Service			
Customer Levels of Service	**Asset Categories**	**Performance Metric**	**Current Performance**	**Current Service Level Target**	**Proposed Service Level Target**
Wastewater					
Collect, move and treat all wastewater from connected local municipal wastewater networks in current and future serviced communities within York Region	Trunk Sewers, pumping stations, forcemains	Percentage of urban properties serviced by the municipal wastewater system	98%	Monitoring metric used for trending purposes only	
	Trunk Sewers, pumping stations, equalization tanks, forcemains	Percentage of collected wastewater treated prior to return to the environment[1]	99.99%	100%	No change
Accept hauled wastewater generated by York Region residents and businesses not served by a municipal wastewater system	Hauled wastewater receiving facilities	Number of days where no hauled wastewater receiving location is available in York Region per year (target to be established)	0	Minimize	No change
Return treated wastewater to environment in a manner that meets or exceeds all regulatory requirements	Water resource recovery facilities	Number of Environmental Compliance Approval (ECA) effluent limit exceedances	1	0	No change
		Number of ECA effluent objective exceedances	7	Minimize	
Remove, process, and responsibly dispose of solids from wastewater stream	Duffin Creek Water Pollution Control Plant incinerators	Total dry tonnes of sludge processed by incineration per year	28,364	Monitoring metric used for trending purposes only	
Contain and/or treat odours to minimize community impact	Air management facilities	Number of odour complaints related to York Region's wastewater system	29	Minimize	No change
Monitor, record, and report required wastewater quantity, quality and compliance information to regulatory agencies	Analyzers and sampling equipment	Percentage of Annual Wastewater Performance Reports completed	100%	100%	No change
		Percentage of quarterly Effluent Regulatory Reporting Information System (ERRIS) reports completed	100%	100%	
Communicate and promote benefits of the municipal wastewater system	All assets	Percentage of York Region residents surveyed that are satisfied with the safety and reliability of the Region's wastewater service	TBD[2]	>80%	No change

[1] This is a performance measure in the 2023-2027 Strategic Plan

[2] Historically, resident satisfaction surveys have asked about the water system. Future surveys will explore satisfaction with the wastewater system

Customer Levels of Service	Asset Categories	Technical Level of Service: Performance Metric	Current Performance	Current Service Level Target	Proposed Service Level Target
Roads					
Plan, build, operate and maintain a connected transportation network for all travelers that is safe, reliable, future-ready, sustainable and balances the needs of the unique communities we serve	Pavements	Average Class Pavement Condition Index (PCI) out of 100 for[1]:			
		• Road Maintenance Class 1	PCI 74 (fair)	PCI 70 (fair)	No change
		• Road Maintenance Class 2	PCI 71 (fair)		
		• Road Maintenance Class 3	PCI 70 (fair)		
		• Road Maintenance Class 4	PCI 70 (fair)		
		Number of lane-kilometers of arterial roads, collector roads and local roads as a proportion of the Region's land area for:			
		• Road Maintenance Class 1	0.15	0.15	No change
		• Road Maintenance Class 2	1.58	1.58	
		• Road Maintenance Class 3	0.53	0.53	
		• Road Maintenance Class 4	0.06	0.06	
	Bridges	Minimum Bridge Condition Index (BCI) out of 100 for bridges in the following categories[1]:			
		• Structure Road Maintenance Class 1	BCI 63 (fair)	BCI >=60 (fair)	No change
		• Structure Road Maintenance Class 2	BCI 58 (poor)		
		• Structure Road Maintenance Class 3	BCI 65 (fair)		
		• Structure Road Maintenance Class 4	BCI 61 (fair)		
		Percentage of bridges with loading or dimensional restrictions in the following categories:			
		• Structure Road Maintenance Class 1	0%	0%	No change
		• Structure Road Maintenance Class 2	5%	<=5%	
		• Structure Road Maintenance Class 3	4%	<=4%	
		• Structure Road Maintenance Class 4	0%	0%	

[1] A similar version of this metric is found in the 2023-2027 Strategic Plan

Customer Levels of Service	Asset Categories	Technical Level of Service: Performance Metric	Current Performance	Current Service Level Target	Proposed Service Level Target
Plan, build, operate and maintain a connected transportation network for all travelers that is safe, reliable, future-ready, sustainable and balances the needs of the unique communities we serve (Continued)	Structural culverts	Minimum Bridge Condition Index (BCI) out of 100 for structural culverts in the following categories[1]:			
		• Structure Road Maintenance Class 1	BCI 52 (poor)	BCI >=60 (fair)	No change
		• Structure Road Maintenance Class 2	BCI 52 (poor)		
		• Structure Road Maintenance Class 3	BCI 63 (fair)		
		• Structure Road Maintenance Class 4	BCI 68 (fair)		
	Stormwater assets	Average Asset Condition metric on a scale of 1 to 5 for[1]:			
		• Storm pipes	4	4	No change
		• Culverts	3	3	
		Percentage of the municipal stormwater management system resilient to a 5-year storm for:			
		• Storm pipes	100%	100%	No change
		• Culverts	100%	100%	
	Fleet	Percentage of assets which have completed manufacturers' maintenance recommendations for:			
		• Licensed vehicles and equipment	97%	>=92%	No change
		• Non-licensed vehicles and equipment	92%		

[1] A similar version of this metric is found in the 2023-2027 Strategic Plan

Customer Levels of Service	Asset Categories	Technical Level of Service: Performance Metric	Current Performance	Current Service Level Target	Proposed Service Level Target
Water					
Provide uninterrupted bulk water supply at all connection points to local municipal water distribution networks in current and future serviced communities	Surface water treatment plants, groundwater treatment facilities, storage reservoirs, pumping stations, transmission mains	Percentage of urban properties serviced by the municipal drinking water system	99%	Monitoring metric for trending purposes only	
		Number of connection-days of service interruption per year attributed to York Region water system	0	0	No change
		Number of outage connection-days to a customer (local municipal) connection point	0	0	
Provide safe drinking water that meets or exceeds all water quality regulations		Number of boil water advisory notices per year attributed to York Region infrastructure failure	0	0	
		Chief Drinking Water Inspector's Annual Report Card score for water samples meeting Ontario's drinking water quality standards[1]	100%	100%	
Target a normal operating pressure consistent with design guidelines	Storage reservoirs, pumping stations, and transmission mains	Percentage of connection points to local municipal distribution networks that receive a pressure between 275 kPa (~40 psi) and 690 kPa (100 psi) during normal operating conditions	100%	100%	
Provide drinking water of high aesthetic quality (such as colour, taste, odour and temperature)		Percentage of drinking water samples meeting the Region's aesthetic objectives	TBD[1]	TBD[1]	TBD[1]
Provide sufficient fire flow (flow rate of water supply available for the fire department)		Percentage of urban properties where fire flow is available	95%	Monitoring metric for trending purposes only	
		Percentage of connection points to local municipal distribution networks that will exceed a minimum pressure of 140 kPa (~20 psi) at ground level under maximum day demand plus fire flow conditions	100%	100%	No change

[1] Pending implementation of the Groundwater Treatment Strategy

Customer Levels of Service	Asset Categories	Technical Level of Service: Performance Metric	Current Performance	Current Service Level Target	Proposed Service Level Target
Monitor and protect source water resources	Surface water treatment plants, groundwater treatment facilities, and monitoring equipment	Total water takings exceeding daily permitted volume and capacity limits	0 m^3	0 m^3	No change
		Percentage of risk management plans implemented within timelines required by the Source Protection Plan	100%	100%	
Monitor, record and report required water quantity, quality and compliance information to regulatory agencies	Analyzers and sampling equipment	Chief Drinking Water Inspector's Annual Report Card inspection score	100%	100%	No change
Communicate and promote the value of the municipal water system	All assets	Percentage of York Region residents surveyed that are satisfied with the safety and reliability of the Region's water service[1]	88%	>80%	No change

[1] This is a performance measure in the 2023-2027 Strategic Plan

		Technical Level of Service			
Customer Levels of Service	**Asset Categories**	**Performance Metric**	**Current Performance**	**Current Service Level Target**	**Proposed Service Level Target**
Transit					
Plan, build, operate, and maintain a connected transportation network for all travelers that is safe, reliable, future-ready, sustainable and balances the needs of the unique communities we serve	Conventional service buses	On-time performance[1]	94%	≥90%	No change
	Rapid transit buses		98%	≥95%	
	Mobility on request buses		94%	≥92%	
	Fleet	Mean distance between failure for fleet reliability (percentage of fleet meeting target)	98%	≥90%	
	Facilities	Condition rating of facilities (out of five)	4	≥4	
	Transit stops	Service coverage - percentage of urban residents within 500 metres of a transit stop[1]	90%	≥90%	

[1] This is a performance measure in the 2023-2027 Strategic Plan

		Technical Level of Service			
Customer Levels of Service	**Asset Categories**	**Performance Metric**	**Current Performance**	**Current Service Level Target**	**Proposed Service Level Target**
Green Infrastructure					
Urban forest: **Provide healthy, resilient street trees, landscape plantings and support infrastructure that beautifying the Region's streetscapes, and contributing to the canopy cover target and environmental priorities**	Street trees	Percentage of available space along urban Regional roads occupied by street trees	76%	75%	95% (By year 2055)
		Most commonly occurring tree species as a percentage of total street trees (a measure of species diversity)	10% (ivory silk lilac)	<10%	No change
		Tree health condition (percentage of street trees in urban and suburban Regional roads meeting satisfactory or better health rating)	87%	90%	No change
		Percentage of requests related to hazard street trees acknowledged within 1 business day and inspected and assessed within five business days	TBD[1]	TBD[1]	95%
		Percentage of scheduled mature street tree inspections undertaken and documented	100%	100%	100%
		Distribution of trees by location and average diameter (measured 1.4 metres from the ground) and age (updated every five years)			
		Rural	26 cm 28 years	Monitoring metric used for trending purposes only	
		Suburban	14 cm 17 years		
		Urban	6 cm 8 years		
		Percentage of street trees pruned in accordance with preventative maintenance program (three year average)	105%	100%	100%
		Area of Street Tree Canopy in hectares (updated every five years)	152	Monitoring metric used for trending purposes only	

[1] This is a new metric that will be tracked moving forward

Customer Levels of Service	Asset Categories	Technical Level of Service: Performance Metric	Current Performance	Current Service Level Target	Proposed Service Level Target
Urban forest: **Provide healthy, resilient street trees, landscape plantings and support infrastructure that beautifying the Region's streetscapes, and contributing to the canopy cover target and environmental priorities** **(Continued)**	Biological assets	Ecosystem benefits (kg/year) (updated every 5 years)			
		Carbon sequestered	289 tonnes	Monitoring metric used for trending purposes only	
		Rainwater runoff avoided	24,400 m3		
		Air pollution removed	7 tonnes		
		Oxygen produced	800 tonnes		
York Regional Forest: **Acquire, restore, maintain and preserve natural spaces to strengthen ecological integrity, adapt and lessen climate change contributing to healthy communities**	York Regional Forest	Area of York Regional Forest in hectares	2,526	2,281	3,060 (by 2051)
		Percentage of conformance of the York Regional Forest to Forest Stewardship Council certification as audited	100%	88%	No change
	Sensitive habitat	Percentage of sensitive habitat protected in the York Regional Forest	32%	25%	No change
	Biological assets	Estimated annual value of ecosystem benefits provided from the York Regional Forest (carbon sequestration, rainwater runoff reduction, pollution removal)	$1.2 million or avg. of $530/ hectare	Monitoring metric used for trending purposes only	
	Forested compartments	Percentage of York Regional Forest regenerating to acceptable levels (reported every 10 years)	99%	95%	No change
Provide infrastructure supporting low-intensity recreational use of the forest and an exceptional visitor experience	Trails	Percentage of tracts in the York Regional Forest with total length of trails identified in the trail management strategy	TBD[1]	TBD[1]	100%
	Parking lots	Percentage of Regional Forest target parking capacity compared to that identified in Visitor Experience Plan	100%	100%	No change
	Accessible trails	Metres of accessible trails added to the York Regional Forest each year (on average)	350m	350m	500m

[1] Pending completion of the trail management strategy in 2024

Customer Levels of Service	Asset Categories	Technical Level of Service: Performance Metric	Current Performance	Current Service Level Target	Proposed Service Level Target
Housing Services					
Provide a healthy supply of affordable rental housing options for residents in all ages and stages of life for both individuals and families	Low-, mid-, high-rise apartments, town houses, emergency and transitional housing	Capacity and use: Number of affordable housing units owned by Housing York Inc. per 1,000 residents by local municipality (reported here as overall Region-wide)[1]	2.35	2.47	2027: 2.83 2032: 2.94
Strive for successful occupancy and enhance resident well-being by treating all residents as individuals and providing the right services at the right time. Build inclusive communities, so all residents feel safe and at home	Site and development features, building interior common spaces, residential units, elevators and lifts	Functional: Percentage of properties where accessibility audits have been completed	12%	100%	No change
		Functional: Percentage delivered of total funding needed to meet accessibility standards (determined by audit)	TBD[2]	TBD[2]	TBD[2]
	All assets	Functional: Percentage of residents that are overall satisfied with Housing York Inc.[1]	80%	80%	No change
Maintain assets in a good state of repair, ensuring they are well-managed for safety, cleanliness, and comfort to meet the standards and expectations of the community	Exterior enclosure and roofing systems, conveying systems, plumbing systems, HVAC systems, fire protection systems, electrical systems, site features	Reliability and quality: Facility Condition Index (FCI) reported as a % where the renewal needs of a building are divided by the current replacement cost	FCI 5.4% (fair)	FCI <5% (good or better)	No change
	Exterior enclosure and roofing systems, conveying systems, plumbing systems, HVAC systems, fire protection systems, electrical systems, site features	Reliability and quality: Percentage of building components that meet or exceed 90% of the expected useful life (by component replacement cost)	93%	>90%	
	All assets	Financially sustainable: Average annual portfolio reinvestment for the next 10 years, as a percentage of the current replacement cost of the portfolio	1%	1.7%-2.5%	

[1] This is a performance measure in the 2023-2027 Strategic Plan

[2] Accessibility audits are underway, which will inform a HYI Accessibility Master Plan to be completed in 2024

Customer Levels of Service	Asset Categories	Technical Level of Service: Performance Metric	Current Performance	Current Service Level Target	Proposed Service Level Target
Property Services					
Maintain facilities promoting the delivery of Regional services endorsed by Regional Council and staff **Manage facilities for current and future generations** **Provide safe, accessible and reliable buildings and facilities for public access to Regional services** **Support Regional programs and their objectives through effective property related solutions**	Administrative offices	Facility Condition Index (FCI)	FCI 0.28%	FCI <5%	No change
	Mixed-use facilities		FCI 2.8%		
	Long-term care homes		FCI 3.3%		
	Paramedic response stations		FCI 1.06%		
	Road maintenance yards		FCI 2.5%		
York Regional Police					
YRP buildings, vehicles, IT and other equipment meet the functional needs of the police service and the public	Facilities	% facilities that meet accessibility and other building standards and codes	100%	100%	
YRP is resilient to climate change impacts		% facilities resilient to flood impacts	Future data	100%	
YRP has sufficient building capacity, vehicles, IT and other equipment to support service to the community	IT assets	% of IT capacity meets the needs of the service (includes redundancy)	100%	100%	
	Facilities	Occupancy/design capacity ratio	>100%	TBD	
	Fleet	Percentage of time fleet is available for duty	100%	100%	

Customer Levels of Service	Asset Categories	Technical Level of Service: Performance Metric	Current Performance	Current Service Level Target	Proposed Service Level Target
Waste Management					
Maximize diversion of waste from landfill and promote the reduction of waste generation	Material Recovery Facility and co-owned Energy from Waste Facility	Percentage of solid waste diverted from landfill[1]	94%	At least 90%	No change
Provide communities with access to depots offering household hazardous waste, recycling, solid waste, and yard waste drop-off services	Community Environmental Centres and Household Hazardous Waste Depots	Number of days in which at least one drop-off facility is open to the public	355	355	No change
		Customer satisfaction from waste depot surveys	90%	80%	
Ensure waste management facilities can receive current and future waste volumes	Material Recovery Facility	Tonnes of material delivered less than available receiving capacity per year	76,032	≤ 140,000 (system capacity)	No change
	All assets	Number of complaints due to performance failure of the facility received per year from local municipalities/customers	0	0	
Maintain facilities in compliance with regulatory requirements and adapt to legislative changes	All assets	Compliance with Environmental Compliance Approval (ECA) terms and conditions related to asset performance/ failure	100% compliant	100% compliant	No change
		Percentage of buildings and facility equipment compliant with health, safety and environment protection programs and regulations	100%	100%	

[1] This is a performance measure in the 2023-2027 Strategic Plan

Customer Levels of Service	Asset Categories	Technical Level of Service: Performance Metric	Current Performance	Current Service Level Target	Proposed Service Level Target
YorkNet					
Build and maintain a network that achieves the greatest number of connections in the shortest amount of time by providing uninterrupted services, increased connectivity, enhanced network efficiency and speed	Fibre network	Transmission characteristics of fibre optic cable consistent with nine micron core and 125 micron cladding (a micron is a micrometre or one-millionth of a metre) Wavelength is measured in nanometres (billionths of a metre or nm) and attenuation (loss of signal over distance) is measured in decibels) per kilometre	TBD[1]	At 1310 nm, attenuation should be no greater than 0.4 dB/km At 1550 nm, attenuation should be no greater than 0.3 dB/km	No change
		Up time (functioning)	TBD[2]	99.5% to 99.9%	
		Attenuation levels (per kilometre of fibre)	≤0.5 decibel	≤0.5 decibel	
		YorkNet loss/attenuation objective for:			
		• All new each fibre optic fusion splice installation	≤0.10 decibel	≤0.10 decibel	
		• All existing splices	≤0.3 decibel	≤0.3 decibel	
		Target response time (RT) following receipt of a service call	TBD[3]	≤4 hours	
		Days of advance notice of scheduled maintenance provided to the customer	≤ 21 days	≤ 21 days	
		Overall network infrastructure split between:			
		• Region	TBD[4]	45%	
		• Municipal, university, school and hospital sector	TBD[4]	35%	
		• Private sector	TBD[4]	20%	

[1] Verified when end users are connected and an Optical Time Domain Reflectometer test is completed. To date, these specifications have been met; however, a measure of overall performance is dependent on pending network buildout

[2] Currently exceeding desired levels but a true measure of overall performance is dependent on pending network buildout

[3] As the network is built out, YorkNet will have a better understanding of the true scope of potential issues that could cause a service disruption. Currently, the target has been met in instances that have occurred, despite being dependent on end-user reporting at time of occurrence. Going forward, YorkNet's ability to meet this standard will be supplemented and improved with a new monitoring system

[4] Current standard is being met because the Region is the primary user. Going forward, network planning will continue to account for minimum requirements of each stakeholder group

Customer Levels of Service	Asset Categories	Technical Level of Service: Performance Metric	Current Performance	Current Service Level Target	Proposed Service Level Target
Information Technology Services					
Provide reliable and fast service across the Region's IT systems and infrastructure for Regional staff. This includes network and internet connectivity, communication systems such as email and phone, digital file storage and access, maintenance, repair, refresh and replacement of technology assets and 24/7 x 365 support	Network and data centre devices (network switches, phones, firewalls, routers, servers and storage) and software (data backup, operation system maintenance, system management tools for network and infrastructure monitoring)	Network and data centre operations:			
		• Percentage of uptime	TBD[1]	99%	No change
		• Percentage of aggregated availability of key corporate services		99.9%	
		• Availability to support client services		Monitoring metric for trending purposes only	
		• Number of alerts			
		• Speed access acceptance			
Build, operate and maintain the Region's corporate technology infrastructure ensuring it is safe and secure. This includes procuring, operating, maintaining and disposing of end-user devices, network switches, firewalls, routers, servers, software and data centres that make up the technology infrastructure	Cybersecurity devices (wired configuration, servers, network, endpoint) and software (firewalls, identity and access management, email and web security, VPN and remote access, database security monitoring, security information and event management)	Cybersecurity:			
		• Number of cyberbreach attempts	3 million	Monitoring metric for trending purposes only	
		• Number of emails filtered	4.9 million		
		• Number of malwares stopped from entering the network	394		
		• Number of responses to privacy and cyber breaches	80		
		• Responses to service desk tickets (incidents)	51		
		• Review data leaving the network	TBD[1]		

[1] Data collection did not occur due to Covid. Data collection will resume in 2024.

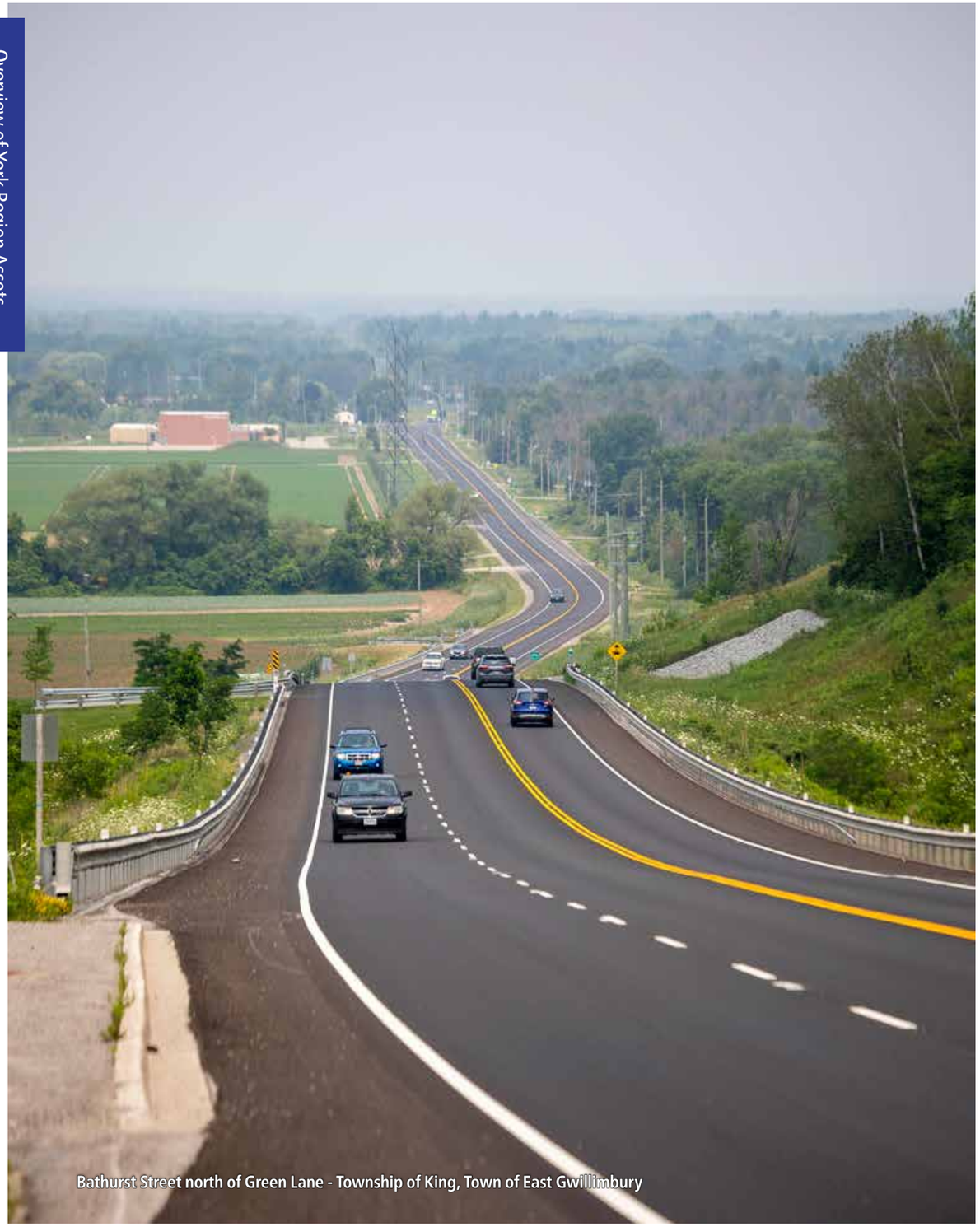
Customer Levels of Service	Asset Categories	Technical Level of Service: Performance Metric	Current Performance	Current Service Level Target	Proposed Service Level Target
Paramedic Services					
Provide 24-hr response to emergency and non-emergency requests for service, delivering out-of-hospital medical care and transport to those individuals suffering injury or illness (this includes basic and advanced life support, emergency and non-emergency medical care and patient transport.) Meet legislated and Council-approved response times and achieve equitable response times in each local municipality. Adapt to the changing health-care, demographic, socioeconomic and medical needs in the Region	All assets	Sudden Cardiac Arrest AED	66%	>60%	No change
		Canadian Triage and Acuity Scale (CTAS 1) (eight minute response time)[1]	74%	>75%	
		Canadian Triage and Acuity Scale (CTAS 2) (10 minute response time)	78%	>80%	
		Canadian Triage and Acuity Scale (CTAS 3) (15 minute response time)	89%	>90%	
		Canadian Triage and Acuity Scale (CTAS 4) (20 minute response time)	93%	>90%	
		Canadian Triage and Acuity Scale (CTAS 5) (25 minute response time)	96%	>90%	
	Ambulances	Average number of unplanned downtime hours per ambulance	99.7%	Monitoring metric for trending purposes only	
		Ratio of standby fleet to active fleet	37%	>39%	
Maintain assets in a state of good repair to provide reliable services to the community that meet the required safety and quality standards	All assets	Percentage of critical assets beyond replacement year (by replacement cost)	3%	0%	No change
		Percentage of lower-critical assets beyond replacement year (by replacement cost)	75%	<15%	
		Percentage of scheduled or unscheduled maintenance work orders compared to total work orders (reliability percentage)	99%	>95%	

[1] This is a performance measure in the 2023-2027 Strategic Plan

Customer Levels of Service	Asset Categories	Technical Level of Service: Performance Metric	Current Performance	Current Service Level Target	Proposed Service Level Target
Seniors Services					
Provide safe, timely, effective, efficient, equitable and client/resident/patient-centered care to seniors living in York Region, and residents of the Region's long-term care homes	All assets	Capacity: Number of available beds	232	232	No change
		Functional: Number of asset-related compliance findings	0	0	
		Functional: Operating cost per long-stay bed day	$328	Monitoring metric for trending purposes only	
		Functional: Percentage of overall satisfaction (favourable response)[1]	100%	>95%	No change
	Wander alert, nurse call system, beds	Reliability: Percentage of critical assets beyond replacement year (by replacement cost)	57%[2]	0%	
	Mattresses, beds, tubs, security systems	Reliability: Percentage of moderately critical assets beyond replacement year (by replacement cost)	6%	<15%	
	Kitchen, cleaning, laundry equipment, cleaning, wireless phones	Reliability: Percentage of lower critical assets beyond replacement year (by replacement cost)	23%	<15%	
	Nurse call system	Reliability: Number of days of system downtime	8 days	0 days	
	Wander alert system	Reliability: Number of days of system downtime	0 Days	0 days	

[1] This is a performance measure in the 2023-2027 Strategic Plan

[2] Percentage measures by asset value which include two nurse call systems, both of which have active capital projects currently underway



Bathurst Street north of Green Lane - Township of King, Town of East Gwillimbury

Overview of York Region Assets

4.1 State of infrastructure

Each year, the Corporate State of Infrastructure Report updates asset information across service areas. Main elements of the report include:

- Current replacement cost
- Quantitative measures of the assets within each asset class
- Metrics used to grade the portfolio (condition, capacity and reliability)
- Average age and expected useful life by asset class
- The condition breakdown of the portfolio
- Key changes to the portfolio
- A look ahead for each service area

At the end of 2022, the report estimated it would cost $25.3 billion to replace York Region's assets. This is only a portion of the asset's full cost. For example, facility replacement cost represents only 30% of the total lifecycle cost, with ongoing costs over the life of the asset accounting for the balance.

In the last five years replacement costs have grown by $10.7 billion, as shown in the graph below. Overall growth reflects new assets added to the base, inflation, and more refined methods of estimating costs. The sharp increase from 2021 to 2022, amounting to $6.3 billion, was largely driven by improved methods of evaluating replacement cost, which accounted for about $4.0 billion of the rise, and higher inflation, which contributed roughly $2.0 billion. About half of the $4.0 billion from improved asset replacement estimates was due to updates in the water and wastewater service areas, specifically for linear infrastructure, while the remainder primarily stemmed from updates in roads and green infrastructure service areas.

Figure 9: York Region service area total assets replacement cost

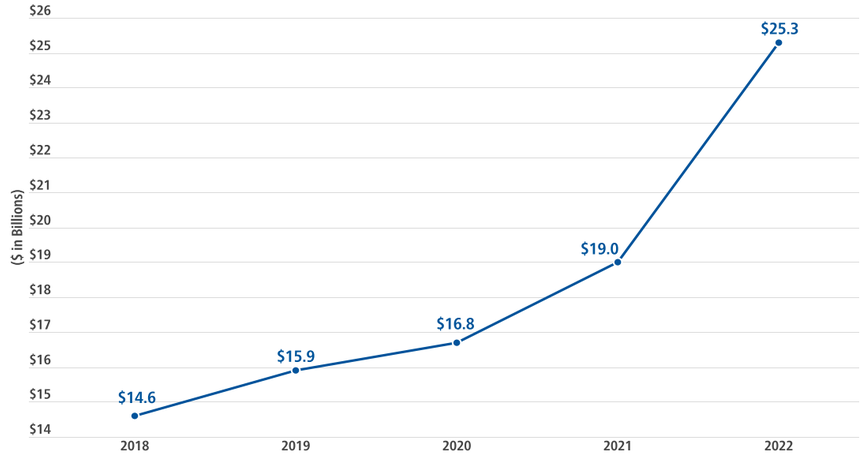


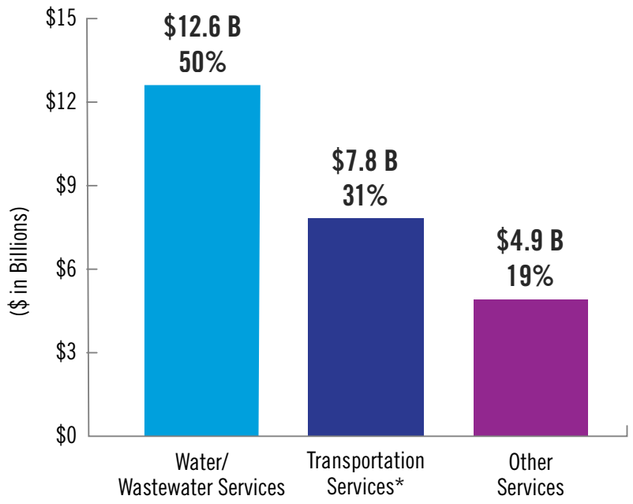
Figure 9 provides the replacement cost of the Region's Corporate Asset Management portfolio as reported in the annual State of Infrastructure Reports.

Public Works assets accounted for 89% of the portfolio, or $22.4 billion. Its assets include water and wastewater assets valued at $12.6 billion, transportation assets, including roads and transit, at $7.8 billion, green infrastructure at $1.8 billion and waste management services at $0.2 billion.

Regional Council has committed to building reserves for the portfolio's growing asset management needs. Adequate reserves are needed to meet the Regional Fiscal Strategy's goal of ensuring assets are properly managed without taking on new debt. The 2024 Regional Fiscal Strategy presented to Council in Q4 of 2023 gave the value of asset replacement reserves as approximately $2.3 billion. Of the total, $1.4 billion was for assets such as roads and green infrastructure that are supported by the tax levy and $0.8 billion was for water and wastewater assets, where costs are covered by user rates. Through the 2021 User Rate Study, Regional Council approved a financial plan that achieved full cost recovery for water and wastewater services, including complete funding for asset rehabilitation and replacement.

Projected replacement values are anticipated to increase significantly in the near future, driven by developments in the York Region Sewage Works Project, which will introduce essential new wastewater infrastructure and upgrade existing facilities. Asset estimation practices within service areas stay updated by monitoring industry cost trends and recent costs from local capital projects. Furthermore, external experts are consulted every few years to verify costs, equipment, and technology trends for complex services. As asset management practices within these areas evolve, ongoing adjustments to replacement cost estimates aim to reduce the gaps between anticipated and actual expenses. While the Region's assets are in relatively good condition now, additional contributions to asset replacement reserves are needed over the long term as the portfolio continues to grow and assets age.

Figure 10: 2022 Service area replacement costs



*(Including Roads and Transit Services)

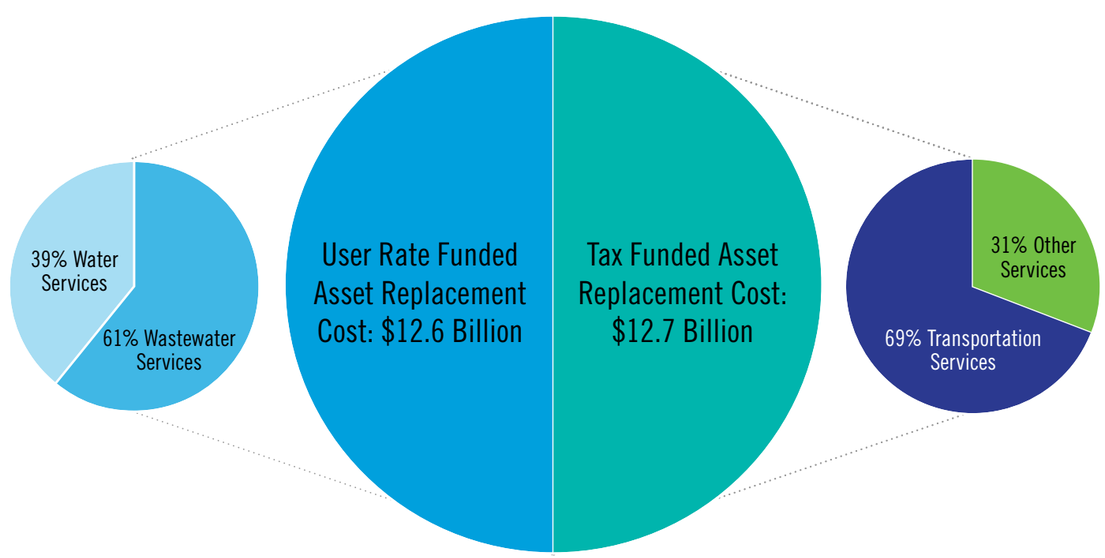
Other Services (% of $4.9 B)

Green Infrastructure Services	36.9%
Housing Services	24.1%
Property Services	20.9%
York Regional Police Services	9.4%
Waste Management Services	4.8%
YorkNet	1.5%
Information Technology Services	1.4%
Paramedic Services	0.7%
Seniors Services	0.3%

Figure 11: 2021 to 2022 replacement cost change

Component	Value ($ millions)	Percent Change
2021 Replacement cost	**$19,051.2**	-
Changes		
New and upgraded assets	$377.7	2.0%
Inflation	$2,017.6	10.6%
Asset evaluation improvements	$4,026.3	21.1%
Decommissioned assets	$(123.3)	-0.6%
Total change	$6,298.3	33.1%
2022 Replacement cost	**$25,349.5**	-

Figure 12: 2022 Total asset replacement cost: $25.3 Billion



Davis Drive - Town of Newmarket

4.2 Asset age and condition by service area

Information on condition, age, performance and service levels of assets, as well as risks to their ability to deliver services, form the basis of ratings for each portfolio of assets.

One priority for asset management is maintaining fair or better ratings for critical assets, which are assets that result in more serious consequences if they fail. Corporate asset management works with the Region's emergency management staff to identify these assets.

Comparing the actual age of an asset to its expected useful life helps predict when it might fail. As shown in Figure 13, some of the Region's assets are relatively new because they were added recently to meet growth needs. Others, however, are reaching the middle or even final stages of their estimated useful lives.

Age alone is not a standalone measure. Assets can fail or become obsolete early because of operation, regulatory requirements and other factors. On the other hand, they may run well beyond their expected lifespan. This makes physical condition and performance key indicators of when assets will need major work or replacement.

At the end of 2022, 92% of all Regional assets were in fair, good and very good condition. Many of the remaining 8% of assets, those rated poor or very poor, are scheduled to be replaced, rehabilitated, or repaired by 2032. The rest will be kept in service and replaced as they fail because the consequence of failure is low.

Household Hazardous Waste Depot - Town of East Gwillimbury

Figure 13: Average age and average useful life by service area

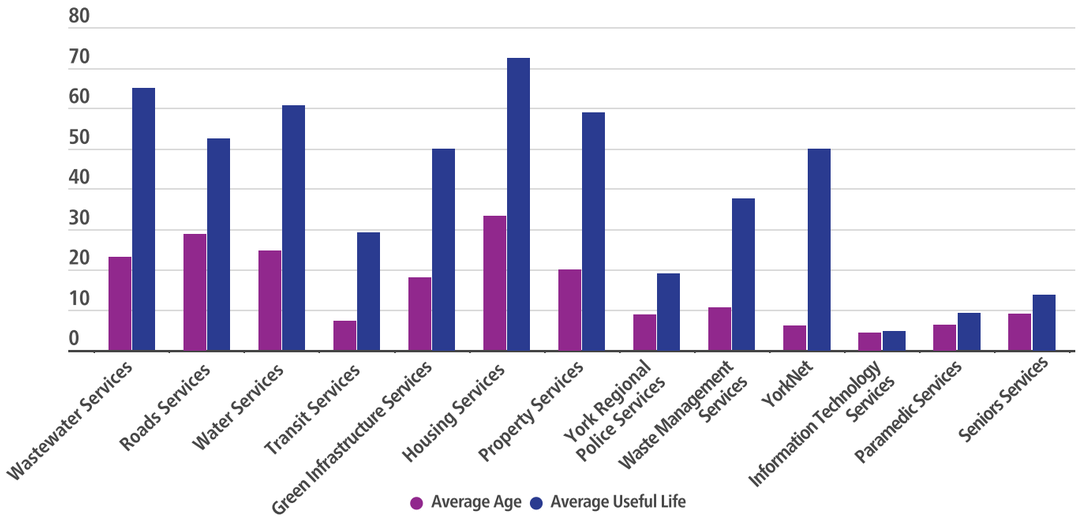
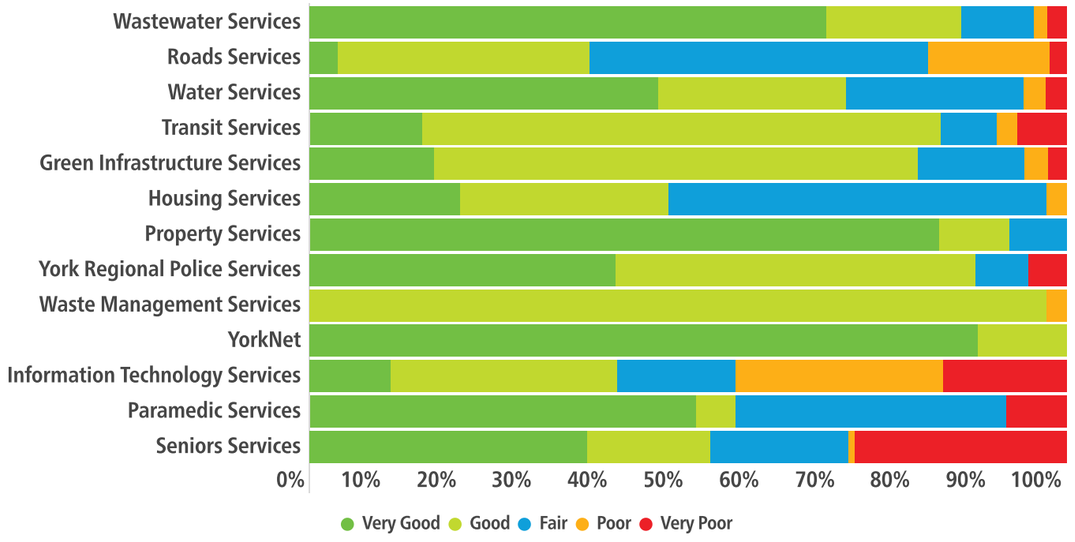
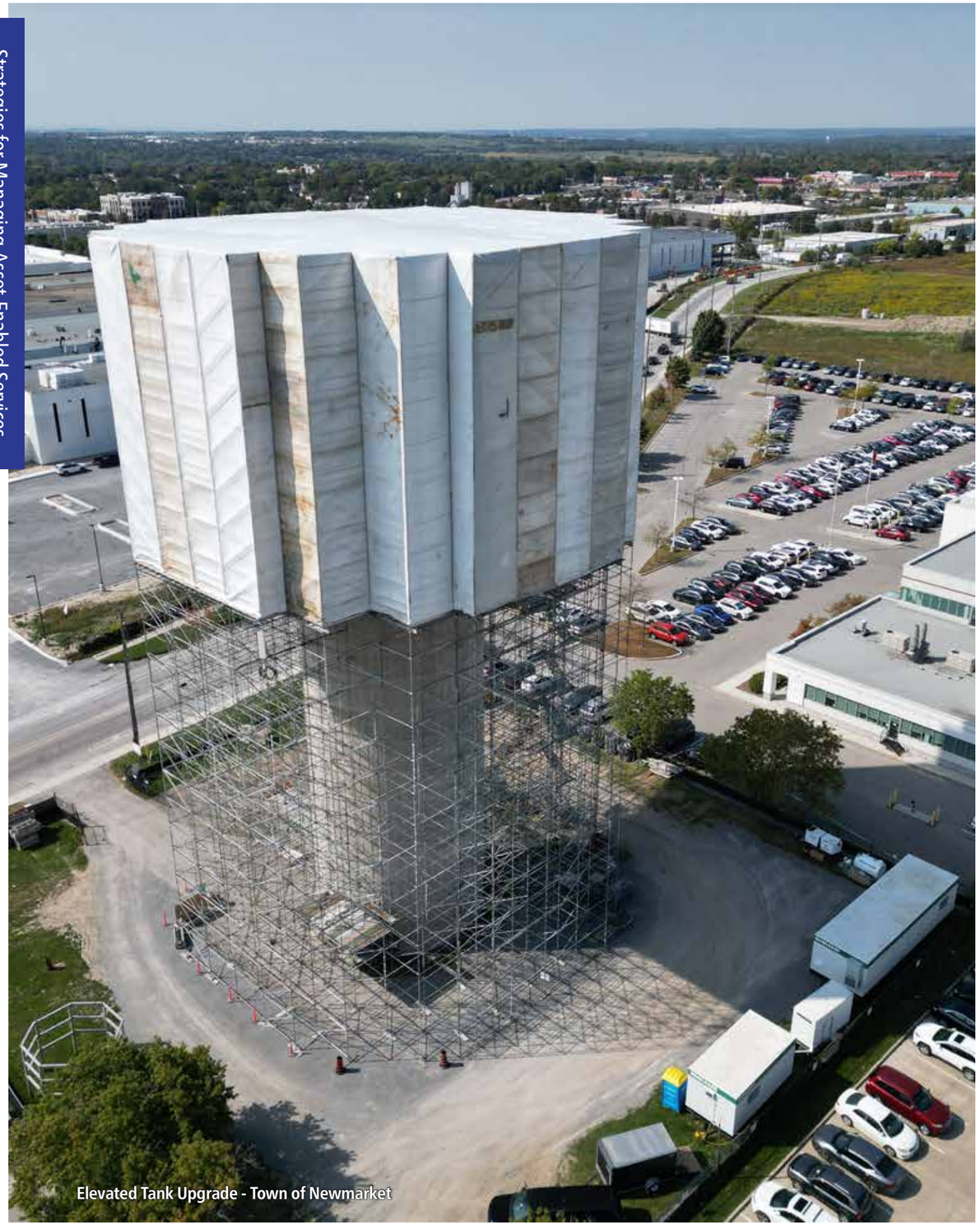


Figure 14: Portfolio condition





Elevated Tank Upgrade - Town of Newmarket

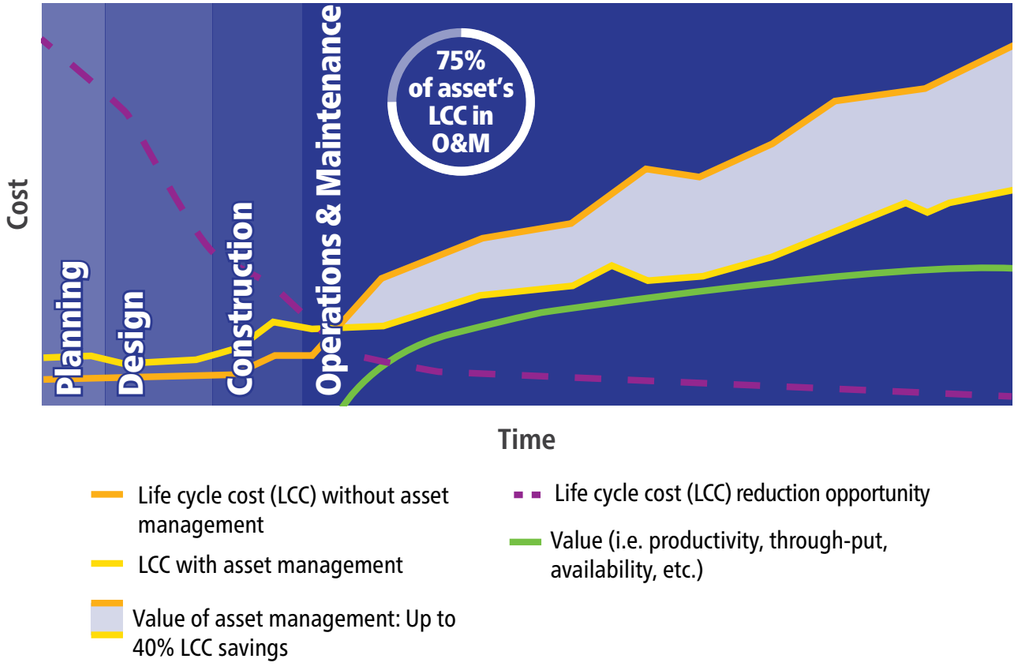
Strategies for Managing Asset-Enabled Services

5.1 Corporate Asset Management Strategy

The aim of the Corporate Asset Management Strategy, which guides programming at the service area level, is to enable the Region to minimize lifecycle costs while providing defined levels of service. It is informed by asset management best practices from around the world and is intended to put the Region in a good position to achieve the goals of the asset management policy. It does this by setting out a system of internal practices and processes that build asset management skills and confidence. This improves decisions around lifecycle management strategies at the service area level.

York Regional Forest - North Tract, Town of Whitchurch-Stouffville

Figure 15: Total lifecycle cost reduction opportunity



Reducing asset lifecycle costs and preventing unexpected failures depends on upfront considerations of risk threats and costs during planning and design. These two phases of the asset's life present unique opportunities to avoid certain threats and to design with reliability in mind. Residual threats that remain after design provide valuable insights for performance, budgeting, useful-life projections, inspections, and maintenance activities. Figure 15, courtesy of the Asset Management Council, highlights how the life cycle cost reduction opportunity decreases as the asset progresses through its lifecycle phases toward handover to operations and maintenance (O&M). The orange line represents Total Cost of Ownership (also known as lifecycle costs) without asset management, while the yellow line shows the value of asset management as potential savings of up to 40% over the life of an asset.

The return on investment (ROI) in a multi-billion-dollar portfolio like that of the Region's is substantial. As illustrated in the graph, approximately 75% of an asset's lifecycle costs occur during operation and maintenance, underscoring the importance of upfront investments during the planning and design phase to improve performance, build for reliability, and reduce lifecycle costs. The Strategy emphasizes strengthening upfront planning and design practices, managing insights from these phases for handover to O&M putting them in the best position to look after assets, and ensuring information is managed throughout the assets lives to enrich future operational and capital decision-making. For more details, please refer to Section 5.5, which outlines the Strategy's five priorities.

5.2 Lifecycle management strategies

A lifecycle management strategy is the combination of activities that will balance costs and risks of delivering a service while meeting service levels. Activities fall into seven categories:

Table 5: Lifecycle management strategies

Activity	Description
Reduce reliance on major infrastructure	Using planning approaches that improve performance, lower costs, and/or extend asset life without major capital costs. This includes managing demand, optimizing processes, integrating projects, and improving the way an asset is operated. For example, relieving demand on roads by providing multi-use paths for the growing number of residents who choose to walk or cycle.
Operate, inspect and maintain	Regularly inspecting and maintaining assets to keep them in good operating condition and reduce the risk of unexpected failures. Maintenance schedules often reflect legislated requirements as well as industry best practice. For example, installing remote sensors.
Rehabilitate	Renewing or extending the life of the asset through capital works. Detailed condition assessments and performance testing generally determine the scope and size of a rehabilitation. For example, a road preservation treatment such as micro-surfacing is applied to roads as a cost-effective way to maintain roads with minor defects and extend the life of the road before major construction is needed.
Expand	Extending services into new areas or expanding services to meet growth needs. While classified as growth-related spending in the Region's budget and 10-year Capital Plan, design and planning of new assets have major impacts on lifecycle costs. For example, building a new combined paramedic station and fire hall in partnership with the Town of Whitchurch-Stouffville, which manages fire services, meets the growing demand and reduces facility costs.
Upgrade	Improving assets to maintain/enhance service levels or meet growth needs. The latter is classified as growth-related in the 10-year capital plan. An example is offering touch-less payment on York Region Transit.
Replace	Acquiring a new asset when the previous one has reached the end of its useful life and repair/rehabilitation is not an option. This should consider ongoing operating costs of various options, as well as up-front investment. For example, leveraging federal support to replace old diesel buses with electric ones, reducing operating costs and cutting greenhouse gas emissions.
Retire	Decommissioning an asset when it is no longer needed or able to deliver services. For example, the demolition of York Region's former headquarters at 62 Bayview Parkway in the Town of Newmarket, to make way for a future affordable housing project.

The lifecycle strategy looks at these possible options and determines the optimal combination. It rests on answering such questions as:

Can the need to acquire be reduced or eliminated?

As the first option in the table above recognizes, the most cost-effective way to deliver services is often to reduce demand for more investment.

How can we reduce costs throughout the lifecycle?

Once the need for new assets is confirmed, lifecycle strategy must look far beyond the initial cost. The cost to build or buy an asset will be far less than its total lifecycle costs. As Figure 15 shows, for example, 75% or more of the total lifecycle cost of a building or facility comes after it is built.

With the right planning and practices, total lifecycle costs can be reduced by as much as 40%. The ability to achieve these savings, however, declines dramatically the further a project progresses.

Therefore, it is critical for capital and operating staff to share insights, ideas and information through the planning and design phase of a project. Taking a broad view of how to plan for, acquire, operate, maintain, rehabilitate and dispose of assets and integrating the expertise of all disciplines is key to minimizing costs over the total lifecycle of an asset.

Can renewal be delayed?

All assets deteriorate over time. Good operating, repair and maintenance practices can slow deterioration, but eventually an asset must be rehabilitated to extend its life or replaced. Together, rehabilitation and replacement are referred to as renewal. Renewing assets when needed is critical to asset management, because if renewal is delayed, day-to-day costs go up and so does the risk to services.

Should an asset be rehabilitated or replaced?

The choice of whether to rehabilitate or replace a particular asset depends on the costs and benefits of each option. Relatively inexpensive assets, such as laptop computers, are usually replaced. Conversely, major assets are rehabilitated, sometimes numerous times. For example, the Regional road system would cost an estimated $5.6 billion to replace. Rehabilitation by resurfacing (replacing a portion of the road surface) is much less expensive and extends the life of the road before major construction (full replacement) is needed.

Managing costs and risks while meeting service levels

In looking at all options, the optimal lifecycle strategy aims to provide a defined level of service at the best possible cost and with manageable risk throughout an asset's lifecycle. Cost is important because lifecycle management strategies are major drivers of the Region's annual operating budget and 10-year Capital Plan.

Each service area's lifecycle strategies are detailed in sections of this plan.

5.3 Managing risk

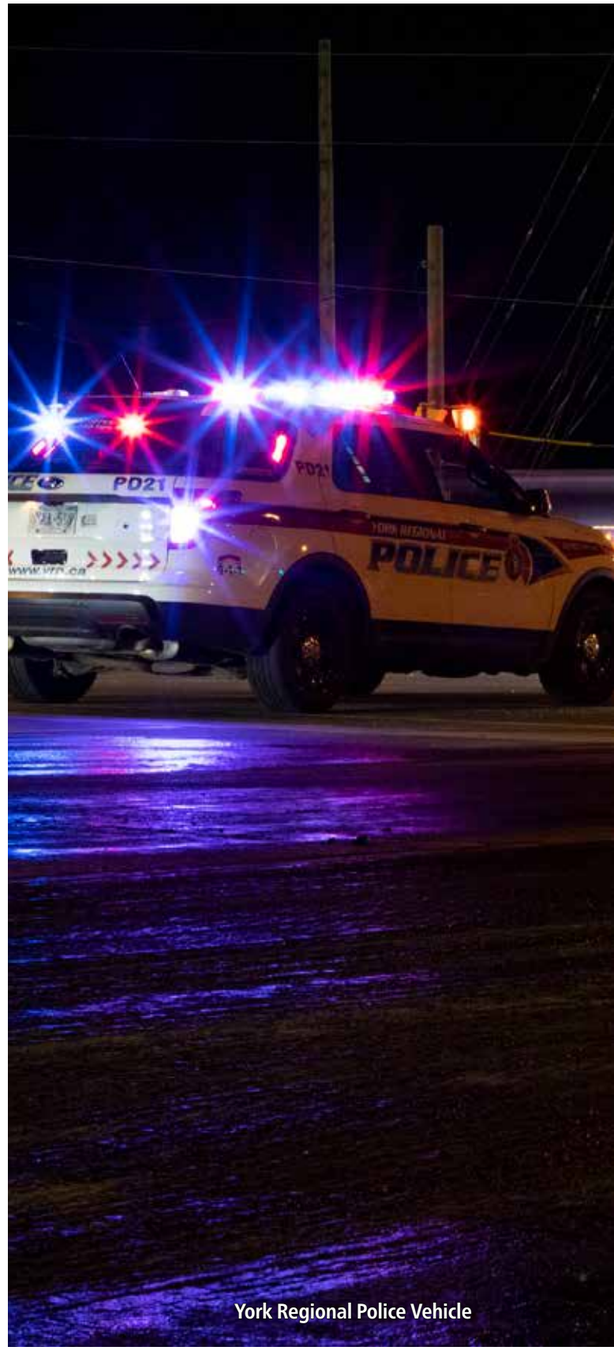
Risks to service delivery include aging assets, extreme weather, power outages, and hidden problems not easily picked up through typical inspection. Population growth that is out of line with forecasts, whether lower or higher, can also pose a significant threat depending on the type of asset. Asset management, including master plans, must take these risks into consideration.

Corporate asset management and the Region's service areas have together identified inputs to calculate risk. Some of these include:

- Likelihood of serious impairment in service delivery based on asset performance, condition and useful remaining life
- Impact on defined levels of service if an asset or system of assets fail
- Impact of failure on specific aspects of levels of service, such as safety
- Impact in service areas where failure poses a greater risk, such as water
- Impacts of failure on the system as a whole and/or other service areas

The Region is developing a corporate-wide system to analyze risk to assets in all service areas. The new system, replacing individual assessments based on age, condition and performance, will look at how capital and operating spending translate into service outcomes. The aim is to produce a consistent approach to risk analysis.

The upside of risk is that an unexpected change might create opportunities to improve asset management. These include third-party funding, co-ownership, and the possibility of using an asset for more than one purpose.



York Regional Police Vehicle

5.4 Measuring asset management maturity

York Region regularly assesses the maturity of its asset management practices and looks for opportunities to improve.

After a detailed review of globally recognized maturity models, the Region created its own tool to assess the level of maturity in 16 categories of asset management planning. The Figure 16 shows the ratings in each of the 16 categories. On the scale, level 1 indicates awareness of what is needed, 2 means skills are developing, 3 means activities are effective and 4 signifies excellence.

The results in this Plan are as of the end of 2023, reporting the second assessment since the maturity tool was first used in 2021. The purple inner line in the circle graph shows ratings in 2021, while the blue line shows 2023 ratings. Between 2021 and 2023, the overall score improved from two-and-a-half out of four (63%) to three out of four (75%) and performance improved in 15 of the 16 categories. In essence, the results show that the Region has moved from skills development to applying skills for effective results.

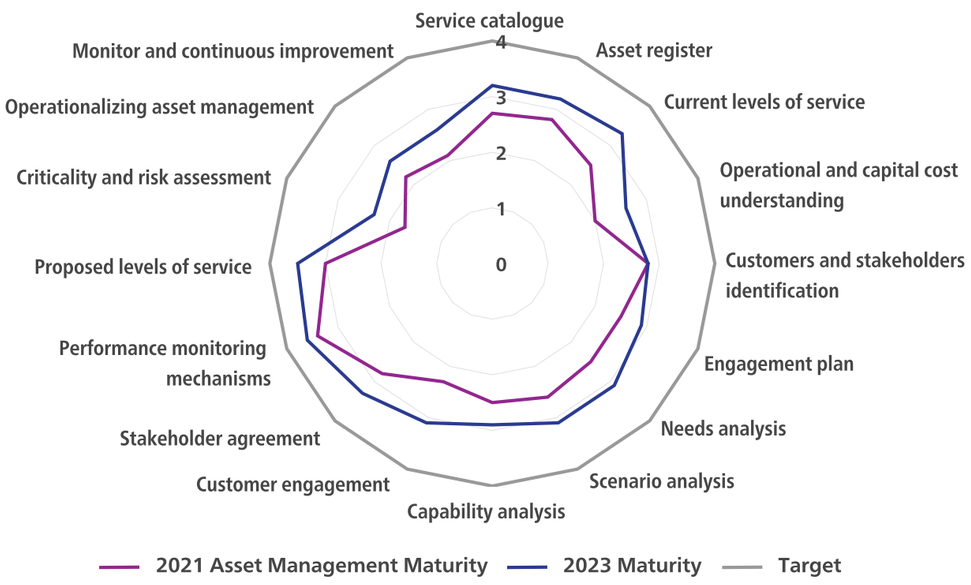
Preparing this Corporate Asset Management Plan has helped progress.

At higher levels of maturity, a better picture emerges of which assets are critical to service delivery and which risks most threaten levels of service. Capital planners are better able to design out threats and the Region overall has the right information to make better decisions. Above all, greater maturity in asset management means there is stronger interaction and hand-off between staff responsible for planning, delivering, operating and maintaining capital assets. This leads to more efficient and sustainable services.

The Region will continue to assess maturity every two years, with the next assessment planned for 2025.

The process of managing assets is continuous and varies by service area. Assessment results for each service area are included in sections of this plan.

Figure 16: York region's asset management maturity



5.5 Priorities to improve level of maturity

In looking at how to raise maturity levels, we identified five priorities to focus on before the next update to the Corporate Asset Management Plan (see Figure 17):

- Engage more fully with customers
- Embed risk management into plans and build response readiness
- Use the best possible evidence in making decisions
- Standardize processes
- Build asset management skills and competence

Figure 17: Strategic asset management priorities

To help guide decisions about which actions are most needed in each service area, the following tables describe each priority, why it's important and what it means in practice.

Engage more fully with customers

Give customers more power to provide feedback and influence outcomes. This will help us better understand current experience as well as changing needs and expectations.
Why is this important?
Asset management must balance customer levels of service with cost and risk, so it is important to know if customer experience aligns with current levels, and whether future levels need to be adjusted. Engagement is also a regulatory requirement.
What does this look like in practice?
The Region: • Publicly discusses asset management costs, levels of service and risk • Asks for and uses customer feedback to inform decisions, including asset management planning • Explains how growth forecasts shape decisions about levels of service and new assets

Embed risk management into plans and build response readiness

From the planning stage onward, build in flexibility and enhance ability to manage uncertainty, reduce the impacts of threats, and leverage new opportunities

Why is this important?

For services to be sustainable, the Region must be able to handle rapidly evolving technologies, demographic trends, climate change and many other uncertainties across all phases of the asset lifecycle. The early phases of a project play a critical role by identifying how an asset is intended to perform and how design, operation and maintenance can all minimize the risk of costly unexpected failure. By building in flexibility and the ability to respond quickly, these early stages can also make it easier to capture benefits associated with change, such as new technologies.

What does this look like in practice?

In line with lifecycle management strategies, each service area:

- Plans and designs projects with a view to flexibility and managing risks throughout the lifecycle
- Reviews levels of service and proposes any changes to respond to customer expectations, indicators of asset performance, climate change, new legislation and changes in costs
- Considers the impacts of actual and potential changes to levels of service, which can involve higher costs to upgrade or renew assets, adjust staff skills and/or adopt new technology
- Sets out and schedules day-to-day asset care that is based on vendor guidance and best practices and includes job plans, safety plans and preventative maintenance plans and any needed staff training
- Assesses risk to existing assets each year and when capital projects begin, looking for threats and opportunities and developing strategies to address these

Use the best possible evidence in making decisions

Be better at collecting, managing and sharing data across the organization and leveraging its value

Why is it important?

Data and information about assets, performance, service delivery, costs and external factors are key inputs into asset management planning. Sharing information about existing and planned assets across the organization is key because the 13 service areas' assets are often interdependent. For example, Public Works' remote monitoring of water and wastewater systems uses YorkNet fibre optic cable, and police vehicles use Regional roads.

What does this look like in practice?

The Region has designed data collection to support better decision-making. For example:

- Work done on site is input digitally against an asset hierarchy and shows what was found, what was done and how the asset was left, so this information can be readily queried for condition assessments
- Information on asset performance drives maintenance planning and scheduling except where calendar-based scheduling is legally required
- Assets that are classed as critical are identified because their needs take priority
- Asset management data is accessible across service areas to support integrated service delivery
- Asset management information and data sources, acquisition methods, uses and governance requirements are well established and implemented
- Processes quickly capture proposed and actual changes to assets in the field and ensure data is accurate

Standardize processes

Standardize asset management processes and practices to build consistency

Why is it important?

Standardized processes remove inefficiencies, improve data accuracy and enable repeatable results.

What does this look like in practice?

The Region:

- Seamlessly integrates asset management practices into operational and business processes
- Reviews existing asset management software solutions before acquiring new ones
- Assesses service area maturity every two years to measure progress
- More fully defines and documents all parts of the asset management system
- Establishes standard processes across the organization to achieve the goals of the Corporate Asset Management Policy, which includes initiatives embedded in the Energy, Conservation and Demand Management Plan, the Climate Change Action Plan, ESG Plan, and the Data and Analytics Action Plan

Build asset management skills and competence

Build and enhance asset management competencies in the organization to advance sustainable service delivery

Why is it important?

The knowledge, skills and attitudes of people who manage assets influence outcomes. Asset management takes a multi-disciplinary lifecycle approach that involves operations, capital planning and delivery, budgeting and managing increasing data and information. The needed skills and competencies must grow across the organization as systems and activities become more sophisticated and complex.

What does this look like in practice?

Staff across the organization:

- Understand the importance of asset management and how it is reflected in their work
- Take part in leading global asset management organizations

The Region:

- Clearly identifies competency gaps and addresses them through a plan that includes more specialized training in such areas as work planning/control and assessing risk
- Considers asset management needs when recruiting staff
- Empowers asset management teams to advise on lifecycle activities in line with best practices
- Regularly researches successful and innovative practices and adopts these where appropriate

5.6 Continuous improvement plan

Asset management is constantly evolving, which calls for continuous improvement efforts. Table 6 outlines 2024 to 2028 actions to advance practices and enhance maturity across the organization.

Completed actions will be reported to the Corporate Asset Management Steering Committee in the first quarter of each year and will inform Regional Council's annual review of asset management progress, as required by O. Reg. 588/17.

Table 6: Summary of asset management improvement actions

Area and Action	Target completion year	Work started	Priority Area: Engage more fully with customers	Embed risk management/build response readiness	Use the best possible evidence in making decisions	Standardize processes	Build asset management skills and competence
Corporate Asset Management							
Complete flood risk assessment project	2024	√		•	•		
Roll out asset management training to the organization	2024	√					•
Update corporate state of infrastructure criteria reporting	2025	√			•	•	
Implement annual corporate asset management progress reporting	2025	√			•	•	
Roll out risk management framework	2027	√	•	•	•	•	
Wastewater Services and Water Services							
Align equipment and business programs with levels of service	2025	√	•				
Improve asset management data availability and visualization	2025	√			•	•	
Coordinate and integrate risk management processes with centralized risk register	2027	√		•		•	
Educate staff and promote asset management throughout branch	2027	√					•
Improve lifecycle cost estimation and forecasting capability	2027	√			•		
Roads Services							
Advance asset management maturity in developing 2023 Transportation State of Infrastructure Report	2024	√				•	
Develop second edition of the Stormwater Asset Management Plan	2025	√		•			
Develop second edition of the Fleet Asset Management Plan	2025	√		•			
New staff obtain certification from the Institute of Asset Management	2026						•
Review roads asset data for quality assurance and quality control	2027	√			•		
Transit Services							
Continue partnership with Metrolinx to ensure seamless delivery of bus rapid transit services	Ongoing	√	•				
Develop second edition of the Transit Asset Management Plan	2024	√		•			
New staff obtain Asset Management Certification from Institute of Asset Management	2026						•
Green Infrastructure							
Improving data accuracy and consistency – Include additional data within the asset inventory (such as creating a digital inventory and condition assessments for irrigation systems)	2026	√			•	•	
Better utilize risk to inform capital planning and asset management decisions – Establish standardized processes for tracking and reporting risks, ensure the risks are considered in decision making and funds are available to address risks as they occur.	2026			•			
Improving cost data – Adopt activity-based costing, maintain a robust set of unit replacement costs and separate maintenance and operating costs.	2026				•	•	

Area and Action	Target completion year	Work started	Priority Area: Engage more fully with customers	Embed risk management/build response readiness	Use the best possible evidence in making decisions	Standardize processes	Build asset management skills and competence
Housing Services							
Identify mission-critical assets and conduct failure mode cause and effect analysis	2024	√		•	•	•	
Develop Energy Utility Management Plan and Climate Change Action Plans for various facilities	2025	√			•		
Develop Accessibility Implementation Master Plan	2025	√	•				
Integrate Asset Management and Maintenance Management software applications	2026	√			•	•	
Property Services							
Develop a clear and standardized, step-by-step framework that ensures consistently transparent asset management practices that promote sound and timely lifecycle planning	2024	√	•	•	•	•	
Complete Corporate Asset Management training module	2024						•
Develop a stakeholder engagement strategy that advances and cultivates Property Services' asset management program	2025	√	•	•	•	•	•
Customize the risk assessment tool to accommodate Property Services' mission critical assets, and to develop a critical rehabilitation ranking	2026			•	•	•	
Establish automated preventative maintenance work orders in Archibus for mission critical assets	2026	√	•	•	•	•	
York Regional Police Services							
In development							

Area and Action	Target completion year	Work started	Priority Area: Engage more fully with customers	Embed risk management/build response readiness	Use the best possible evidence in making decisions	Standardize processes	Build asset management skills and competence
Waste Management Services							
Improve Asset Management data availability and leverage the Public Works Digital Transformation to support asset management planning	Ongoing	√			•	•	•
Review opportunities to integrate climate change considerations in service delivery	Ongoing	√		•			
Update condition assessment strategy	2024	√			•		•
Adapt level of service to reflect changing regulations, including requirements for Extended Producer Responsibility	2026				•	•	
Implement and integrate the results of the risk assessment	2026			•		•	
Implement and integrate the level of service and function hierarchy and link to level of service	2026		•		•		•
YorkNet							
Implement fibre monitoring system	2024	√	•	•	•	•	
Purchase asset management software	2024	√			•	•	
Conduct network audit	2026	√		•	•		
Finish building network	2032	√	•	•	•	•	•

Area and Action	Target completion year	Work started	Priority Area: Engage more fully with customers	Embed risk management/build response readiness	Use the best possible evidence in making decisions	Standardize processes	Build asset management skills and competence
Information Technology Services							
Review renewal/refresh service delivery (technology asset management governance and target operating model program)	Ongoing	√	•			•	•
Preliminary license and compliance management program strategy (technology asset management governance and target operating model program)	2026			•	•	•	•
Corporate IT service management implementation (services kpi planning - technology asset management planning frameworks and methodologies)	2026	√	•	•	•		
Develop technology master plan (informs technology asset management governance and target operating model program)	2027	√		•	•		
Paramedics Services							
Identify mission-critical assets and conduct failure mode cause and effect analysis	2024	√		•	•		
Detailed lifecycle analysis of assets, moving away from age- or mileage-based service life	2025	√			•		
Integrate Asset Management and Maintenance Management software applications	2026				•	•	
Seniors Services							
Conduct annual asset condition assessments, build detailed inventory of asset needs and associated costs to assist in the short- and medium-term capital planning activities	2024	√			•		
Identify mission-critical assets and conduct failure mode cause and effect analysis	2025	√		•	•		
Integrate Asset Management and Maintenance Management software applications	2026	√			•	•	

For a summary of the completion status of continuous improvement actions contained in the 2018 Corporate Asset Management Plan, see Appendix B.

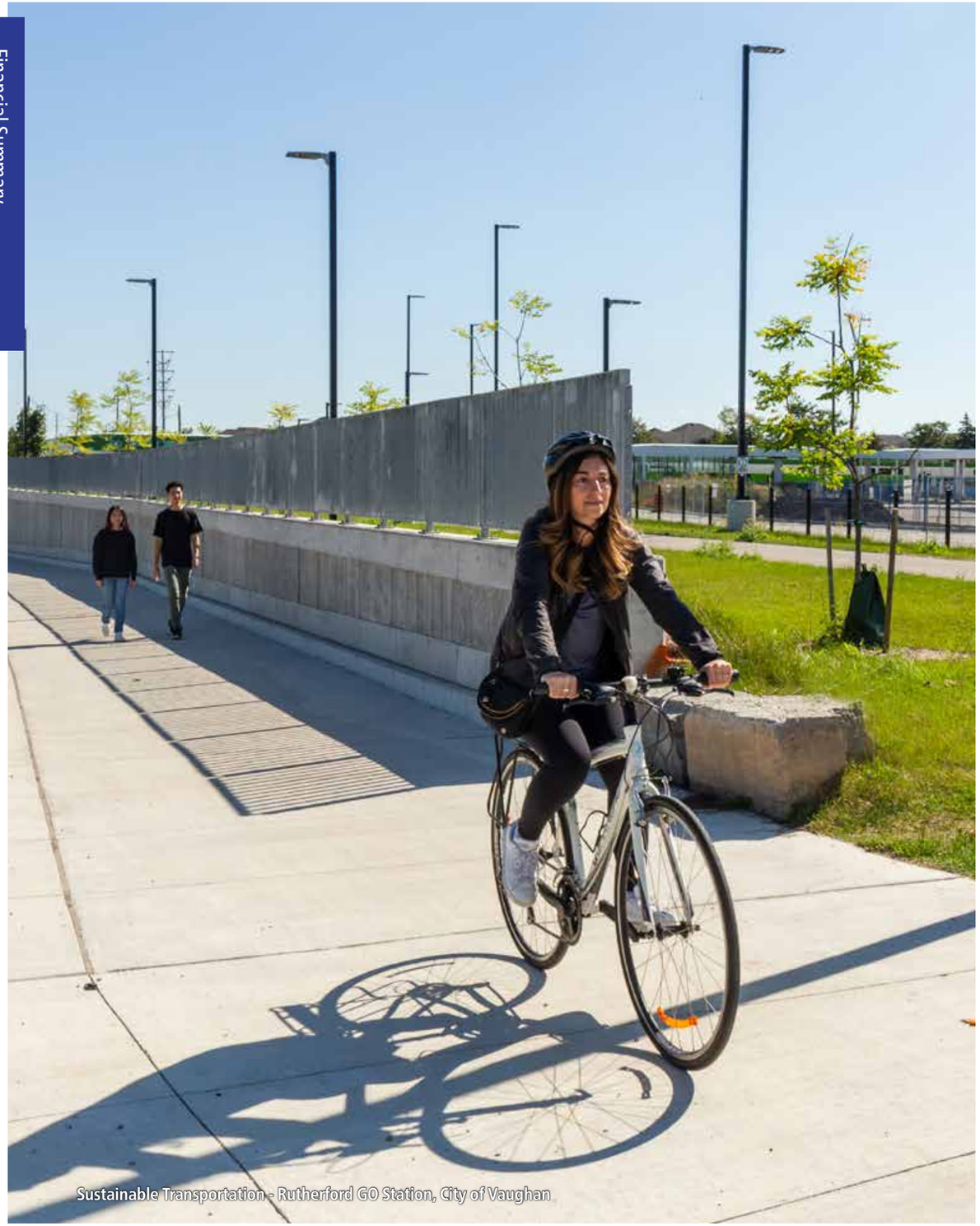
5.7 A corporate-wide asset management system

An asset management system provides a uniform approach to asset management across all service areas, ensuring activities result in repeatable outcomes. These activities include identifying the need for assets, acquiring or building them, and handing the assets over to be operated and maintained. The desired system of repeatable practices also acknowledges the importance of considering operations and maintenance early in the lifecycle of an asset. This is key to reducing lifecycle costs. The system should also ensure that by the in-service date:

- Asset management and other applications, for example Supervisory Control and Data Acquisition (SCADA), have already been loaded with the required data
- Work orders have already been scheduled and generated and operating staff are ready to carry them out, including receiving any necessary training
- Required tools, equipment and spare parts are available

The approach described above also encourages use of an asset failure reporting, analysis and corrective action system across the organization. This provides consistent information about service delivery that is easily queried to inform capital design, assess asset condition and continuously improve maintenance activities.

Forcemain Twinning - Town of Newmarket



Sustainable Transportation - Rutherford GO Station, City of Vaughan

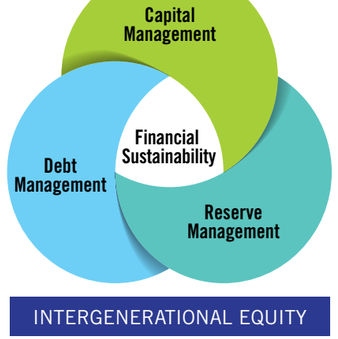
Financial Summary

This section provides an overview of the asset-related costs needed to maintain current levels of service and to meet proposed levels of service as reflected in annual budgets, master plans or other Council reports. To develop cost estimates, each service area reviewed the operating and capital needs of its assets. The analysis is intended to meet the financial reporting requirements of O. Reg. 588/17.

6.1 Fiscal strategy and background

The Regional Fiscal Strategy, first approved by Council through the 2014 budget process and updated annually since, focuses on managing three inter-related pillars: debt, reserves and the capital plan (see Figure 18). A key part of this strategy is managing future asset management needs without the need to issue new tax levy or user rate debt.

Figure 18: York Region's fiscal strategy



These pillars support the overarching objective of intergenerational equity, which means fair treatment for current and future residents. It provides a comprehensive framework to guide the Region's budget development process and effectively manage financial risks. The Fiscal Strategy has been a guide in ensuring enough funding and reserves to keep the Region's assets in a good state of repair for current levels of service.

York Region's asset management strategy informs Regional Council's investment decisions. The 10-year Capital Plan balances the need to build new infrastructure to meet growth needs with the need to renew existing assets. The 2023 budget included a 10-year capital plan totaling $9.9 billion, of which 40% was for asset rehabilitation and replacement. Similarly, the budget included a $3.1 billion operating budget in 2023, with over $800 million allocated to operating, maintaining and repairing assets, which are also important aspects of asset management. A further $378 million was contributed to asset management reserves to fund current and long-term needs, and $344 million was planned to be drawn from those reserves in 2023.

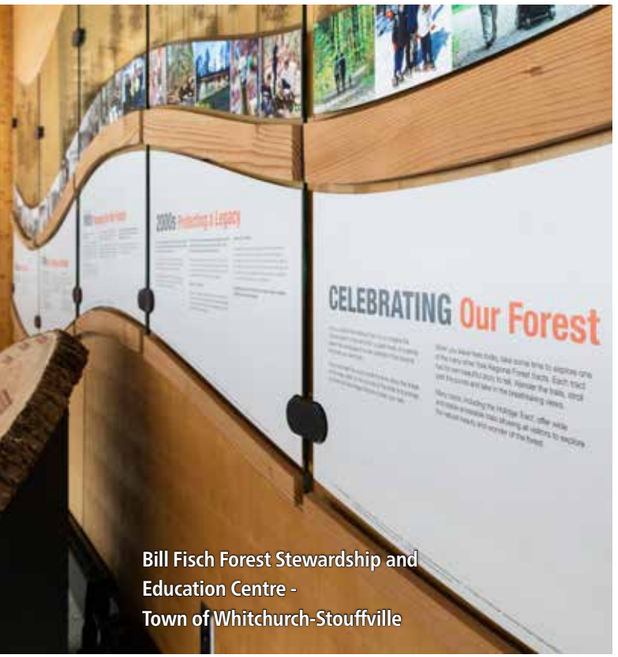
Funding for asset management needs comes from several sources:

- Property tax revenue largely funds waste management, policing, forestry, and road-related services, including contributions to asset management reserves
- Water and wastewater user rates cover all asset management costs of providing these services
- Fares help fund transit, while rental revenues offset some of the costs of community housing
- Development charges help to pay for growth-related capital
- Other grants, projects and fees also provide operating funding and, on occasion, capital funding

The asset management strategy and policy aim to ensure these funds are used consistently and effectively across all service areas in the Region.

One goal of the Regional fiscal strategy is to ensure inter-generational equity – that is, the principle that taxpayers and water and wastewater service users are treated fairly over time. For water and wastewater assets, this goal was achieved through Council's approval of the 2021 User Rate Study. However, planned contributions to tax levy-funded asset management reserves fall short of this objective.

Changes at the provincial level will reduce the Region's revenues from development charges that help pay for new capital projects. Council had endorsed an interim measure to use surplus and reserves to fund the DC shortfalls until another funding source is determined. If asset management contributions had to be diverted toward funding new projects as a result, the gap between needs and available funding for renewal of tax-levy-funded assets would widen, and a new gap might open for user-rate-funded renewal. Annual reporting on this Plan will assess this risk.



Bill Fisch Forest Stewardship and Education Centre - Town of Whitchurch-Stouffville

6.2 Lifecycle spending

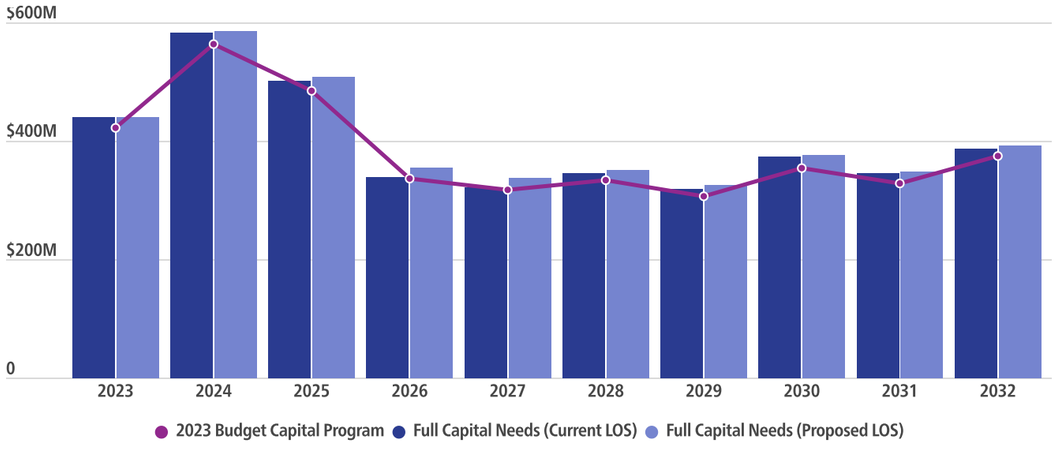
This section outlines lifecycle spending needs identified in the service area reviews discussed above. These needs support the two levels of service defined in Section 3.5 Level of services. To align with the Region's budget practices, they are split between capital and operating needs. Capital needs are further broken down between renewal needs and growth-related needs. The projected budget to meet asset lifecycle needs over the next 10 years (2023 to 2032) is $17.8 billion. This includes capital costs for existing assets ($3.8 billion), capital costs for growth-related assets ($4.6 billion), and operating costs for both existing and growth-related assets ($9.4 billion).

Capital spending to renew assets

This spending estimates the cost of renewing assets to maintain current levels of service and, where applicable, to meet proposed levels over the 10-year period of this Plan. In developing the forecast, service areas reviewed costs for existing assets and increases in renewal needs as assets are added to the base.

Figure 19 shows the results. Adding annual spending over the 10 years, the cost to maintain the current levels of service amounts to approximately $4.0 billion.

Figure 19: Capital budget vs. full capital needs (existing assets)



Note: All values in 2023 dollars, uninflated.

The line in the graph shows projected asset management funding in the 2023 Budget's 10-year Capital Plan (for consistency, the graph excludes expected spending on assets outside the scope of this Plan).

The total over 10 years amounts to approximately $3.8 billion. This is slightly lower than the $4.0 billion expected cost for maintaining current levels of service. The individual service area discussions for Roads, Property Services, Seniors Services, and Green Infrastructure explain the variances.

There is a difference of $0.2 billion between the 10-year Capital Plan and projected needs for levels of service. This reflects variances of:

- $161 million for Roads
- $21 million for Property Services
- $9 million for Green Infrastructure
- $5 million for Seniors Services

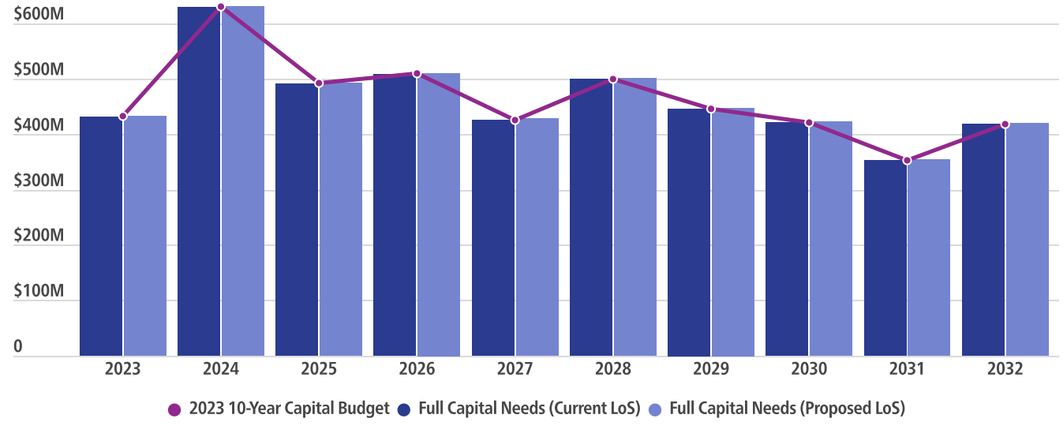
The individual discussions for these service areas provide more detail. The needs to budget differences are reviewed through the annual budget process as per Section 6.3.

Capital spending to meet growth needs

This category captures the initial cost to build or acquire new assets to meet growth needs. For these estimates, service areas reviewed the costs of new assets to maintain current levels of service and, where applicable, to meet proposed levels of service over the 10-year period.

Figure 20 shows the results. Adding annual spending over the 10 years, the cost of new assets amounts to approximately $4.6 billion to maintain current levels of service or move to proposed ones.

Figure 20: Capital budget vs. full capital needs (future assets)



Note: All values in 2023 dollars, uninflated.

The line in the graph shows projected growth-related funding in the 2023 Budget's 10-year Capital Plan totaling $4.6 billion (for consistency, the graph excludes expected spending on assets outside the scope of this Plan).

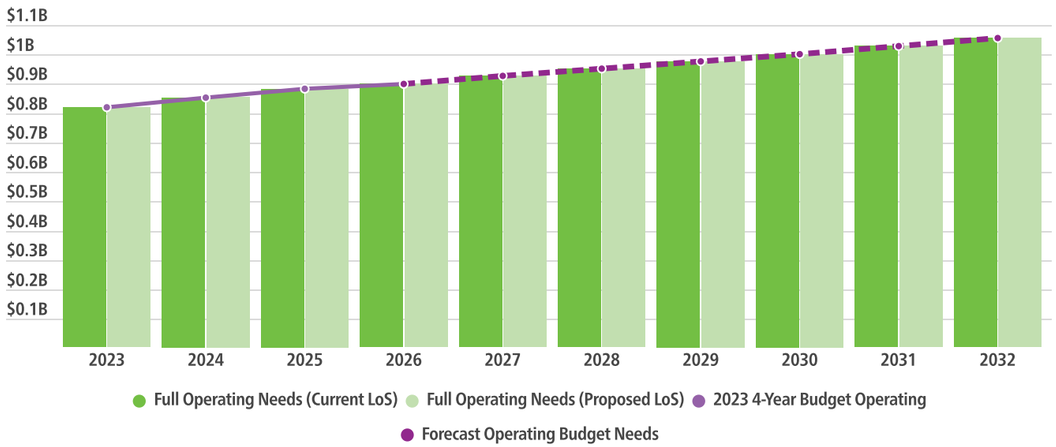
Although these figures suggest adequate funding is available, there are small differences in timing of planned spending for Property Services and Green Infrastructure. The discussion for each of these service areas provides details.

Operating costs

Service areas estimated the costs to operate existing and new assets in this Plan to maintain current levels of service and, where applicable, to meet proposed levels of service. Only costs to maintain and operate the Region's assets were captured in the analysis. Finally, consistent with the Region's budget, operating costs are shown in nominal dollars.

Figure 21 represents the results of the analysis from 2023 to 2032. In 2023, asset-related operating costs amounted to approximately $821 million. By 2032, these costs are expected to reach $1.1 billion. Over the 10-year period, the total operating cost amounts to $9.4 billion.

Figure 21: Operating budget vs. full operating needs (existing and future assets)



Note: All values in nominal dollars.

A similar approach to capital has been used to assess the relative level of spending available for each service area against the costs for current and proposed levels of service. The Region's budget process prioritizes the operating needs required to provide service. As shown in Figure 21, the Region expects to have sufficient funding available for operating needs over the 10-year period to meet current levels of service. For proposed levels of service, one service area has reported small operating pressures:

- Green Infrastructure would require additional average annual operating spending of approximately $76,000

Additional details are provided in the appendix for each service area.

Anticipated pressures

Based on the analysis outlined in this report, the Region expects to have sufficient funding to continue providing the current levels of service over the 10-year period. The Region is projecting significant population growth, and additional growth-related infrastructure is required to meet levels of services objectives. These projections are expected to create additional pressures for the Region going forward:

- The Region's share of funding for the Yonge North Subway Extension is approximately $1.12 billion based on the 2023 budget. Once the project is complete, tax levy support for the Region's share of operating costs will be needed from the Region's annual operating budget
- The cost of the next phase of bus rapid transit is estimated to be approximately $1.5 billion over the 10-year period. This was not included in the 2023 Capital Plan as senior government funding would be needed to undertake these projects
- Approximately $423 million in community housing projects were excluded from the Plan for the same reason
- A new direction for servicing population growth in northern communities that was mandated by the Province late in 2022 (the York Region Sewage Works Project), is expected to increase water and wastewater capital and operating costs

Microtunnel Boring Shaft -
York Durham Sewage System Foremain Twinning

6.3 Fiscal strategy considerations

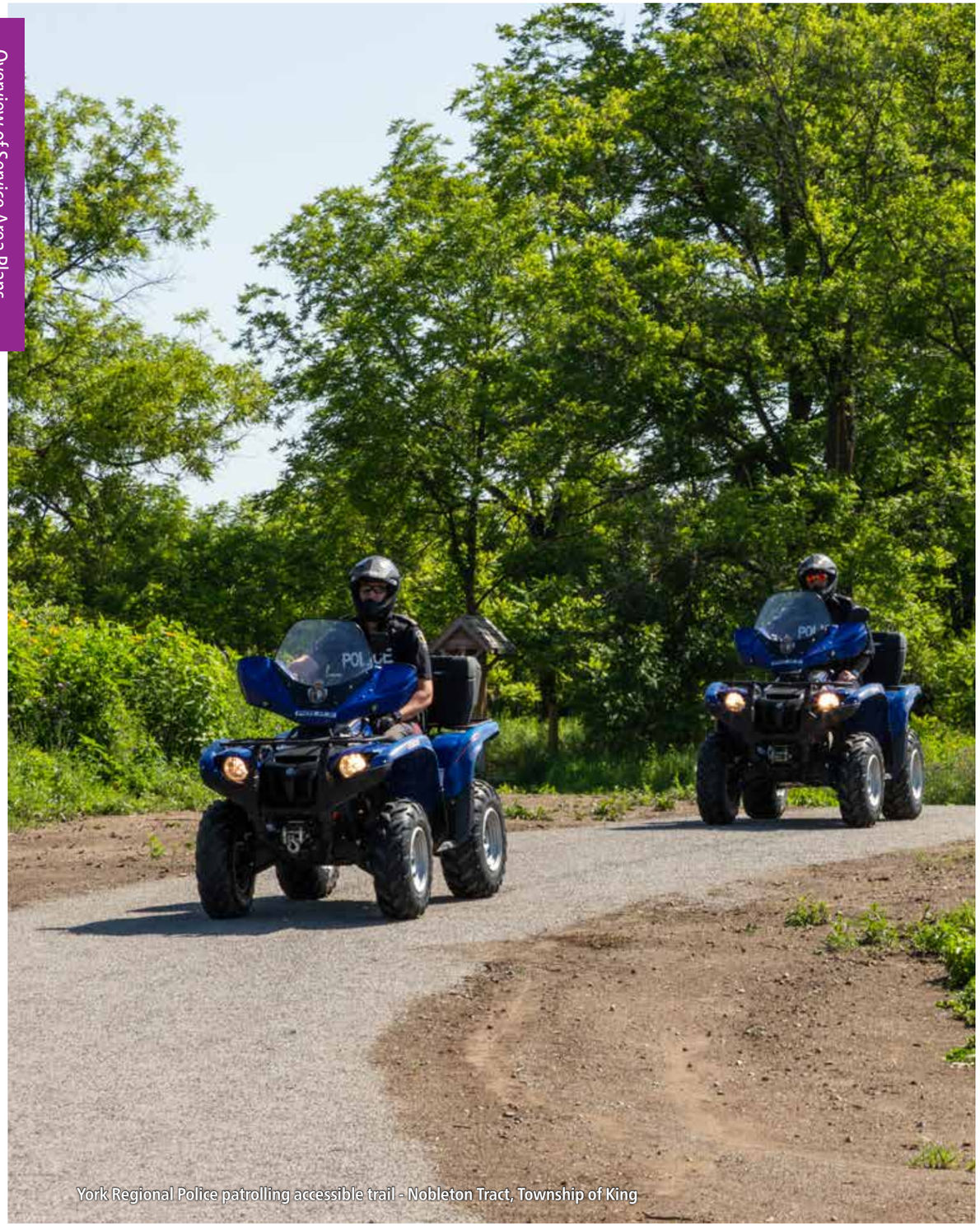
The Region effectively manages its lifecycle needs through the annual budget process and the Regional Fiscal Strategy. This includes a long-term funding strategy that meets its levels of service needs to 2032.

Given the size and complexity of its portfolio and impact of senior government direction on asset management, the Region considers other sources, such as grants, subsidies and developer support, to reduce costs to its own service users.

The following options adhere to the principles of the Fiscal Strategy, encompassing both fiscal strategies and improvements in asset management. Fiscal strategies are constrained by the Region's fiscal capacity and competing budget priorities.

Table 7: Fiscal strategies for addressing asset management lifecycle costs

Fiscal Strategies	Description
Contributions to asset management reserves	• Contributions are funded from the tax levy or water and wastewater user rates through the annual operating budget • The 2023 Fiscal Sustainability Update identified an annual contribution gap of approximately $70 million a year on average relative to the inter-generational equity target. Contributions are expected to increase annually but would need to increase further to close the gap
Rapid Transit / Infrastructure Levy	• This levy, equal to 1% of the property tax base, funds a reserve to help pay for the Region's share of the Yonge North Subway Extension and other critical infrastructure projects. It was approved for 2022 to 2024 budget and endorsed in outlook for 2025 and 2026. Since the levy is now part of the base budget, once the subway need is met, the Region could consider using the funds to bring contributions to asset management reserves to the level needed for intergenerational equity
Development charges	• Development charges are collected on new development in accordance with the Development Charges Act, 1997. They pay for most of the capital costs for growth-related infrastructure • In some cases, development charges can be used to fund rehabilitation/renewal work that must be undertaken during the delivery of a growth-related project
Operating costs	• Through its operating forecast models, the Region considers future operating costs and plans accordingly • The Region needs to consider phasing in additional operating budget room to meet proposed levels of service not already budgeted
Advocate for funding support from upper levels of government	• The Region has shown strong commitment to asset management and fiscal responsibility. Nonetheless, it faces fiscal pressures through the introduction of new and recent provincial measures, including the More Homes Built Faster Act, 2022 • The Region advocates for senior government funding to offset these pressures
Advocate for additional revenue tools from upper levels of government	• In the past, the Region has advocated for new revenue tools to help fund Regional services • The Region should consider continuing to advocate for additional revenue tools such as those given to the City of Toronto through the City of Toronto Act. For example, Municipal Land Transfer Tax
Improved data quality	• As the asset management lifecycle cost analysis matures for each service area over time, budget practices should better align to identify budget needs • The Region regularly reviews how activities are categorized in the budget to better capture costs
Adjust levels of service	• Align service levels with available funding



York Regional Police patrolling accessible trail - Nobleton Tract, Township of King

Overview of Service Area Plans

7.1 Service area summaries

This chapter shows how the service area summaries that follow align with Ontario Regulation 588/17. A link to the full regulation appears as Appendix O. In the discussion below, relevant subsections of the regulation appear in brackets. Each service area discussion comprises seven items:

1. **State of infrastructure**

   An overview as of December 31, 2022, including:

   - Summary of asset inventory (subsection 5 (2) 3. i)
   - Replacement cost of assets (subsection 5 (2) 3. ii)
   - Average age and useful life by asset category (subsection 5 (2) 3. iii)
   - Overall performance grade, based on indicators of condition, reliability, and capacity. Indicator of condition (subsections 5 (2) 3. iv and v) generally draw on best practices in the relevant industry

2. **Strategy**

   This section details the service area's strategic approach to asset management. It also explains how its strategy aligns with the Corporate Asset Management Policy and the Strategic Plan

3. **Financial outlook**

   This section sets out estimated lifecycle costs to maintain current levels of service and meet proposed levels of service over ten years from 2023 to 2032 inclusive (subsection 5 (2) 6 vi and subsections 6 (1) 4 ii-iv). It provides graphs of:

   - 10-year Capital Plan in the 2023 Budget vs. Estimated Full Capital Needs for existing assets
   - 10-year Capital Plan in the 2023 Budget vs. Estimated Full Capital Needs for future assets
   - Operating costs in the 2023 budget out to 2026 and the budget forecast from 2027 to 2032 vs. Estimated Full Operating Needs for existing and future assets

Passenger boarding York Region Transit bus - Town of Aurora

Major Mackenzie West Terminal - City of Vaughan

4. **Current levels of service**

   This section sets out commitments for both, including current levels and, where available, recent trends and targets (subsections 5 (2) 1-2).

   This section also outlines management options and planned activities up to 2032, as well as risks related to assets failing to meet current levels of service (subsections 5. (2) 4 i-iii and 6 (1) 4 i). Risks include climate change, technological advancements including artificial intelligence, changes between actual and forecast demand, and regulatory changes.

5. **Proposed levels of service approved by Regional Council**

   This section provides proposed customer and technical levels of service to 2032 by asset category (subsections 6 (1) 1, 6 (1) 2 i-iv and 6 (1) 3) as approved by Regional Council through a budget, master plan, or similar process. If these differ from current levels, an explanation is provided.

   Lifecycle management options and planned activities over the 10-year timeframe are included, along with risks associated with assets failing to meet proposed levels of service (subsection 6 (1) 4 i). As with current levels of service, risks include climate change, technological advancements including artificial intelligence, changes between actual and forecast demand, and regulatory changes.

6. **Maturity**

   This section summarizes the service area's level of maturity in asset management, based on a joint assessment by the service area and the Corporate Asset Management team. Section 5.4 provides details of the assessment tool and rolls up results across the organization.

7. **Monitor and continuous improvement**

   This section outlines the efforts, initiatives, and projects the service area is undertaking or will undertake to grow in maturity, address threats, and exploit opportunities identified in developing its asset management plan.

   Please note that most asset management plan summaries are based on service area asset management plans.

7.2 Service area profiles

Wastewater Services 79
Roads Services 91
Water Services 107
Transit Services 123
Green Infrastructure Services 135
Housing Services 153
Property Services 167
York Regional Police Services 181
Waste Management Services 195
YorkNet 207
Information Technology Services 219
Paramedic Services 229
Seniors Services (Long-Term Care) 239

"This section details each service areas' **strategic approach** to asset management."

Keswick Water Resource Recovery Facility - Town of Georgina

Wastewater Services

Replacement cost:
$8,727.6 M

Performance grade	Condition (fair or better)
A	96%

Asset portfolio:

- One wastewater treatment lagoon
- One water pollution control plant (co-owned with Durham Region)
- Two equalization tanks
- Six solar arrays at wastewater sites
- Six water resource recovery facilities
- Eight odour control facilities
- 21 wastewater pumping stations
- 230 km of trunk sewers including manholes
- 138 km of sanitary forcemains

Changes in asset portfolio:

Recently decommissioned, Aurora Odour Control Facility was removed from the portfolio in 2022. No other significant changes to the wastewater services asset portfolio took place in 2022.

Future outlook:

The Region has several upcoming capital projects to maintain its ability to meet current and projected wastewater requirements. These projects are determined through multi-year condition assessment programs and include Duffin Creek Water Pollution Control Plant upgrades, Trunk Sewer rehabilitations, and various Water Resource Recovery Facility and Sewage Pumping Station upgrades.

8.1 State of the infrastructure

York Region is responsible for collecting and treating wastewater from local cities and towns, who in turn collect from residents and businesses.

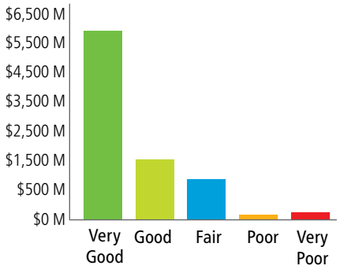
Replacement cost summary:

2021 Replacement Cost		$6,240.7 M
Changes:		$2,486.9 M
New and upgraded Assets	$0.0 M	
Asset evaluation improvements and inflation	$2,504.5 M	
Decommissioned assets	($17.6) M	
2022 Replacement cost		$8,727.6 M

Performance grade:

Criteria	Grade	Trend
Reliability	A	→
Capacity	A	→
Condition	A	→

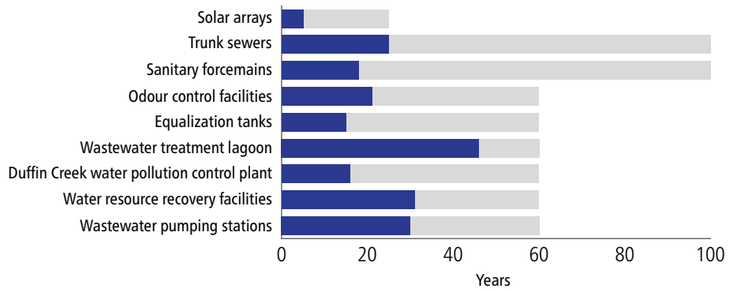
Condition ($M)



York Region reviews and updates replacement cost models on a regular basis to reflect changing conditions and new information.

Assets on average have 71% of their useful life remaining.

Average age and useful life expectancy (years)



Where the average age of the asset class exceeds its Useful Life Expectancy, the blue bar extends beyond the gray bar and is noted by a hatched white line.

8.2 Strategy

Wastewater Services' strategic approach to decision-making relies upon the following plans, processes, and tools:

- **The Water and Wastewater Asset Management Plan** sets out current and proposed levels of service and summarizes how the service area will manage assets so these can be met
- **The Water and Wastewater Master Plan** explains how the Region will meet demand and provide defined service levels as population grows. This includes aligning infrastructure with population growth and efforts to remain flexible in case patterns differ from forecast
- **The Integrated Management System** is a framework for consistently delivering services that comply with regulations and management standards. York Region's wastewater systems are registered to the ISO 9001 Quality Management Standard and the ISO 14001 Environmental Management Standard
- **The Supervisory Control and Data Acquisition (SCADA) system** monitors the wastewater system, provides real-time and historical data, and enables asset management and risk management activities remotely or on site
- **Comprehensive condition assessment programs** identify risks to physical condition and performance of wastewater infrastructure
- **A Centralized Maintenance Program** based on meeting or exceeding manufacturer requirements aims to ensure problems are prevented or, if they occur, are resolved as quickly as possible. Maintenance plans and practices are constantly reviewed and refined based on real-world experience
- **Capital project intake and review process** considers all growth-related and renewal needs for wastewater capital. This includes those identified through the Water and Wastewater Master Plan, condition assessments, engineering studies and staff observations
- **The Maximo Computerized Work Management System** tracks all operations and maintenance work orders and records equipment and assets. Over 50,000 work orders are issued annually through this centralized system
- **The Financial Sustainability Plan** supports full cost recovery for water and wastewater services. It recommends user rates that cover expected operating, compliance, maintenance, asset renewal and emergency response costs. (At present, growth-related capital is funded in large part by development charges.) The current rate structure will be in place until March 31, 2028. A new rate structure is typically recommended to Regional Council based on an update to the Financial Sustainability Plan

Meeting asset management policy objectives

Wastewater Services is aligned to the Corporate Asset Management Policy objectives through activities like:

- Monitoring asset performance through condition assessments and inspections
- Coordinating financial planning through the 2022 Water and Wastewater Financial Sustainability Plan and yearly lifecycle forecasts
- Validating growth and long-term renewal needs through the capital budget process
- Using lifecycle costing principles to analyze asset management strategies
- Closely linking decisions about asset management to defined levels of service
- Considering risks, including risks to critical infrastructure, when setting priorities for wastewater asset management
- Taking potential climate change impacts into account in asset management
- Optimizing maintenance practices to support reliability
- Improving system resiliency by ensuring the collection network has enough capacity for extreme events, providing standby power at all critical facilities and acting on climate change adaptation studies
- Continuing to evaluate and advance asset management maturity to support continuous improvement

Alignment with corporate strategic goals

The Region's wastewater service area directly supports all four Strategic Plan priority areas:

Areas of Focus	Objective	Alignment with Wastewater Services
ECONOMIC VITALITY	Attract and retain businesses, develop employment opportunities, and grow a skilled workforce	• Reliable wastewater services are provided to attract businesses and people
HEALTHY COMMUNITIES	Support safe communities	• Wastewater treatment is required for a safe community
	Protect and promote residents' well-being	• Wastewater treatment is required for a healthy community
SUSTAINABLE ENVIRONMENT	Deliver and promote environmentally sustainable services	• Directly by treating wastewater before returning to the environment. Indirectly through process energy management and water conservation initiatives
GOOD GOVERNMENT	Deliver fiscally sustainable services	• Indirectly through asset management principles and activities documented in this Plan and in the Water and Wastewater Financial Sustainability Plan, which aims to ensure that water and wastewater rates are sufficient for full-cost recovery and long-term funding sufficiency

Innovation Story - "Digital twins"

Data collected in water and wastewater systems helps create a variety of "digital twins" that can be used to virtually monitor system health and predict response to changing conditions. For example, the more than 300 flow meters that warn of unwanted water getting into sewer lines. With the decreasing cost of sensors, the department is exploring the next level of twinning – connecting data flow across activities to make it easier to pinpoint concerns and prevent problems before they happen.

8.3 Financial outlook

Enough funding should be available to fund both the current and proposed levels of service, as the graphs below show. The Region regularly updates its Water and Wastewater Financial Sustainability Plan, which sets out user rates that should cover all operating and renewal costs. Development charges are applied to the cost of new assets or expansions needed to service growth.

In the graphs below and on the next page, forecast capital and operating costs for current and proposed service levels appear as bars and operating and capital budget amounts as lines. The lines reflect the 2023 10-year capital plan and, for operating costs, the 2023-26 budget plus a forecast to 2032. Contributions to conservation authorities and reserves, debt-related costs, and capital costs that are recovered through third-party funding are excluded. Operating expenses include the purchase of wastewater treatment services from Peel. A new direction for servicing population growth in northern communities that was mandated by the Province late in 2022 (the York Region Sewage Works Project) is expected to increase water and wastewater capital and operating costs.

Figure 22: Capital budget vs. full capital needs (existing assets)

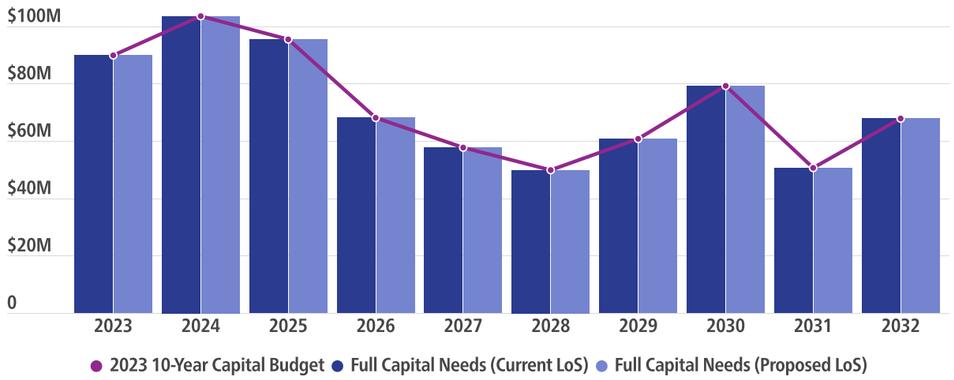


Figure 23: Capital budget vs. full capital needs (future assets)

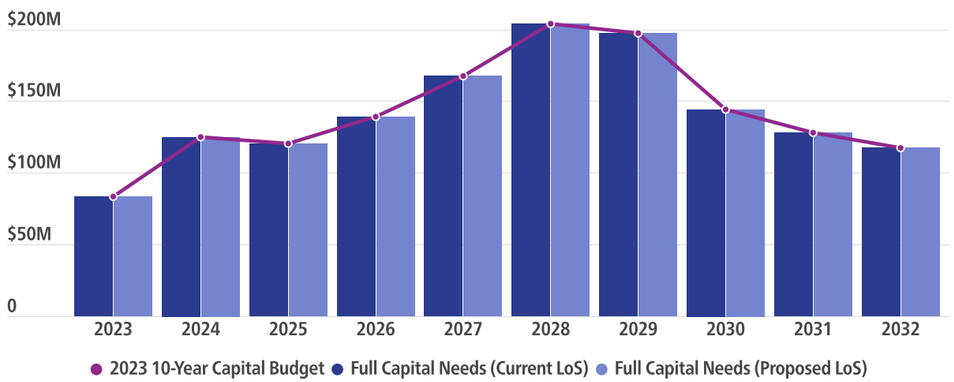
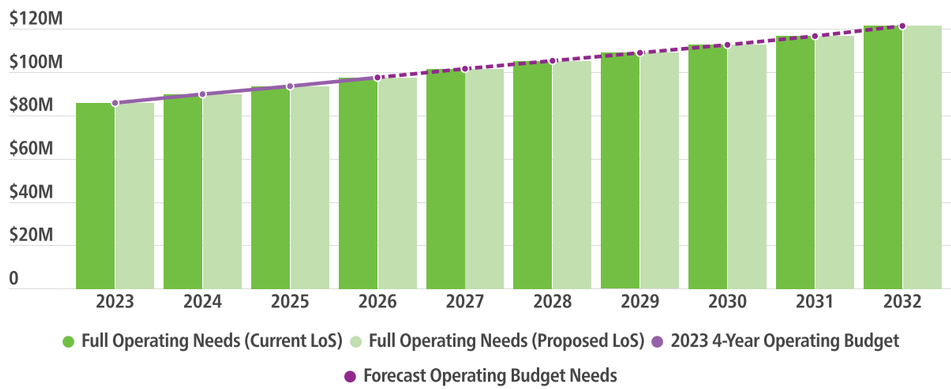


Figure 24: Operating budget vs. full operating needs (existing and future assets)



8.4 Current levels of service

Customer levels of service

- **Collect, contain and convey to treatment facilities all wastewater** from connected local municipal wastewater networks in current and future serviced communities in York Region
- **Provide hauled wastewater receiving locations** to accept wastewater generated by York Region residents and businesses not served by a municipal wastewater system
- **Treat wastewater and return water to environment** such that the effluent meets or exceeds all regulatory requirements
- **Remove, process and responsibly dispose of solids** from wastewater stream
- **Contain and/or treat odours** to minimize community impacts
- **Monitor, record and report required wastewater quantity, quality and compliance information** to regulatory agencies
- **Communicate and promote the benefits of the municipal wastewater system**

Current technical levels of service

This table provides the current customer levels of service, the supporting asset categories and related technical metrics.

		Technical Levels of Service		
Customer Levels of Service	**Asset Categories**	**Performance Metric**	**Current Service Level Target**	**Current Performance**
Collect, contain, and convey to treatment facilities all wastewater from connected local municipal wastewater networks in current and future serviced communities within York Region	Trunk Sewers, pumping stations, forcemains	Percentage of urban properties serviced by the municipal wastewater system	N/A	98%
	Trunk Sewers, pumping stations, equalization tanks, forcemains	Percentage of collected wastewater treated prior to return to the environment	100%	99.99%
Provide hauled wastewater receiving locations to accept wastewater generated by York Region residents and businesses not served by a municipal wastewater system	Hauled wastewater receiving facilities	Number of days where no hauled wastewater receiving location is available in York Region per year	Minimize	0
Treat wastewater and return water to environment such that the effluent meets or exceeds all regulatory requirements	Water resource recovery facilities	Number of Environmental Compliance Approval (ECA) effluent limit exceedances	0	1
		Number of ECA effluent objective exceedances	Minimize	7
Remove, process and responsibly dispose of solids from wastewater stream	Duffin Creek WPCP incinerators	Total dry tonnes of sludge processed by incineration per year (monitoring metric used for trending purposes only)	N/A	28,364
Contain and/or treat odours to minimize community odour impacts	Air management facilities	Number of odour complaints attributed to York Region Wastewater system	Minimize	29
Monitor, record and report required wastewater quantity, quality and compliance information to regulatory agencies	Analyzers and sampling equipment	Percentage of Annual Wastewater Performance Reports completed	100%	100%
		Percentage of quarterly Effluent Regulatory Reporting Information System (ERRIS) reports completed	100%	100%
Communicate and promote benefits of the municipal wastewater system	All assets	Percentage of York Region residents surveyed that are satisfied with the safety and reliability of the Region's wastewater service	>80%	N/A

Risks and treatment options

- **Condition or performance deterioration:** as infrastructure ages, condition and performance deteriorate. To manage this risk, the Region regularly inspects all Region-owned wastewater infrastructure, carries out comprehensive condition assessments and follows maintenance programs designed to keep infrastructure in a good state of repair and promptly address any deficiencies
- **Unforeseen changes in demand:** designing for both current and forecast demand is a challenge. Demand is driven by population growth, and actual growth that differs from forecast, either up or down, is a risk. Higher growth might make the system too small, while lower growth creates operating challenges that affect levels of service. The Region's Water and Wastewater Master Plan mitigates risk by identifying the best long-term infrastructure options to support forecast growth. It models a range of future flow scenarios and adopts the upper bound of the 95% confidence interval in its analysis. Annual capital planning updates then verify growth needs, integrate related projects and ensure alignment with fiscal capacity. Key Regional roles are to coordinate capacity assignment, align projects with actual growth, and address capacity constraints. Its demand management programs (such as Inflow and Infiltration reduction) also help ensure that existing infrastructure is used as effectively as possible before new infrastructure is constructed
- **Inflow and Infiltration:** when water, groundwater, stormwater or snowmelt enters the sewage system through sump pumps, downspouts, foundation drains and/or holes and cracks in the pipes, the capacity of the system to handle major weather events is reduced. The Region's Inflow and Infiltration Reduction Strategy mitigates this risk
- **Climate change impacts:** extreme variance from average weather caused by climate change can overburden assets, potentially shortening their service lives. The Region completed a water and wastewater climate change adaptation study in 2019 to identify opportunities to reduce the servicing impacts of climate change and support actions through growth and renewal planning. System resiliency is considered in planning long-term servicing strategies
- **Other external hazards:** damage caused by third-party excavation could impair the ability to maintain services. This risk is reduced through identifying locates before excavation

Secondary Clarifier at Duffin Creek, City of Pickering

- **Changes in raw wastewater quality:** the quality of incoming raw wastewater at a treatment plant affects the intensity of needed treatment. The Region enforces a sewer use bylaw to mitigate this risk and adjusts treatment operations at its facilities in response to changes in influent quality
- **Regulatory changes:** regulatory changes can impact service delivery and may require upgrades to existing infrastructure, increasing capital and often operating costs. The Region works diligently to keep in step with increasingly complex regulations and provides input to proposed provincial or federal changes that may affect service delivery
- **Planning Act Changes:** Bill 185, Cutting Red Tape to Build More Homes Act, 2024, proposes many changes to municipal growth planning in Ontario, including the removal of York Region's planning authority and "use it or lose it" policies that provide an ability to reclaim approvals from stalled developments in favor of developments that are ready to proceed. Changes to the Region's role in the planning process increase the importance of continued coordination with local municipalities in the delivery of infrastructure. There is also potential for an increased number of private communal systems, which should only be used as a last resort where municipal servicing is not available. Municipal systems are more resilient and operate at a significantly lower level of environmental and legal risk. The Region intends to continue coordinating closely with its nine local municipalities on the delivery of infrastructure required to service growth and to adapt to this new planning environment.
- **Changes in system configuration:** building new infrastructure sometimes involves reconfiguring parts of existing systems. As well, the challenges of coordinating with local municipalities can lead to unplanned reconfigurations. To manage these risks, the Region considers systems holistically, models the implications of new servicing alternatives, and considers the feasibility and expense of altering existing infrastructure
- **Personnel-related risks:** illness, injury, performance and retirements can affect the delivery of services. Well-thought-out training programs, properly maintained health and safety equipment and careful work practices aim to reduce injury risks and ensure staff safety. To mitigate the risk of catastrophic business interruptions such as a pandemic might trigger, the Region has developed business continuity plans and emergency management strategies. Risks related to staff capability and resourcing are mitigated through workforce planning and a learning and development program tailored to individual job requirements
- **Financial risks:** lower-than-forecast revenues and underfunding for asset management can put levels of service at risk. The Region's Financial Sustainability Plan and the Regional Fiscal Strategy manage this risk. Based on regular reviews of expected costs, forecast growth and water use per capita, the financial sustainability plan recommends rates that are intended to cover all ongoing operating needs, including needed contributions to asset management reserves. Rates also fund a reserve to manage short-term fluctuations in revenue, such as those arising from summer weather that deviates from the long-term average.

  Under the Regional Fiscal Strategy, asset management reserves are available to fund renewal of the Region's infrastructure, reducing reliance on debt for that purpose. The design of new infrastructure is also an aspect of asset management. The York Sewage Works Project, as a result of the Supporting Growth and Housing in York and Durham Regions Act, 2022, requires York Region to expand and extend the York Durham Sewage System. This expansion will service new growth in Aurora, East Gwillimbury and Newmarket, and return wastewater from these areas south for treatment and discharge into Lake Ontario. The provincially imposed solution requires substantial lengths of new linear infrastructure sized to accommodate projected 2051 flows. This introduces large initial costs within the current Capital Plan and requires the management of pipes that will operate at sub-optimal efficiency for many years given their oversized configuration relative to current conditions. Growth-related capital is funded in part by development charges. As Section [6] of this Plan notes, recent provincial changes are reducing the Region's revenue from this source, which may have impacts on asset management

Lifecycle activities to maintain current levels of service

The activities below are based on the options in Table 5 of Section 5.2. This list is not exhaustive, as many other measures, such as basic inspections and maintenance, take place every day and help staff adjust operations and make minor repairs as needed.

Asset Type	Inspections	Maintenance	Capital (rehab, replace, expand, upgrade)
Gravity Sewers	Gravity sewers and maintenance holes are inspected by remote-controlled CCTV cameras. Inspections are prioritized by risk with the target of inspecting at least 10% of the gravity sewer network every year.	Minor repairs to sewers (such as grouting of small and accessible cracks, ladder and fall arrest platform maintenance, or improving the seal of a maintenance hole access hatch) can be completed as part of the CCTV inspection program. Major maintenance or repair activities are completed through Capital projects.	• 35 km of new sewer to be constructed • 15 km of sewer to be rehabilitated or replaced
Forcemains	Comprehensive valve chamber condition assessments are prioritized by risk and undertaken regularly. Chamber inspections and valve exercising are completed regularly by Operators. Forcemain inspections are also prioritized by risk and inspected by specialized third party service providers. Forcemain inspection technologies include leak detection, pressure monitoring, and electromagnetic testing.	All critical air valves are serviced annually. Parging of cracks/spalling, ladder repair/replacement, installation of mechanical valve supports, replacement of valve extensions/ operating nuts, repair of valve boxes, replacement of missing lids, insulation/ frost cover repair/replacement, uncovering/repairing valve boxes, replacement of IPT fittings.	• 10 km of forcemain to be rehabilitated or replaced
Sewage Pumping Stations	Comprehensive condition assessments are prioritized by risk with a target frequency of five years. Operators on site check daily for defects and performance issues. Risks are reviewed in annual review meetings with operations staff.	Bar screen cleaning, pump and motor lubrication and maintenance, generator testing, valve exercising, instrument calibration, touch-up painting and re-coating of piping/valves, and wet well cleaning.	• Rehabilitation and upgrades to 11 sewage pumping stations • Two new sewage pumping stations • Upgrades to standby power equipment at multiple facilities
Wastewater Treatment	Comprehensive condition assessments are prioritized by risk with a target frequency of five years. Operators on site check daily for defects and performance issues. Risks are reviewed in annual review meetings with operations staff.	Regular cleaning of bar screen, clarifier, and other processes, sand filter media air lancing, pump and motor lubrication and maintenance, generator testing, valve exercising, instrument calibration, touch-up painting and re-coating of piping/valves.	• Rehabilitation and upgrades to six water resource recovery facilities • Upgrades to standby power and other equipment at multiple water resource recovery facilities
Duffin Creek	Comprehensive condition assessments of the facility are prioritized by risk. Critical equipment and processes are monitored and inspected daily, weekly, or monthly by operations staff and service providers (such as Original Equipment Manufacturer and specialist inspectors) as required.	Operation and maintenance of Duffin Creek Water Pollution Control Plant (WPCP) is done by Durham Region staff. York Region operators and engineers are consulted and informed of major maintenance activities.	• Rehabilitation and upgrades to various buildings and process areas • Incinerator replacement

8.5 Proposed levels of service

Customer

There are no changes to the current customer levels of service over the next 10 years.

Technical

There are no changes to the current technical levels of service over the next 10 years.

Lifecycle activities to achieve proposed levels of service

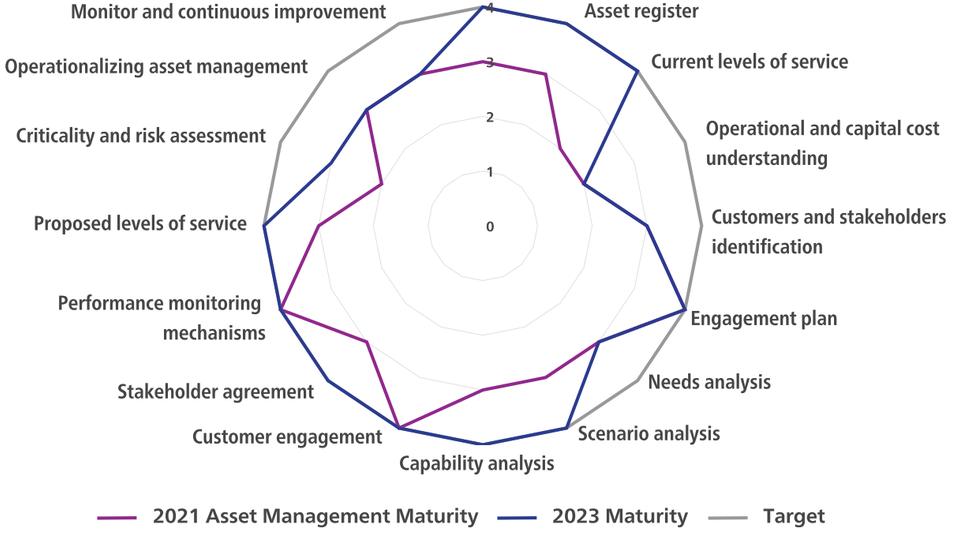
Not applicable, as no proposed levels of service are included in this plan.

A map of the current and expanded Wastewater system can be found in Appendix E.

8.6 Service area asset management maturity

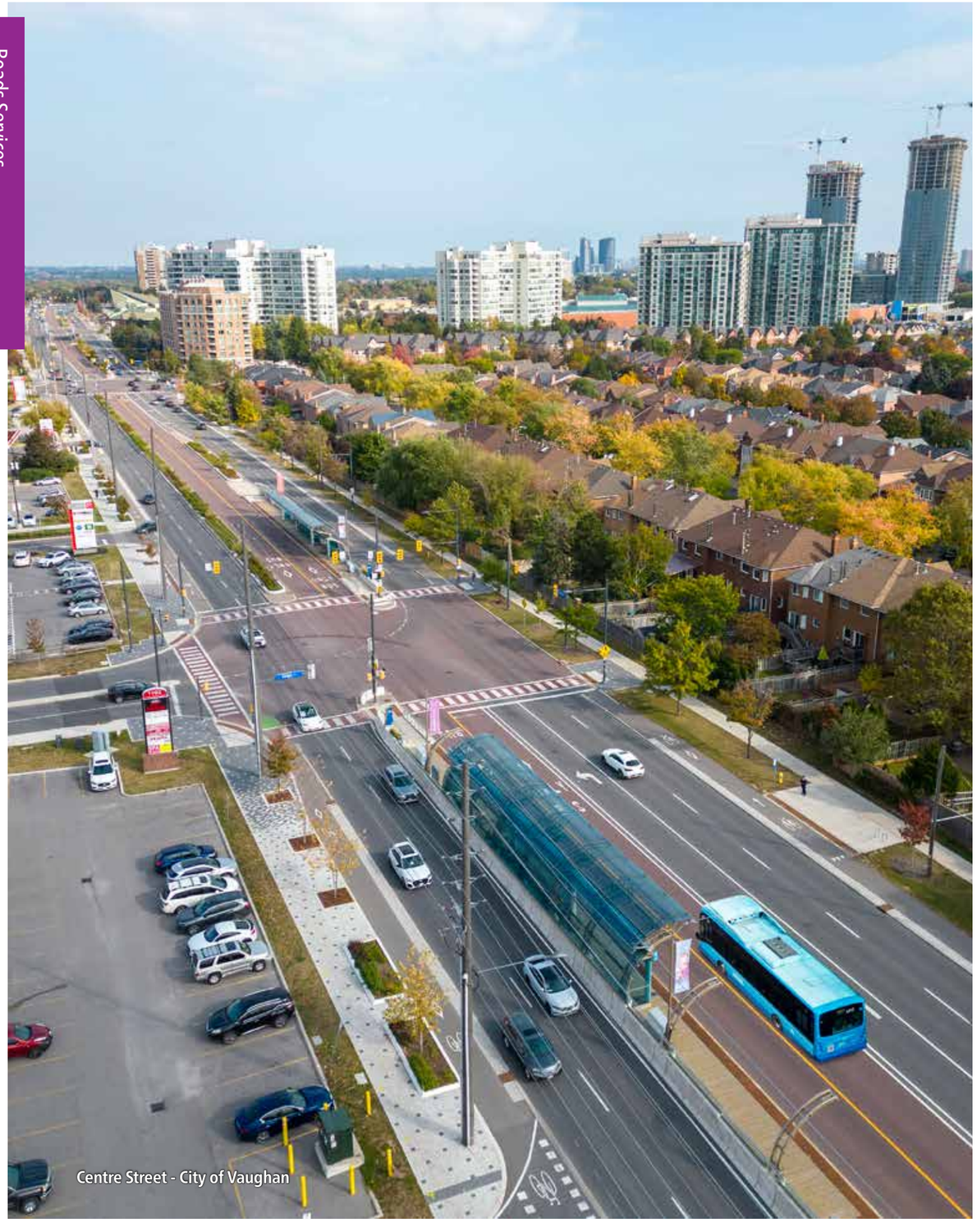
Figure 25: Asset management maturity graph

There are 16 categories labeled in the circle graph, each scored on maturity. Scores range from 0, the lowest maturity, at the centre of the circle, to 4, the highest, at the perimeter.



8.7 Monitoring and continuous improvement

		Priority Area				
Area and Action	**Target completion year**	**Engage more fully with customers**	**Embed risk management/ build response readiness**	**Use the best possible evidence in making decisions**	**Standardize processes**	**Build asset management skills and competence**
Align equipment and business programs with Levels of Service	2025	•				
Improve Asset Management data availability and visualization	2025			•	•	
Coordinate and integrate risk management processes with centralized risk register	2027		•		•	
Education and promotion of Asset Management throughout department	2027					•
Improve lifecycle cost estimation and forecasting capability	2027			•		



Centre Street - City of Vaughan

Roads Services

Replacement cost:
$5,648.0 M

Performance grade:
B

Condition (fair or better)
82%

Asset portfolio:

- Five maintenance facilities
- 105 retaining walls
- 138 bridges and 203 structural culverts
- 555 managed vehicles and equipment
- 784 signalized intersections
- 1,845 km of storm pipes, outfalls and ditches
- 7,365 streetlights
- 4,383 lane-kms of Regional roads
- 38,000 signs

Changes in asset portfolio:

- Rehabilitated 152 lane-kms and preserved 113 lane-kms of Regional roads
- Performed major rehabilitations of various structural culverts (>3m span), which contributed to improved asset conditions
- Completed traffic control system upgrade on Regional road network

Future outlook:

The Region has several upcoming capital projects to enhance its ability to meet current and projected transportation demands, including roads capital improvement projects in the 10-year Roads Capital Plan such as Yonge Street from Davis Drive to Green Lane, various road pavement preservation and rehabilitation projects, and bridge rehabilitation and replacement projects.

9.1 State of the infrastructure

York Region manages over 4,300 lane-kilometres of Regional roads. York Region's roads are maintained and improved regularly, assisting in the safe and efficient transport of goods and people between urban and rural areas. York Region provides many routine and by-request services to ensure motorists are safe and the road network is maintained.

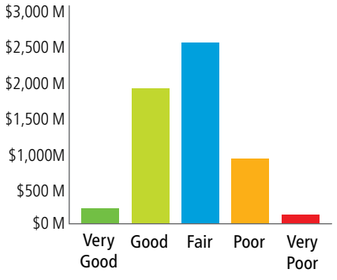
Replacement cost summary:

2021 Replacement cost		$4,553.5 M
Changes:		$1,094.5 M
New and upgraded assets	$77.9 M	
Asset evaluation improvements and inflation	$1,016.6 M	
Decommissioned assets	$0 M	
2022 Replacement cost		$5,648.0 M

Performance grade:

Criteria	Grade	Trend
Reliability	A	→
Capacity	B	→
Condition	B	→

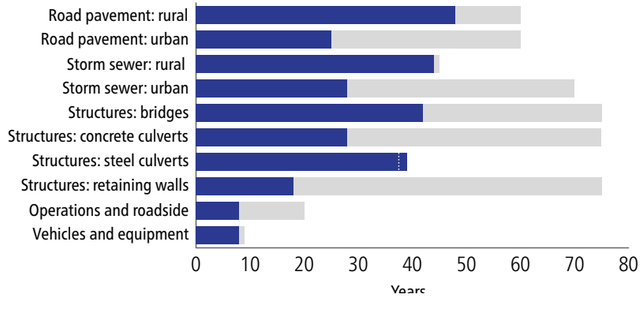
Condition ($M)



1.4% of replacement cost is planned to be spent in the 2023 budget on rehabilitation and replacement.

The average asset has reached 56% of its useful life.

Average age and useful life expectancy (years)



Where the average age of the asset class exceeds its Useful Life Expectancy, the blue bar extends beyond the gray bar and is noted by a hatched white line.

9.2 Strategy

Roads Services' strategy focuses on supporting the Transportation Master Plan (TMP) that guides staff in planning, building, operating, and maintaining a connected transportation network that is safe, sustainable, efficient, reliable, and ready for the future. Roads Services' approach also aligns with the Corporate Asset Management Policy and Strategy.

During development of the TMP, data about road growth and demand needs were collected through stakeholder and customer outreach. Participation and feedback from York Region residents and stakeholders helped balance the needs of the unique communities across the Region.

Asset management sustainably supports the growth and demand needs identified in the TMP. Staff feedback, research, and expertise was used to set asset strategy and inform levels of service.

To support asset strategy, levels of service have been set to help manage risk, demand, and sustainability. Levels of service for assets adhere to industry best practices, while balancing sustainability and low-cost lifecycle investment options. Additional operating levels have been set by provincial regulations, including:

1. Ontario Regulation 104/97: Standards for Bridges
2. Ontario Regulation 424/97: Commercial Motor Vehicle Operators' Information
3. Ontario Regulation 239/02: Minimum Maintenance Standards for Municipal Highways

Roads Services also relies upon the following plans, processes and tools for asset management decision-making:

- **Roads Service Area Strategy** uses asset management systems for data-driven decisions, that balance asset needs with financial and construction timing constraints, to support sustainable asset performance. Staff work with internal and external Regional and municipal stakeholders to create a robust program that meets the demands of the service area. Staff engagement also ensures demand is weighed against financial constraints for delivering projects
- **Pavement Management System (PMS)** application supports road rehabilitation and renewal planning. All road segments are inspected every two years and data is entered into the system, providing a forecast of short- and medium-term needs. Priorities for repair and rehabilitation are established in a 10-year investment forecast. Longer-term needs can be forecasted using rule-based strategies. Risk, including road criticality, is integrated into PMS decision-making through various road classes identified in Ontario Regulation 239/02(MMS)
- **Bridge Management System (BMS)** application supports bridge and structure rehabilitation, and renewal planning. All structures are inspected every two years and the data collected provides a forecast of short- and medium-term needs. Priorities are developed into a 10-year capital requirement projection. Longer-term needs can be forecasted using rule-based strategies. Risk, including structure criticality, is integrated into the BMS decision-making per Ontario Regulation 104/97(SB)
- **Fleet Management System (FMS)** application supports fleet maintenance and renewal planning. All vehicles and equipment are inspected based on regulatory requirements and industry best practices. Fleet data is entered in the system to track and identify needs and priorities. This fleet data is used to forecast a 10-year replacement and renewal plan. Risk is managed through asset inspections and by following regulatory requirements. These requirements, as well as industry best practices, help establish levels of service for fleet vehicles and equipment
- New assets are integrated through **digital technologies and data collection**. New roads assets are generated through new road construction, uploads from local cities and towns, and downloads from the province. New fleet assets are added through procuring vehicles or equipment. All new assets are collected following construction or fleet procurement milestones using digital technologies. When new assets are identified, the asset information is entered into data warehouses that make the information accessible through asset management systems used by planning and operating staff

Once information is in the asset management data warehouse, asset inspections, failures, and events can be recorded through asset management software applications. These applications are used to track service requests, work orders, and inspections. Tracking helps Regional staff create action plans and strategies to support the continuous improvement of asset management in Roads Service.

Meeting asset management policy objectives

Roads Services is aligned with the Corporate Asset Management Policy objectives through activities such as:

- Ensuring organizational accountability and transparency by engaging customers to provide input for transportation planning
- Improving evidence-based decision-making using in-service asset data related to expenditures, operations, and maintenance
- Providing defined levels of service that consider costs and risks

Alignment with corporate strategic goals

The Region's roads services area directly supports all four Strategic Plan priority areas:

Areas of Focus	Objective	Alignment with Roads Services
ECONOMIC VITALITY	**Attract and retain businesses, develop employment opportunities, and grow a skilled workforce**	• All businesses and residents rely on a transportation network that can move people and goods throughout the Region quickly and efficiently
HEALTHY COMMUNITIES	**Support safe communities**	• Renewal programs maintain the Region's roads and bridges in a state of good repair to support activity
	Protect and promote residents' well-being	• Asset management plans ensure funding to maintain Regional assets for current and future generations.
SUSTAINABLE ENVIRONMENT	**Deliver and promote environmentally sustainable services**	• Roads projects associated with the Energy Demand Management Plan and the Climate Change Action Plan support environmental sustainability
GOOD GOVERNMENT	**Deliver fiscally sustainable services**	• Completion of asset management plans, including this one, demonstrates financially sustainable lifecycle management for getting full value from assets. Funding models adhere to the Fiscal Strategy

9.3 Financial outlook

The 10-year financial highlights are:

- The Capital Roads Renewal Budget, with an annual average of approximately $105 million in 2023, covers pavement, structural, stormwater, and fleet asset classes. However, pavement renewal needs consume about 60% of the budget
- In 2018, pavements were identified as being unsustainable due to funding that was three times lower than industry recommended levels, and three and a half times lower than those recommended by Public Works staff
- In response, a financial model and strategy was developed in 2018 by Corporate Finance and Public Works which has significantly increased pavement renewal funding from a 10-year average of $27.8 millions to $63.2 million, a 127% increase
- This increase in pavement spending was well received and this investment has helped maintain safe and reliable pavement conditions over the past five years
- Further investments will be necessary to sustain good pavement conditions without incurring unsustainable long-term costs. The financial strategy has been revisited based on growing pavement asset needs over the next decade, with a goal of ensuring Roads Service's long-term sustainability
- As shown in the graph below, the approved 10-year budget falls short in sustaining current pavement levels of services, resulting in a 10-year funding gap of approximately $161 millions for maintaining current pavement conditions
- Current pavement levels of service are lower than the ideal lowest lifecycle cost approach to pavements, which aims to provide good pavement conditions long term. As pavements deteriorate, maintenance and renewal costs can become 5 to 25 times higher than well-maintained pavements. This means it is cheaper for the Region long-term to keep pavements in good condition.
- Reaching the lowest lifecycle cost option will require an initial investment to clear a backlog of unfunded road projects, and further investments to reach attainable levels. This-long term lowest lifecycle cost approach reduces road lifecycle costs over the next 20 to 50 years and improves intergenerational equity
- The Region contributes to reserves, including the Asset Replacement Reserve, to meet known liabilities, such as increasing long-term pavement needs
- Public Works staff will continue to implement effective pavement lifecycle strategies, such as pavement preservation, to improve the condition and sustainability of pavements at the lowest lifecycle costs
- Public Works staff shall follow-up with Council at a later date to introduce a lowest lifecycle cost approach to pavements, and what funding needs would be necessary

Figure 26: Capital budget vs. full capital needs (existing assets)

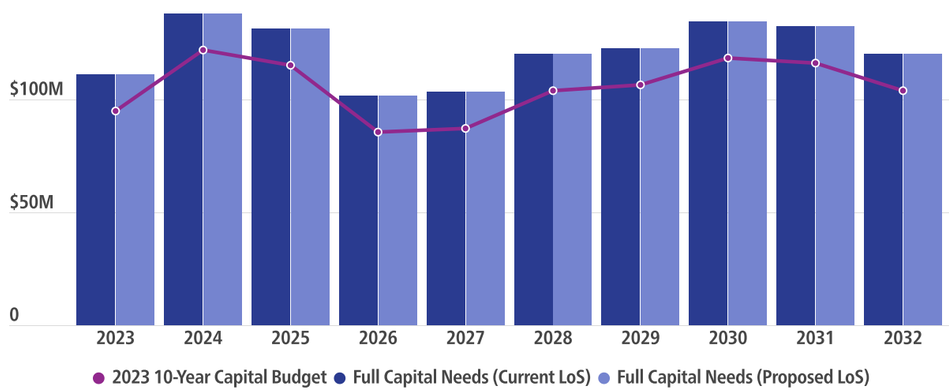


Figure 27: Capital budget vs. full capital needs (future assets)

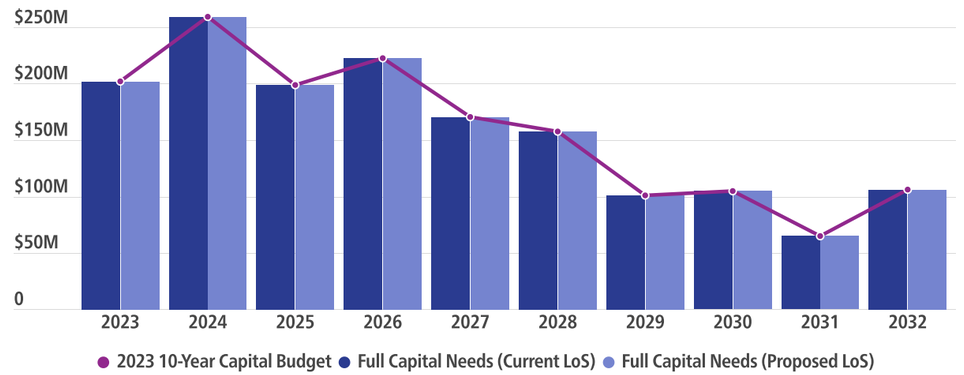
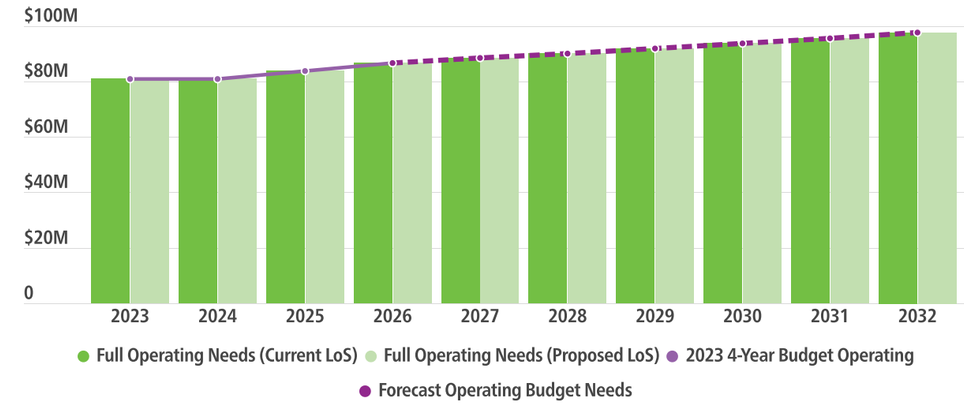


Figure 28: Operating budget vs. full operating needs (existing and future assets)



9.4 Current levels of service

Current customer levels of service

Roads Services adheres to a robust customer levels of service statement: Plan, build, operate and maintain a connected transportation network for all travelers that is safe, reliable, future-ready, sustainable, and balances the needs of the unique communities we serve.

Road pavement conditions are defined by the Pavement Condition Index (PCI), as shown in the table below.

Condition Grade	Typical Pavement Example
Very good (PCI 90–100)	
Good (PCI 80–89)	
Fair (PCI 60–79)	
Poor (PCI 50–59)	
Very poor (PCI 0–49)	

Bridges and structural culverts are designed in accordance with the standards and requirements of the Bridge Design Code at the time of construction. The Region owns the following three types of bridges:

- Vehicular bridges or structural culverts: Designed to carry vehicular traffic, pedestrians, and cyclists wherever possible
- Railway bridges: Designed to carry railway traffic over Regional roads
- Pedestrian bridges or culverts: Designed to carry pedestrians, cyclists, and maintenance vehicles.

Bridge condition and structural culverts levels of service are defined by the Bridge Condition Index (BCI) (see below Bridge Conditions and Major Culvert Conditions tables).

Bridge Conditions

BCI Range	Condition Description	Condition	Elevation	Underside (Soffit)
>=85	Fit for the Future	Very Good		
			Major Mackenzie Drive West CPR Grade Separation	Major Mackenzie Drive West between Barrons Street & Timber Creek Boulevard
70-85	Adequate for Now	Good		
			Holland River Bridge	2.35 km North of Bathurst Street
60-70	In Need of Attention	Fair		
			Pefferlaw Bridge	1.18 km West of Lake Ridge Road
50-60	At Risk of Failure	Poor		
			Highway 27 CPR Grade Separation	Highway 27 Between Martin Grove Road & Royalpark Way
<=50	Unfit For Sustained Service	Very Poor		
			Gibney Bridge	0.85 km North of Queensville Road

Major Culvert Conditions				
BCI Range	Condtition Description	Condition	Elevation	Inside (Barrel)
>=85	Fit for the Future	Very Good		
			Major Mackenzie Drive Culvert	0.3km East of Highway 50
70-85	Adequate for Now	Good		
			Wellington Street West Culvert	2.0km East of Bathurst Street
60-70	In Need of Attention	Fair		
			Highway 27 Culvert	0.38 km North of Lloydtown/Aurora Road
50-60	At Risk of Failure	Poor		
			Woodbine Avenue Culvert	1.35 km North of St. Johns Sideroad
<=50	Unfit For Sustained Service	Very Poor		
			Leslie Street Culvert	0.8 km North of Green Lane East

Current technical levels of service

The current technical levels of service provide a fair performance asset base, safely and efficiently moving people, goods, and services across the Region. Fair and better performance is marked by a condition index of 60 or higher (out of 100), or a three out of five.

There are currently four bridges serving Regional roads, that have loading or dimensional restrictions.

The Region is currently undertaking a comprehensive load evaluation assignment to verify the load capacity of all bridges. The outcome of this assignment will be included in the next version of this Plan.

Fleet levels of service focus on meeting scheduled maintenance requirements for vehicles and equipment. Meeting the requirements allows fleet services to better support frontline services.

		Technical Levels of Service		
Customer Levels of Service	**Asset Categories**	**Performance Metric**	**Current Level of Service Target**	**Current Performance**
Plan, build, operate and maintain a connected transportation network for all travelers that is safe, reliable, future-ready, sustainable and balances the needs of the unique communities we serve	Pavement	Average Class Pavement Condition Index (PCI) out of 100 for:		
		Road Maintenance Class 1	PCI 70 (fair)	PCI 74 (fair)
		Road Maintenance Class 2		PCI 71 (fair)
		Road Maintenance Class 3		PCI 70 (fair)
		Road Maintenance Class 4		PCI 70 (poor)
		Number of lane-km each of arterial roads, collector roads and local roads as a proportion of the Region's land area for:		
		Road Maintenance Class 1	0.15	0.15
		Road Maintenance Class 2	1.58	1.58
		Road Maintenance Class 3	0.53	0.53
		Road Maintenance Class 4	0.06	0.06
	Bridges	Minimum Class Bridge Condition Index (BCI) out of 100 for bridges in the following categories:		
		Structure Road Maintenance Class 1	BCI >=60 (fair)	BCI 63.2 (fair)
		Structure Road Maintenance Class 2		BCI 58.0 (poor)
		Structure Road Maintenance Class 3		BCI 64.8 (fair)
		Structure Road Maintenance Class 4		BCI 61.0 (fair)

Customer Levels of Service	Asset Categories	Technical Levels of Service: Performance Metric	Current Level of Service Target	Current Performance
Plan, build, operate and maintain a connected transportation network for all travelers that is safe, reliable, future-ready, sustainable and balances the needs of the unique communities we serve (Continued)	Structural Culverts	Minimum Class Bridge Condition Index (BCI) out of 100 for:		
		Structure Road Maintenance Class 1	BCI >=60%	BCI 52.5 (poor)
		Structure Road Maintenance Class 2		BCI 52.3 (poor)
		Structure Road Maintenance Class 3		BCI 62.6 (fair)
		Structure Road Maintenance Class 4		BCI 68.1 (fair)
	Bridges and Structures	Percentage of bridges in the municipality with loading or dimensional restrictions for:		
		Structure Road Maintenance Class 1	0%	0%
		Structure Road Maintenance Class 2	<=5%	5.1%
		Structure Road Maintenance Class 3	<=4%	4.2%
		Structure Road Maintenance Class 4	0%	0%
	Stormwater	Average asset condition metric on a scale of one to five for:		
		Storm pipes	4	4
		Culverts	3	3
		Percentage of the municipal stormwater management system resilient to a five-year storm for:		
		Storm pipes	100%	100%
		Culverts	100%	100%
	Vehicles and equipment	Percentage of assets which have completed manufacturers' maintenance recommendations for:		
		Licensed vehicles and equipment	>=92%	97%
		Non-licensed vehicles and equipment		92%

Risks and treatment options

The treatment options below are based on asset needs. The only risks relate to the ability to sustainably fund the roads asset management programs. Sustainable funding sources have been created with Corporate Finance through the Asset Replacement Reserve. The risk of declining asset conditions increases as the ability to deliver the treatment options below decreases. Sustainable funding sources are key to minimizing risks and delivering the treatment options for various assets.

Treatment options are divided into two categories: growth and renewal. Growth options include increasing capacity by building or acquiring new assets, as well as expanding existing infrastructure. Renewal options either extend the life of an existing asset or replace it. The follow table shows options for different assets.

Treatment options for growth and renewal

Asset Class/Category	Growth Options	Renewal Options
Pavements	• Intersection widening • Adding turning lanes or roundabouts • Road widening	• Pavement preservation • Pavement rehabilitation • Road reconstruction
Bridges and structures	• New construction • Structure widening or extensions	• Major and minor rehabilitation • Replacement
Storm pipes, outfalls, maintenance holes, catch basins, ditch inlets, and oil grate separators	• Road urbanization through reconstruction or road widening • Storm infrastructure for new road construction	• Infrastructure repair • Infrastructure replacement • Pipe relining
Culverts and roadside ditches	• Culvert expansion, such as widening or extensions • New culvert and ditch construction	• Culvert relining and rehabilitation • Culvert replacement • Ditch cleaning and regrading
Fleet vehicles	• Purchasing additional vehicles	• Regular maintenance
Fleet equipment	• Purchasing new equipment	• Regular maintenance

Innovation Story - "Paving the way"

Created by a company in York Region and based on machine learning, the CityROVER app uses a cellphone mounted in a vehicle to scan pavement for deficiencies, capture data and log locations in real time. It frees up staff time by replacing visual checks and manual data entry.

Lifecycle activities to maintain current levels of service

The activities below are based on lifecycle management options contained in Table 5 of Section 5.2. This list is not exhaustive because many other measures, such as basic inspections and maintenance, take place every day. This helps staff adjust operations and make minor repairs as needed.

Lifecycle activities—pavements

Year	Inspections	Maintenance	Capital (rehab, replace, expand, upgrade)
2023-2032 (all activities completed annually, unless otherwise indicated)	Routine patrol inspections carried out as per O. Reg. 239/02: Minimum Maintenance Standards for Municipal Highways. Detailed pavement inspections completed every two years.	Pavement assets are primarily maintained based on condition; however, regular maintenance activities do occur throughout the year. Maintenance activities include, but are not limited to: Pavement marking application • Pothole repair • Street sweeping • Winter maintenance, including plowing, sanding, and salting	Pavement assets receive renewal capital programming prioritization annually. Prioritization is based on optimized lifecycle needs. Pavement lifecycle activities are implemented based on Pavement Condition Index (PCI) ratings out of 100. Pavement lifecycle activities include, but are not limited to: • Crack sealing (PCI above 75) • Preservation (PCI 75 and above) • Grind and patch (PCI under 60) • Reconstruction (PCI 50) • Rehabilitation (PC 50–60) • Growth, including widening (PCI as needed) • New construction (PCI as needed)

Lifecycle activities—bridges and structures

Year	Inspections	Maintenance	Capital (rehab, replace, expand, upgrade)
2023-2032 (all activities completed annually, unless otherwise indicated)	Routine patrol inspections carried out as per O. Reg. 239/02: Minimum Maintenance Standards for Municipal Highways. Structural inspections carried out as per O. Reg. 104/97: Standards for Bridges.	Bridges and structures assets are primarily maintained based on condition; however, regular maintenance activities do occur throughout the year. Maintenance activities include, but are not limited to: • Bridge washing • Sweeping • Winter maintenance, including plowing, sanding, and salting	Bridge and structures assets receive annual renewal capital programming prioritization. Prioritization is based on optimized lifecycle needs. Bridges and structures lifecycle activities include, but are not limited to: Bridges: • Minor rehabilitation (at 15 and 40 years old) • Major rehabilitation (at 25 and 50 years old) • Replacement (at 75 years old) Concrete culverts: • Major rehabilitation (at 25 and 50 years old) • Replacement (at 75 years old) • Corrugated steel pipe culverts: • Minor rehabilitation (at 18 years old) • Replacement (at 35 years old) Retaining walls: • Major rehabilitation (at 25 and 50 years old) • Replacement (at 75 years old)

Lifecycle activities—Storm pipes, outfalls, maintenance holes, catch basins, ditch inlets, and oil grit separators

Year	Inspections	Maintenance	Capital (rehab, replace, expand, upgrade)
2023-2032 (all activities completed annually, unless otherwise indicated)	Routine patrol inspections carried out as per O. Reg. 239/02: Minimum Maintenance Standards for Municipal Highways. Detailed annual outfall, maintenance hole, catch basin, ditch inlet, and oil grit separator inspection. Storm pipe inspections based on age and risk profile.	Storm pipe assets are primarily maintained based on age and condition; however, regular maintenance activities do occur throughout the year. Maintenance activities include, but are not limited to: • Catch basin cleaning • Oil grit separator maintenance and cleaning • Pipe and outlet flushing and cleaning • Structure frame and grate repair and replacement	Storm pipe assets receive annual renewal capital programming prioritization. Prioritization is based on optimized lifecycle needs. Storm pipe lifecycle activities are implemented based on age and inspection reports. Storm pipe lifecycle activities include, but are not limited to: • Storm pipe replacement (at 35–75 years old) • Outfall replacement (at 35–75 years old) • Maintenance hole replacement (at 60 years old) • Catch basin and ditch inlet replacement (at 60 years old) • Oil grit separator replacement (at 50 years old)

Lifecycle activities—culverts and roadside ditches

Year	Inspections	Maintenance	Capital (rehab, replace, expand, upgrade)
2023-2032 (all activities completed annually, unless otherwise indicated)	Routine patrol inspections carried out as per O. Reg. 239/02: Minimum Maintenance Standards for Municipal Highways. Culverts under three metres inspection carried out every three years.	Culvert and roadside ditches assets are primarily maintained based on condition; however, regular maintenance activities do occur throughout the year. Maintenance activities include, but are not limited to: • Culvert flushing and outlet cleaning • Ditch cleaning, including garbage and debris removal • Ditch re-profiling and regrading as needed	Culverts under three metres in diameter receive annual renewal capital programming prioritization. Prioritization is based on optimized inspections and lifecycle needs. Culvert lifecycle activities include, but are not limited to: • Culverts under three metres: • Replacement or relining (at 35–75 years old)

Lifecycle activities—fleet vehicles

Year	Inspections	Maintenance	Capital (rehab, replace, expand, upgrade)
2023-2032 (all activities completed annually, unless otherwise indicated)	Safety check for Gross Vehicle Weight Rating of 4,500 kg: annual Inspection for Combined Vehicle Weight Rating under 4,500 kg: annual	• Air filter - 60,000 km • Full service - 365 days or 10,000 km • Transmission service - 60,000 km • Tune up - 160,000 km	• Heavy duty vehicle - Replacement: 10 years • Light duty vehicle - Replacement: five to eight years based on inspections • Medium duty vehicle - Replacement: five to eight years based on inspections • Patrol vehicle - Replacement: two years

Lifecycle activities—fleet equipment

Year	Inspections	Maintenance	Capital (rehab, replace, expand, upgrade)
2023-2032 (all activities completed annually, unless otherwise indicated)	Propone safety inspection: annual Crane safety: annual Winter inspection: annual	As needed based on outcome of inspection	• Fuel storage tanks - Replacement: 25 years • Heavy duty equipment - Replacement: 10 to 15 years based on inspections • Liquid dispensing equipment - Replacement: 10 years • Miscellaneous equipment - Replacement: 10 to 15 years based on inspections

9.5 Proposed levels of service

Proposed customer levels of service

There are no changes to the customer levels of service over the next 10 years.

Proposed technical levels of service

There are no changes to the current technical levels of service over the next 10 years.

Lifecycle activities to achieve proposed levels of service

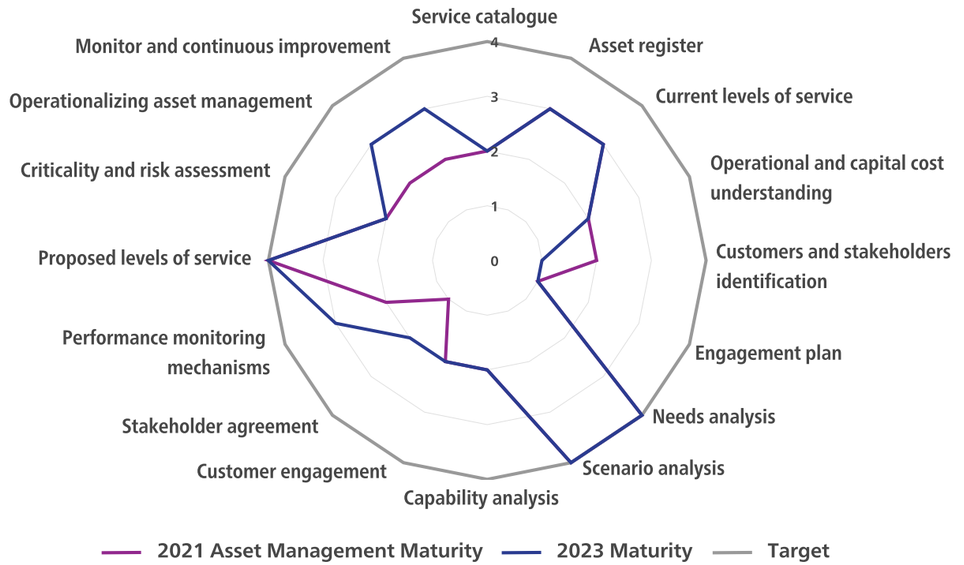
See the Lifecycle Activities to Maintain Current Levels of Service section. For a list of capital projects related to the growth phases based on the rationale provided, please refer to the Appendices F to G.

A map of the current and expanded roads system can be found in Appendix F towards the end of this document. Similarly, a current and expanded system map of the stormwater system, culverts and associated structures can be found in Appendix G.

9.6 Service area asset management maturity

There are 16 categories labeled in the circle graph, each scored on maturity. Scores range from 0, the lowest maturity, at the centre of the circle, to 4, the highest, at the perimeter.

Figure 29: Asset management maturity graph



9.7 Monitoring and continuous improvement

Area and Action	Target completion year	Priority Area: Engage more fully with customers	Embed risk management/ build response readiness	Use the best possible evidence in making decisions	Standardize processes	Build asset management skills and competence
Advance asset management maturity in developing 2023 Transportation State of Infrastructure Report	2024				•	
Develop second edition of the Stormwater Asset Management Plan	2025		•			
Develop second edition of the Fleet Asset Management Plan	2025		•			
New staff obtain certification from the Institute of Asset Management	2026					•
Review roads asset data for quality assurance and quality control	2027			•		

Ivsbridge Elevated Tank - Town of Newmarket

Water Services

Replacement cost:
$3,883.5 M

Performance grade:
A

Condition (fair or better)
94%

Asset portfolio:

- Two surface water treatment plants
- Five at-grade storage reservoirs
- Eight solar arrays at water facility sites
- 10 in-ground storage reservoirs
- 22 pumping stations
- 24 groundwater treatment facilities (including 41 production wells)
- 29 elevated tanks
- 358 km transmission mains including chambers

Changes in asset portfolio:

An additional production well was connected at the Nobleton Well 3 Groundwater Treatment Facility. There were no other major changes in asset inventory in 2022.

Future outlook:

The Region has several upcoming capital projects to maintain its ability to meet current and projected water demands, including elevated tank and reservoir upgrades as determined through the Region's multi-year inspection program, groundwater treatment improvements as determined by the Groundwater Treatment Strategy, water transmission main replacement and Lake Simcoe Mussel Control Strategy.

10.1 State of the infrastructure

York Region is responsible for securing, treating, and transmitting bulk water supply to local cities and towns, who in turn distribute to residents and businesses.

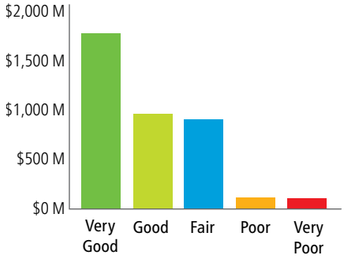
Replacement cost summary:

2021 Replacement cost		**$2,712.0 M**
Changes:		**$1,171.5 M**
New and upgraded assets	**$3.7 M**	
Asset evaluation improvements and inflation	**$1,167.8 M**	
Decommissioned assets	**$0 M**	
2022 Replacement cost		**$3,883.5 M**

Performance grade:

Criteria	Grade	Trend
Reliability	**A**	→
Capacity	**A**	→
Condition	**B**	→

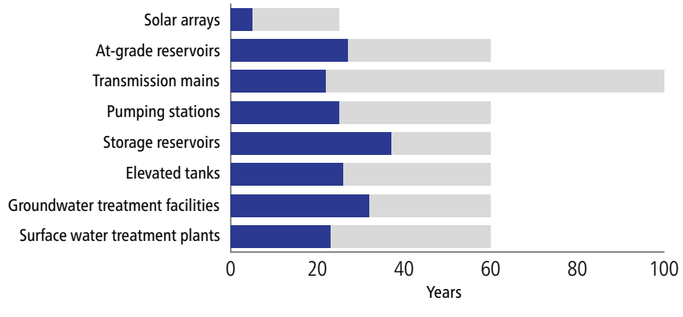
Condition ($M)



York Region reviews and updates its replacement cost models on a regular basis to reflect changing conditions and new information.

Assets on average have 68% of their useful life remaining.

Average age and useful life expectancy (years)



Where the average age of the asset class exceeds its Useful Life Expectancy, the blue bar extends beyond the gray bar and is noted by a hatched white line.

10.2 Strategy

Water Services' strategic approach to decision-making relies upon the following plans, processes, and tools:

- **The Water and Wastewater Asset Management Plan** establishes current and proposed levels of service and summarizes how the service area will manage assets so these can be met
- **The Water and Wastewater Master Plan** identifies ways to address future demand and continued service levels to a growing population. The Region monitors system capacity and reviews development applications to ensure water and wastewater systems can accommodate all growth
- **The Integrated Management System** provides a consistent framework for delivering services in compliance with regulatory requirements and management standards. York Region's water systems are registered to the Drinking Water Quality Management Standard (DWQMS) and the ISO 9001 Quality Management Standard
- **The Supervisory Control and Data Acquisition (SCADA) system** enables remote and local monitoring and control of the water system. The SCADA system is essential for effective delivery and provides real-time and historical data that supports a variety of asset management and risk management activities
- **Comprehensive condition assessment programs** support asset management by identifying risks to the physical condition and functional performance of water infrastructure
- **A Centralized Maintenance Program** supports the lifecycle management of water infrastructure through preventative and reactive maintenance on all water and wastewater equipment. The Region's maintenance strategies meet or exceed manufacturer requirements and are continually reviewed and optimized based on real-world performance
- **Capital project intake and review process** supports the lifecycle management of water infrastructure through the planning, design and construction of new infrastructure and upgrades to existing infrastructure. All capital needs are considered through this process, including those identified through the Water and Wastewater Master Plan, Condition Assessment Programs, engineering studies and staff observations
- **The Maximo Computerized Work Management Software** tracks all operations and maintenance work orders and records equipment and assets. Over 50,000 work orders are issued annually through this centralized system
- **The Financial Sustainability Plan** supports full cost recovery for Water and Wastewater Services. It recommends user rates that cover expected operating, compliance, maintenance, asset renewal and emergency response costs. (At present, growth-related capital is funded in large part by development charges.) The current rate structure will be in place until March 31, 2028. A new rate structure is typically recommended to Regional Council based on an update to the Financial Sustainability Plan

Meeting asset management policy objectives

Water Services is aligned with the Corporate Asset Management Policy objectives through activities such as:

- Continuing to evaluate and advance asset management maturity to support continuous improvement
- Coordinating financial planning for the rehabilitation, replacement, or disposal of infrastructure assets through completion of the Water and Wastewater Financial Sustainability Plan and annual long-term lifecycle forecasts
- Developing comprehensive levels of service to better connect objectives to delivery
- Considering climate change in asset risk management
- Incorporating risk-based analysis to support prioritization of water asset management projects
- Monitoring and evaluating asset performance through comprehensive assessments and inspections
- Optimizing maintenance practices of water infrastructure to support reliability
- Striving to improve system resiliency through interconnection and flexibility in the transmission network, providing standby power at all critical facilities, and implementation of climate change adaptation studies
- Using lifecycle costing principles to analyze alternative asset management strategies
- Validating long-term renewal needs through the capital budget process

Alignment with corporate strategic goals

The Region's Water Services area directly supports all four strategic plan priority areas: Economic Vitality, Healthy Communities, Sustainable Environment and Good Governance and several of the strategic plan objectives including:

Areas of Focus	Objective	Alignment with Water Services
ECONOMIC VITALITY	**Attract and retain businesses, develop employment opportunities, and grow a skilled workforce**	• Reliable water and wastewater services are provided to attract businesses and people
HEALTHY COMMUNITIES	**Support safe communities**	• Reliable drinking water is required for a safe community
	Protect and promote residents' well-being	• Reliable drinking water is required for a healthy community
SUSTAINABLE ENVIRONMENT	**Deliver and promote environmentally sustainable services**	• Regional water system provides a zero-waste, on-demand source of water to all homes. Process energy management and water conservation initiatives manage system demand and mitigate climate change impacts through energy conservation and adaptation planning
GOOD GOVERNMENT	**Deliver fiscally sustainable services**	• Completion of asset management plans, including this plan, and the Water and Wastewater Financial Sustainability Plan, aim to ensure that water and wastewater rates are sufficient for full-cost recovery and long-term funding sufficiency

10.3 Financial outlook

The 10-year financial highlights include:

- The charts below display capital and operating costs, forecasted annually, for the current and proposed service levels as bars, and include the relevant operating and capital budget amounts as lines. These costs are based on the 2023 10-Year Capital Plan and the 2023–2026 multi-year Operating Budget, projected until 2032, which also includes the purchase of water from Toronto and Peel. The budget and costs displayed exclude contributions to conservation authorities, contributions to reserves, debt-related costs, and capital costs recovered through third-party funding
- As shown, the Region's 10-Year Budget is sufficient to fund both current and proposed levels of service
- The Region ensures funding sufficiency through regular updates to its Water and Wastewater Financial Sustainability Plan, which promotes user rates that can support full cost recovery and eliminate shortfalls in asset management funding. The Region's Development Charges Bylaw is critical for supporting new infrastructure or expansions required to service growth
- Funding for proposed improvements to service levels is already included in the approved 2023 Capital Budget Program

Figure 30: Capital budget vs. full capital needs (existing assets)

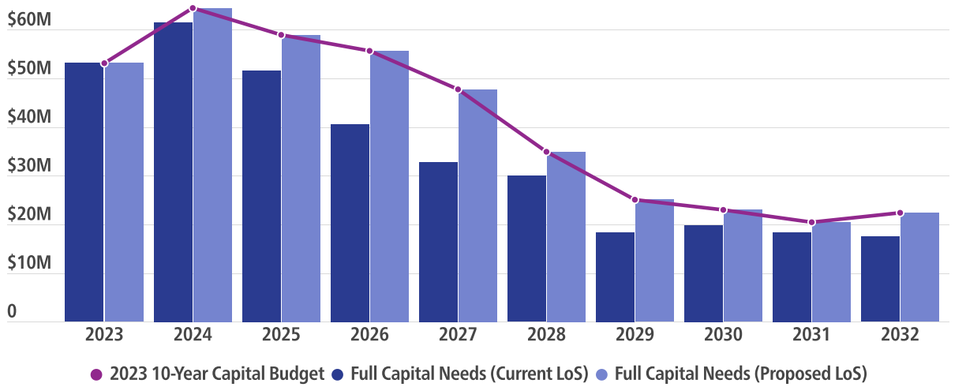


Figure 31: Capital budget vs. full capital needs (future assets)

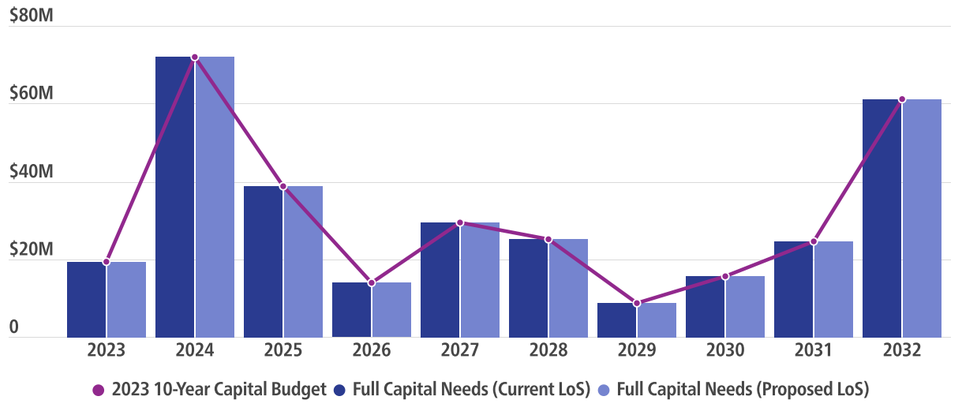


Figure 32: Operating budget vs. full operating needs (existing and future assets)

10.4 Current levels of service

Current customer levels of service

Water Services uses the following statements to inform levels of services at all connection points to local municipal water distribution networks:

- Provide uninterrupted bulk water supply at all connection points to local municipal water distribution networks in current and future serviced communities
- Target a normal operating water pressure consistent with design guidelines
- Provide safe drinking water that meets or exceeds all water quality regulations
- Provide drinking water of high aesthetic quality (non-health-related aspects, such as colour, taste, odour, temperature)
- Provide sufficient fire flow (flow rate of water supply available for the fire department)
- Monitor and protect source water resources
- Monitor, record, and report required water quantity, quality, and compliance information to regulatory agencies
- Communicate and promote the value of the municipal water system

Current technical levels of service

This table provides the current customer levels of service, the supporting asset categories and related technical metrics.

		Technical Levels of Service		
Customer Levels of Service	**Asset Categories**	**Performance Metric**	**Current Service Level Target**	**Current Performance**
Provide uninterrupted bulk water supply	Surface water treatment plants, groundwater treatment facilities, storage reservoirs, pumping stations, transmission mains	Percentage of urban properties serviced by the municipal drinking water system	N/A	99%
		Number of connection-days of service interruption per year attributed to York Region water system	0	0
Provide safe drinking water	Surface water treatment plants, groundwater treatment facilities, storage reservoirs, pumping stations, transmission mains	Number of outage connection-days to a customer (lower municipal) connection point	0	0
		Chief Drinking Water Inspector's annual report card score for water samples meeting Ontario's drinking water quality standards	100%	100%
Target a normal operating pressure consistent with design guidelines	Storage reservoirs, pumping stations, and transmission mains	Percentage of connection points to local municipal distribution networks that receive a pressure between 275 kPa (~40 psi) and 690 kPa (100 psi) during normal operating conditions	100%	100%
Provide drinking water of high aesthetic quality	Storage reservoirs, pumping stations, and transmission mains	Concentrations of iron, manganese, methane, and sodium recorded in municipal drinking water samples (Monitoring metric for trending purposes only) (New)	N/A	N/A
Provide sufficient fire flow	Storage reservoirs, pumping stations, and transmission mains	Percentage of urban properties where fire flow is available	N/A	95%
		Percentage of connection points to local municipal distribution networks that will exceed a minimum pressure of 140 kPa (~20 psi) at ground level under maximum day-demand plus fire flow conditions	100%	100%
Monitor and protect source water resources	Surface water treatment plants, groundwater treatment facilities, and monitoring equipment	Total water takings exceeding daily permitted volume and capacity limits	0 m^3	0 m^3
		Percentage of Risk Management Plans implemented within timelines required by the Source Protection Plan	100%	100%
Monitor, record, and report water quantity, quality, and compliance information	Analyzers and sampling equipment	Chief Drinking Water Inspector's annual report card inspection score	100%	100%
Communicate the value of the municipal water system	All assets	Percentage of York Region residents surveyed that are satisfied with the safety and reliability of the Region's water service	>80%	88%

Risks and treatment options

- **Condition or performance deterioration:** As infrastructure ages, condition and performance deteriorate. To manage this risk, the Region monitors the condition of all Region-owned water infrastructure, carries out comprehensive condition assessments, and follows maintenance programs designed to keep infrastructure in a state of good repair and promptly address any deficiencies.
- **Changes in demand:** Significant changes in demand could result in the current water system becoming insufficient to meet service levels. To mitigate this risk, long-term servicing strategies and infrastructure needs to support growth are assessed and planned through the Region's Water and Wastewater Master Plan. Growth needs are validated through annual capital planning updates to consider availability of capacity and integration of related projects, while ensuring alignment of servicing needs with fiscal capacity. Capacity assignment and development approvals are assessed by the Region to ensure that growth is aligned with infrastructure, and capacity constraints are addressed. In addition, demand management programs (such as water conservation) ensure that existing infrastructure is utilized as effectively as possible before new infrastructure is constructed.
- **Changes in operating conditions or environment:** Many situations can lead to infrastructure operating under different conditions, including changes in operational strategy by the Region or by local municipalities, large differences between current flows and future flows, the impacts of climate change on average weather patterns, or the effects of a new threat in the operating environment, such as mussels. The Region addresses these risks by modelling current and future flow scenarios, monitoring pressures throughout the system, and designing facilities to accommodate phased expansion. To address the changing environment at Lake Simcoe caused by rising mussel populations around its intake structures, the Region is implementing mussel control programs at its surface water treatment plants. The Region is also considering the impacts of climate change on the future operating environment through growth and renewal planning processes.
- **External hazards:** Damage caused by external hazards, such as extreme weather and third-party construction activities, could affect the Region's ability to maintain service levels. The Region completed a water and wastewater climate change adaptation study in 2019 to identify opportunities to reduce the impacts of extreme weather events due to climate change, and support actions through growth and renewal planning. Risks due to third-party construction are reduced through locates prior to excavation. Infrastructure solutions that support system resiliency are considered.
- **Changes in raw water quality:** Protecting the quality of raw water is fundamental to ensuring the sustainable delivery of water services. Under the Clean Water Act, 2006, which formalized source water protection in Ontario, the Region includes conditions for development applications in vulnerable areas to safeguard drinking water. Staff also work cooperatively with land and business owners to mitigate risks. The Region has also implemented a groundwater monitoring program that includes over 200 monitoring wells.
- **Regulatory changes:** Regulatory changes can impact service delivery requirements and may require upgrades to existing infrastructure, which can increase both capital and operating costs. The Region works diligently to keep up with an increasingly complex regulatory environment and provides input to proposed provincial or federal changes through consultation processes.
- **Planning Act Changes:** Bill 185, Cutting Red Tape to Build More Homes Act, 2024, proposes many changes to municipal growth planning in Ontario, including the removal of York Region's planning authority and "use it or lose it" policies that provide an ability to reclaim approvals from stalled developments in favor of developments that are ready to proceed. Changes to the Region's role in the planning process increase the importance of continued coordination with local municipalities in the delivery of infrastructure. There is also potential for an increased number of private communal systems, which should only be used as a last resort where municipal servicing is not available. Municipal systems are more resilient and operate at a significantly lower level of environmental and legal risk. The Region intends to continue coordinating closely with its nine local municipalities on the delivery of infrastructure required to service growth and to adapt to this new planning environment.
- **Changes in system configuration:** Construction of new infrastructure sometimes involves reconfiguring parts of existing systems to support new servicing strategies. To manage risks related to these changes, the Region considers systems holistically, models the implications of all servicing alternatives, and considers the feasibility and expense of altering existing infrastructure.
- **Risks to personnel supporting service delivery:** Personnel risks related to illness, injury, performance, and retirement affect staff safety or the ability of staff to support the delivery of water services. The Region prioritizes staff safety and has comprehensive safety training programs in place. All facilities are provided with appropriate health and safety equipment that is regularly inspected and kept in good condition. Work is planned and completed in a way that minimizes safety hazards. To mitigate the risk of catastrophic business interruptions, the Region has developed business continuity plans and emergency management strategies. The Region manages staff capability and resourcing through workforce planning and a learning and development program tailored to individual job requirements.
- **Financial risks:** Financial risks include all risks affecting the ability to fund the activities required to maintain service levels. To mitigate these risks, the Region maintains a Financial Sustainability Plan based on regular reviews of the sufficiency of its wholesale water and wastewater rates and the latest understanding of asset management needs. The Region manages both a rate stabilization reserve (to mitigate future risks, such as pandemics, extreme weather, regulatory changes, and unexpected operating fluctuations) and an asset management reserve to support renewal of the Region's water and wastewater infrastructure. The Region's fiscal strategy supports the use of asset management reserves and reduced reliance on debt. Growth-related capital is funded in part by development charges. As Section 6 of this Plan notes, recent provincial changes are reducing the Region's revenue from this source, which may have impacts on asset management.

York Region monitors the condition and performance of all Region-owned water infrastructure to identify opportunities to enhance operational performance, forecast maintenance, and inform the infrastructure renewal program. This process ensures that risks, levels of service, legislative or policy changes, and operational efficiencies are considered, and provides current information to inform and validate asset lifecycle decisions.

It is important to recognize these activities are crucial to delivering sustainable service delivery, despite being described as independent lifecycle activities. Additionally, operational and capital projects may occur simultaneously. For example, planned maintenance could continue during a planned rehabilitation or service expansion project.

Lifecycle activities to maintain current levels of service

The activities below are based on lifecycle management options contained in Table 5 of Section 5.2. This list is not exhaustive, as many other measures, such as basic inspections and maintenance, take place every day and help staff adjust operations and make minor repairs as needed.

Asset Type	Inspections	Maintenance	Capital (rehab, replace, expand, upgrade)
Treatment	Comprehensive condition assessments are prioritized by risk with a target frequency of five years. Operators on site monitor for defects and performance issues. Risks are reviewed in annual review meetings with staff	Membrane integrity testing, mussel plate cleaning, generator testing, pump and motor lubrication and maintenance, valve exercising, instrument calibration, touch-up painting and re-coating of piping/valves, and maintenance and cleaning chemical feed systems	• Upgrade and renewal projects at both surface water treatment plants • Upgrades of and/or replacements to ten groundwater treatment facilities
Transmission	Comprehensive valve chamber condition assessments are prioritized by risk and undertaken regularly. Chamber inspections and valve exercising are completed regularly by operators. Transmission mains are also prioritized by risk and inspected by specialized third party service providers. Transmission main inspections include leak detection, pressure monitoring, and electromagnetic testing	All critical air valves are serviced annually. Parging of cracks/spalling, ladder repair/replacement, installation of mechanical valve supports, replacement of valve extensions/operating nuts, repair of valve boxes, replacement of missing lids, insulation/frost cover repair/replacement, uncovering/repairing valve boxes, replacement of IPT fittings	• 10 km of new watermain to be constructed • 19 km of watermain to be rehabilitated or replaced • More than 100 chambers to be rehabilitated
Pumping	Comprehensive condition assessments are prioritized by risk with a target frequency of five years. Operators on site monitor for defects and performance issues. Risks are considered in annual review meetings with staff	Pump and motor lubrication and maintenance, generator testing, valve exercising, instrument calibration, touch-up painting and re-coating of piping/valves and maintenance, and cleaning of chemical feed systems	• Two new water pumping stations • Upgrades to two pumping stations • Ongoing rehabilitation of three pumping stations • Upgrades to standby power equipment at multiple facilities
Storage	Comprehensive condition assessments are prioritized by risk with a target frequency of five years for storage tank inspection and cleaning. Operators on site monitor for defects and performance issues. Risks are considered in annual review meetings with staff	Tank cleaning, valve exercising, equipment lubrication, instrument calibration, touch-up painting and re-coating of piping/valves, and maintenance and cleaning of chemical feed systems	• Two new elevated tanks • Re-coating and/or upgrades to twelve elevated tanks • Rehabilitations of eight in-ground storage reservoirs

10.5 Proposed levels of service

Proposed customer levels of service

There are no changes to the customer levels of service over the next ten years.

Proposed technical customer levels of service

Technical levels of service are expected to remain the same over the next ten years, with one exception. The Region is in the process of improving service levels related to aesthetic quality by implementing the Groundwater Treatment Strategy.

This strategy involves upgrading aesthetic treatment technology at most groundwater treatment facilities. The strategy was originally planned to be completed within the next decade, but the timeline has been extended due to funding and resource constraints. Some groundwater treatment facilities will be upgraded within ten years, and service levels will incrementally improve over time.

The strategy will also comply with the following upcoming regulatory changes:

- Expected future provincial regulations that align with the newly established Maximum Allowable Concentration for Manganese in the federal Guidelines for Canadian Drinking Water Quality
- Future changes to disinfection requirements for groundwater sources in the Procedure for Disinfection of Drinking Water in Ontario

There are no changes to the customer service levels statement: "Provide drinking water of high aesthetic quality." However, to reflect the improved service levels expected from implementation of the Groundwater Treatment Strategy, the supporting technical level of service may change. As the Region implements the Groundwater Treatment Strategy, key aesthetic parameters will be considered. Changes to levels of service may be implemented to align with internal objectives as they are developed.

Innovation Story - "Changes flooding in"

A Regional project will improve how infrastructure is protected from flooding, which is likely to become a greater threat as a result of climate change. Twenty high-risk zones for flooding will be identified on a geospatial map. For each zone the project will then:

- Rank flooding risks to built assets and infrastructure that provide services to residents
- Analyze potential impacts on trees and other green infrastructure
- Recommend changes to better adapt to flooding risk in the five zones ranked highest for both likelihood of flooding and severity of impacts

Recommendations are likely to cover many aspects of asset management, including asset design, selection, operation and maintenance, retrofits and changes in levels of service. They may also take a broader view to consider how green infrastructure, including urban trees, forested areas, natural features and landscaping components, can also reduce flooding risk and manage its impacts, as well as how these assets might themselves need to change as part of climate change response.

To further refine recommendations, the project will outline the costs associated with various actions.

Proposed technical levels of service

This table provides the current customer levels of service, the supporting asset categories and related technical metrics. Only one* current Levels of Service Statement is expected to have a new proposed target.

		Technical Levels of Service	
Customer Levels of Service	**Asset Categories**	**Performance Metric**	**Proposed Service Level Target**
Provide uninterrupted bulk water supply	Surface water treatment plants, groundwater treatment facilities, storage reservoirs, pumping stations, transmission mains	Percentage of urban properties serviced by the municipal drinking water system	N/A
		Number of connection-days of service interruption per year attributed to York Region water system	0
		Number of outage connection-days to a customer (lower tier) connection point	0
Provide safe drinking water	Surface water treatment plants, groundwater treatment facilities, storage reservoirs, pumping stations, transmission mains	Number of boil water advisory notices per year attributed to York Region infrastructure failure	0
		Chief Drinking Water Inspector's annual report card score for water samples meeting Ontario's drinking water quality standards	100%
Target a normal operating pressure consistent with design guidelines	Provide drinking water of high aesthetic quality requires its own asset category: Treatment infrastructure	Percentage of connection points to local municipal distribution networks that receive a pressure between 275 kPa (~40 psi) and 690 kPa (100 psi) during normal operating conditions	100%
Provide drinking water of high aesthetic quality*	Provide drinking water of high aesthetic quality requires its own asset category: Treatment infrastructure	Percentage of water supply sources designed to meet aesthetic objectives as defined in York Region's Design Guideline	TBD
Provide sufficient fire flow	Provide drinking water of high aesthetic quality requires its own asset category: Treatment infrastructure	Percentage of urban properties where fire flow is available	N/A
		Percentage of connection points to local municipal distribution networks that will exceed a minimum pressure of 140 kPa (~20 psi) at ground level under maximum day demand plus fire flow conditions	100%
Monitor and protect source water resources	Surface water treatment plants, groundwater treatment facilities, and monitoring equipment	Total water takings exceeding daily permitted volume and capacity limits	0 m^3
		Percentage of required risk management plans implemented within timelines required by the Source Protection Plan	100%
Monitor, record and report water quantity, quality, and compliance information	Analyzers and sampling equipment	Chief Drinking Water Inspector's annual report card inspection score	100%
Communicate the value of the municipal water system	All assets	Percentage of York Region residents surveyed that are satisfied with the safety and reliability of the Region's water service	>80%

Lifecycle activities to achieve proposed levels of service

In addition to the lifecycle activities identified to meet current levels of service, these lifecycle activities are required, from 2023 through 2032.

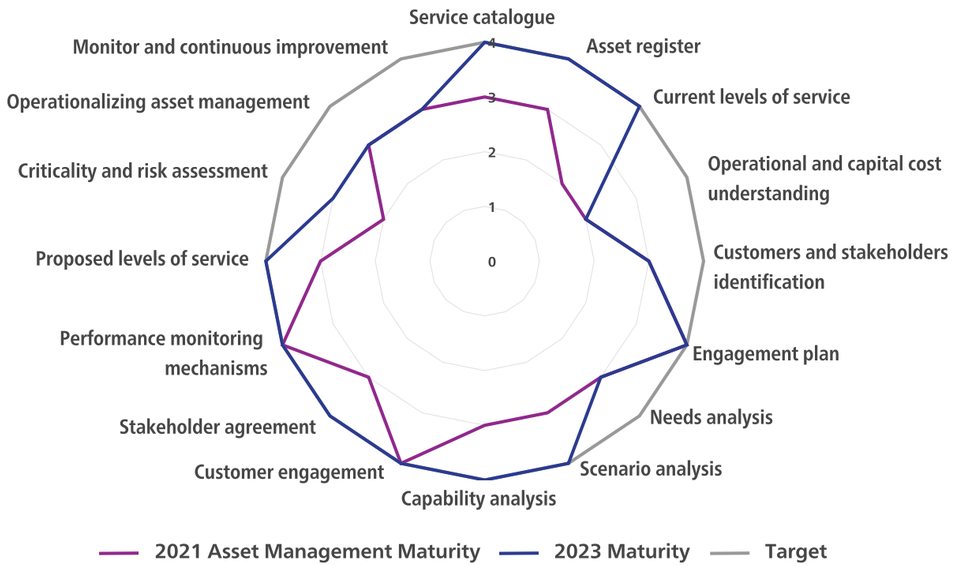
Asset	Inspections	Maintenance	Capital (rehab, replace, expand, upgrade)
Treatment	See Lifecycle Activities to Maintain Current Levels of Service table	See Lifecycle Activities to Maintain Current Levels of Service table	• Installation of treatment and filtration equipment identified in the Groundwater Treatment Strategy • Schomberg Water Treatment Plant Filtration System Pilot (2022 to 2023)

A map of the current and expanded Water System can be found in Appendix D.

10.6 Service area asset management maturity

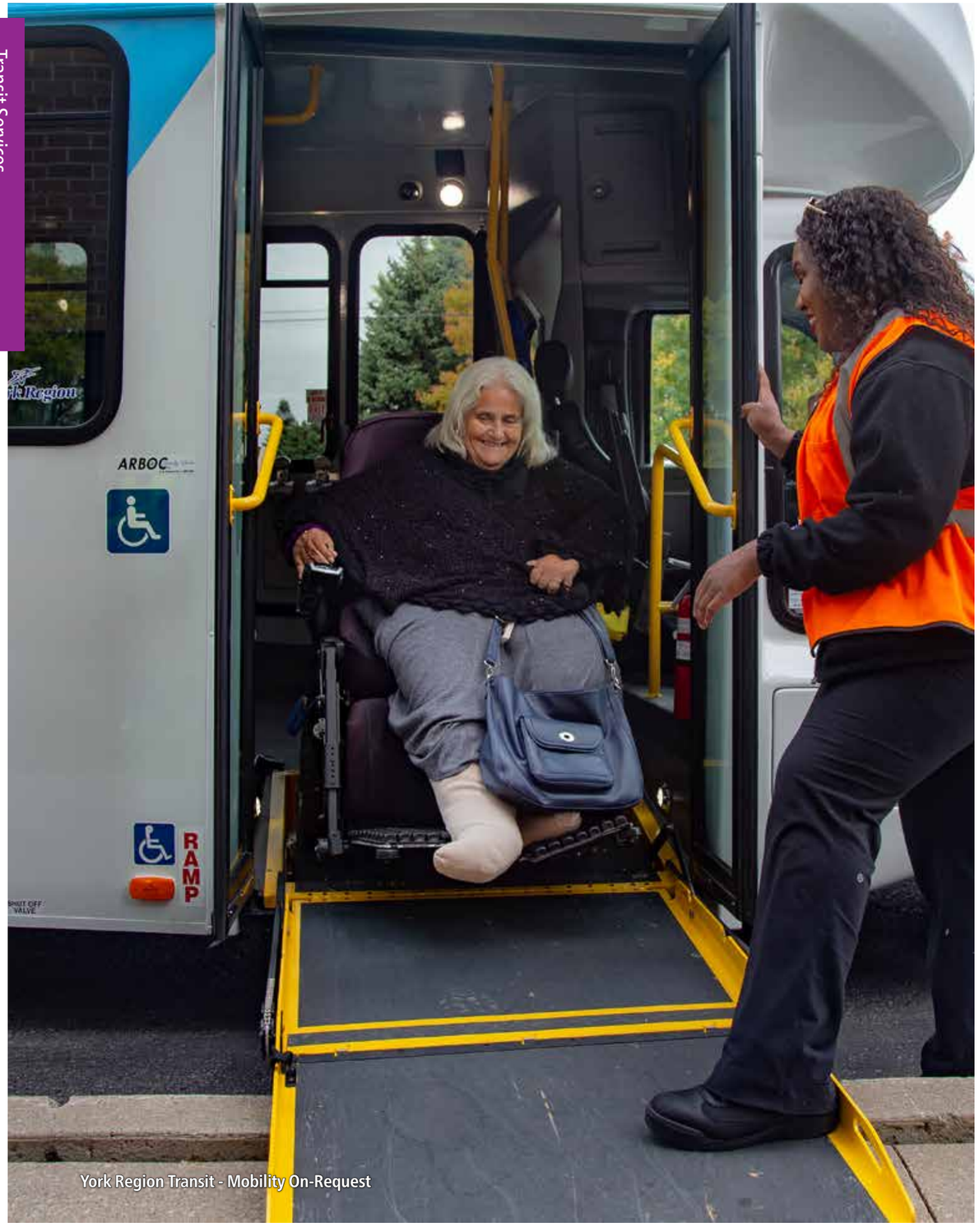
There are 16 categories labeled in the circle graph, each scored on maturity. Scores range from 0, the lowest maturity, at the centre of the circle, to 4, the highest, at the perimeter.

Figure 33: Asset management maturity graph



10.7 Monitoring and continuous improvement

Area and Action	Target completion year	Priority Area: Engage more fully with customers	Embed risk management/build response readiness	Use the best possible evidence in making decisions	Standardize processes	Build asset management skills and competence
Align equipment and business programs with levels of service	2025	•				
Improve asset management data availability and visualization	2025			•	•	
Coordinate and integrate risk management processes with centralized risk register	2027		•		•	
Educate staff and promote asset management throughout branch	2027					•
Improve lifecycle cost estimation and forecasting capability	2027			•		



York Region Transit - Mobility On-Request

Transit Services

Replacement cost:
$2,182.9 M

Performance grade:
B

Condition (fair or better)
91%

Asset portfolio:

- Four Region-owned garages
- Seven Region-owned terminals
- 35 Mobility on request buses
- 96 bus rapid transit (VIVA) buses
- 476 conventional York Regional Transit (YRT) buses, including 14 electric buses
- 5,000+ transit stops including platforms, shelters and coordinated street furniture
- Transit management systems and equipment

Changes in asset portfolio:

- Facility improvements including 18110 Yonge Street garage expansion, new Cornell Bus Terminal and Major Mackenzie West Terminal
- Bus fleet replacement and addition, including new electric buses
- Upgrades to transit management equipment and technology, including Presto machines, mobile fare payment machines and new security cameras

Future outlook:

To meet current and future public transit demands, York Region has active and planned capital projects for expansion construction at 55 Orlando Avenue (City of Richmond Hill) and 8300 Keele Street (City of Vaughan). The Region will also maintain a 10-year average fleet age, replace end-of-life buses, add electric buses, expand charging infrastructure, and undertake transit terminal rehabilitation projects aligned with the Council-endorsed Transit and Corporate Fleet Electrification Plan.

11.1 State of the infrastructure

Transit Services area provides reliable, convenient and seamless travel across the nine local cities and towns and easy access to the Toronto Transit Commission, Brampton Transit and provincial GO Transit systems.

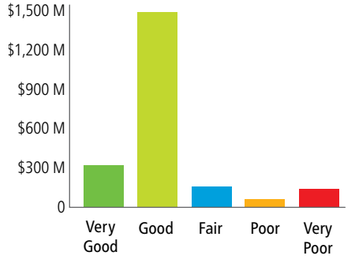
Replacement cost summary:

2021 Replacement cost	$2,069.2 M
Changes:	$113.7 M
New and upgraded assets	$119.4 M
Asset evaluation improvements and inflation	$40.9 M
Decommissioned assets	($46.6) M
2022 Replacement cost	$2,182.9 M

Performance grade:

Criteria	Grade	Trend
Reliability	A	→
Capacity	B	↑
Condition	B	→

Condition ($M)

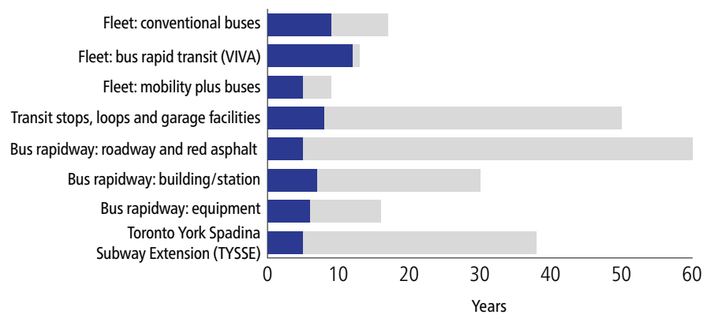


100% of bus fleet vehicles with end of life replacement scheduled in future budget.

Each transit stop and terminal is inspected at various frequencies throughout the year and any deficiencies are reported as part of the inspection.

The average asset has reached 27% of its useful life.

Average age and useful life expectancy (years)



11.2 Strategy

Transit Services' strategic approach to decision making focuses on supporting the Moving to 2025: YRT 2021–2025 Business Plan and Transportation Master Plan (TMP), while aligning with the Corporate Asset Management Policy. The Business Plan summarizes how York Region Transit (YRT) will address the Region's transit needs over the next five years. The purpose of the TMP is to guide staff in planning, building, operating and maintaining a connected transportation network that is safe, sustainable, efficient, reliable, and ready for the future. Participation and feedback from residents and stakeholders helped balance the needs of the unique communities across York Region. Asset management was a key consideration as part of the TMP.

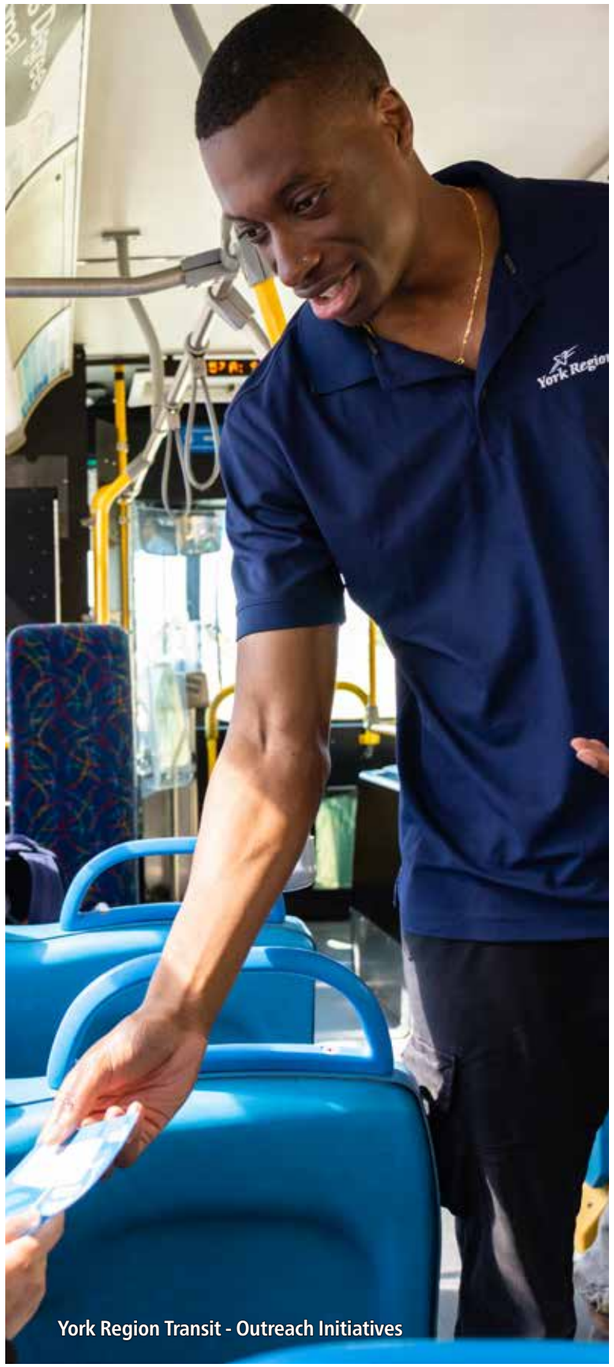
To support asset strategy, levels of service have been set to help manage risk, demand and asset sustainability. Levels of service also help support YRT Service Guidelines and Performance Indicators.

Transit Service area asset strategy uses asset management systems to inform data-driven decisions that support sustainable performance.

Meeting asset management policy objectives

Transit Services is aligned with the Corporate Asset Management Policy objectives through activities such as:

- Providing defined levels of service that are balanced against costs and risks
- Improving evidence-based decision-making, using in-service asset data related to expenditures, operations and maintenance
- Ensuring organizational accountability and transparency by engaging customers to provide input on planning.



York Region Transit - Outreach Initiatives

Alignment with corporate strategic goals

The Region's Transit Services area directly supports all four strategic plan priority areas: Economic Vitality, Healthy Communities, Sustainable Environment and Good Governance and several of the strategic plan objectives including:

Areas of Focus	Objective	Alignment with Transit Services
ECONOMIC VITALITY	**Attract and retain businesses, develop employment opportunities, and grow a skilled workforce**	• Renewal programs maintain the Region's roads and bridges in a state of good repair to increase safety and reduce travel times
HEALTHY COMMUNITIES	**Support safe communities**	• Lifecycle models assess and incorporate risk into targeted levels of service to ensure the Region's transportation network is safe and reliable
	Protect and promote residents' well-being	• Asset management plans ensure sufficient funding to maintain Regional assets for current and future generations
SUSTAINABLE ENVIRONMENT	**Deliver and promote environmentally sustainable services**	• Transit projects associated with the Energy Demand Management Plan and the Climate Change Action Plan support environmental sustainability
GOOD GOVERNMENT	**Deliver fiscally sustainable services**	• Completion of asset management plans, including this plan, demonstrates financially sustainable lifecycle management to gain full value from assets. Funding models adhere to the Fiscal Strategy

Innovation Story - "Just a click away"

On-board computers help transit drivers check their performance in real time, while riders can check bus schedules by stop number on their phone and pay touch-free using the Presto card.

11.3 Financial outlook

The 10-year financial highlights include:

The approved 2023 10-Year Capital Transit Renewal Budget, averaging $70 million annually, includes various asset classes such as, fleet, facilities, terminals and stops. It will sustain current levels of service identified in the asset management plans. Costs for the Yonge North Subway Extension have been included, with tax levies supporting future additional operating costs. The Bus Rapid Transit's next phase of costs were not included in the 2023 Capital Plan as senior government funding would be leveraged.

At present, no infrastructure funding gap to meet proposed levels of service has been identified over the next 10 years. Beyond the 10-year horizon, there will likely be longer-term pressures for rapid transit projects including both the Yonge North Subway Extension as well as additional bus rapid transit lines. The next Transit Asset Management Plan, to be released after this Plan, will assess asset management needs and outline any additional funding, if required.

Figure 34: Capital budget vs. full capital needs (existing assets)

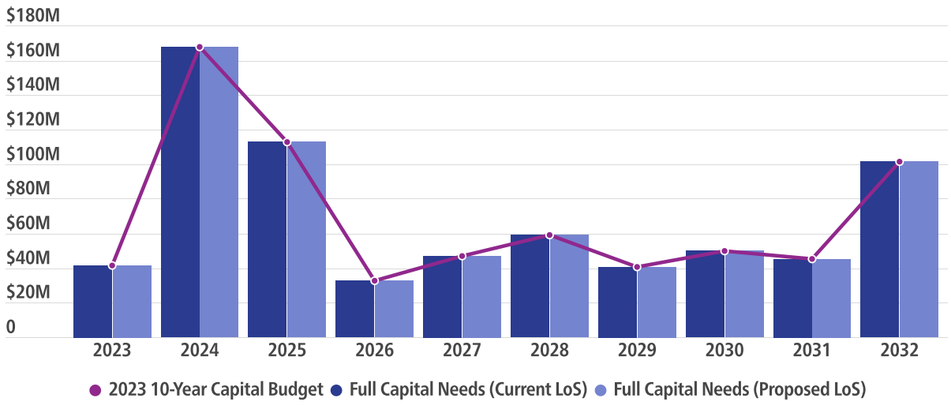
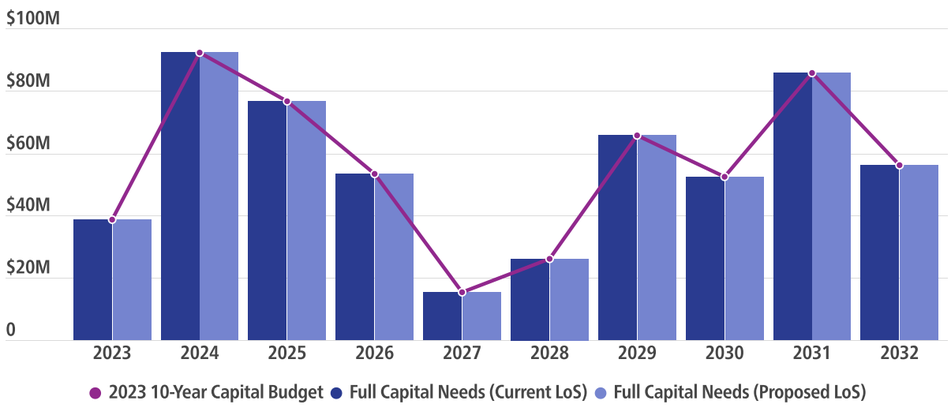
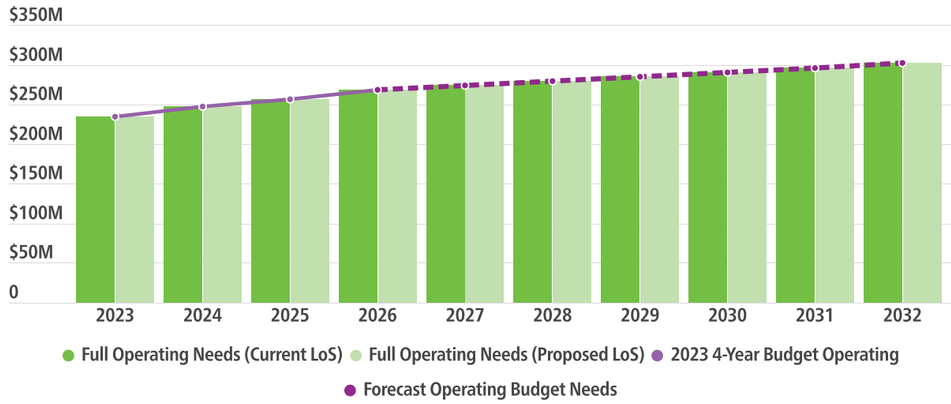


Figure 35: Capital budget vs. full capital needs (future assets)



The approved 2023 Four-Year Operating Transit Budget, with an annual average of approximately $273 million, is designed to sustain the current and proposed levels of service (shown in the graph below in the first four of the 10 years).

Figure 36: Operating budget vs. full operating needs (existing and future assets)



11.4 Current levels of service

Current customer levels of service

The current customer levels of service statement that Transit Services works towards is to plan, build, operate, and maintain a connected transportation network for all travelers that is safe, reliable, future-ready, sustainable, and balances the needs of the unique communities we serve.

Current technical levels of service

The levels of service currently provided by the Transit Service Area are good, on average.

On-time performance is used to measure the timeliness of fleet assets, including conventional buses, VIVA buses, and mobility-on-request vehicles. It is an important measure of vehicle asset reliability.

Mean distance between failures is also a measure of reliability. It expresses the average distance travelled by the fleet before a reportable mechanical failure (i.e. incidents precluding a bus from completing its trip or starting its next scheduled trip). A greater mean distance between failures means the fleet is encountering fewer mechanical issues.

Facility conditions are rated on a score out of five. This assessment provides a clear guidance for transit to perform lifecycle treatment to the buildings. The facility condition assessments and Facility Index Reports will be updated as part of the second edition of the Transit Asset Management Plan.

Transit stop service coverage is presented as a percentage of urban residents within 500 metres of a transit stop. This percentage measures accessibility of the transit network.

		Technical Levels of Service		
Customer Levels of Service	**Asset Categories**	**Performance Metric**	**Current Service Level Target**	**Current Performance**
Plan, build, operate, and maintain a connected transportation network for ll travelers that is safe, reliable, future-ready, sustainable and balances the needs of the unique communities we serve.	Conventional service buses	On-time performance	≥ 90%	94%
	Rapid transit buses		≥ 95%	98%
	Mobility on request buses		≥ 92%	94%
	Fleet reliability	Mean distance between failure for fleet reliability (percentage of fleet meeting target)	≥ 90%	98%
	Facilities	Condition rating (out of five)	≥ 4	4
	Transit stops	Service coverage (percentage of urban residents within 500 m of a transit stop)	≥ 90%	90.4%

Lifecycle activity options to maintain current levels of service

Capital projects fall into two portfolios: growth and renewal. Projects coming out of the growth portfolio involve purchasing or constructing new transit assets. The renewal portfolio mainly uses two strategies: rehabilitating and replacing transit assets. To maintain current levels of service, the renewal portfolio needs to maintain the current level of investment, as shown in the capital budget in Section 6.2. Maintaining current levels of service at the lowest cost option means making the right investment with the right treatment at the right time. Inspections are completed on assets, based on industry standards, to ensure we have the best information for keeping assets performing well.

Risks and treatment options

The treatment options below are based on asset needs. The only risks relate to our ability to sustainably fund Transit asset management programs. Sustainable funding sources have been created, with Corporate Finance, through the Asset Replacement Reserve. These sources are key to minimizing risks and delivering the treatment options below. As transit's ability to deliver the treatment options below decreases, risks of declining fleet and facility conditions increase.

Fleet

Growth projects increase the capacity of the overall fleet, and include:

- Purchasing additional buses for planned service expansion
- Replacing existing buses at end of life with new vehicles with additional passenger capacity

Renewal projects extend the life of or replace an existing vehicle, and include:

- Capital refresh
- Mid-life rehabilitation
- Total life (end of life) replacement

Facilities

Growth projects increase the capacity and/or number of garages, stops, terminals, and facilities and include:

- Building new garages and facilities
- Building new stops and terminals
- Expanding the storage capacity of existing garages

Renewal projects extend the life or replace an existing asset, and include:

- Rehabilitating an existing garage, stop, terminal or facility
- Replacing an existing garage, stop, terminal or facility

Lifecycle activities to maintain current levels of service

The activities below are based on lifecycle management options contained in Table 5 of Section 5.2. This list is not exhaustive, as many other measures, such as basic inspections and maintenance, take place every day and help staff adjust operations and make minor repairs as needed.

Lifecycle activities—Fleet

Year	Inspections	Maintenance	Capital (rehab, replace, expand, upgrade)
2023-2032 (all activities completed annually, unless otherwise indicated)	Day-to-day cleanliness inspections are conducted on all vehicles. Legislative inspections are conducted semi-annually on all vehicles.	Day-to-day operations and maintenance are conducted on all vehicles as needed, including oil changes and tire changes. Mechanical refreshes are conducted as follows: • 30-foot buses: every 6 years • 40-foot buses: every 6 years • 60-foot buses: none required • Mobility on Request vehicles: none required due to service life	Fleet assets receive annual renewal capital programming prioritization, based on optimized lifecycle needs for each vehicle class. Fleet lifecycle activities happen based on the semi-annual condition assessments and age. Fleet lifecycle activities include, but are not limited to: Total life replacement: • 30-foot buses: 12 years • 40-foot buses: 18 years • 60-foot buses: 12 years • Mobility Plus vehicles: 7 to 12 years • 40-foot eBuses: 18 years • 60-foot eBuses: 12 years Capital refresh: • 30-foot buses: none • 40-foot buses: 6 years • 60-foot buses: 6 years • Mobility Plus vehicles: none • 40-foot eBuses: 10 years • 60-foot eBuses: 6 years Midlife rehabilitation: • 30-foot buses: none • 40-foot buses: 10 years • 60-foot buses: none • Mobility Plus vehicles: none • 40-foot eBuses: 6 years • 40-foot eBuses: 12 years • 60-foot eBuses: 6 years

Lifecycle activities—Facilities

Year	Inspections	Maintenance	Capital (rehab, replace, expand, upgrade)
2023-2032 (all activities completed annually, unless otherwise indicated)	Day-to-day based on routine patrol. Formal Condition assessments as follows: • Garages: annually • Garage equipment: monthly to annually • Terminals and stops: annually	As needed based on routine patrols and formal condition assessments.	Garage structures, garage equipment, terminals, transit stop platforms and transit stop shelters receive annual renewal programming prioritization annually, based on optimized lifecycle needs for each facility class. Facility lifecycle activities happen based on annual condition assessments and age. Facility lifecycle activities include, but are not limited to: • Total life replacement: • Garage equipment: 5 to 25 years • Garage structures: 50 years • Terminals: 50 years • Transit stop platforms: 10 to 15 years • Transit stop shelters: 15 years

11.5 Proposed levels of service

Proposed customer levels of service

There are no changes to the customer levels of service over the next 10 years.

Proposed technical levels of service

There are no changes to the current technical levels of service over the next 10 years.

Lifecycle activities to achieve proposed levels of service

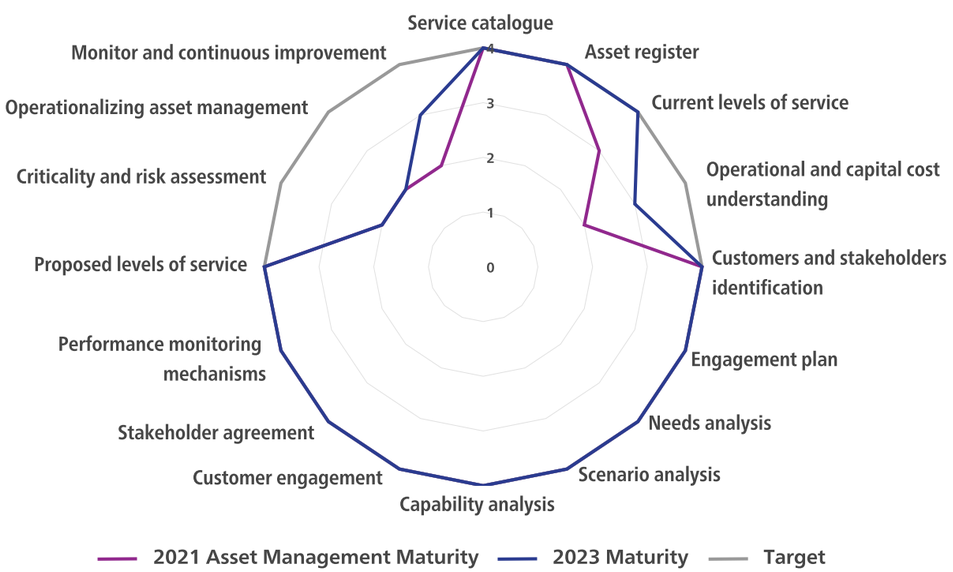
See the lifecycle activities outlined in the Lifecycle Activities to Maintain Current Levels of Service section.

A map of the current and proposed transit system can be found towards the end of this document, in Appendix H.

11.6 Service area asset management maturity

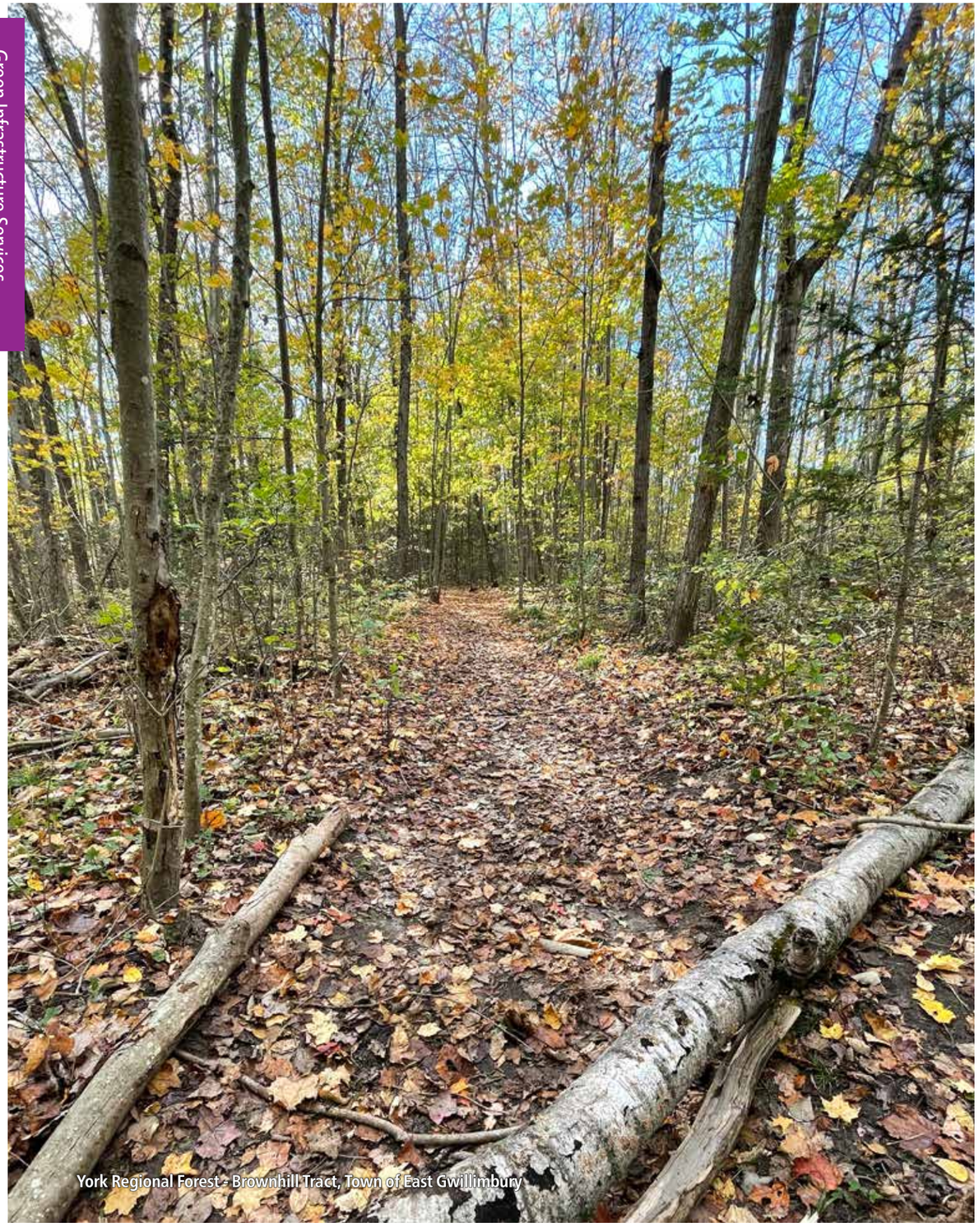
There are 16 categories labeled in the circle graph, each scored on maturity. Scores range from 0, the lowest maturity, at the centre of the circle, to 4, the highest, at the perimeter.

Figure 37: Asset management maturity graph



11.7 Monitoring and continuous improvement

		Priority Area				
Area and Action	**Target completion year**	**Engage more fully with customers**	**Embed risk management/ build response readiness**	**Use the best possible evidence in making decisions**	**Standardize processes**	**Build asset management skills and competence**
Continue partnership with Metrolinx to ensure seamless delivery of bus rapid transit services	Ongoing	•				
Develop second edition of the Transit Asset Management Plan	2024		•			
Develop 2024 Transportation State of Infrastructure Report	2024				•	
Send new staff to get Asset Management Certification from Institute of Asset Management	2026					•



York Regional Forest - Brownhill Tract, Town of East Gwillimbury

Green Infrastructure Services

Replacement cost:
$1,810.1 M

Performance grade:
B

Condition (fair or better)
94%

Asset portfolio:

- Urban Forest: 72,624 street trees, 23,750 shrubs and 54,501 perennials including landscaped boulevard and center median planters
- York Regional Forest: 2,526 hectares including forested and non-forested areas, roads, parking facilities, trails and fences
- The Bill Fisch Forest Stewardship and Education Centre

Changes in asset portfolio:

- 8,447 street trees added to the inventory
- 725 m of new access trails
- 7,822 shrubs and perennials planted

Future outlook:

The Region has several projects planned and ongoing to enhance its ability to manage green infrastructure and meet its level of service through implementing actions from the 2022 Green Infrastructural Asset Management Plan, capital infrastructure improvements in the York Regional Forest and expanding and improving the green infrastructure asset inventory and inspection program.

12.1 State of the infrastructure

York Region owns and manages a diverse network of planted and natural vegetation communities, along with recreational and supporting infrastructure, including the Bill Fisch Forest Stewardship and Education Centre, collectively known as green infrastructure.

Replacement cost summary:

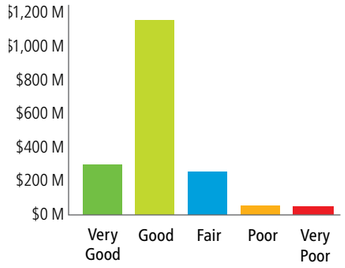
2021 Replacement cost	**$626.3 M**
Changes:	**$1,183.8 M**
New and upgraded assets	**$65.1 M**
Asset evaluation improvements and inflation	**$1,161.3 M***
Decommissioned assets	**($42.6) M**
2022 Replacement cost	**$1,810.1 M**

Performance grade:

Criteria	Grade	Trend
Reliability	A	→
Capacity	B	→
Condition	B	→

** The improvements in the methodology to assess the replacement cost of the York Regional Forest resulted in a significant increase, with the replacement cost exceeding $1 billion in 2022.*

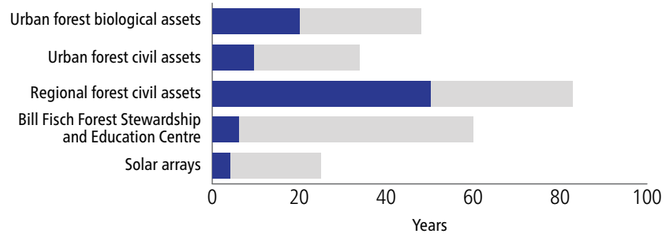
Condition ($M)



York Regional Forest biological assets are excluded from the *Average Age and Useful Life* chart as they are self-sustaining natural communities with no measurable life expectancy.

Assets on average have 58% of their useful life remaining.

Average age and useful life expectancy (years)



Where the average age of the asset class exceeds its Useful Life Expectancy, the blue bar extends beyond the gray bar and is noted by a hatched white line.

12.2 Strategy

Green Infrastructure Services' strategic approach to decision-making is supported by digital tools, datasets and dedicated staff:

- The Region's **Green Infrastructure Asset Management Plan** sets out actions and processes for lifecycle management. It describes current and proposed levels of service, summarizes how they will be achieved and explains how risks will be identified and managed. It also sets out activities and funding needed for sustainability beyond a 10-year planning horizon
- The Region's **Management Plan for the York Regional Forest** provides key principles, practices and actions for meeting levels of service. The plan reflects how demand for the Regional Forest services is expected to increase as the Region's population grows
- The **Forest Operating Plan**, updated every five years, is designed to achieve objectives of the Regional Forest Management Plan. It provides a schedule for such activities as silviculture, planting and caring for trees, managing invasive species and improving visitor amenities and other civil infrastructure
- York Region's **Greening Strategy** creates and maintains healthy natural environments that foster healthy, sustainable communities now and into the future. The strategy provides a framework for initiatives to restore habitat, increase canopy and woodland cover, secure the Regional Greenlands and promote and protect the natural environment
- The Region's **Transportation Master Plan** identifies and recommends changes to its road network over the next 30 years to meet expected growth needs, including supporting a shift to more eco-friendly travel options. Plantings of trees and other greenery along existing and new parts of the transportation network complement these investments
- The Region's **10-year capital plan** includes green infrastructure growth and renewal needs. Needs are reviewed annually through the budget process to align with fiscal capacity and determine how to integrate work with other projects. Renewal needs are informed by current asset condition and performance information provided either directly by maintenance staff or through the Forestry condition assessment program
- Many ongoing lifecycle management activities, such as watering, structural pruning, mulching, and removing hazard trees, are funded by the Region's **operating budget**. These and other monthly/seasonal activities are essential to health and survival of the living assets that make up green infrastructure
- **Non-infrastructure solutions** to managing risks and maintaining levels of service include educating the public on use of the Regional Forest and its trails, and setting out acceptable and prohibited uses/activities. This helps to reduce lifecycle costs, for example by preventing new seedlings from being trampled, ensuring the Region can gain benefits from existing assets instead of having to invest in new ones
- **Operations and maintenance work orders** are managed through Cityworks and other digital databases. Digital transformation is improving data capture and integrating more processes to support better asset management decisions and activities

Meeting asset management policy objectives

Green Infrastructure Services is aligned to the Corporate Asset Management Policy objectives through activities such as:

- Continuing to advance asset management maturity
- Coordinating financial planning through the operating budget and capital plans
- Defining levels of service and better identifying risks and how they will be managed
- Incorporating climate change considerations
- Regularly monitoring and evaluating performance of assets
- Optimizing maintenance practices to make living assets more resilient to threats like extreme weather and invasive species

Alignment with corporate strategic goals

The Region's Green Infrastructure Services area directly supports all four strategic plan priority areas: Economic Vitality, Healthy Communities, Sustainable Environment and Good Government and several of the strategic plan objectives including:

Areas of Focus	Objective	Alignment with Green Infrastructure Services
ECONOMIC VITALITY	**Attract and retain businesses, develop employment opportunities, and grow a skilled workforce**	• Green Infrastructure fosters an environment that attracts businesses, grows employment opportunities and attracts people
HEALTHY COMMUNITIES	**Support safe communities**	• New urban forest assets will be established along roadway corridors as part of transportation network improvements
	Protect and promote residents' well-being	• Acquire and manage natural spaces fosters healthy, sustainable communities for current and future generations
SUSTAINABLE ENVIRONMENT	**Deliver and promote environmentally sustainable services**	• Create healthy resilient streetscapes and forests that contribute to the Region's canopy cover and environmental priorities strengthen environmental sustainability
	Enhance and preserve green space	• Acquire and manage natural spaces that foster healthy, sustainable communities for current and future generations
GOOD GOVERNMENT	**Improve customer experience by leveraging digital transformation**	• Develop and report performance measures and forecast the costs of achieving them leads to greater understanding of how well services are being delivered and the associated costs
	Deliver fiscally sustainable services	• Completion of asset management plans, including this plan, demonstrates financially sustainable lifecycle management to gain full value from assets

Innovation Story - "View from the top"

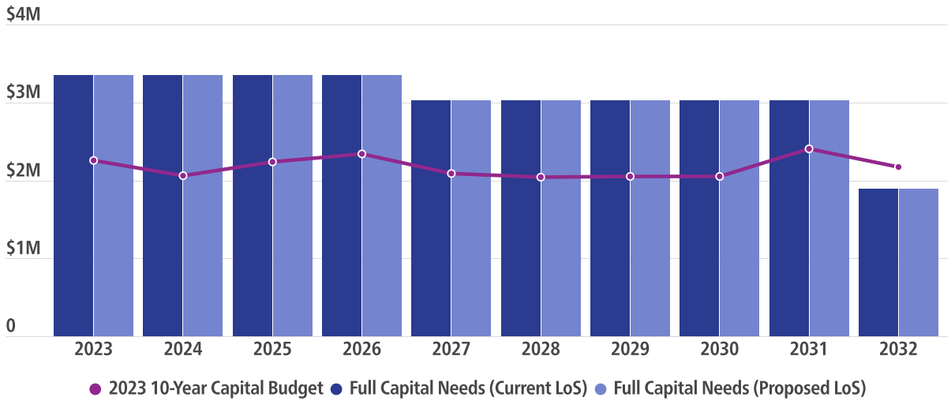
Use of aerial LiDAR (Light Detection and Ranging) and high-resolution satellite imagery has provided a more accurate picture of the Region's tree cover and other land uses. As well as enabling better use of Forestry resources, the images can provide insights to other departments.

12.3 Financial outlook

In the graph below, the darker blue bars show forecast capital costs to meet current levels of service as population grows, while the lighter bars indicate forecast costs to meet proposed levels of service with the same growth. The line shows funds available in the ten-year capital plan. A total funding gap of roughly $9 million is expected over the next ten years for existing assets. No difference in capital needs between current and proposed service levels is expected as all proposed service levels relate to future assets only.

Forecasted capital needs vary over time depending on the condition and installation date of existing assets. The forecasted needs in 2032 happen to be lower as fewer assets are forecasted to need capital interventions in that year. However, due to cumulative unmet needs before 2032, no budget surplus is anticipated for that year.

Figure 38: Capital budget vs. full capital needs (existing assets)

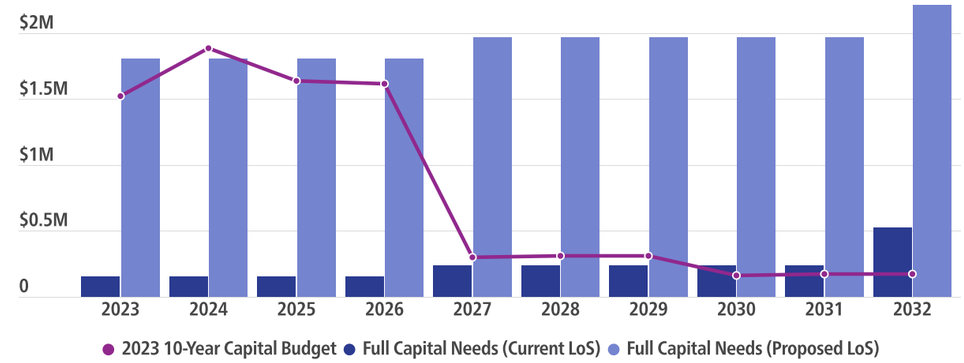


In the graph below, future assets include a larger Regional forest with more trails and parking capacity and more street trees. These needs were identified in the 2022 Green Infrastructure Asset Management Plan update and have not yet been fully integrated into capital planning.

The capital budget line reflects the ten-year capital plan in the Region's 2023 budget. It reflects federal funding in 2023 through 2026 that the Region is using to move to proposed levels of service that Council has approved. These include expanding the Regional Forest and planting more street trees.

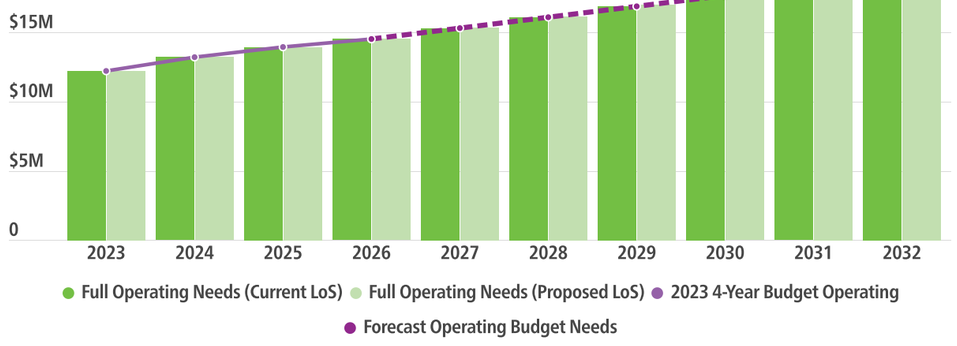
A total funding gap of about $20 million is expected over the next ten years to meet these proposed levels of service.

Figure 39: Capital budget vs. full capital needs (future assets)



The graph below shows projected operating budget against asset-related needs, including salaries, fleet and facility maintenance, and care of living assets. Reserve contributions, debt principal and non-asset-related programs are excluded. Ten-year operating costs are estimated at $157 million. The largest element is the cost of maintaining greenery in planters to specified landscaping standards.

Figure 40: Operating budget vs. full operating needs (existing and future assets)



12.4 Current levels of service

Current customer levels of service

The current customer levels of service statements are:

Urban forest

Provide healthy, resilient street trees, landscape plantings and support infrastructure that helps beautify the Region's streetscapes and contribute to the canopy cover target and environmental priorities

York Regional Forest

Acquire, restore, maintain and preserve natural spaces to strengthen ecological integrity, adapt to and mitigate climate change and contribute to healthy communities

Provide infrastructure supporting low-intensity recreational use of the forest and an exceptional visitor experience

Current technical levels of service

The following table presents measures used to gauge current performance with respect to the level of service statements above:

Urban forest

		Technical Levels of Service	
Customer Levels of Service	**Asset Categories**	**Performance Metric**	**Current Performance**
Plan, build, operate, and maintain a connected transportation network for all travelers that is safe, reliable, future-ready, sustainable and balances the needs of the unique communities we serve	Street trees	Percentage of available space along urban and suburban Regional roads occupied by street trees.	75%
		Percentage of street trees by species (species diversity)	Ivory silk lilac make up 10% of total number of trees
		Health of urban and suburban trees (% rate satisfactory or better health), measured every five years	87%
		Information is shown by diameter and age. Diameter is measured 1.4 metres from the ground (monitoring metric used for trending purposes only)	Rural: 26 centimetres , 28 years Suburban: 14 centimetres, 17 years Urban: 6 centimetres, 8 years
Plan, build, operate, and maintain a connected transportation network for all travelers that is safe, reliable, future-ready, sustainable and balances the needs of the unique communities we serve **(Continued)**	Street trees	Area of street tree canopy in hectares (updated every five years) (monitoring metric used for trending purposes only)	152
	Planter beds	Percentage of planter beds along urban Regional roads meeting landscaping standards	100%
	All public-facing Urban Forest assets	Customer satisfaction with urban forest (out of 10), measured every five years	Average score was 7/10
	Biological assets	Ecosystem benefits (annual) (monitoring metric used for trending purposes only)	• Carbon sequestered: 289 tonnes • Rainwater runoff avoided: 24,400 cubic metres • Air pollution removed: 7 tonnes • Oxygen produced: 800 tonnes

York Regional Forest

		Technical Levels of Service	
Customer Levels of Service	**Asset Categories**	**Performance Metric**	**Current Performance**
Acquire, restore, maintain and preserve natural spaces to strengthen ecological integrity, adapt and lessen climate change contributing to healthy communities	York Regional Forest	Area of York Regional Forest in hectares	2,526
	Sensitive habitat	Percentage of sensitive habitat protected in the York Regional Forest	32%
	Biological assets	Estimated annual value of ecosystem benefits provided from the York Regional Forest (carbon sequestration, rainwater runoff reduction, pollution removal) (monitoring metric used for trending purposes only)	$1.2 million or an average of $530/hectare

Customer Levels of Service	Asset Categories	Technical Levels of Service: Performance Metric	Technical Levels of Service: Current Performance
Acquire, restore, maintain and preserve natural spaces to strengthen ecological integrity, adapt and lessen climate change contributing to healthy communities **(Continued)**	Forested compartments	Percentage of York Regional Forest regenerating to acceptable levels (reported every 10 years)	99%
	Forest area	Percentage of conformance of the York Regional Forest to Forest Stewardship Council certification as audited	100%
Provide infrastructure supporting low-intensity recreational use of the forest and an exceptional visitor experience	Trails	Percentage of tracts in the York Regional Forest with total length of trails identified in the trail management strategy	Not yet evaluated as trail management project is in progress
	Parking lots	Adequate number of parking spaces	472 parking spots
	Civil infrastructure	Average condition rating for trails, bridges, culverts, signage, roads and parking lots	Fair or better
	Accessible Trails	Kilometres of accessible trails	5.3

Risks and treatment options

The following list describes asset-related risks to service delivery for this service area. The Region has implemented several risk management processes to monitor, assess and treat the associated risks as described below:

- **Climate change:** damage caused by extreme weather reduces the Region's ability to maintain service levels. More intense wind/rain can knock trees down or make them hazardous, as well as causing flooding. Higher temperatures and/or drought can affect tree health directly or by accelerating the spread of invasive species. To manage risks, drought-resistant trees are selected for new plantings where possible. The Region monitors for hazard trees and removes them as needed, and trees are inspected regularly and pruned as needed. Pruning increases structural stability and overall health/longevity of the tree. The York Regional Forest is monitored, and silviculture practices used as needed. Measures to address pests and diseases are outlined below.
- **Pests and diseases:** The Region's current management strategy includes monitoring for emerald ash borer, oak wilt, spongy moth, hemlock woolly adelgid and other species to provide early warning and using control measures and mitigation tactics as needed. Where possible, more resistant species are selected for new plantings.
- **Changes in demand:** Population growth will result in greater use of the York Regional Forest, as will continuing interest sparked during the COVID-19 pandemic. In turn, demand for parking, trails and other visitor amenities is growing. At current levels of public use, the Region is able to balance ecological integrity and recreational use priorities. Acquiring new lands in line with the Region's Greening Strategy will help manage the risk of imbalance over time.
- **Transportation infrastructure growth:** New tree and other plantings along existing roadways and new trails will be needed as the Transportation Master Plan is acted on. Annual costs to maintain streetscapes could vary significantly depending on the landscaping standards implemented, which will continue to have a significant impact on the forestry budget.
- **Condition:** The Region regularly assesses the health of trees and other greenery and condition of civil infrastructure to ensure assets can provide defined levels of service. Trees in the urban forest are assessed and maintained based on standards developed by the International Society of Arboriculture. The York Regional Forest is certified by the Forest Stewardship Council, which sets international principles and criteria for sustainable, healthy forests and activities are also guided by the Forest Operating Plan.
- **Personnel-related risks:** Illness, injury, performance and retirements can affect the delivery of services. Well-thought-out training programs, properly maintained health and safety equipment and careful work practices aim to reduce injury risks and ensure staff safety. To mitigate the risk of catastrophic business interruptions such as a pandemic might trigger, the Region has developed business continuity plans and emergency management strategies. Risks related to staff capability and resourcing are mitigated through workforce planning and a learning and development program tailored to individual job requirements.
- **Financial risks:** The capital plan captures growth and renewal work needed to achieve defined levels of service. Budgeting for this service area is integrated with that of Public Works and reflects the department's asset planning practices. The capital budget covers ten years, in line with the Region's budget outlook. Asset management is based on a 100-year forecast. Both are updated annually.

Lifecycle activities to maintain current levels of service

The activities below are based on lifecycle management options contained in Table 5 of Section 5.2. This list is not exhaustive, as many other measures, such as basic inspections and maintenance, take place every day and help staff adjust operations and make minor repairs as needed.

Lifecycle activities—urban forestry (trees)

Year	Inspections	Maintenance	Capital (rehab, replace, expand, upgrade)
All activities completed annually, unless otherwise indicated	• Inspections of green infrastructure along Regional roads to identify maintenance needs • Tree health assessment and inventory Inspections	• Mulching • Removing dead or hazard trees • Structural pruning	• Tree planting • Watering after planting • Planting warranty maintenance • Tree removal and stumping

Lifecycle activities—urban forestry (shrubs, perennials, and ornamental grasses)

Year	Inspections	Maintenance	Capital (rehab, replace, expand, upgrade)
All activities completed annually, unless otherwise indicated	• Annual plant health inspections • Inspections to determine plant maintenance requirements	• Fertilizing • Mulching • Removing debris from planter beds • Replacing individual plants as needed • Splitting and transplanting perennials • Watering	Replacing shrubs, perennials, and grasses

Lifecycle activities—civil assets

Year	Inspections	Maintenance	Capital (rehab, replace, expand, upgrade)
All activities completed annually, unless otherwise indicated	• Annual inspection of tree grates • Monthly inspections of irrigation systems April to October	Fall close out and winterizing of irrigation systems to prevent damaged during cold weather	• Replacing tree grates • Replacing soil cells • Replacing irrigation systems • Replacing soil in planters and tree bed areas

Lifecycle activities—York Regional Forest (newly acquired areas)

Year	Inspections	Maintenance	Capital (rehab, replace, expand, upgrade)
All activities completed annually, unless otherwise indicated	• Inspecting site to identify assets and risks for Property Management Plan • Inventorying new forest compartments (smaller sections of a forest tract)	Post-planting activities such as mowing and controlling competition from unwanted species	• Afforestation of new properties to increase woodland cover (includes site preparation and planting) • Creating new parking lots and trails for public access

Lifecycle activities—York Regional Forest: Forested Compartments

Year	Inspections	Maintenance	Capital (rehab, replace, expand, upgrade)
All activities completed annually, unless otherwise indicated	• Updating forest resource inventory • Monitoring tree harvest • Inspecting for invasive species and assessing threats	• Invasive species control • Plantation thinning • FSC certification • Hazard tree removal • Research and development of new methods • Silvicultural prescriptions and tree marking where thinning is scheduled	Underplanting to increase biodiversity in plantations

Lifecycle activities—York Regional Forest: Tall Grass Prairie

Year	Inspections	Maintenance	Capital (rehab, replace, expand, upgrade)
All activities completed annually, unless otherwise indicated	Vegetation monitoring and assessment	• Seed collecting • Invasive plant control • Mowing • Controlled burns	Prairie establishment through site preparation and seeding

Lifecycle activities—York Regional Forest (civil infrastructure, access)

Year	Inspections	Maintenance	Capital (rehab, renewal, replacement, new)
All activities completed annually, unless otherwise indicated	Asset condition inspections	• Grading and surface maintenance of parking lots and roads • Trail mowing	• New trail builds • Renewing trail surfaces • Full depth trail reconstructions • New parking lot construction • Parking lot resurfacing • Full depth reconstruction of parking lot • Build new bridges

Lifecycle activities—York Regional Forest (civil infrastructure, fencing and gates)

Year	Inspections	Maintenance	Capital (rehab, renewal, replacement, new)
All activities completed annually, unless otherwise indicated	Asset condition inspections	Grease gates and mow around them	• Construct new fences • Replace fences • Install new gates • Replace gates

Lifecycle activities—York Regional Forest (civil infrastructure, culverts and drainage structures)

Year	Inspections	Maintenance	Capital (rehab, renewal, replacement, new)
All activities completed annually, unless otherwise indicated	Asset condition inspections	Periodic flushing and cleaning of culverts and drainage structures	• Culvert installation • Culvert replacement

Lifecycle activities—York Regional Forest (civil infrastructure, dams and water control structures)

Year	Inspections	Maintenance	Capital (rehab, renewal, replacement, new)
All activities completed annually, unless otherwise indicated	Asset condition inspections	Minor repairs	Decommission or replace dams in poor condition

Lifecycle activities—York Regional Forest (civil infrastructure, garbage cans, benches, signs and display cases)

Year	Inspections	Maintenance	Capital (rehab, renewal, replacement, new)
All activities completed annually, unless otherwise indicated	Asset condition inspections	Graffiti removal, minor repairs	• Installation of accessible benches • Replacing accessible benches • Install display cases • Replace display cases • Install garbage cans • Replace garbage cans • Install signs • Replace signs • Replace sign posts

12.5 Proposed levels of service

Proposed customer levels of service

No changes are expected to current customer levels of service.

Proposed technical levels of service

The Region has proposed a higher technical level of service for the quantity of streets trees along Regional Roads. Currently 75% of available spaces along roads are occupied by a street tree. The target is to increase the quantity to 95% by 2055. The Region plans to progress towards this target by planting new trees each year and replacing existing trees when needed.

The Region will continue to acquire property to add to the land base of the York Regional Forest to increase total area from 2,526 hectares at present to 3,060 by 2051. Acquired properties are a combination of forested areas and non-forested land, such as fallow fields. Generally, the latter are planted to create forests where appropriate. Some land, such as wetlands, is left as is.

New civil assets will also be needed to allow safe access to newly acquired lands. What type and how much is based on the current size of existing York Regional Forest and the target of adding more accessible trails.

Options for proposed levels of service and risks associated with those options

The proposed level of service will have additional capital and maintenance costs that accompany the additional assets. The cost to mitigate risks of current and newly acquired assets is relatively low compared to the overall lifecycle costs of achieving the proposed level of service.

Non-infrastructure solutions are the actions that the Region can undertake as options or in addition to investing in assets to deliver defined levels of service. Several of these are identified in the Management Plan for the York Regional Forest 2019-2038.

Proposed technical levels of service

Urban forest

Customer Levels of Service	Asset Categories	Technical Levels of Service: Performance Metric	Technical Levels of Service: Proposed Service Level Target
Provide healthy, resilient street trees, landscape plantings and support infrastructure that beautifying the Region's streetscapes, and contributing to the canopy cover target and environmental priorities	Street trees	Percentage of available space along urban Regional roads occupied by street trees	95% by 2055
		Most commonly occurring tree species as a percentage of total street trees (a measure of species diversity)	<10%
		Tree health condition (percentage of street trees in urban and suburban Regional roads meeting satisfactory or better health rating)	90%
		Percentage of requests related to hazard trees acknowledged within one business day and inspected and assessed within five business days	95%
		Percentage of scheduled mature tree inspections undertaken and documented	100%
		Percentage of street trees pruned in accordance with preventative maintenance program (three-year average)	100%
		Distribution of trees by age/diameter and location (updated every five years) (monitoring metric used for trending purposes only)	N/A
		Area of street tree canopy in hectares (updated every five years) (monitoring metric used for trending purposes only)	N/A
	Biological assets	Ecosystem benefits (kg/year) (updated every five years) Estimated annual value of ecosystem benefits provided (e.g. carbon sequestration, rainwater runoff reduction, pollution removal) (monitoring metric used for trending purposes only)	Update and report trend to public every five years

York Regional Forest

Customer Levels of Service	Asset Categories	Technical Levels of Service: Performance Metric	Technical Levels of Service: Proposed Service Level Target
Acquire, restore, maintain and preserve natural spaces to strengthen ecological integrity, adapt and lessen climate change contributing to healthy communities	York Regional Forest	Area of York Regional Forest in hectares	3,060 ha by 2051
		Percentage of conformance of the York Regional Forest to Forest Stewardship Council certification as audited	88%
	Sensitive habitat	Percentage of sensitive habitat protected in the York Regional Forest	25%
	Biological assets	Estimated annual value of ecosystem benefits provided from the York Regional Forest (carbon sequestration, rainwater runoff reduction, pollution removal) (monitoring metric used for trending purposes only)	Update and report trend to public every five years
	Forested compartments	Percentage of York Regional Forest regenerating to acceptable levels (reported every 10 years)	95%
	Trails	Percentage of tracts in the York Regional Forest with the total length of trails identified in the trail management strategy	100%
	Parking lots	Percentage of York Regional Forest target parking capacity, compared to that identified in the Visitor Experience Plan	100%
	Accessible trails	Metres of accessible trails added to the York Regional Forest each year (on average)	500 metres

Lifecycle activities to achieve proposed levels of service

The Region is planning to improve service levels by:

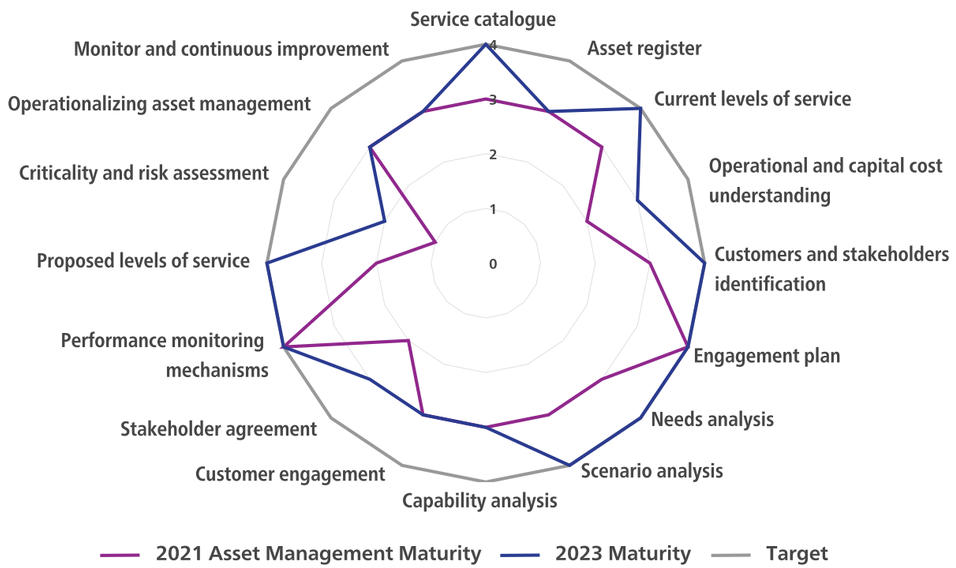
- Adding more civil infrastructure, such as accessible trails
- Securing more land for the York Regional Forest
- Planting more trees along Regional roads

No new lifecycle activities will be needed to meet the proposed levels of service, although existing activities may need to increase in quantity or frequency.

12.6 Service area asset management maturity

There are 16 categories labeled in the circle graph, each scored on maturity. Scores range from 0, the lowest maturity, at the centre of the circle, to 4, the highest, at the perimeter.

Figure 41: Asset management maturity graph

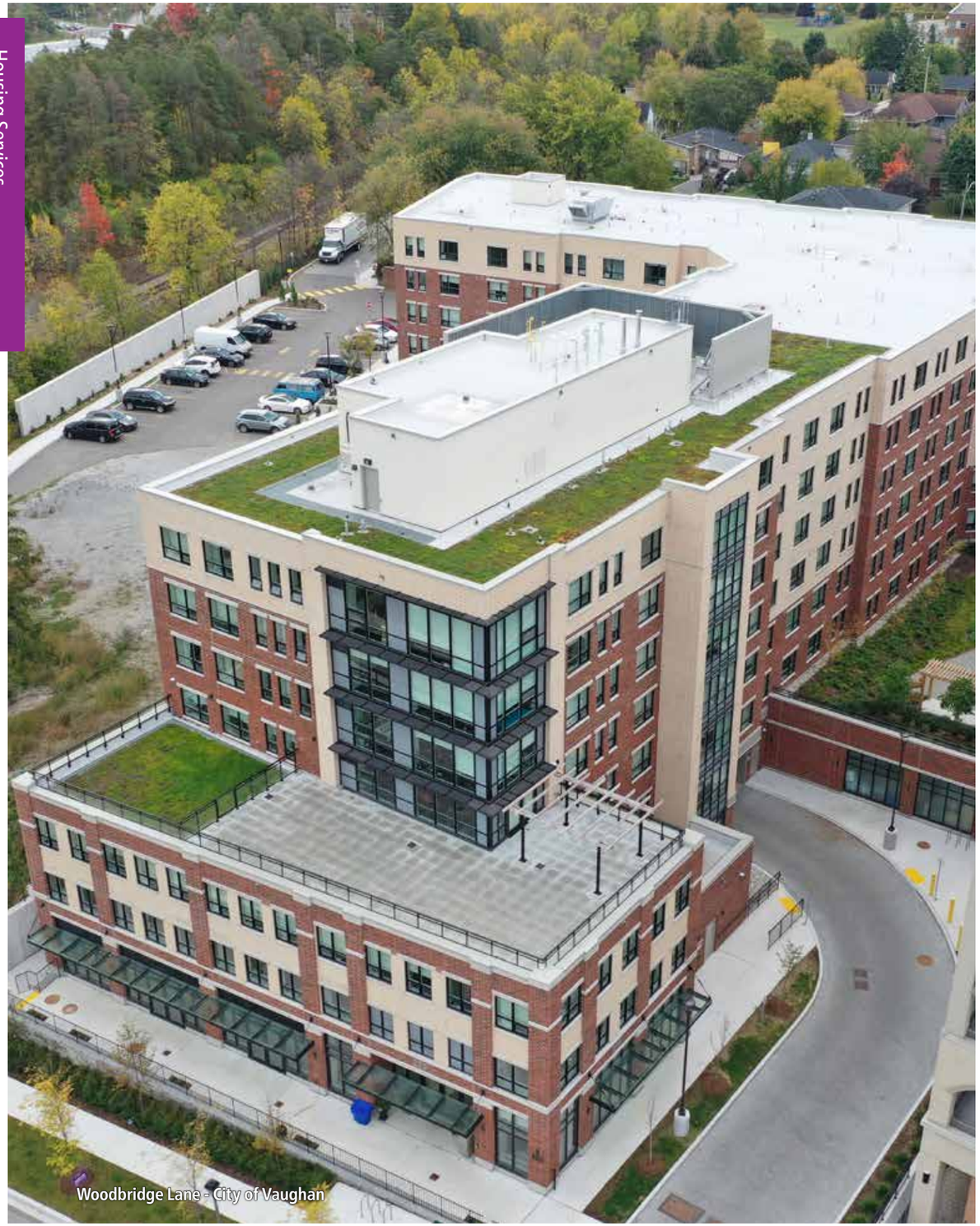


12.7 Monitoring and continuous improvement

Area and Action	Target completion year	Priority Area: Engage more fully with customers	Embed risk management/build response readiness	Use the best possible evidence in making decisions	Standardize processes	Build asset management skills and competence
Improving data accuracy and consistency – Include additional data within the asset inventory (such as creating a digital inventory and condition assessments for irrigation systems).	2026			•	•	
Better utilize risk to inform capital planning and asset management decisions – Establish standardized processes for tracking and reporting risks, ensure the risks are considered in decision making and funds are available to address risks as they occur.	2026		•			
Improving cost data – Adopt activity-based costing, maintain a robust set of unit replacement costs and separate maintenance and operating costs.	2026			•	•	

Innovation Story - "Increasing the green"

After adding 142 hectares (about 350 acres) to the York Regional Forest by securing a property near Queensville Sideroad and McCowan Road in the Town of East Gwillimbury, the Region turned to residents and other potential visitors for their input on how the new land should be managed.
Consultation took place through a virtual information session and interactive map. It focused on the plan's most important features for visitors, including ongoing restoration by planting trees and shrubs, design and location of trails with an expected total length of 6.7 kilometres, parking lots and making amenities accessible. The Region has incorporated feedback into its management plan for the new property.



Woodbridge Lane - City of Vaughan

Housing Services

Replacement cost:
$1,186.0 M

Performance grade:
B

Condition (fair or better)
97%

Asset portfolio:

- Five emergency and transitional housing facilities
- Seven townhouse complexes
- 11 low-rise housing apartment buildings
- 20 mid- or high-rise housing apartment buildings

Changes in asset portfolio:

- Passage House entered service in Q4 of 2022. The development is an 18 unit men's emergency and transitional housing residence located in the Town of East Gwillimbury.

Future outlook:

Upcoming projects planned to enhance the housing stock include 265 seniors' apartment units in the City of Markham and 8 units of youth transitional housing (2023 occupancy), 97 mixed apartment units in the Town of Whitchurch-Stouffville (anticipated 2024), Men's Emergency and Transitional Housing in the Town of Aurora (pending municipal approval), and 150 apartment units at the Box Grove site (anticipated 2025).

13.1 State of the infrastructure

York Region funds approximately 7,000 units, of which 2,757 residential units are owned and managed by Housing York Inc. (HYI). Housing Services owns an additional 200 emergency and transitional housing beds.

Replacement cost summary:

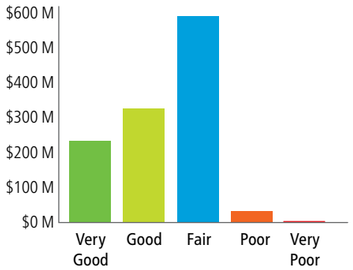
2021 Replacement cost	$1,223.0 M
Changes:	($37.0) M
New and upgraded assets	$4.5 M
Asset evaluation improvements and inflation	($41.5) M*
Decommissioned assets	$0
2022 Replacement cost	$1,186.0 M

Performance grade:

Criteria	Grade	Trend
Reliability	B	→
Capacity	B	→
Condition	C	↑

** Housing Services completed a valuation study as part of the 2023 CHS Asset Management Plan update. Findings of the valuation study indicated that some of the asset costs had been over indexed during the last 5 years and have since been adjusted.*

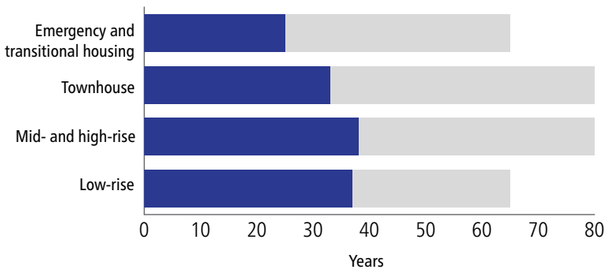
Condition ($M)



Housing Services has allocated approximately $12 M for the next five years for HYI capital rehabilitation. $3 M has been allocated to address backlog needs as a result of a pause during COVID-19.

The average asset has reached 45% of its useful life.

Average age and useful life expectancy (years)



13.2 Strategy

The Housing York Inc. Strategic Plan is the main driver of Housing Services' strategic approach to decision making. The plan includes three priorities to advance HYI's vision of leading the way in providing affordable housing options, including:

- Expanding the housing portfolio
- Building inclusive communities and supporting successful tenancies
- Being financially sustainable in the long term.

Housing Services develops, monitors and reports on levels of service that are in alignment with strategic priorities and focus on stakeholder and resident needs. The levels of service provide a link to asset capacity and use, function, quality and reliability, and financial sustainability.

Housing Services strives to provide a healthy supply of affordable rental housing in line with the Region's growing population. Presently, the true overall need for affordable housing within the Region is projected to be between 16,000 and 18,000 residents. To meet this need Housing Services will use a combination of strategies, including developing additional HYI owned assets, and working closely with and supporting other housing providers. HYI plans to build 1,502 new units over the next 10 years (funding dependent).

Housing Services uses a risk framework, measuring the probability and consequences of asset failure, to identify critical assets and determine the lifecycle activities required to manage those risks. Housing Services is currently undertaking a critical asset review initiative, using weighted criteria for analysis and to rank asset criticality. Once complete, Housing Services will conduct Failure Modes, Effects and Criticality Analysis (FMECA) for the most critical assets to evaluate risk treatment and lifecycle activities.

Meeting asset management policy objectives

Housing Services is aligned to the Corporate Asset Management Policy objectives through activities, including:

- Executing a financially sustainable lifecycle management program to gain full value from assets
- Maintaining defined levels of service that are balanced against cost and risk considerations
- Using evidence-based decision-making practices in the operations, maintenance, and capital renewal of housing facilities
- Using industry accepted asset management practices that align with established standards and legislation

Alignment with corporate strategic goals

As the Housing Service Manager, York Region funds more than 6,700 housing units, 2,757 of which are owned and managed by HYI. The balance belong to 42 non-profit and co-operative housing providers. As the Service Manager for homelessness prevention and housing stability, the Region is responsible for administering funding for four emergency and transitional housing facilities, totaling 181 beds/units. Social housing units including low-, mid-, and high-rise apartment buildings, townhouse complexes and emergency housing facilities. This network contributes to York Region's leadership in affordable housing, building and maintaining inclusive communities that people can proudly call home.

The Region's Housing Services area directly supports all four strategic plan priority areas: Economic Vitality, Healthy Communities, Sustainable Environment and Good Governance and several of the strategic plan objectives including:

Areas of Focus	Objective	Alignment with Housing Services
ECONOMIC VITALITY	**Attract and retain businesses, develop employment opportunities, and grow a skilled workforce**	• A healthy supply of affordable and rental housing is needed in the Region for individuals and families to have housing options for all ages and stages of their lives
HEALTHY COMMUNITIES	**Support safe communities**	• Stable housing supports safe communities and is a priority for HYI and the Region
	Protect and promote residents' well-being	• HYI considers individual needs, providing the right services at the right time, and building inclusive communities so all residents feel safe, welcome, and at home
SUSTAINABLE ENVIRONMENT	**Deliver and promote environmentally sustainable services**	• Development and implementation of the HYI Energy Utilities Management Plan and associated projects target reducing energy usage and greenhouse gas emissions
GOOD GOVERNMENT	**Deliver fiscally sustainable services**	• HYI's long-term financial sustainability is critical for ensuring individuals, seniors, and families have access to high-quality affordable housing now and in the future. Completion of asset management plans, including this plan, demonstrates financially sustainable lifecycle management to gain full value from assets

13.3 Financial outlook

The graphs below summarize the projected capital and operating budgets, along with the forecasted funding necessary to achieve both current and proposed levels of service. The financial forecast does not include unfunded CHS priority capital projects aimed at expanding the housing portfolio. These projects can only progress with support from the federal and provincial governments, and as of now, funding has not been entirely committed.

The capital repairs and renewal program includes necessary asset rehabilitation and replacement activities. The repair and renewal program for HYI assets is self-funded through HYI held reserves which are supported primarily by rental revenues. Examples include replacing windows and roofs, replacing mechanical and electrical equipment and general site improvements.

Figure 42: Capital budget vs. full capital needs (existing assets)

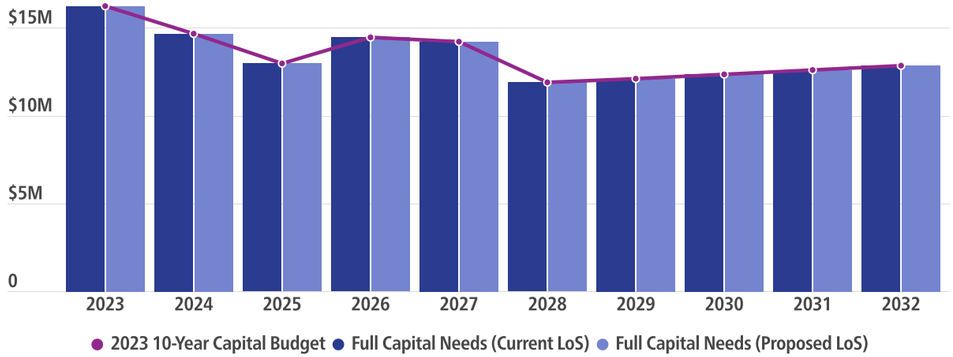
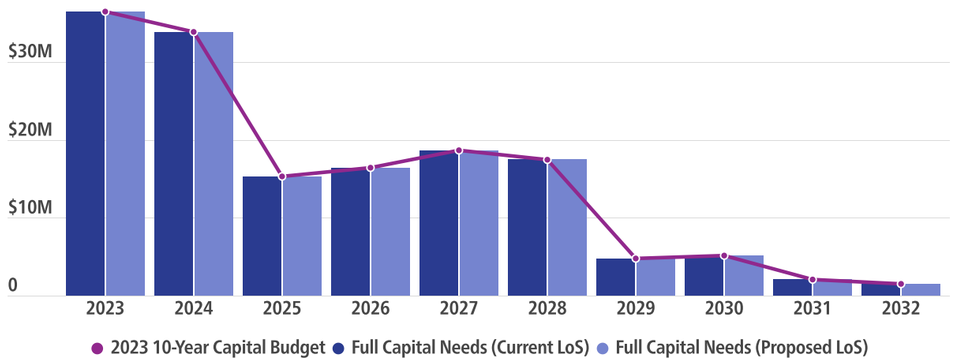
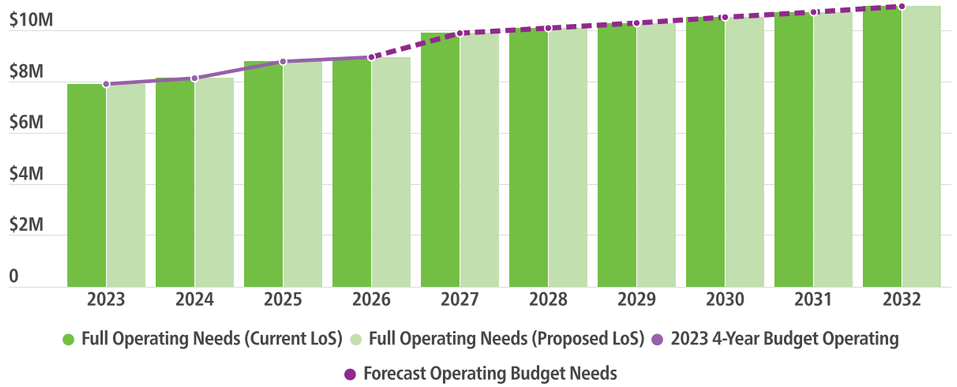


Figure 43: Capital budget vs. full capital needs (future assets)



Operations costs include conducting preventative maintenance, regular inspections, providing contracted services and completing minor repairs as needed.

Figure 44: Operating budget vs. full operating needs (existing and future assets)



13.4 Current levels of service

Current customer levels of service

The current customer levels of service statements are:

- Provide a healthy supply of affordable rental housing options for residents in all ages and stages of life for both individuals and families
- Strive for successful tenancies and enhance resident well-being by treating all residents as individuals and providing the right services at the right time
- Build inclusive communities so all residents feel safe and at home
- Maintain assets in a good state of repair, ensuring they are well-managed for safety, cleanliness, and comfort to meet the standards and expectations of the community

Current technical levels of service

The table below provides measurable outcomes, as numerical values, for various services:

		Technical Levels of Service		
Customer Levels of Service	**Asset Categories**	**Performance Metric**	**Current Service Level Target**	**Current Performance**
Provide a healthy supply of affordable rental housing options for residents in all ages and stages of life for both individuals and families	Low-, mid-, high-rise apartments, town houses, emergency and transitional housing	Capacity and use: Number of affordable housing units owned by Housing York Inc. per 1,000 residents by local municipality (reported here as overall Region-wide)	2.47	2.35
Strive for successful occupancy and enhance resident well-being by treating all residents as individuals and providing the right services at the right time. Build inclusive communities, so all residents feel safe and at home.	Site and development features, building interior common spaces, residential units, elevators and lifts	Functional: Percentage of properties where accessibility audits have been completed	100%	12%
	All assets	Functional: Percentage of residents that are overall satisfied with Housing York Inc.	Maintain 80% overall satisfaction (next survey planned for 2025)	80%
Maintain assets in a good state of repair, ensuring they are well-managed for safety, cleanliness, and comfort to meet the standards and expectations of the community.	Exterior enclosure and roofing systems, conveying systems, plumbing systems, HVAC systems, fire protection systems, electrical systems, site features	Reliability and quality: Facility Condition Index reported as a percentage, where the renewal needs of a building are divided by the current replacement cost of the building	< 5% (good condition or better)	5.4% (fair condition)
		Reliability and quality: Percentage of building components that meet or exceed 90% of the expected useful life (by component replacement cost)	> 90%	93%
	All assets	Financially sustainable: Average annual portfolio reinvestment for the next 10 years, as a percentage of the current replacement cost of the portfolio	1.7%–2.5%	1%

Risks and treatment options

- There is a risk to the capacity and use levels of service as the development and growth plan is currently unfunded. Housing Services is working with stakeholders to assess impacts from legislative changes and determine an appropriate growth plan.
- There is a risk that inflation will affect the construction industry, constraining what renewal activities can be undertaken with the available funding. Increased construction costs will limit the amount of renewal work that can be completed within the forecasted annual budget. Housing Services will work with stakeholders to ensure reserves are adequate and continue to monitor levels of service and asset performance.

Lifecycle activities to maintain current levels of service

The activities below are based on lifecycle management options contained in Table Z of Section 4.1. This list is not exhaustive, as many other measures, such as basic inspections and maintenance, take place every day. They help staff adjust operations and make minor repairs as needed.

Asset Type	Year	Inspections	Capital (Renewal)	Capital (Expansion)
Asset Class: Low-, Mid-, and High-Rise Emergency Housing	2023	• Building condition assessments • Cooling systems (chillers) • Dryer venting • Electrical (electrical safety authority) • Energy audits • Fire alarm and monitoring systems • Fire hydrants • Heating systems (boilers) • Kitchen equipment • Playground equipment • Plumbing systems • Roof anchor(s) • Sprinkler systems • Ventilation systems (rooftop units, make-up air units) • Vertical transportation (elevators, lifts) • Water treatment systems	• Building envelope: roofs, windows, doors, parking garage, balconies • Building interior: flooring, kitchens, bathrooms, appliances • HVAC: heating boilers, domestic water, ventilation, unit heating • Life safety systems: fire alarm, elevator modernization • Site: walkways, parking lots, landscaping	Unionville Commons (265 units) The Bridge (16 units)
	2024			Stouffville Community Housing (97 units)
	2025			Aurora Men's Emergency and Transitional Housing (68 units) Box Grove Community Housing (150 units, planning only)
	2026			Bayview Parkway Redevelopment (250 units, planning only)
	2027			Planning only: Aurora Development (150 units) King Township (200 units) Newmarket (90 units)
	2028			Planning only: East Gwillimbury (175 units) Georgina (90 units)
	2029			
	2030			Planning only: East Gwillimbury (175 units) Georgina (90 units)
	2031			Markham (250 units) Richmond Hill (125 units) Whitchurch-Stouffville (200 units)
	2032			

**Capital expansion is based on the HYI Board-approved Community Housing Master Development Plan, which is contingent on federal funding, provincial funding and Council approval.*

Asset Type	Year	Inspections	Capital (Renewal)	Capital (Expansion)
Asset Class: Town Houses	2023	• Building condition assessments • Cooling systems (air conditioners) • Dryer venting • Electrical (ESA panel inspections) • Energy audits • Fire alarm and CO detectors • Heating systems (furnaces) • Kitchen equipment repairs and replacement • Playground equipment • Plumbing systems • Pothole, walkway and curb repairs • Sanitary sewage system maintenance and inspections	• Building envelope: roofs, windows, doors, garage doors, foundation waterproofing • Building interior: flooring, kitchens, bathrooms, appliances • Mechanical/electrical: furnace replacements, domestic water heaters, led upgrades, smart thermostats • Site: walkways, roadways, driveways, landscaping/drainage, fences, stairs and balconies	Unionville Commons (265 units) The Bridge (16 units)
	2024			Stouffville Community Housing (97 units)
	2025			Aurora Men's Emergency and Transitional Housing (68 units) Box Grove Community Housing (150 units, planning only)
	2026			Bayview Parkway Redevelopment (250 units, planning only)
	2027			Planning only: Aurora Development (150 units) King Township (200 units) Newmarket (90 units)
	2028			Planning only: East Gwillimbury (175 units) Georgina (90 units)
	2029			
	2030			Planning only: East Gwillimbury (175 units) Georgina (90 units)
	2031			Markham (250 units) Richmond Hill (125 units) Whitchurch-Stouffville (200 units)
	2032			

13.5 Proposed levels of service

Proposed customer levels of service

There are no changes to the current customer levels of service.

Proposed technical levels of service

The proposed technical levels of service seek to improve the supply of rental housing units, the accessibility of the physical environments and the condition of buildings.

The proposed levels of service seek to expand availability of affordable housing Region-wide and provide an equitable distribution of rental options in the Region's communities. The number of affordable housing units owned by HYI per 1,000 residents will increase from 2.35 to 2.94 by 2032.

Housing Services strives to enhance resident well-being. The proposed levels of service seeks to improve accessibility for residents. The percentage of properties where accessibility audits have been completed will increase from 12% to 100%. Results from these audits will be used to inform an HYI Accessibility Master Plan, which will determine how much investment is needed to improve accessibility.

Housing Services assets are kept in a good state of repair and are well managed for safety, cleanliness, and comfort. The proposed levels of service seeks to maintain assets in good condition (FCI less than 5%), provide reliable services, and maintain resident satisfaction.

Options for proposed levels of service

Housing Services has considered two options for delivering the proposed levels of service, focusing specifically on asset renewal needs. Presently, the estimated annual average capital renewal need is $17 million over a 10-year period (2023–2032, inclusive). Funding the full need is an option; however, there are risks that the service area won't have the funds to do the work, pay for applicable staffing resources, maintain healthy HYI reserves, and so on.

An alternative option is to maintain a Facility Condition Index (FCI) below 5% (good condition) which would require funding of approximately $11.8 million annually. This is a savings of $5.2 million annually compared to the unconstrained option. There is a risk with this option that assets will be kept in service beyond their expected service life, and therefore require greater maintenance. Capital funding under the constrained model would be prioritized to critical assets, equipment and projects that are prioritized through the annual capital planning process.

Proposed technical levels of service

		Technical Levels of Service	
Customer Levels of Service	**Asset Categories**	**Performance Metric**	**Proposed Service Level Target**
Provide a healthy supply of affordable rental housing options for residents in all ages and stages of life for both individuals and families	Low-, mid-, high-rise apartments, town houses, emergency and transitional housing	Capacity and use: Number of affordable housing units owned by Housing York Inc. per 1,000 residents by local municipality (reported here as overall Region-wide)	2027: 2.83 2032: 2.94
Strive for successful occupancy and enhance resident well-being by treating all residents as individuals and providing the right services at the right time. Build inclusive communities, so all residents feel safe and at home	Site and development features, building interior common spaces, residential units, elevators and lifts	Functional: Percentage of properties where accessibility audits have been completed	100%
	All assets	Functional: Percentage of residents that are overall satisfied with Housing York Inc.	Maintain 80% overall satisfaction

Customer Levels of Service	Asset Categories	Technical Levels of Service: Performance Metric	Technical Levels of Service: Proposed Service Level Target
Maintain assets in a good state of repair, ensuring they are well-managed for safety, cleanliness, and comfort to meet the standards and expectations of the community	Exterior enclosure and roofing systems, conveying systems, plumbing systems, HVAC systems, fire protection systems, electrical systems, site features	Reliability and quality: Facility Condition Index reported as a percentage, where the renewal needs of a building are divided by the current replacement cost of the building	<5% (good condition or better)
		Reliability and quality: Percentage of building components that meet or exceed 90% of the expected useful life (by component replacement cost)	>90%
	All assets	Financially sustainable: Average annual portfolio reinvestment for the next 10 years, as a percentage of the current replacement cost of the portfolio	1.7%–2.5%

[1] Accessibility audits are underway, which will inform a HYI Accessibility Master Plan to be completed in 2024

Lifecycle activities to achieve proposed levels of service

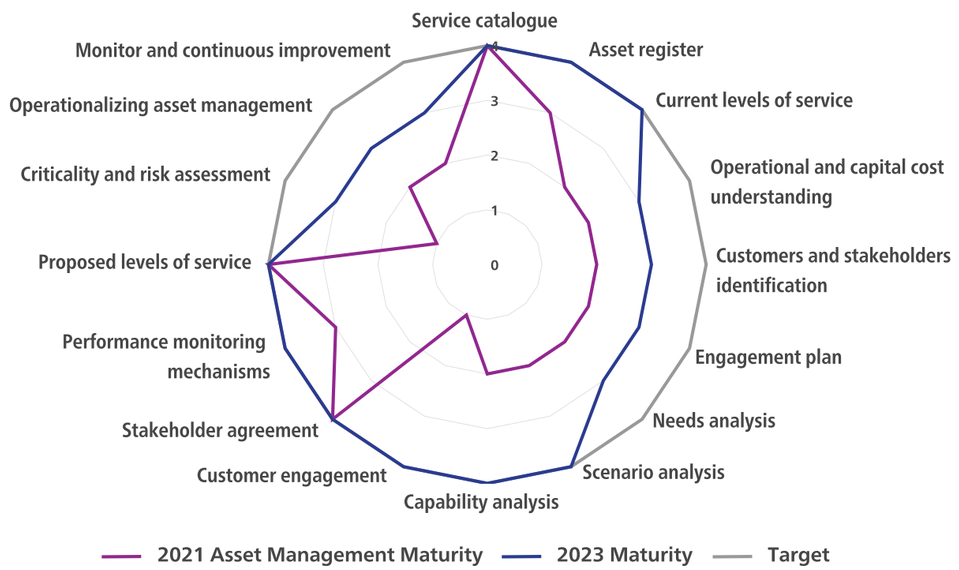
Asset Type	Year	Inspections	Capital (Renewal)	Capital (Expansion)
Asset Class: Low-, Mid-, and High-Rise Emergency Housing	2023	• Building condition assessments • Cooling systems (chillers) • Dryer venting • Electrical (Electrical Safety Authority), (generators) • Energy audits • Fire alarm and monitoring systems • Fire hydrants • Heating systems (boilers) • Kitchen equipment • Playground equipment • Plumbing systems • Roof anchor(s) • Sprinkler systems • Ventilation systems (rooftop units, make-up air units) • Vertical transportation (elevators, lifts)	• Building Envelope: roofs, windows, doors, parking garage, balconies • Building Interior: flooring, kitchens, bathrooms, appliances • HVAC: heating boilers, domestic water, ventilation, unit heating • Life Safety Systems: fire alarm, elevator modernization • Site: walkways, parking lots, landscaping	Unionville Commons (265 units) The Bridge (16 units)
	2024			Stouffville Community Housing (97 units)
	2025			Aurora Men's Emergency and Transitional Housing (68 units) Box Grove Community Housing (150 units, planning only)
	2026			Bayview Parkway Redevelopment (250 units, planning only)
	2027			Planning only: Aurora Development (150 units) King Township (200 units) Newmarket (90 units)
	2028			
	2029			
	2030			Planning only: East Gwillimbury (175 units) Georgina (90 units)
	2031			Markham (250 units) Richmond Hill (125 units) Whitchurch-Stouffville (200 units)
	2032			

**Capital expansion is based on the HYI Board-approved Community Housing Master Development Plan, which is contingent on federal funding, provincial funding, and Council approval.*

13.6 Service area asset management maturity

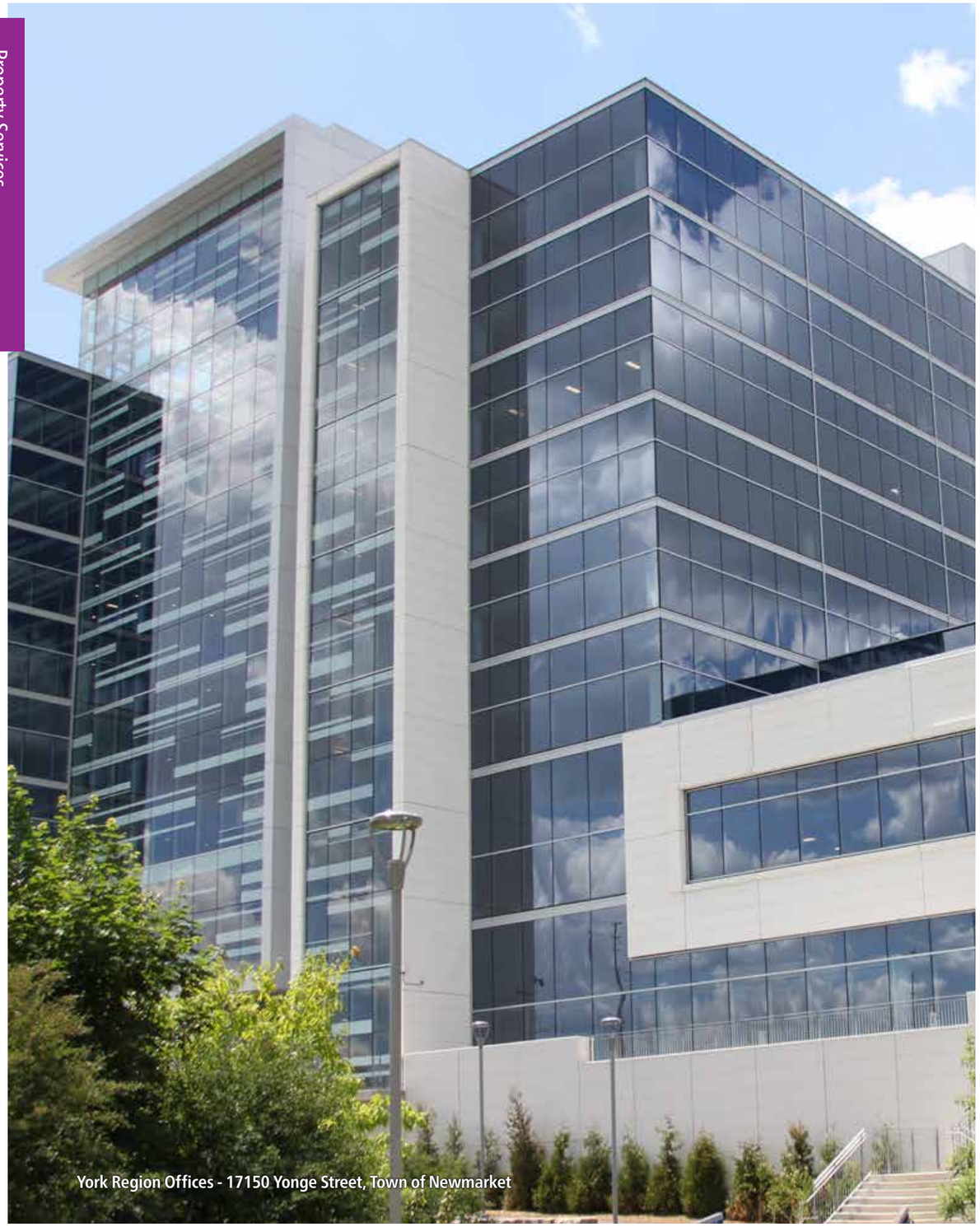
There are 16 categories labeled in the circle graph, each scored on maturity. Scores range from 0, the lowest maturity, at the centre of the circle, to 4, the highest, at the perimeter.

Figure 45: Asset management maturity graph



13.7 Monitoring and continuous improvement

		Priority Area				
Area and Action	Target completion year	Engage more fully with customers	Embed risk management/ build response readiness	Use the best possible evidence in making decisions	Standardize processes	Build asset management skills and competence
Identify mission-critical assets and conduct Failure Modes, Effects and Criticality Analysis (FMECA)	2024		•			
Develop Energy Utility Management Plan and Climate Change Adaption Plans for various facilities	2025			•		
Develop Accessibility Implementation Master Plan	2025	•				
Integrate Asset Management and Maintenance Management software applications	2026				•	



York Region Offices - 17150 Yonge Street, Town of Newmarket

Property Services

Replacement cost:
$1,025.3 M

Performance grade:
A

Condition (fair or better)
100%

Asset portfolio:

- Two long-term care homes
- Four mixed-use facilities
- Four administrative office facilities
- Five road maintenance yards
- 19 paramedic response stations (owned)

Changes in asset portfolio:

No changes in the Property Services portfolio in 2022.

Future outlook:

Property Services will conduct renovations, rehabilitations, and Building Condition Assessments (BCA) to maintain asset condition and reliability. This includes ongoing renovations at York Region's Administrative Centre and other facilities, and implementation of a multi-year BCA program (2023-2027). Three new paramedic response stations will be added in 2023 and 2024.

14.1 State of the infrastructure

York Region's Property Services provides property-related solutions to the organization and communities in an efficient and cost-effective manner. The department acquires, constructs, rehabilitates and maintains building and facility assets that support Regional Council and employees in delivering various Regional services.

Replacement cost summary:

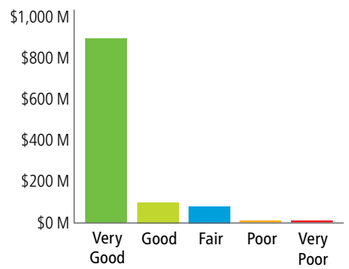
2021 Replacement cost		$890 M*
Changes:		$135.3 M
New and upgraded assets	$0 M	
Asset evaluation improvements and inflation	$135.3M	
Decommissioned assets	$0 M	
2022 Replacement cost		$1,025.3 M

**Correction to a $13.6 M calculation error in the 2021 data reflected in this number*
***Capacity grading under review as changes to workplace strategy evolves.*

Performance grade:

Criteria	Grade	Trend
Reliability	A	→
Capacity	N/A**	N/A
Condition	B	→

Condition ($M)

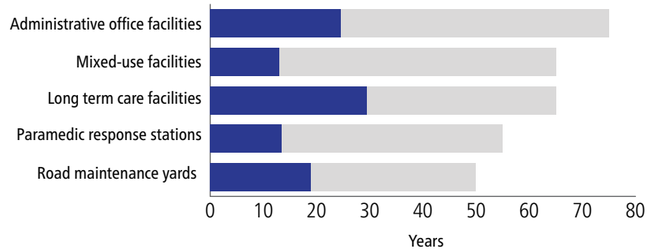


*Correction to a $13.6 M calculation error in the 2021 data reflected in this number.

**Capacity grading under review as changes to workplace strategy evolves.

The average asset has reached 34% of its useful life.

Average age and useful life expectancy (years)



14.2 Strategy

Property Services' strategic approach to decision-making is rooted in maintaining minimum performance requirements for the condition, reliability, capacity, and financial sustainability of the Region's facilities. Property Services monitors, inspects and assesses performance throughout an asset's lifecycle to ensure it continues to function and meets stakeholder expectations. Consistent with corporate direction, Property Services ensures resident, business and municipal government levels of service requirements are consistently met.

Property Services plans for growth and corporate facility expansion by reviewing service levels with internal and external partners. Property Services also relies on service area master plans while developing and implementing service level expansionary plans.

Regular preventative maintenance, asset inspections, and condition-based assessments are used to develop operating and maintenance plans, and capital programs. Where required by legislation, third-party specialists conduct maintenance and inspection activities to ensure service levels remain uninterrupted. Additionally, safety and reliability are maintained by monitoring a variety of systems platforms, such as Building Automation Systems (HVAC), and security and CCTV systems. The integrity of such systems, including failures, is tracked in the Archibus work order management software. Interventions and asset rehabilitations are prioritized where higher failure rates and safety risks are determined and for critical assets.

Meeting asset management policy objectives

Property Services is aligned with Corporate Asset Management Policy objectives through activities, such as:

- Defining levels of service that are balanced against cost and risk
- Demonstrating financially sustainable lifecycle management using asset performance and assessment data to maximize asset value and service life
- Aligning asset management planning and operational plans using in-service asset data
- Advancing asset management practices that align with facility management industry standards and legislation

Alignment with corporate strategic goals

Property Services is aligned with the corporate strategic goals and objectives detailed in the Strategic Plan:

- Ensure reliable, effective and efficient delivery of services through review and monitoring of levels of service
- Manage assets for current and future generations through annual tracking, monitoring and reporting asset conditions

The Region's Property Services area directly supports all four strategic plan priority areas: Economic Vitality, Healthy Communities, Sustainable Environment and Good Governance and several of the strategic plan objectives including:

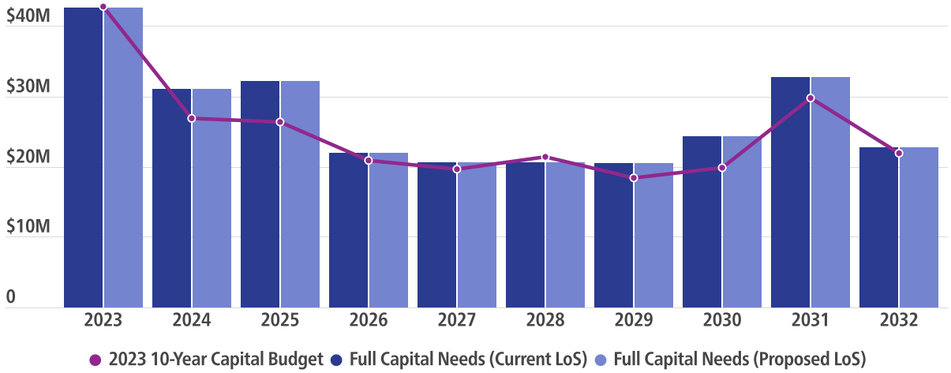
Areas of Focus	Objective	Alignment with Property Services
ECONOMIC VITALITY	**Attract and retain businesses, develop employment opportunities, and grow a skilled workforce**	• Capital planning and rehabilitation programs maintain safe and functioning facilities that encourage economic activity
HEALTHY COMMUNITIES	**Support safe communities**	• Prioritize rehabilitation projects that focus on critical assets to ensure the greatest safety needs are met first
	Protect and promote residents' well-being	• Ensuring buildings and facilities, and service levels, are maintained in fair or better condition for current and future generations
SUSTAINABLE ENVIRONMENT	**Deliver and promote environmentally sustainable services**	• Promote energy efficiency strategies that align with the Energy Conservation and Demand Management Plan, and the Region's long-term greenhouse gas reduction policies and objectives
GOOD GOVERNMENT	**Deliver fiscally sustainable services**	• Completion of asset management plans, including this plan, demonstrates financially sustainable lifecycle management to gain full value from assets

14.3 Financial outlook

The ten-year financial highlights include:

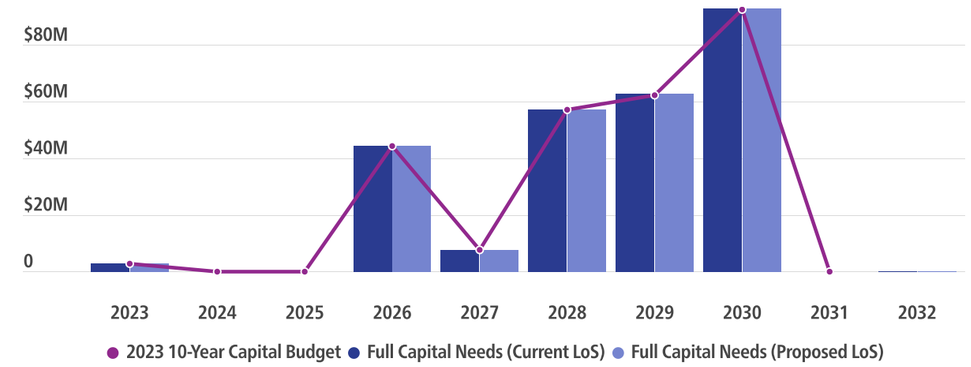
- The ten-year financing plan, as shown below: a summary of the forecasted capital renewal, rehabilitation, operating and maintenance budgets for the Property Services portfolio of facilities
- The capital renewal program, with the required asset rehabilitation and replacement activities for maintaining assets in a state of good repair. Examples include window replacements and parking lot resurfacing at the 17250 Yonge Street headquarters

Figure 46: Capital budget vs. full capital needs (existing assets)



The capital upgrade program includes the expected required funds for renovating and upgrading existing facilities to respond to growth. An example is space intensification projects.

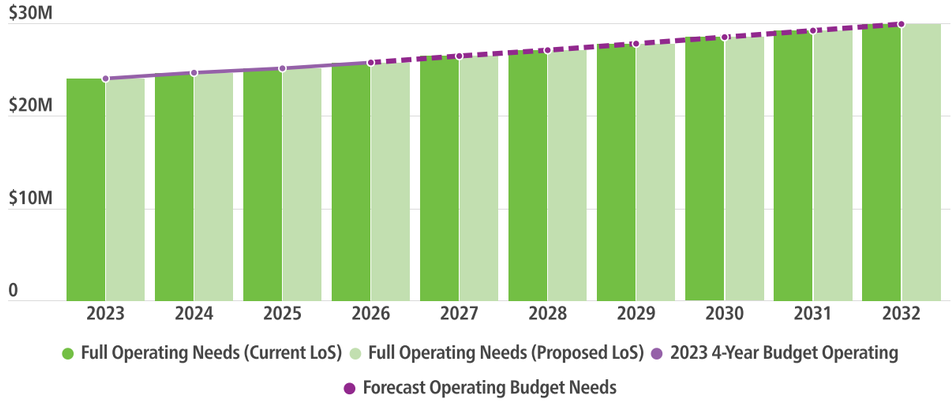
Figure 47: Capital budget vs. full capital needs (future assets)



The maintenance program includes regular inspections, preventative maintenance, required repairs and corrective actions.

The operations program includes utilities, security services, janitorial and grounds-keeping services, special events, and A/V services that support Council's needs.

Figure 48: Operating budget vs. full operating needs (existing and future assets)



14.4 Current levels of service

Current customer levels of service

The current customer levels of service statements are:

- Maintain facilities that promote the delivery of Regional services endorsed by Council and Regional staff
- Manage facilities for current and future generations
- Provide safe, accessible and reliable buildings and facilities for public access to Regional services
- Support Regional programs and their objectives through effective property management related solutions

Current technical levels of service

The overall condition of buildings and facilities is represented by Facility Condition Index (FCI), which is calculated as a ratio between the total cost of deferred maintenance plus two years of projected capital needs to the current replacement cost of the facility. Between 1% and 4.9% represents a good rating and is used as a standard for planning regular maintenance and rehabilitation projects. Required maintenance and rehabilitation projects are prioritized to ensure risk mitigation strategies are met. A building's critical assets include building envelope and roofing system, conveying systems, plumbing systems, HVAC systems, fire protection systems, electrical systems and site features.

		Technical Levels of Service		
Customer Levels of Service	**Asset Categories**	**Performance Metric**	**Current Service Level Target**	**Current Performance**
Maintain facilities promoting the delivery of Regional services endorsed by Regional Council and staff **Manage facilities for current and future generations. Provide safe, accessible and reliable buildings and facilities for public access to Regional services** **Support Regional programs and their objectives through effective Property management related solutions**	Administrative offices	Facility Condition Index (FCI)	<5%	0.28%
	Mixed-use facilities			2.8%
	Long-term care homes			3.3%
	Paramedic response stations			1.06%
	Road maintenance yards			2.5%

Risks and treatment options

In general terms, with an average age of 20 years, Property Services' asset base is relatively new. Regular inspections, preventative maintenance, and capital planning programs ensure the longest useful life of buildings and facilities, along with their systems. Maintenance and frontline staff support this process by monitoring and reporting deficiencies through Archibus facility management software platform. Property Services' operations team monitors, prioritizes and tracks service requests to ensure levels of service are maintained and future rehabilitation projects are scheduled and executed.

Lifecycle activities to maintain current levels of services

The activities below are based on lifecycle management options contained in Table 5 of Section 5.2. This list is not exhaustive, as many other measures, such as basic inspections and maintenance, take place every day and help staff adjust operations and make minor repairs as needed. The full operation, maintenance, and capital lifecycle activity plans are stored in the Archibus computerized maintenance management software (CMMS).

Lifecycle activities - administrative office facilities

Asset Type	Year	Inspections	Maintenance	Capital (rehab, replace, expand, upgrade)
Administrative Office Facilities	2023	Regular inspections at various intervals as prescribed by legislation or other regulatory agencies, manufacturers, or industry best practices (e.g., TSSA, ESA, Fire life safety system inspection, etc.)	Critical equipment and building envelope assets are maintained using scheduled preventative procedures, and include tasks such as: • Consumable part replacement • Envelope sealing and repairs • Equipment overhaul • Lubrication • Performance and condition monitoring • Seasonal maintenance	17250 Yonge Street—parking lot replacement
	2024			17250 Yonge Street—HVAC upgrade
	2025			9060 Jane Street—garage ramp heating system
	2026			Multiple facilities interior refreshwes
	2027			9060 Jane Street—HVAC system major overhaul
	2028			17250 Yonge Street—replace water treatment equipment
	2029			9060 Jane Street—BAS system upgrade and heat pumps
	2030			16389 Highway 48—roofing system replacement
	2031			17250 Yonge Street—sump pump replacement
	2032			Multiple facility interior refresh
	2033			9060 Jane Street—lighting control system upgrade

Lifecycle activities - mixed-use facilities

Asset Type	Year	Inspections	Maintenance	Capital (rehab, replace, expand, upgrade)
Mixed-Use Facilities	2023	Regular inspections at various intervals as prescribed by legislation or other regulatory agencies, manufacturers, or industry best practices (e.g., TSSA, ESA, Fire life safety system inspection, etc.)	Critical equipment and building envelope assets are maintained using scheduled preventative procedures, and include tasks such as: • Consumable part replacement • Envelope sealing and repairs • Equipment overhaul • Lubrication • Seasonal maintenance • Performance and condition monitoring	145 Harry Walker Parkway—window replacement
	2024			380 Bayview Parkway—rooftop units and exhaust fans
	2025			90 Bales Drive—major rehabilitations (boilers and roof)
	2026			80 Bales Drive—interior refresh
	2027			80 Bales Drive—roofing system replacement
	2028			380 Bayview Parkway—major HVAC rehabilitations (MUA units and boilers)
	2029			90 Bales Drive—parking lot resurfacing
	2030			145 Harry Walker Parkway—electrical switch gear upgrade
	2031			80 Bales Drive—emergency generator upgrade
	2032			145 Harry Walker Parkway—fire alarm system renewal
	2033			80 Bales Drive—major HVAC rehabilitations (fan coils/ exhaust fans)

Lifecycle activities - long-term care homes

Asset Type	Year	Inspections	Maintenance	Capital (rehab, replace, expand, upgrade)
Long-Term Care Homes Year	2023	Regular inspections at various intervals as prescribed by legislation or other regulatory agencies, manufacturers, or industry best practices	Critical equipment and building envelope assets are maintained using scheduled preventative procedures, and include tasks such as: • Consumable part replacement • Envelope sealing and repairs • Equipment overhaul • Lubrication • Performance and condition monitoring • Seasonal maintenance	10424 Keele Street—roof top unit replacement
	2024			194 Eagle Street—fire alarm system upgrade
	2025			194 Eagle Street—HVAC rehabilitation, Phase I (RTUs)
	2026			194 Eagle Street— HVAC rehabilitation, Phase II (exhaust fans)
	2027			194 Eagle Street—HVAC rehabilitation, Phase III (terminal units/unit heaters)
	2028			10424 Keele Street—security system upgrade (CCTV/ card access)
	2029			10424 Keele Street—security system upgrade (CCTV/ card access)
	2030			194 Eagle Street—window glazing replacement
	2031			10424 Keele Street—elevator modernization
	2032			194 Eagle Street—roofing system replacement
	2033			10424 Keel Street—window replacement
				194 Eagle Street—interior refresh project

Lifecycle activities - paramedic response stations

Asset Type	Year	Inspections	Maintenance	Capital (rehab, replace, expand, upgrade)
Paramedic Response Stations	2023	Regular inspections at various intervals as prescribed by legislation or other regulatory agencies, manufacturers, or industry best practices (e.g., TSSA, ESA, Fire life safety system inspection, etc.)	Critical equipment and building envelope assets are maintained using scheduled preventative procedures, and include tasks such as: • Consumable part replacement • Envelope sealing and repairs • Equipment overhaul • Lubrication • Performance and condition monitoring • Seasonal maintenance	171 Major Mackenzie Drive West—roofing system replacement
	2024			21001 Dalton Road—window and skylight replacement
	2025			171 Major Mackenzie Drive West—overhead door replacement
	2026			111 Racco Parkway—overhead door replacement
	2027			22A Princess Street—overhead garage doors
	2028			9601 Islington Avenue—replace overhead garage doors
	2029			160 Morton Avenue—washroom and shower renovation
	2030			100 Weldon Road—roof replacement
	2031			280 Church Street—overhead door replacement
	2032			10 Riviera Drive—overhead door replacement
	2033			415 Harry Walker Parkway—south roof replacement

Lifecycle activities - road maintenance yards

Asset Type	Year	Inspections	Maintenance	Capital (rehab, replace, expand, upgrade)
Road Maintenance Yards	2023	Regular inspections at various intervals as prescribed by legislation or other regulatory agencies, manufacturers, or industry best practices (e.g., TSSA, ESA, Fire life safety system inspection, etc.)	Critical equipment and building envelope assets are maintained using scheduled preventative procedures, and include tasks such as: • Consumable part replacement • Envelope sealing and repairs • Equipment overhaul • Lubrication • Performance and condition monitoring • Seasonal maintenance.	2850 Rutherford Road—electrical upgrades
	2024			2850 Rutherford Road—TSSA compliance for emergency power generation fuel rank
	2025			16042 Woodbine Avenue—replace roofing system
	2026			1700 Major Mackenzie Drive—replace domestic water heaters
	2027			3525 Baseline Road—replace overhead door systems
	2028			1700 Major Mackenzie Drive—resurface parking and roadways, Phase I
	2029			2850 Rutherford Road—asphalt repaving
	2030			2850 Rutherford Road—replace interior lighting
	2031			2850 Rutherford Road—emergency generator upgrade
	2032			2850 Rutherford Road—replace radiant unit heaters
	2033			1700 Major Mackenzie Drive—resurface parking and roadways, Phase II

14.5 Proposed levels of service

Proposed customer levels of service

There are no changes to the current customer levels of service over the next ten years.

Proposed technical levels of service

There are no changes to the current technical levels of service over the next ten years.

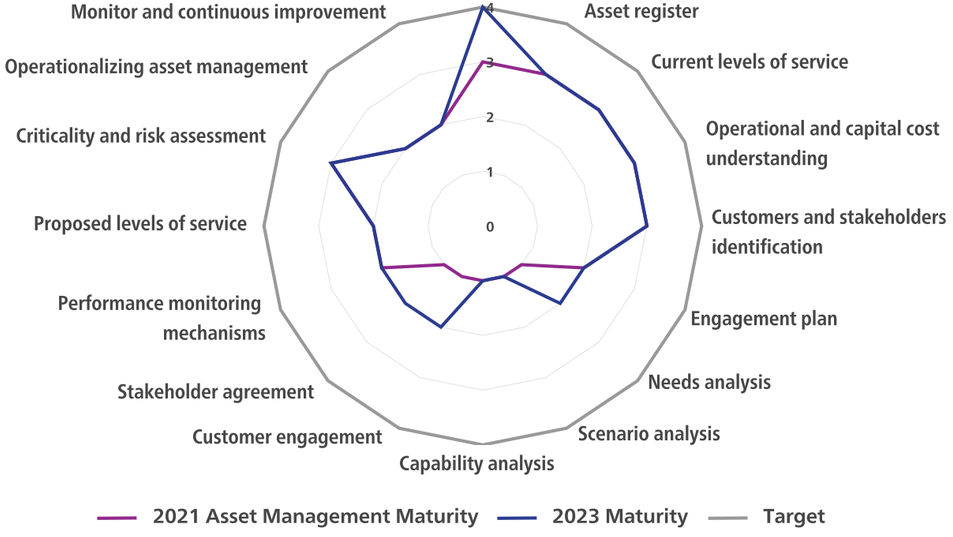
Lifecycle activity options to achieve proposed levels of service

See the lifecycle activities outlined in the Lifecycle Activities to Maintain Current Levels of Service in Section 14.4.

14.6 Service area asset management maturity

There are 16 categories labeled in the circle graph, each scored on maturity. Scores range from 0, the lowest maturity, at the centre of the circle, to 4, the highest, at the perimeter.

Figure 49: Asset management maturity graph



14.7 Monitoring and continuous improvement

		Priority Area				
Area and Action	**Target completion year**	**Engage more fully with customers**	**Embed risk management/ build response readiness**	**Use the best possible evidence in making decisions**	**Standardize processes**	**Build asset management skills and competence**
Develop a clear and standardized, step-by-step framework that ensures consistently transparent asset management practices that promote sound and timely lifecycle planning	2024	•	•	•	•	
Complete Corporate Asset Management training module	2024					•
Develop a stakeholder engagement strategy that advances and cultivates Property Services' asset management program	2025	•	X	•	•	•
Customize the risk assessment tool to accommodate Property Services' mission critical assets, and to develop a critical rehabilitation ranking	2026		•	•	•	
Establish automated preventative maintenance work orders in Archibus for mission critical assets	2026	•	•	•	•	

York Regional Police Vehicle

York Regional Police

Replacement cost:
$460.4 M

Performance grade:
B

Condition (fair or better)
94%

Asset portfolio:
- 10 YRP-owned facilities
- Fleet (One helicopter, nine vessels, 713 vehicles, specialized equipment)
- Information technology assets (hardware, IT infrastructure and applications)
- Telecommunication towers

Changes in asset portfolio:
New #1 District opened 2022

Future outlook:
Staff are working with consultants to assist with lifecycle management strategy, levels of service and capacity and condition assessments. YRP will continue to add new equipment and fleet assets to meet the Region's growth. In 2023, YRP will be adding a replacement helicopter and continue renovations at the original #1 District located in the Town of Newmarket, which will remain as a YRP facility used for other operational needs.

15.1 State of the infrastructure

York Regional Police (YRP) provides crime prevention and law enforcement in the nine local cities and towns within York Region. Their mission is to ensure York Region residents feel safe and secure through excellence in policing. YRP assets support sworn and civilian members in providing superior quality services while adapting to new demands and challenges.

Replacement cost summary:

2021 Replacement cost		$384.9 M
Changes:		$75.5 M
New and upgraded assets	$39.3 M	
Asset evaluation improvements and inflation	$44.6 M	
Decommissioned assets	($8.4) M	
2022 Replacement cost		$460.4 M

Performance grade:

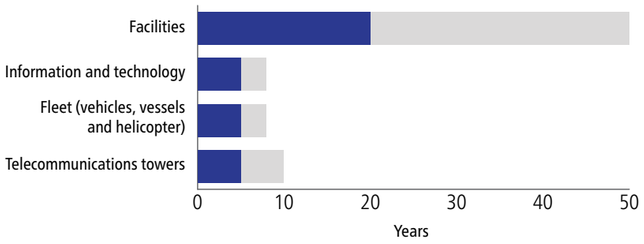
Criteria	Grade	Trend
Reliability	A	→
Capacity	B	→
Condition	B	→

Condition ($M)

On average, 2.9% of replacement cost is spent each year on rehabilitation and replacement of facilities.

Assets on average have 38% of their useful life remaining.

Average age and useful life expectancy (years)



Where the average age of the asset class exceeds its Useful Life Expectancy, the blue bar extends beyond the gray bar and is noted by a hatched white line.

15.2 Strategy

The Police Service Board has established our minimum performance requirements. Infrastructure Services monitors the performance of our service area and assets to ensure we are compliant with legislation.

We use capability and risk analyses to inform maintenance and renewable capital plans. As such, we arrive at customer oriented, risk-based levels of service to sustain operational requirements.

Any critical asset failures that cause interruptions to services are reported and tracked by a service desk and subsequently investigated using a root cause failure analysis. Corrective actions are issued to the necessary parties along with a timeline for such actions.

Assets are integrated into facilities, fleet, and info technology's operating environment, by approval from finance, based on needs for Capital investments. Growth and replacement are considered by looking at useful life span and rehabilitation needs, along with program delivery from annual and forecasted business plans.

We continually improve and refine asset management planning, data collection processes, and analyses of asset lifecycle.

Infrastructure service assets are aligned with the Regions Corporate Asset Management priority objectives:

- Provide defined levels of service that are balanced against considerations of cost and risks.
- Improve evidence-based decision-making from in-service asset data related to expenditures, operations and maintenance planning.
- Ensure organizational accountability and transparency by engaging each class, Facilities, Info Technology and Fleet to provide input into asset management planning.

Alignment with corporate strategic goals

- Summarize the current asset states of facilities, fleet, and infrastructure services
- Develop a comprehensive asset registry for critical assets to maintain levels of service
- Provide defined levels of service that balance costs and risks
- Improve evidence-based decision making from in-service asset data related to expenditures, operations, and maintenance planning
- Ensure organizational accountability and transparency by engaging facilities, fleet, and information technology to provide input into asset management planning
- Develop a renewal plan using a 10-year forecast
- Optimize tracking, monitoring and reporting asset condition by department using service desk and M5 reporting

The York Regional Police service area directly supports all four strategic plan priority areas: Economic Vitality, Healthy Communities, Sustainable Environment and Good Governance and several of the strategic plan objectives including:

Areas of Focus	Objective	Alignment with York Regional Police Services
ECONOMIC VITALITY	**Attract and retain businesses, develop employment opportunities, and grow a skilled workforce**	Capital planning and rehabilitation programs maintain safe and functioning facilities that encourage economic activity
HEALTHY COMMUNITIES	**Support safe communities**	Prioritize rehabilitation projects that focus on critical assets to ensure the greatest safety needs are met first
	Protect and promote residents' well-being	Ensuring buildings and facilities, and service levels, are maintained in fair or better condition for current and future generations
SUSTAINABLE ENVIRONMENT	**Deliver and promote environmentally sustainable services**	Promote energy efficiency strategies that align with the Energy Conservation and Demand Management Plan, and the Region's long-term greenhouse gas reduction policies and objectives
GOOD GOVERNMENT	**Deliver fiscally sustainable services**	Completion of asset management plans, including this plan, demonstrates financially sustainable lifecycle management to gain full value from assets

15.3 Financial outlook

Summary of 10-year service delivery costs

The following charts outline the asset lifecycle costs for maintaining actual levels of service and meeting approved levels of service covering 2023 to 2032. The information here is based on the 2023 budget and 2023 outlook approved by the YRP board. Police Services is currently undertaking a departmental asset management plan with a consultant to develop a detailed levels of service analysis, expected to be completed after the 2024 CAMP. No changes are proposed to the levels of service at this time and funding should be sufficient to undertake the work.

The projected capital costs for existing assets over the 10-year period total $147.7 million. This includes routine repair and replacement of police vehicles, officer equipment, IT equipment, and maintaining facilities in a good state of repair.

The projected capital costs for future assets over the 10-year period total $53.1 million. This includes acquiring new vehicles and equipment. This also includes about $12.8 million in 2032 for district/major renovations.

The operating cost chart includes a subset of costs that can be directly associated to police operations and asset maintenance, but generally excludes costs related to policing work. The YRP board approved a 2-year budget for 2023 and 2024, and the operating cost forecast grants $160 million and $163 million respectively in asset operating costs. Projections assume incremental operating costs of 2% annually, reaching $190 million by 2032.

Figure 50: Capital budget vs. full capital needs (existing assets)

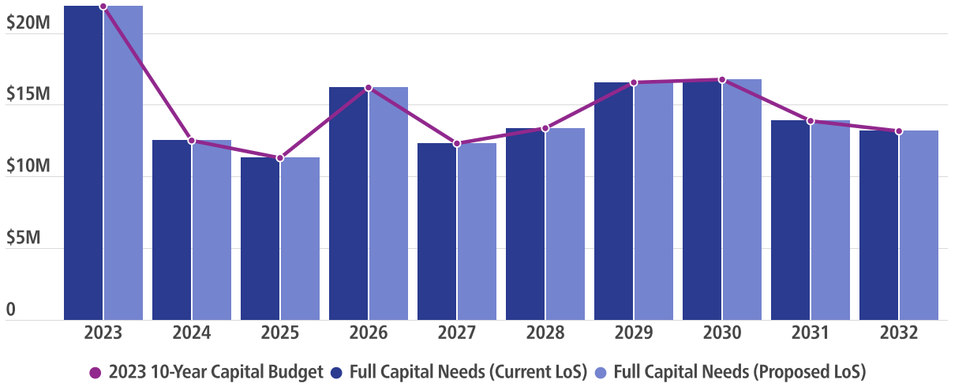


Figure 51: Capital budget vs. full capital needs (future assets)

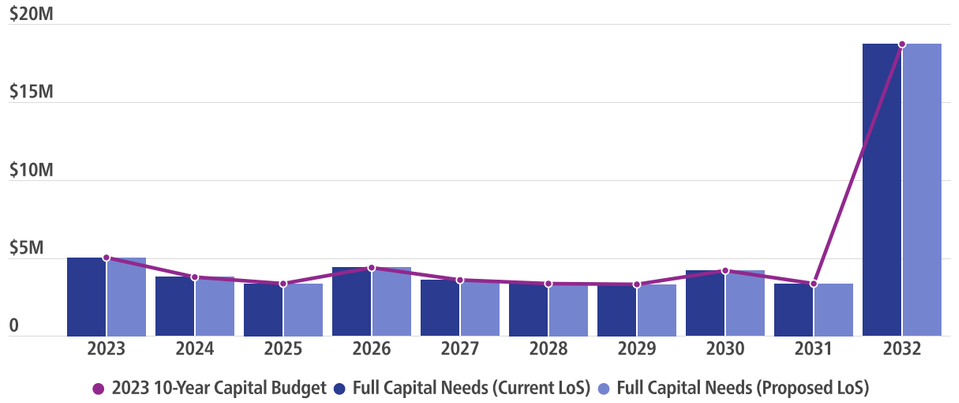
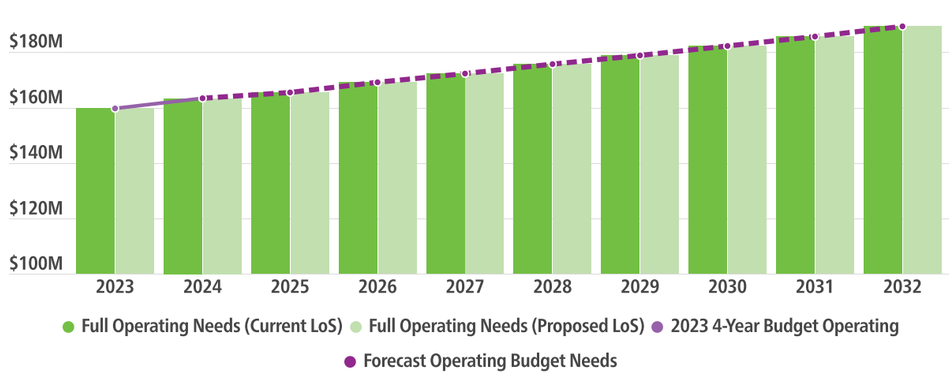


Figure 52: Operating budget vs. full operating needs (existing and future assets)



15.4 Current levels of service

Current customer levels of service

Continue to provide a safe and functional environment with superior levels of service for critical infrastructure and facility buildings.

Current technical levels of service

The table provides the current customer levels of service, the supporting asset categories and related technical metrics.

		Technical Levels of Service		
Customer Levels of Service	**Asset Categories**	**Performance Metric**	**Current Service Level Target**	**Current Performance**
YRP buildings, vehicles, IT and other equipment meet the functional needs of the police service and the public	Facilities	% facilities that meet accessibility and other building standards and codes	100%	100%
YRP is resilient to climate change impacts		% facilities resilient to flood impacts	100%	Future data
YRP has sufficient building capacity, vehicles, IT and other equipment to support service to the community	IT assets	% of IT capacity meets the needs of the service	100%	100% (includes redundancy)
	Facilities	Occupancy/design capacity ratio	TBD	>100%
	Fleet	Percentage of time fleet is available for duty.	100%	100%

Risks and treatment options

- Condition or performance deterioration: As infrastructure ages, condition and performance deteriorate. To manage this risk, YRP conducts regularly scheduled inspections and maintenance on facilities and vehicles. Maintenance programs are designed to keep these assets in a state of good repair and to address any deficiencies. In addition, IT, communications and other equipment are replaced on a regular schedule
- Service capacity and proximity: As the Region's population grows, the need for police services increases. YRP is continuously monitoring and forecasting service demand, so that the need for additional facility capacity or service locations can be identified, along with the need for additional officers, vehicles and equipment. When possible, facility expansions are timed to align with asset renewal needs
- Technology changes: As technologies change, the community expects police services to adopt those changes to operate efficiently and to effectively counter criminal activities that also evolve with technology. To mitigate the risk of falling behind, YRP regular develops a multi-year Technology Plan that is aligned with the multi-year Business Plan
- Climate change resiliency: Extreme rain and flooding events are becoming frequent and can disrupt facility operations. YRP is participating in a Region-led study to identify facilities at risk of flooding and actions to improve facility resiliency
- Climate change impact mitigation: The Region has set a goal of operating with Net Zero emissions by 2050 and has developed a plan to address this goal

Lifecycle activities to maintain current levels of service

The lifecycle activity options for Police Services' asset portfolio include:

- Inspections and performance monitoring
- Regular maintenance, based either on calendar schedule or conditions
- Renewal and rehabilitation
- Replacement

Using a combination of these activities, YRP can maintain current levels of service for customers and stakeholders.

The highest financial cost comes with acquiring new assets, which typically is necessary when there are either critical asset failures or capacity fails to meet growth.

Operational, maintenance, and capital plans ensure YRP infrastructure is adequate. Service desk management minimizes disruptions to services, and is informed by in-house subject matter experts, manufacturer recommendations, and regulatory maintenance.

The activities below are based on lifecycle management options contained in Table 5 of Section 5.2. This list is not exhaustive, as many other measures, such as basic inspections and maintenance, take place every day and help staff adjust operations and make minor repairs as needed.

- Lifecycle models have been developed for YRP's assets, which predict deterioration
- YRP performs condition assessments at regular intervals (i.e., five-year cycles) on all facilities to inform maintenance and capital planning programs, avoiding reactive, unplanned maintenance or replacement costs
- YRP develops an asset management plan and asset management strategy with SLBC Consultants to provide updates

Lifecycle activities options

Asset Type	Year	Inspections	Maintenance	Capital (rehab, replace, expand, upgrade)
Category 1 Facilities and Critical Equipment	2023	• Regular inspections at various intervals, as prescribed by legislation or other regulatory agencies, manufactures, and best industry practices. • TSSA, ESA, Fire life safety systems.	• Routine and preventative maintenance programs, including daily, weekly and monthly checks on elevators, generators, fire system, chillers, heating boilers, air handling and recovery units, fire suppression systems, roof top units, and domestic hot water boilers. • Contracts in place for legislative inspections in accordance with TSSA and fire code for back up generators, fire systems, boilers and heating terminals in bi-annual and annual preventative maintenance programs.	Hydronic boilers replacement at 47 Don Hillock Dr. Upgrade and replacement of cooling tower, heat pumps, and fire panel at 240 Prospect St.
	2024			Replacement of Hydronic Boilers at 47 Don Hillock Dr.
	2025			-
	2026			HQ mechanical upgrades to existing systems being reviewed to determine scope (Phase 1).
	2027			-
	2028			HQ mechanical upgrades to existing systems being reviewed to determine scope (Phase 2).
	2029			HQ mechanical upgrades to existing systems being reviewed to determine scope (Phase 3).
	2030			HQ mechanical upgrades to existing systems being reviewed to determine scope (Phase 4).
	2031			-
	2032			To be determined from 2024 business plan for on-ward outlook years

Technical support lifecycle activities options

Year	Inspections	Maintenance	Capital (rehab, replace, expand, upgrade)
2023 to 2032	• Annual radio system infrastructure inspections following preventative maintenance schedule, as outlined in radio system customer support plan. • Monthly site checks. • Comprehensive tower inspections once every three years.	Radio system: Annual maintenance, with an asset life of 10 to 15 years. Tower equipment: Maintenance every 15 to 20 years depending on the technology.	• Portable radios: replace every seven years • Mobile radio: replace every seven years • Radio dispatch console: replace every five to seven years • Radio tower site network equipment: replace every seven to 10 years • Radio tower site microwave equipment: replace every 10 to 15 years • Radio tower site batteries: replace every five to seven years • Radio tower site generator: replace every 10 to 15 years

Information technology lifecycle activities options

Year	Inspections	Maintenance	Capital (rehab, replace, expand, upgrade)
2023 to 2032	Information technology uses an IT based service desk to track maintenance. Inspections on data server rooms are completed on a regular basis.	Information technology has refresh periods every four to five years.	• Monitors: five to seven years • Desktops: four to five years • Workstations: four to five years • Laptops: four to five years • Printers and multifunction devices: seven to 10 years • Servers: five years • Switches: seven to 10 years • Storage: five years

Fleet lifecycle activities options

Year	Inspections	Maintenance	Capital (rehab, replace, expand, upgrade)		
			Category	Max Life (years)	Max km
2023 to 2032	Vehicles go through a daily visual inspection to determine functionality of equipment, such as signals, light bars, and radio checks. Deficiencies are reported to Fleet for Service.	YRP follows a preventative maintenance program to keep vehicles in peak working condition and to minimize the risk of failure. The goal is to save costs by maintaining versus repairing fleet vehicles. Police vehicles are maintained in accordance with guidelines based on manufacturers' service programs.	Marked and unmarked patrol	8	200
			Investigative/Surveillance/project	8	160
			Administrative/Motor pool	8	160
			Operational support vehicles/ Prisoner transports	10	200
			Senior management vehicles	5	160
			Motorcycles	8	50
			ATVs/Snowmobiles	10	N/A
			Marine vessels/Trailers/ Armored heavy truck/Specialty/ Bus (including equipment and generators)	20	N/A
			Historical vehicles	N/A	N/A

Administration and building operations lifecycle activities category 2 options

Year	Inspections	Maintenance	Capital (rehab, replace, expand, upgrade)
2023 to 2032	• Assigned work orders to conduct daily, weekly, monthly, and annual inspections to building and grounds. • Building condition assessments are conducted every four to five years. • Legislative inspections are conducted as per building code schedule.	• Routine and preventative maintenance programs, including reactive maintenance, may arise during normal operation of assets or from inspections. • Implementation and optimization of maintenance programs ensure building function and structure are maintained, and the service life of the assets are maximized. • A focus on planning and scheduling to efficiently and effectively realize the maximum value of YRP's facilities.	• District Parking lot replacement at 171 Major Mackenzie Dr. • Window replacement at 8700 McCowan Rd. • Headquarters interior renovation due to growth
			• Window replacement (Phase 2) at 8700 McCowan Rd. • District Parking lot replacement (Phase 2) • Roof replacement at 171 Major Mackenzie Dr. • Property Evidence suppression system at 2700 Rutherford Rd. and 8700 McCowan Rd. • Front desk counter replacement at 8700 McCowan Rd.
			• Secure locker storage, region wide • Roof replacement (Phase 2) at 171 Major Mackenzie Dr. • Roof replacement at 2700 Rutherford Rd. • Infrastructure upgrades at 47 Don Hillock Dr.
			• Secure locker storage (Phase 2), region wide • Roof replacement (Phase 2) at 2700 Rutherford Rd. • Infrastructure upgrades (Phase 2) at 47 Don Hillock Dr. • Asphalt rehabilitation at headquarters • Asphalt rehabilitation at 3527 Baseline Rd.
			• Secure locker storage (Phase 3) at District #1
			• Roof replacement at 240 Prospect St.
			• Roof replacement at 3527 Baseline Rd.
			• To be determined from 2024–2027 business plan for onward outlook years.

15.5 Proposed levels of service

Proposed customer levels of service

Same as current customer levels of service see Section 15.4).

Proposed technical levels of service

Same as current technical levels of service (see Section 15.4).

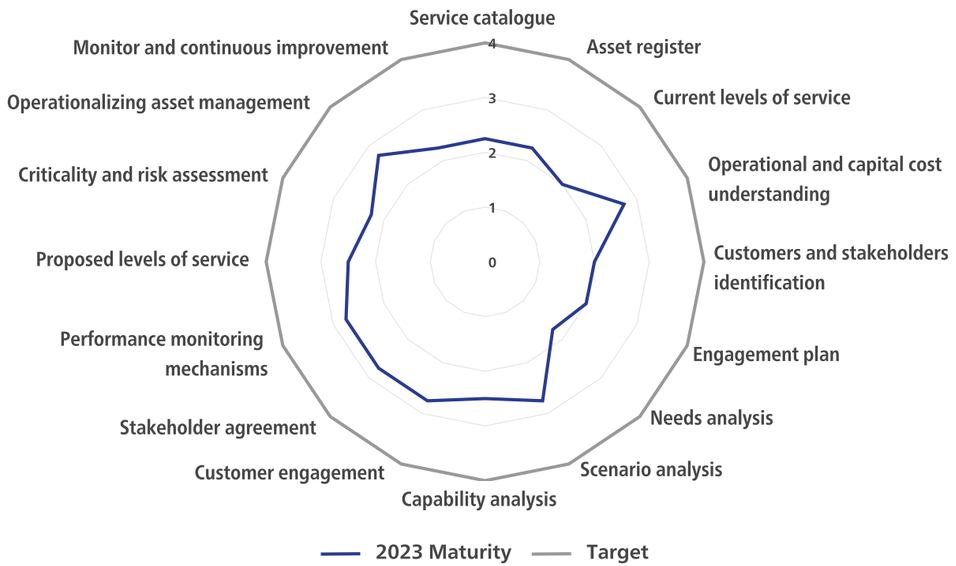
Lifecycle activity options to achieve proposed levels of service

Same as current lifecycle activity options (see Section 15.4).

15.6 Service area asset management maturity

There are 16 categories labeled in the circle graph, each scored on maturity. Scores range from 0, the lowest maturity, at the centre of the circle, to 4, the highest, at the perimeter.

Figure 53: Asset management maturity graph



15.7 Monitoring and continuous improvement

Area and Action	Target completion year	Priority Area: Engage more fully with customers	Embed risk management/ build response readiness	Use the best possible evidence in making decisions	Standardize processes	Build asset management skills and competence
AM Roles, Responsibilities and Procedures - Formalize roles, responsibilities and procedures for executing AM activities. For example, incorporate the AM Plan and SOIR into YRP's reporting cycle, along with roles and responsibilities for delivering those reports.	2025 to 2026				•	
Risk-Based Capital Prioritization Approach - Establish a capital prioritization approach based on the risk framework defined in the current AM Plan. Use the approach to prioritize needs during AM Planning and capital planning.	2025		•			
Master Asset Inventory - Establish a master inventory of assets to support AM activities, along with processes to keep the inventory up-to-date. The inventory should list assets to the level of replaceable units, in contrast with TCA, wherein low-value assets are pooled. Moreover, the AM asset register and TCA register should be aligned, and processes should be established to keep the two asset registers consistent.	2026			•		
Work Order Management - Explore options to establish work order management processes and technologies that are consistent across the organization and support leading practice AM. Options may include adjustment of an existing system, adoption of a system used by York Region, or procurement of a new system.	2026			•	•	
Level of Service (LOS) Monitoring and Reporting - Formalize roles and responsibilities for measuring, reporting and consolidating LOS performance data. For metrics that are not currently collected, establish a strategy and plan for implementing the processes and tools required to collect and report on the defined performance metrics. Establish the weights or relationships to aggregate Technical LOS scores to Customer LOS scores.	2024	•		•	•	
Building Condition Assessments - Update the Building Condition Assessments (BCA) for YRP Facilities identifying renewal needs for the next 10 years.	2024			•	•	

McCleary Court Environmental Centre - City of Vaughan

Waste Management Services

Replacement cost:
$236.0 M

Performance grade:	Condition (fair or better)
B	97%

Asset portfolio:

- One solar array at a waste management site
- One material recovery facility and transfer station
- One co-owned energy-from-waste facility
- One transfer station with a household hazardous waste depot
- Two standalone household hazardous waste depots
- Two community environmental centres (each with a household hazardous waste depot)

Changes in asset portfolio:

There were no major changes to the asset portfolio in 2022. Work on this asset portfolio is continuing

Future outlook:

The Region has several upcoming and ongoing capital projects planned to enhance its ability to meet current and projected solid waste demands, including ongoing rehabilitation of the of the Region's Household Hazardous Waste Depot located on Rodick Road and replacement and upgrades to equipment at drop-off facilities.

16.1 State of the infrastructure

Waste Management Services works in partnership with the Region's local cities and towns to ensure proper processing and disposal of waste. It also operates public drop-off depots to supplement curbside service as well as collect materials not managed at curbside, such as electronic waste, scrap metal and household hazardous waste.

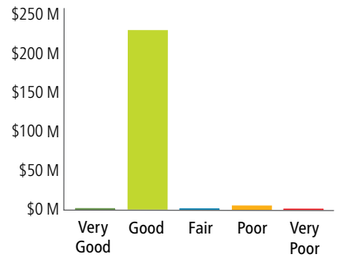
Replacement cost summary:

2021 Replacement cost		$206.2 M
Changes:		$29.8 M
New and upgraded assets	$0 M	
Asset evaluation improvements and inflation	$29.8 M	
Decommissioned assets	$0 M	
2022 Replacement cost		$236.0 M

Performance grade:

Criteria	Grade	Trend
Reliability	A	→
Capacity	A	→
Condition	B	→

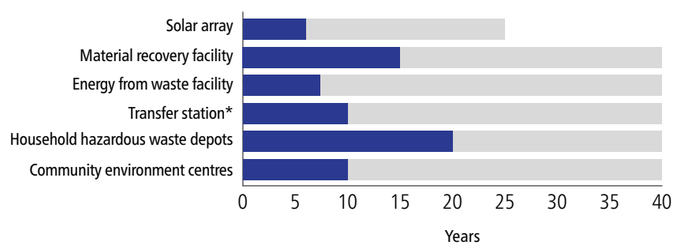
Condition ($M)



York Region's Waste Management facilities are operated by third-party contractors.

Assets on average have 75% of their useful life remaining.

Average age and useful life expectancy (years)



*Where the average age of the asset class exceeds its Useful Life Expectancy, the blue bar extends beyond the gray bar and is noted by a hatched white line. *Average age considers major upgrades completed in 2018*

16.2 Strategy

Waste Management Services uses digital tools and datasets to inform dedicated staff, ensuring effective service planning and delivery.

- The Region's **Waste Management Asset Management Plan (AMP)** establishes a set of actions and processes for the full lifecycle of assets, as well as planned infrastructure to support growth. The plan describes current and proposed levels of service and summarizes how the Region's infrastructure assets, business processes, and staff activities contribute to maintaining levels of service. The AMP outlines the current processes to identify and manage risks and summarizes lifecycle activities and the funding necessary to provide sustainable levels of service over a 10-year period
- The Region is committed to continuously improving its solid waste management and operations by maintaining ISO 14001 Environmental Management System and ISO 9001 Quality Management accreditations for its facilities. Solid waste facilities owned by the Region are operated by third-party contractors; levels of service and facility performance requirements are specified during contract negotiations. York Region is responsible for ensuring that contractors are operating/managing facilities in compliance with regulations
- The 2020 update to the York Regional Council-endorsed **SM4RT Living Plan (Integrated Waste Management Master Plan)** analyses impacts from anticipated growth and future potential changes in waste composition on solid waste facilities. Expansion activities identified for solid waste assets include increasing the processing capacity/enhancing existing facilities, as well as the construction of new facilities for greater customer convenience
- Growth and renewal programs identified through the **Region's 10-year Capital Plan** capture the work required to maintain or improve levels of service through several phases of an asset's lifecycle. Needs identified in the plan are informed by current asset condition and performance information. The capital planning process also reflects the Region's current processes for prioritizing needs, as the timing of needs is reviewed annually to consider capacity, integration of related projects, recent assessment results, and other criteria
- Operations and maintenance of solid waste facilities is administered through contracts with third parties and the Region's Property Services branch. The Region's maintenance program is managed through the computerized maintenance management systems. Preventative maintenance (PM) tasks are typically based on time intervals and many assets have a list of PM activities. Major maintenance projects that are typically complex and take a long time, or require engineering, are planned and approved in advance and procured through quotations or tendered contracts
- The Region has several well-developed programs that support non-infrastructure solutions for addressing risks to service delivery. During the development of the AMP, risk threats were analyzed following the ISO standard for risk management (ISO 31000:2018). Risks are managed through demand management initiatives documented in the SM4RT Living Plan, following standard operating procedures, collaboration with local municipalities, and comprehensive condition assessments. Infrastructure related risks to service delivery and treatment options are presented further below

The Region currently manages a Waste Management Centre containing a transfer station for management of organics and residual waste, and a Material Recovery Facility (MRF) for blue box recyclables processing. Over the next few years, responsibility for processing blue box materials will be transitioned to the producers of plastic and other packaging (full producer responsibility), in accordance with provincial legislation.

The Region is also responsible for its public waste drop-off depots: Community Environmental Centres (CEC), the Georgina Transfer Station, and household hazardous waste depots. In addition, York Region owns a 21.4% share in the Durham York Energy Centre (DYEC), located in Courtice. The remainder of waste processing services are managed through contracts between York Region and private waste processing contractors.

Meeting asset management policy objectives

Waste Management Services is aligned with Corporate Asset Management Policy objectives through activities such as:

- Continuing to evaluate and advance asset management maturity to support improvement
- Coordinating financial planning for the rehabilitation, replacement, or disposal of infrastructure assets through the operating budget, capital budget, and annual long-term lifecycle forecasts
- Developing comprehensive levels of service to improve the link between service delivery and assets
- Incorporating climate change considerations into asset risk management
- Incorporating risk-based analysis to prioritize asset management projects
- Monitoring and evaluating asset performance through completing comprehensive condition assessments and inspections

Alignment with corporate strategic goals

The Region's Waste Management Services area directly supports all four strategic plan priority areas: Economic Vitality, Healthy Communities, Sustainable Environment and Good Governance and several of the strategic plan objectives including:

Areas of Focus	Objective	Alignment with Waste Management Services
ECONOMIC VITALITY	**Attract and retain businesses, develop employment opportunities, and grow a skilled workforce**	• Effective waste management services support a clean and safe physical environment for businesses and people
HEALTHY COMMUNITIES	**Support safe communities**	• Depots offering various waste disposal services support healthy communities
	Protect and promote residents' well-being	• Waste reduction and diversion efforts support a circular economy that minimizes waste and impact on the environment
SUSTAINABLE ENVIRONMENT	**Deliver and promote environmentally sustainable services**	• Developing and reporting performance measures and forecasting associated costs lead to a greater understanding of how well services are being delivered
GOOD GOVERNMENT	**Deliver fiscally sustainable services**	• Completion of asset management plans, including this plan, demonstrates financially sustainable lifecycle management to gain full value from assets

In addition to supporting the community-level outcomes of the 2023 to 2027 Strategic Plan, Waste Management provides services directly to customers, supported by the Region's waste management facilities and assets. The Region's asset management system aims to provide line-of-sight between the performance of assets at each waste management facility and the levels of service that they support.

16.3 Financial outlook

The 10-year financial highlights appear in the charts below, which include all asset-related costs and exclude contributions to reserves, debt principal, and intradepartmental allocations. Additionally:

- The decrease in the Operating Cost Forecast between 2025 and 2026 accounts for the Region no longer operating the MRF because blue box materials processing is transitioning to full producer responsibility in accordance with provincial legislation
- In 2023, Council awarded a new long-term operating contract to provide management of all of the Region's source separated organic waste (SSO) using a privately-owned facility. Capital funding continues to be held in years 2031 through 2032 of the 2024 approved 10-year capital plan as a risk mitigation measure and will be re-evaluated through the annual budget process

Figure 54: Capital budget vs. full capital needs (existing assets)

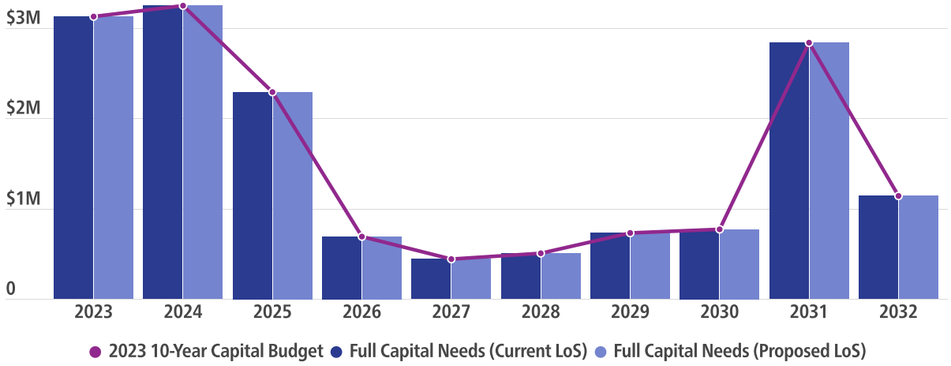


Figure 55: Capital budget vs. full capital needs (future assets)

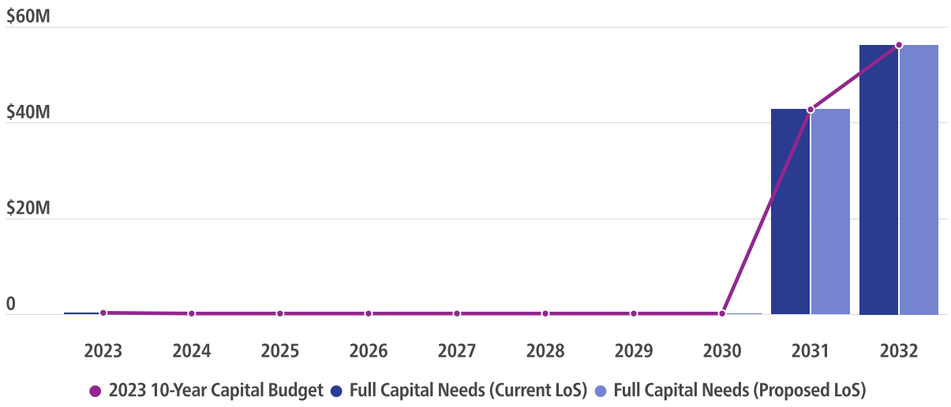
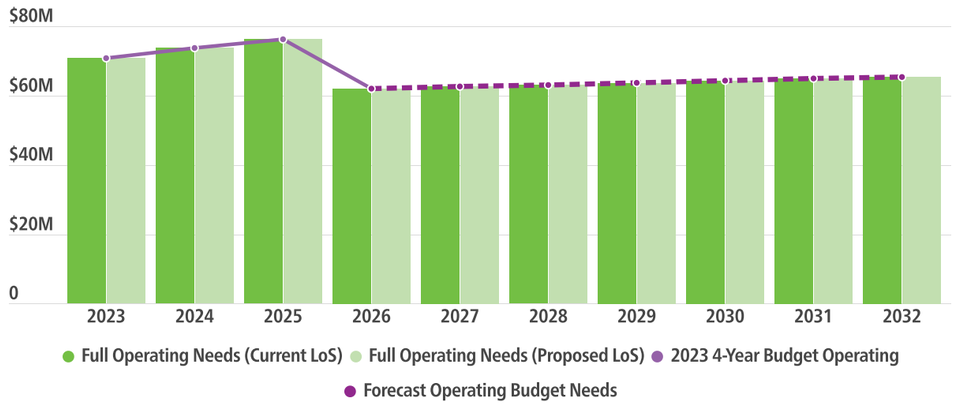


Figure 56: Operating budget vs. full operating needs (existing and future assets)



- The Region ensures sufficient funding through regular updates to its four-year operating budget, 10-year Capital Plan, and long-term forecast so that all rehabilitation, replacement, operating and assessment projects are planned for
- The Region recently increased the weight-based fee that it charges at waste depots for accepting residual waste and other items, such as concrete, drywall, untreated wood, and yard waste. Since implementation in 2018, the weight-based fee has not been increased to account for inflation or higher operating costs. An increase offsets the recent rise in contract costs to operate the waste depots, and would also align with similar fees charged by other municipalities in Ontario
- The Region's development charges bylaw is critical for supporting new infrastructure or expansions

16.4 Current levels of service

Current customer levels of service

Waste Management uses the following statements to inform the current customer levels of service:

- Maximize diversion of waste from landfill and promote the reduction of waste generation
- Provide communities with access to waste depots offering household hazardous waste, recycling, solid waste and yard waste drop off services
- Ensure waste management facilities have the capacity to receive current and future waste volumes
- Maintain facilities in compliance with regulatory requirements and adapt to legislative changes

Current technical levels of service

This table provides metrics for the current customer levels of service, the supporting asset categories and related technical metrics.

		Technical Levels of Service		
Customer Levels of Service	**Asset Categories**	**Performance Metric**	**Current Service Level Target**	**Current Performance**
Maximize diversion of waste from landfill	Material Recovery Facility and co-owned Energy from Waste Facility	Percent of solid waste diverted from landfill.	90%	94%
Provide communities with access to waste depots	Community Environmental Centres and Household Hazardous Waste Depots	Number of days per year in which at least one drop-off facility is open to the public.	355 days	355 days
		Customer satisfaction from waste depot surveys.	80% satisfied	90% satisfied
Ensure waste management facilities have capacity	Material Recovery Facility	Tonnes of blue box material delivered must be less than the available receiving capacity at the Material Recovery Facility.	No more than 140,000 tonnes/ year (system capacity)	76,032 tonnes processed
	All assets	Number of complaints due to performance failure of the facility received per year from local municipalities and customers.	0	0
Maintain facilities in compliance with regulatory requirements	All assets	Compliance with Environmental Compliance Approval (ECA) terms and conditions related to asset performance/failure.	100% compliant	100% compliant
		Compliance of buildings and facility equipment with health, safety and environment protection programs and regulations.	100% compliant	100% compliant

Risk and treatment options

The Region has implemented several risk management processes to monitor, assess, and treat risks to service delivery.

- **Condition or performance deterioration:** As infrastructure ages, condition and performance deteriorate over time. To reduce this risk, the Region proactively monitors the condition of all Region-owned waste management facilities though regular inspections and condition assessments. The Region also implements a comprehensive maintenance program to ensure infrastructure is kept in a good state of repair, performing preventative maintenance on equipment and promptly addressing deficiencies. Some maintenance of solid waste facilities is administered through third party contracts
- **Changes in demand:** Significant changes in demand could result in the current waste management system becoming insufficient in meeting levels of service. To mitigate this risk, long-term strategies and growth plans are assessed, via the Region's SM4RT Living Plan. Expansion activities include increasing the processing capacity, enhancing existing facilities, and constructing new facilities for greater customer convenience. In addition, demand management programs (such as waste prevention, recycling, and diversion programs) ensure that existing facilities are utilized as effectively as possible before new infrastructure is constructed
- **Changes in operating conditions:** The challenges of designing infrastructure that can handle both current and future waste streams can lead to less than peak performance. Changing waste composition, contamination of waste, proportion of high-density dwellings, and legislative requirements are just some of the factors that affect waste streams. The Region addresses these risks through community-based research, diversion programs that aim to prevent waste (such as repair cafés), and designing facilities to accommodate phased expansion
- **Regulatory changes:** Changes in regulations can impact service delivery requirements, and may require upgrades to existing infrastructure, which can increase both capital and operating costs. The Region works diligently to keep in step with an increasingly complex regulatory environment, and provides input to policy changes through consultation processes. The Waste-Free Ontario Act, 2016, shifts responsibility for some waste materials to a full producer responsibility framework, which will see the transition of the blue box program from Ontario municipalities to producers over the next few years
- **Risks to personnel supporting service delivery:** Personnel related risks, including illness, injury, performance, and retirements, can affect staff safety or levels, and the ability of staff to support the delivery of services. The Region's solid waste facilities are certified to the ISO 9001 standard, which requires health and safety policies and guidelines (based on applicable legislation) to be in place. The Region's operations contractors must comply with the health and safety policies and guidelines, and report on non-conformity. The Region's facilities are equipped with appropriate health and safety equipment that is regularly inspected and maintained in good condition. Work is planned and completed in a way that minimizes safety hazards. To mitigate the risk of catastrophic business interruptions, the Region has developed business continuity plans and emergency management strategies. The Region manages staff capability and resourcing through workforce planning and a learning and development program tailored to individual job requirements
- **Financial risks:** There are risks affecting the ability to fund the activities required to maintain levels of service. The capital planning budgeting cycle for solid waste is integrated within Public Works' asset planning practices. The operating budget is a four-year plan and the capital budget is forecasted for 10, 20, and 100 years, and is updated annually. Growth and renewal programs identified through the Capital Plan account for maintaining or improving levels of service throughout the asset lifecycle. Needs identified in the Capital Plan are informed by operational requirements, regulation changes, insurance requirements, and current asset condition and past performance, informed by the Region's operations contractors, feedback from residents, or through condition assessment activities
- **Climate risk:** There is a growing emphasis and focus on climate change as municipalities strive to better understand the long-term impact on their communities. Service delivery, health and safety, as well as the condition and performance of solid waste assets could all be affected. The Region has identified ways to mitigate these risks and is taking proactive measures. For example, the Region's SM4RT Living Plan emphasizes waste Reduction (one of 4 Rs), one of the most effective tools in reducing greenhouse gas emissions. Another example is the Region's ongoing transition from source separated organics (SSO) composting to SSO anaerobic digestion, which will reduce greenhouse gas emissions and produce renewable biogas

Lifecycle activities to maintain current levels of service

The activities below are based on lifecycle management options contained in Table 5 of Section 5.2. This list is not exhaustive, as many other measures, such as basic inspections and maintenance, take place every day and help staff adjust operations and make minor repairs as needed.

The capital project examples listed are construction projects from the recently approved Capital Plan.

Throughout the asset lifecycle, Waste Management Services proactively monitors the condition and performance of all Region-owned solid waste infrastructure. This process ensures that risk, levels of service, legislative or policy changes, and operational efficiencies are considered, and provides current information to inform and validate asset lifecycle decisions.

It is important to recognize that although the activities are described as separate lifecycle options, they may occur concurrently. For example, continued maintenance may be undertaken during a planned rehabilitation, expansion project, or integration of related projects.

Administration and building operations lifecycle activities category 2 options

Asset Type	Year	Inspections	Maintenance	Capital (rehab, replace, expand, upgrade)
Waste Depots	2023 to 2032	Daily and weekly visual inspections are performed by operating contractors. Property Services conducts inspections at regular intervals, as well as periodic condition assessments.	• Maintaining underground holding tanks • Maintaining waste compactors • Testing and calibrating radiation detection systems and LEL gas detection equipment • Testing cisterns	• Public Works led projects: • Asset upgrade/replacement – waste management centre • Fire suppression system upgrade – waste management centre • Asset upgrade/replacement public drop-off depots • Property Services led projects:* • Corporate facilities asset renewal (including driveway rehab and renewal, ramp rehab, roof renewal, tree removals, fence repair and renewal, storm water pond restoration, and new kiosks) • Property Services branch general capital (including a new electric vehicle charging station)
Waste Management Centre (WMC)			• Daily and preventative maintenance of conveyors, balers, ballistic separator, eddy current separator, elector magnet conveyors, screens, motion floor, and optical sorting system • Daily and weekly maintenance of glass cleaning system, broken glass lines, and magnetic conveyor • Preventative maintenance of air blower, plastic perforator, mixed paper system, and compactors	
Common			• Preventative maintenance of exhaust fans, heaters, and HVAC systems • Testing and calibrating weigh scales	

**These Property Services-led projects have not been included in the Financial Outlook section.*

16.5 Proposed levels of service

Proposed customer levels of service

There are no changes to the current customer levels of service over the next 10 years.

Proposed technical levels of service

There are no changes to the current technical levels of service over the next 10 years.

Lifecycle activity options to achieve proposed levels of service

See lifecycle activities detailed in the Lifecycle Activities to Maintain Current Levels of Service section.

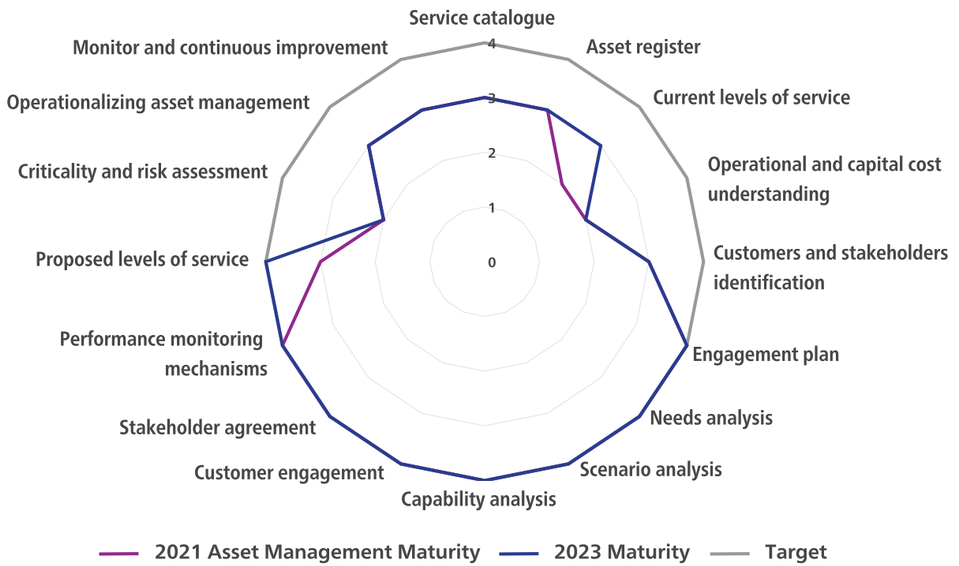
A system map of the current Waste Management facility locations can be found towards the end of this document, in Appendix K.

Elgin Mills Environmental Centre - City of Richmond Hill

16.6 Service area asset management maturity

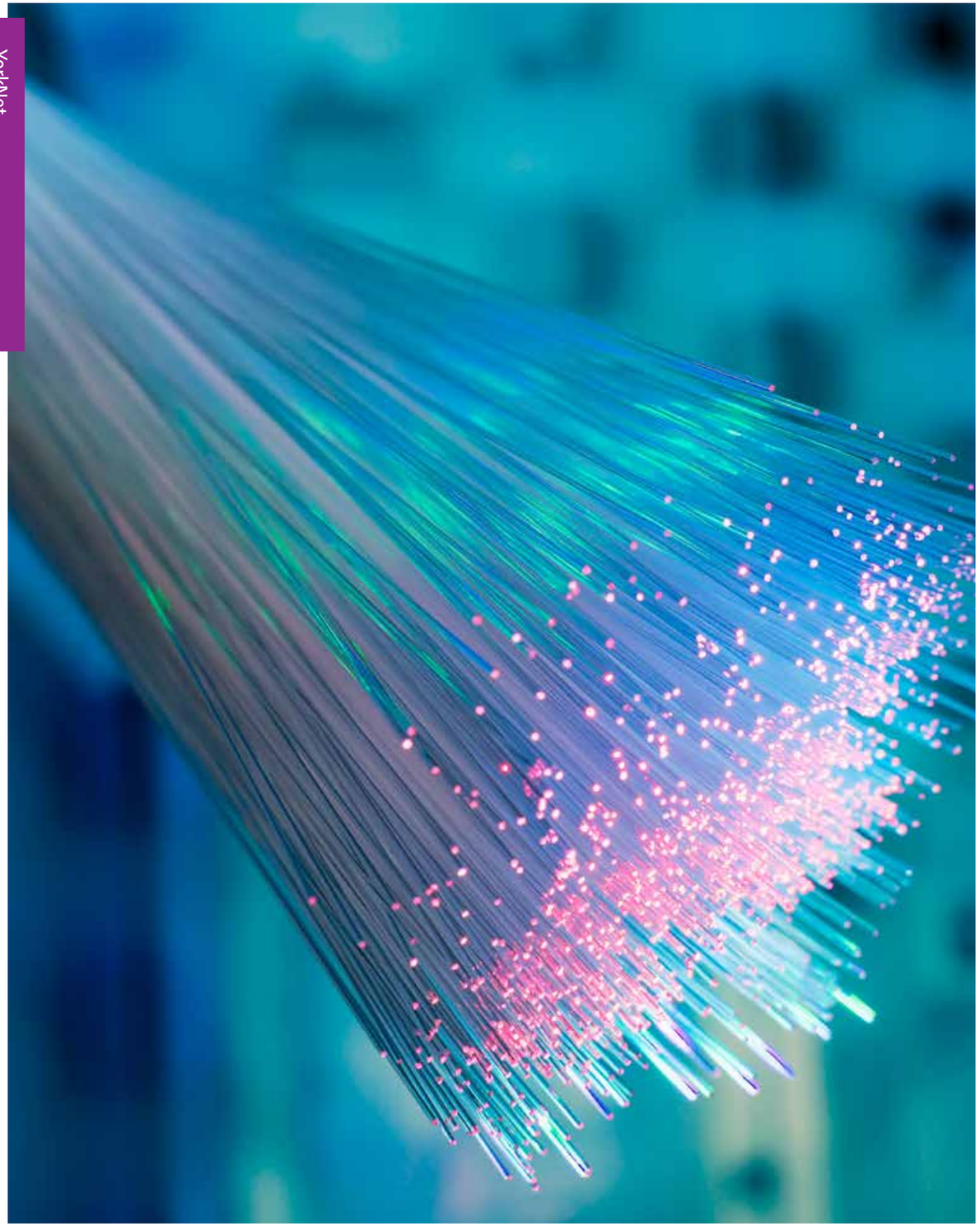
There are 16 categories labeled in the circle graph, each scored on maturity. Scores range from 0, the lowest maturity, at the centre of the circle, to 4, the highest, at the perimeter.

Figure 57: Asset management maturity graph



16.7 Monitoring and continuous improvement

Area and Action	Target completion year	Priority Area: Enhance customer engagement	Strengthen proactive service readiness and risk management	Support evidence-based decision-making	Promote process standardization	Sustain and increase asset management competencies
Improve assessment management data availability and leverage the Public Works Digital Transformation to support asset management planning	Ongoing			•	•	•
Review opportunities to integrate climate change considerations in service delivery	Ongoing		•			
Update condition assessment strategy	2024			•		•
Adapt level of service to reflect changing regulations, including requirements for Extended Producer Responsibility	2026			•	•	
Implement and integrate the results of the risk assessment	2026		•		•	
Implement and integrate the level of service and function hierarchy	2026	•		•		•



YorkNet

Replacement cost:
$72.0 M

Performance grade:
A

Condition (fair or better)
100%

Asset portfolio:

- 502 kms of network infrastructure made up of:
- Aerial/buried fibre
- Conduit
- Fibre optic splice enclosures
- Gators/Traffic controllers
- Patch panels (connection points)
- Manholes
- Hand-wells

Changes in asset portfolio:

Asset portfolio increased by 50 km; major items added include:

- 3 km build in Mount Albert
- 10 km build in Richmond Hill
- 18 km build in Markham, including 5 km on 14th Avenue
- Denison Rail Crossing
- Initiated UBF Project with 11km build in Georgina

Future outlook:

Future asset requirements are primarily focused on continuing to build the network as quickly as possible. By 2025, the network will have tripled in size from 502 km to more than 1,600 km through rural expansion and fibre construction throughout the Region. In addition, YorkNet will be investing in maintenance and repairs while also contributing to long-term asset management reserves.

17.1 State of the infrastructure

YorkNet is a wholly-owned subsidiary of the Region, incorporated in 2017 under the Business Corporations Act (Ontario). YorkNet is responsible for the planning, acquisition/ construction, maintenance, renewal and disposal of the Region's fibre assets.

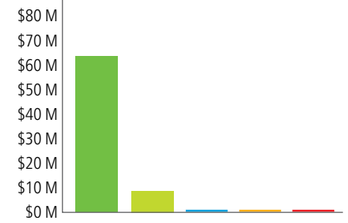
Replacement cost summary:

2021 Replacement cost		$51.9 M
Changes:		$20.1 M
New and upgraded assets	$11.8 M	
Asset evaluation improvements and inflation	$8.3 M	
Decommissioned assets	$0 M	
2022 Replacement cost		$72.0 M

Performance grade:

Criteria	Grade	Trend
Reliability	A	→
Capacity	A	→
Condition	A	→

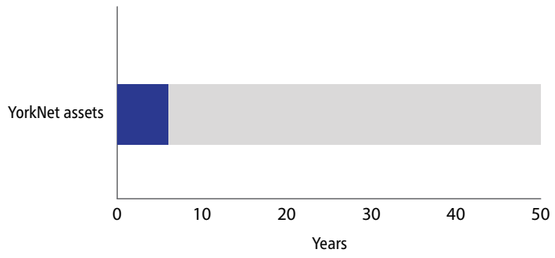
Condition ($M)



On average, YorkNet plans to spend 2.0% of replacement cost on rehabilitation and replacement over the next five years.

The average asset has reached 7.1% of its useful life.

Average age and useful life expectancy (years)



17.2 Strategy

YorkNet's strategic approach to decision making is closely tied to the mandate of the corporation as set out by the board of directors:

- Ensure connectivity of Regional facilities for better efficiency and service delivery
- Assist MUSH (Municipalities, Universities, Schools, Hospitals) sector partners with connectivity needs
- Foster relationships with third party service providers to facilitate connectivity and economic development.

Investing in the fibre network improves infrastructure, such as traffic signals and water systems. It also increases productivity and reduces costs, and potentially generates revenues. Overall, investing in the fibre network means the Region benefits from the same or better network coverage and levels of service than a third party can provide, while spending less.

The pandemic highlighted dramatically why access to reliable high-speed internet is essential. Emerging digital trends, such as artificial intelligence and smart grids, will continue to radically reshape both the nature of work and how people live day to day.

Fibre assets consist primarily of fibre optic cabling and, in the case of buried fibre, conduits to protect the fibre from the elements. The cabling contains strands of glass fibre, bunched in multiples of twelve (e.g., 96, 144, etc.), housed within a cable sheath. To date, approximately 502 km of dark fibre (unused cable, built for future use) network has been constructed throughout the Region with an additional 1,100 km needed to complete a total of 1,600 km at full buildout.

Fibre provides the Region with virtually unlimited bandwidth capabilities, rapid scalability to meet changing demands, network control, increased cloud and big data capabilities, and more. Service levels are generally based on providing uninterrupted services, increased connectivity, and enhancing network efficiency and speed—all of which will depend on maximizing the unique features of fibre, through a fully built network. Additionally, the most probable and consequential risks, as well as the most effective lifecycle activities to manage them, have been documented and will be monitored semi-annually. Risk management strategies will be updated with gained experiences and knowledge.

Current asset requirements focus on continuing to build the network as quickly as possible, incorporating diversity, and optimizing asset lifecycle while minimizing costs. Planning for future asset requirements beyond buildout has begun, with annual budgets factoring in target levels for asset management reserves. This level of planning requires an estimation of replacement costs, usually based on current tender prices, and an inflation forecast. The benefit of buried fibre is that replacement cost is usually less than the initial construction cost, due to the permanency of some of the supporting structures. Buried fibre is a prudent long-term investment for resolving the connectivity divide problem.

Meeting asset management policy objectives

YorkNet is aligned with Corporate Asset Management Policy objectives through various activities:

- Reviewing and updating current asset inventory, levels of service, and risk management strategies
- Integrating with corporate financial and risk management processes to ensure asset lifecycle needs are incorporated into long-term financial sustainability considerations
- Recording tangible capital assets in accordance with the Region's Tangible Capital Asset (TCA) Policy (until YorkNet's specific TCA policy is created and board approved)

Alignment with corporate strategic goals

With YorkNet's investments in extending fibre to underserved areas, more households are within reach of reliable and affordable broadband access. Because more health, education, government, and other services are being delivered online, greater connectivity helps build healthier communities. Enabling people to connect virtually with services also cuts road travel, which supports more sustainable environments.

YorkNet directly supports all four strategic plan priority areas: Economic Vitality, Healthy Communities, Sustainable Environment and Good Governance and several of the strategic plan objectives including:

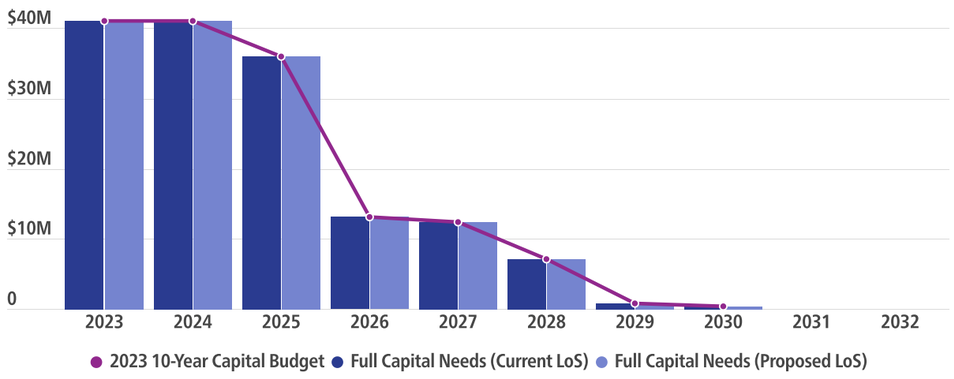
Areas of Focus	Objective	Alignment with YorkNet
ECONOMIC VITALITY	**Attract and retain businesses, develop employment opportunities, and grow a skilled workforce**	• In a data dependent world, access to fibre infrastructure is important for businesses. In addition, Internet Service Providers (ISPs) can use the network to provide better services, particularly in underserved areas of the Region
HEALTHY COMMUNITIES	**Support safe communities** **Protect and promote residents' well-being**	• YorkNet enables residents to more easily access digital services that support community health, safety, and well-being in a rapidly evolving digital world
SUSTAINABLE ENVIRONMENT	**Deliver and promote environmentally sustainable services**	• Safe and secure access of online services means less need to travel, reducing the overall carbon footprint within the Region
GOOD GOVERNMENT	**Deliver fiscally sustainable services**	• By investing in and owning the fibre network, the Region has greater control of the assets, and access to higher bandwidth. Direct investment also carries lower construction costs than a private sector collaboration

17.3 Financial outlook

The 10-year financial highlights include:

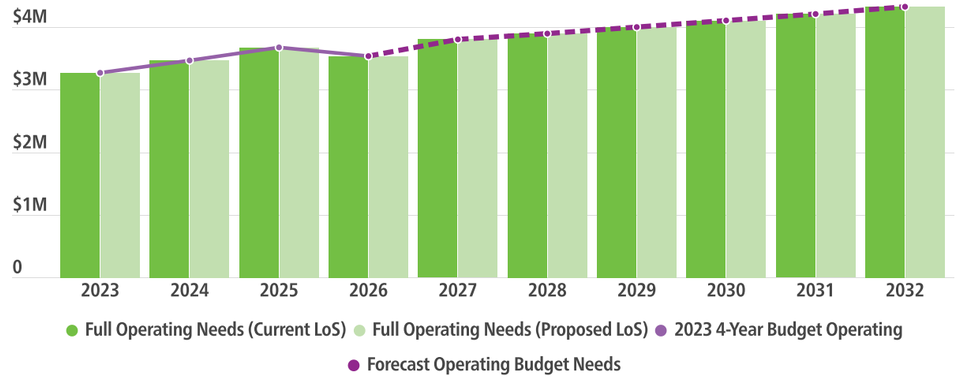
- Asset management related expenditures, such as initial construction, maintenance, staffing, and contributions to asset management reserves for long-term rehabilitation and replacement
- The YorkNet 10-year capital plan is $152.2 million and is made up of two capital programs expanding the network from 500 km to 1,600 km
    - The Expansion Project will improve connectivity in underserved areas. ISPs will have the opportunity to connect to this open-access network, giving thousands of homes and businesses access to high-speed service
    - The remainder of the plan is focused on connections to Regional and other public sector facilities, and improving private sector connectivity across the Region
- As well as extending the network, the capital plan includes building additional loops and redundancies to reduce the risk of service disruptions
- With significant growth in the network, asset management will need to evolve substantially over the next five years. To this end, YorkNet is working through the process of building a formal asset management plan to more clearly inform future budgetary needs. Based on this work, rehabilitation/betterment spending will likely enter future capital budgets. With almost 70% of the assets yet to be constructed, there is no asset management "back log" or funding gap (this is why there is no Capital Budget Graph below for existing assets)

Figure 58: Capital budget vs. full capital needs (future assets)



The operating budget accounts for interim lifecycle needs with funds for materials and maintenance, staffing (including salaries and peripheral costs), and systems support (including asset management software and third-party resources, such as consultants). The operating budget also addresses future replacement needs, which means YorkNet is in a good position to fully fund asset management needs going forward.

Figure 59: Operating budget vs. full operating needs (existing and future assets)



17.4 Current levels of service

Current customer levels of service

The current customer levels of service statement is to build and maintain a network that achieves the greatest number of connections in the shortest amount of time, by providing uninterrupted services, increased connectivity, enhanced network efficiency, and speed.

Current technical levels of service

The table below provides measurable outcomes of the service using numerical values:

		Technical Levels of Service		
Customer Levels of Service	**Asset Categories**	**Performance Metric**	**Current Service Level Target**	**Current Performance**
Build and maintain a network that achieves the greatest number of connections in the shortest amount of time by providing uninterrupted services, increased connectivity, enhanced network efficiency and speed	• Fibre Network • Conduit • Vaults • Fibre Optic Splice Closures • Monitoring System • Panels • Locate Wands	Transmission characteristics of fibre optic cable consistent with nine micron core and 125 micron cladding (a micron is a micrometre or one-millionth of a metre). Wavelength is measured in nanometres (billionths of a metre or nwm) and attenuation (loss of signal over distance) is measured in decibels (decibels) per kilometre.	At 1310 nm, attenuation should be no greater than 0.4 dB/km At 1550 nm, attenuation should be no greater than 0.3 dB/km	TBD (Verified when end users are connected and an Optical Time Domain Reflectometer test is completed. To date, these specifications have been met; however, a measure of overall performance is dependent on pending network buildout.)
		Up time (functioning)	99.5% to 99.9%	TBD (Currently exceeding desired levels but a true measure of overall performance is dependent on pending network buildout.)
		Attenuation levels (per kilometre of fibre) (verified through OTDR tests)	≤0.5 decibel	≤0.5 decibel
		YorkNet's loss/attenuation objective for:		
		All new each fibre optic fusion splice installation	≤0.10 decibel	≤0.10 decibel
		All existing splices	≤0.3 decibel	≤0.3 decibel
Build and maintain a network that achieves the greatest number of connections in the shortest amount of time by providing uninterrupted services, increased connectivity, enhanced network efficiency and speed *(Continued)*	Fibre network, conduit, vaults, fibre optic splice closures, monitoring system, panels and locate wands	Target Response Time (RT) following receipt of a service call (defined as the time required for the technician to be on site for an emergency repair following customer notification by phone and receiving access to the facility. Upon assessment, YorkNet will notify the customer of forecasted length of the outage.)	≤ 4 hours	TBD (As the network is built out, YorkNet will have a better understanding of the true scope of potential issues that could cause a service disruption. Currently, the target has been met in instances that have occurred, despite being dependent on end-user reporting at time of occurrence. Going forward, YorkNet's ability to meet this standard will be supplemented and improved with a new monitoring system.)
		Days of advance notice of scheduled maintenance provided to the customer (Unscheduled maintenance may also occur, and can be any maintenance activity performed on the network as a result of a threat (low risk for outage) or an emergency (unplanned/ unforeseen events).	≤ 21 days	≤ 21 days
		Overall network infrastructure split between:		
		Region	45%	TBD (Current standard is being met because the Region is the primary user. Going forward, network planning will continue to account for minimum requirements of each stakeholder group.)
		Municipal, university, school and hospital sector (MUSH)	35%	
		Private sector	20%	

Risks and treatment options

A formal risk assessment has identified YorkNet's most probable and consequential threats, as well as the most effective lifecycle activities to manage them.

Fibre cuts and damage are the highest risk threat. Building infrastructure underground protects assets from above-ground hazards. Once the infrastructure is underground, physically marking where it is located prior to any digging activity (via locate services) is the most effective way to continue to protect it once operational.

Network identification and information management are key for ensuring the network remains reliable for customers. Network monitoring infrastructure will be expanding to detect any disruptions early.

Lifecycle activity options to maintain current levels of service

YorkNet is in a growth phase of building out the network, with most of the current network still in an early stage of its lifecycle. Nearly 70% of the total network has yet to be constructed. YorkNet is still primarily in the planning, acquiring, and using stages of the lifecycle; although, maintenance and disposal activities are considered for the existing network and will continue to be as the broader network evolves.

Planning:

- As YorkNet plans and builds the asset, the goal is to create better designs to mitigate some future operational costs and replacements. For example, fibre construction planning prefers a buried structure over an aerial structure (on utility poles) whenever possible because buried requires less ongoing maintenance and extends the asset's useful life. In the long run, it is more cost efficient, significantly reducing the potential for damage and degradation
- In addition, as demand for connectivity is growing quickly, YorkNet is planning for increased future capacity requirements by using micro-conduit and building more conduit to meet long-term needs. YorkNet is also using higher count fibre bundles throughout the network. For example, using 144, 256, or even 864 strand bundles versus 12 or 48 strand bundles. This can be done for a small incremental cost and avoids future costs associated with disturbing the fibre for foreseeable and necessary capacity upgrades
- Each fibre strand has enormous capacity as well, limited only by the equipment to which it is connected. To this end, good planning has considered fibre to be the best and most scalable data transmission medium to address the increasing speed and bandwidth demands of new technology

Acquiring:

- Like Regional departments, YorkNet procures assets via a competitive process
- In 2022, YorkNet tendered nine contracts to build out 1,100 km of fibre by 2026
- The contracts cover materials, equipment, design and construction
- New assets are added and integrated into the operational environment through uploading as-build drawings into mapping network software. This helps with network visualization and management

Using:

- The using phase for dark (not in use) fibre assets is hard to account for because they are, by definition, not yet in use. Once built, the fibre is ready for use but the end user is responsible for lighting it
- With almost two-thirds of YorkNet's current 503 km asset base having been constructed over the past five years, most existing assets are still in the using phase, requiring very little maintenance
- Only a small portion of older assets are entering the maintenance and disposal phases. For the most part, these segments were constructed prior to the current vision and mandate, so upgrades will be required to increase capacity and/or relocate

Maintenance:

Data travels through the fibre as light, with very little "wear and tear." While degradation will occur, it is mostly imperceivable. Nevertheless, maintenance activities are still part of YorkNet's asset management framework.

- Currently, YorkNet uses a reactive, condition-based approach for existing assets. Repairs due to deterioration, emergency events, or unforeseen asset failures are currently captured as they happen
- Corrective maintenance is currently being deployed to upgrade and, in some cases, relocate fibre assets. Activities include installing higher strand-count bundles in existing segments, and implementing a duct-in-duct initiative that inserts micro-duct into existing duct to optimize conduit capacity. Circumstances needing such activities are usually not urgent and can be managed over time as resources and planning permits
- Emergency maintenance is undertaken to restore service when fibre is cut or damaged. Incidents may arise from digging with machines in areas with buried fibre, aerial fibre being damaged by a third party or weather event, and rodents chewing through fibre. This kind of maintenance is usually initiated through a report to YorkNet by an end-user who has lost service. As a result, YorkNet has established maximum downtime standards to mitigate negative consequences like reputational damage and/or loss of an essential service
- Going forward, YorkNet plans to implement a more proactive approach to maintenance. Preventative maintenance through regularly scheduled inspections and ongoing monitoring will help to further minimize service loss. Field inspectors have been added to the YorkNet team to assist with physical inspections as assets are constructed to ensure minimum standards are being met. Inspectors will be instrumental in future condition assessments, too. YorkNet already procures for locate services so that fibre assets can be identified and located by third parties doing work near them. By the end of 2024, a fibre monitoring system will be installed to help identify breaks in the network so they can be dealt with in a timelier fashion, further minimizing downtime

Disposal:

- Fibre assets have a long useful life, currently estimated to be 50 years, but may be significantly longer. Full renewal or replacement of the assets usually occurs at the end of the useful life. Many existing assets are new, while others range up to 20 years old. No major replacements are anticipated in the next 20 years, barring anything unforeseen. The technology itself has only been in use for 30 years and is still going strong in most cases, so the useful life assumption is still being tested
- As noted earlier, some older fibre segments are being disposed of, or will be disposed of, to address capacity shortcomings and bring service up to current and future standards
- Disposal activities will continue as needed

Lifecycle activities to maintain current levels of service

The activities below are based on lifecycle management options contained in Table z of Section 4.1. This list is not exhaustive, as many other measures, such as basic inspections and maintenance, take place every day and help staff adjust operations and make minor repairs as needed. The full operation, maintenance, and capital lifecycle activity plans are housed in the Net Designer software, which will be supplemented by new asset management software by the end of Q3 2024.

Lifecycle activities - dark fibre network

Year	Inspections	Maintenance	Capital (rehab, replace, expand, upgrade)
2023 to 2032	• Construction inspections • Asset condition inspections • Network monitoring	• Minor repairs • Emergency repairs • Relocations • Disposal of obsolete assets	• Network planning and design • Materials procurement • Network construction • Fibre replacement/upgrade • Fibre relocations • Add paths for network diversity

17.5 Proposed levels of service

Proposed customer levels of service

There are no planned changes to the current customer levels of service since we are still building out the network.

Proposed technical levels of service

YorkNet has received nearly $120 million in funding to expand the network as quickly as possible. As the network nears full buildout and reaches its full potential, new or modified levels of service may be identified.

The current and proposed YorkNet system map can be found in Appendix I towards the end of this document.

Lifecycle activities to achieve proposed levels of service

As noted above, a fully built, contiguous network provides a different context for service level provision. Once fully built, it becomes a complete asset, which shifts emphasis from planning and acquiring to using, maintaining, and disposal phases of the asset lifecycle.

Planning and Acquiring:

Planning and acquiring will continue for new construction while there remain "stub" segments (areas that are underserved). Otherwise, planning and acquiring shifts to a long-term focus of major rehabilitation and replacement.

Using:

Once built and in full use, data on the asset's ability to provide service as intended, its deterioration, and its failure will be gathered to plan for and allocate maintenance resources and strategy.

Maintenance:

Based on more robust usage data, and as the asset ages, the maintenance strategy will have a more proactive approach; however, all maintenance activities will remain the same:

- Corrective maintenance will continue as needs evolve over time. Activities such as installing higher count fibre bundles or adding conduit will be likely solutions for these circumstances
- Emergency maintenance will continue to be required as it is impossible to avoid fibre cuts or damage entirely. However, with enhanced asset management systems, emergency response management will be more robust
- Preventative maintenance through regularly scheduled inspections and ongoing monitoring will help to further minimize service loss

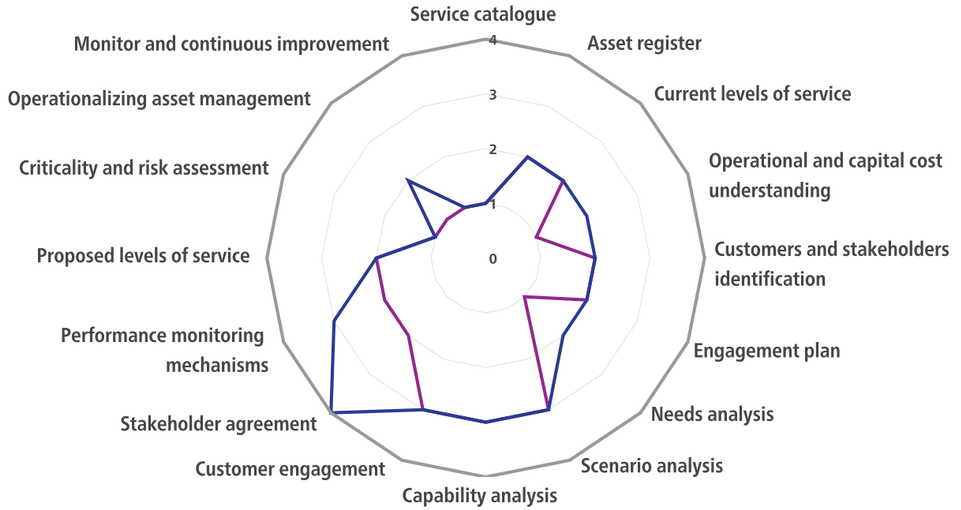
Disposal:

Disposal activities will continue as needed.

17.6 Service area asset management maturity

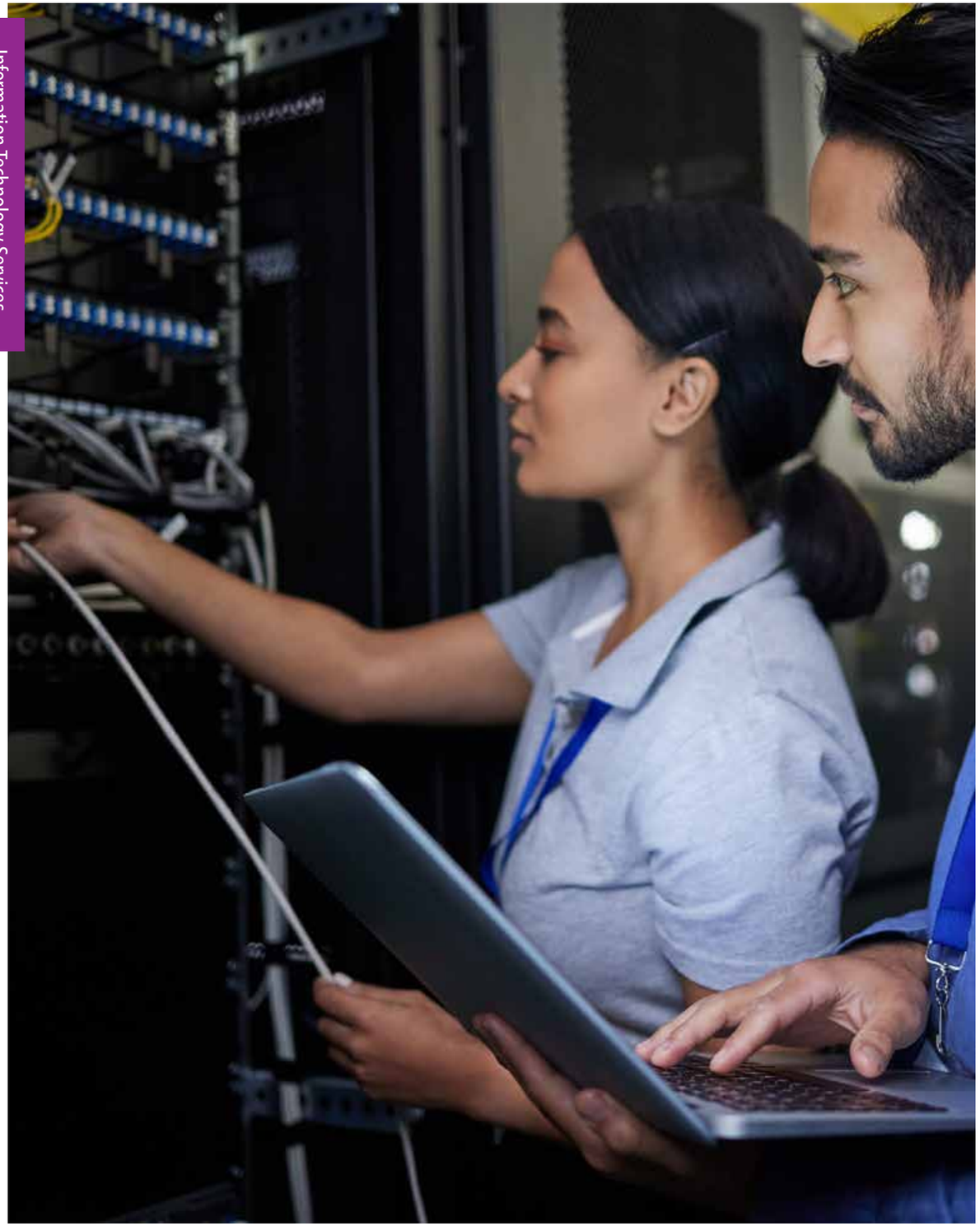
Figure 60: Asset management maturity graph

There are 16 categories labeled in the circle graph, each scored on maturity. Scores range from 0, the lowest maturity, at the centre of the circle, to 4, the highest, at the perimeter.



16.7 Monitoring and continuous improvement

		Priority Area				
Area and Action	Target completion year	Engage more fully with customers	Embed risk management/ build response readiness	Use the best possible evidence in making decisions	Standardize processes	Build asset management skills and competence
Implement fibre monitoring system	2024	•	•	•	•	
Purchase asset management software	2024			•	•	
Conduct network audit	2026		•	•		
Finish building network	2032	•	•	•	•	•



Information Technology Services

Replacement cost:
$68.4 M

Performance grade:
B

Condition (fair or better)
56%

Asset portfolio:

- 920 printers
- 6,592 cellular devices (cell phones, pagers and wireless modems including machine to machine)
- 8,832 network and data centre devices (including cybersecurity, network switches, phones, firewalls, routers, servers and storage)
- 20,546 computers (including monitors and docking stations)
- Software (applications, systems, etc.)

Changes in asset portfolio:

- $5.2M in assets retired across all classes
- 60% of new or replaced assets (by cost) were deployed to network and data centre infrastructure (including cybersecurity)

Future outlook:

The overall condition grading of the technology asset portfolio is expected to experience a slight downward trend due to backlog resulting from the global technology supply chain issue. As the issue normalizes, the instability in availability and cost of technology is still expected.

18.1 State of the infrastructure

Information Technology (IT) Services is responsible for building, operating and maintaining the Region's corporate technology infrastructure to ensure safety and security. This includes procuring, operating, maintaining and disposing of end-user devices, network switches, firewalls, routers, servers, software and data centres that comprise the technology infrastructure.

Replacement cost summary:

2021 Replacement cost		$63.7 M
Changes:		$4.7 M
New and upgraded assets	$9.9 M	
Asset evaluation improvements and inflation	$0 M	
Decommissioned assets	($5.2) M	
2022 Replacement cost		$68.4 M

Performance grade:

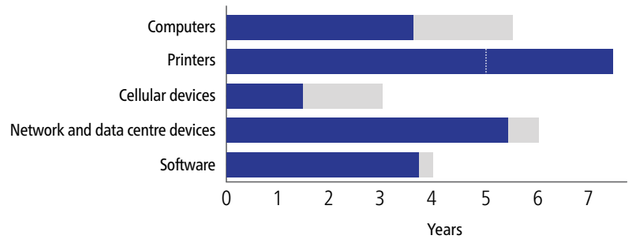
Criteria	Grade	Trend
Reliability	A	→
Capacity	B	→
Condition	C	→

Condition ($M)

Mitigation measures to manage potential asset and services vulnerabilities include: Purchasing extended warranty, early ordering to offset lead times, increasing pool of spare assets and replacement parts for repairs, and monitoring health assets and capacity for replacements/repairs.

Overall average of assets in the portfolio have reached 79% of their useful life.

Average age and useful life expectancy (years)



Where the average age of the asset class exceeds its Useful Life Expectancy, the blue bar extends beyond the gray bar and is noted by a hatched white line.

18.2 Strategy

Information Technology Services' (ITS) strategic approach to decision making focuses on planning, acquiring, operating, maintaining, refreshing, and disposing assets that make up the technology infrastructure to ensure stakeholder requirements are regularly met.

Demand for new services and enhancement to existing services are monitored and driven by:

- An expanding customer base due to staff and population growth
- Cybersecurity needs
- Infrastructure replacement needs and technology obsolescence

With demand, ITS considers both asset and non-asset solutions for mitigating risk and managing failure. These solutions are supported by:

- Annual review of assets in "fair," "poor," and "very poor" condition (i.e., annual State of Infrastructure Report)
- IT service and asset management best practices to provide valuable services and encourage appropriate use of assets
- Information about customer satisfaction and general feedback gathered through focus groups, surveys, and other means to drive improvements and identify new opportunities
- IT Enterprise Architecture (EA) methodologies to design, plan, implement, and govern technology infrastructure (establishing enterprise level EA program)
- Implementation and monitoring of online security technologies to manage cybersecurity risks

Assets that are deemed mission critical and/or in a critical state are monitored closely and, if possible, maintained or replaced before they fail. If there is a failure or service degradation, it is reported to the ITS Service Desk. Following procedures, root causes of issues are then identified, and assets and services are restored as quickly as possible. Issues are categorized based on the severity of their impact to productivity, safety, and financial loss, and responses are managed accordingly.

Current risk treatment plans include (but are not limited to) major incidents processes, application vulnerability scans, spare asset pools, and fault-tolerant redundancy. An IT Disaster Recovery Plan is in place to provide immediate response and recovery of mission critical assets following any major threats. Recovery personnel are trained to ensure strategies and actions accurately reflect current recovery requirements.

Meeting asset management policy objectives

ITS is aligned to Corporate Asset Management Policy objectives through activities such as:

- Ensuring organizational accountability and transparency by engaging customers for input into asset management planning
- Improving evidence-based decision making using in-service asset data related to expenditures, operations, and maintenance
- Providing defined levels of service that are balanced against costs and risks

Alignment with corporate strategic goals

The Region's Information Technology Services area directly supports all four strategic plan priority areas: Economic Vitality, Healthy Communities, Sustainable Environment and Good Governance and several of the strategic plan objectives including:

Areas of Focus	Objective	Alignment with Information Technology Services
ECONOMIC VITALITY	**Attract and retain businesses, develop employment opportunities, and grow a skilled workforce**	• Regular technology renewals and refreshes ensure the Region's technology infrastructure remains in good condition, supporting departments in the effective delivery of services to both staff and the community
HEALTHY COMMUNITIES	**Support safe communities** **Protect and promote residents' well-being**	• Regular technology renewals and refreshes ensure the Region's technology infrastructure remains in good condition, supporting departments in the effective delivery of services to both staff and the community
SUSTAINABLE ENVIRONMENT	**Deliver and promote environmentally sustainable services**	• Minimize asset carbon footprint by implementing responsible disposal practices to reduce landfill waste, and preferring vendors offering eco-friendly or recyclable product packaging, where possible • Require vendors to list "Regulatory and Environmental" specifications on their products, including: Energy Star configurations where available, and EPEAT (Electronic Product Environmental Assessment Tool) registration • Encourage vendor use of recycled materials in their product where possible • Explore options for re-purposing end-of-life technology assets for a "second life," such as providing loaner devices for break/fix scenarios when practical
GOOD GOVERNMENT	**Deliver fiscally sustainable services**	• Completion of asset management plans, including this plan, demonstrate financially sustainable lifecycle management to gain full value from assets. Funding models adhere to the Fiscal Strategy

18.3 Financial outlook

The 10-year financial highlights:

- The graphs below demonstrate that the asset renewal/refresh funding ratio will provide 100% of the necessary funds for the optimal renewal/refresh and replacement of technology assets
- The current capital funding is deemed sufficient to maintain existing services at the current levels of service over a 10-year planning period, assuming no changes in levels of service
- The lifecycle capital cost for services covered in this asset management plan amounts to $276 million over 10 years, with an average of $27.6 million per year. Additionally, the total lifecycle operations and maintenance expenditure is $488 million, averaging $48.8 million per year, which includes expenses like salaries, benefits, administration, and reserves contributions. The total projected needs stand at $764 million, averaging $76.4 million per year

Figure 61: Capital budget vs. full capital needs (existing assets)

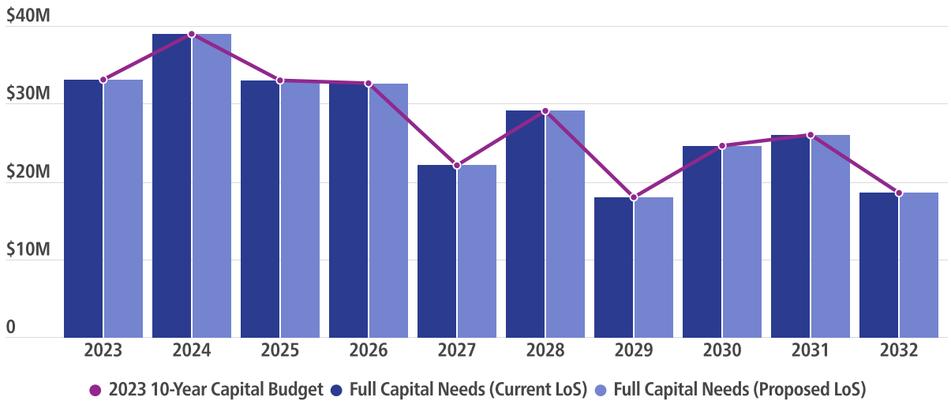


Figure 62: Capital budget vs. full capital needs (future assets)

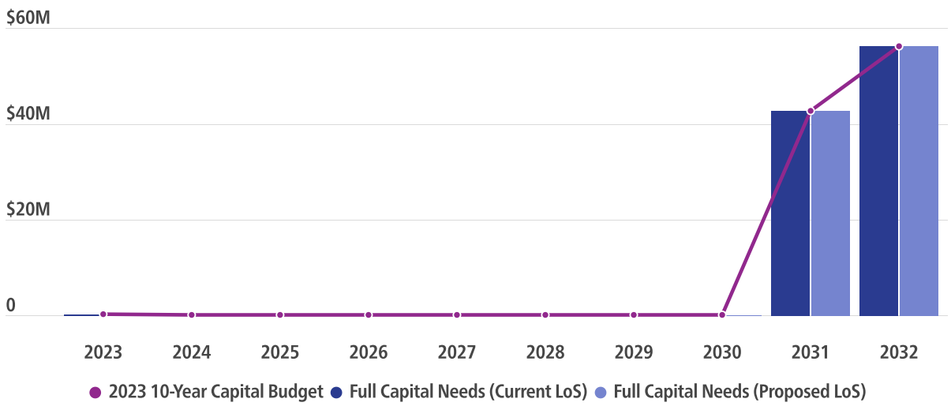
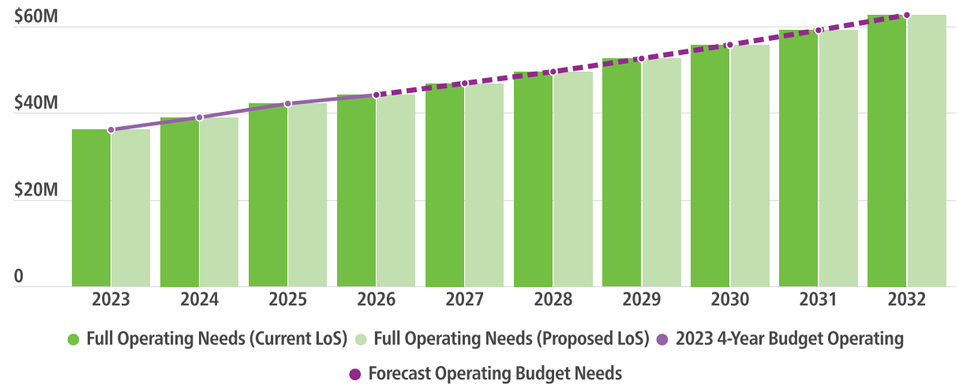


Figure 63: Operating budget vs. full operating needs (existing and future assets)



18.4 Current levels of service

Current customer levels of service

Current customer levels of service statements are as follows.

Network and data centre operations:

- Provide reliable and fast service across the Region's IT systems and infrastructure for Regional staff. This includes network and internet connectivity, communication systems (such as email and phone), digital file storage and access, maintenance, repair, renewal/refresh and replacement of technology assets, and 24/7 x 365 support

Cybersecurity:

- Build, operate, and maintain the Region's corporate technology infrastructure to be safe and secure. This includes procuring, operating, maintaining and disposing all end-user devices, network switches, firewalls, routers, servers, software, and data centres that make up the technology infrastructure

Current technical levels of service

The technical levels of service for network and data centre operations are defined by the metrics associated with that service.

In order to provide a safe and secure service through cybersecurity, the Region monitors how well software prevents suspicious data from entering the network. It also identifies unusual behaviour patterns of employees (e.g., login attempt from a foreign country), and movement of information (e.g., files being extracted onto a USB). Details related to levels of service are tracked internally.

Network and data centre operations

Customer Levels of Service	Asset Categories	Technical Levels of Service: Performance Metric	Current Service Level Target	Current Performance
Provide reliable and fast service across the Region's IT systems and infrastructure for Regional staff. This includes network and internet connectivity, communication systems such as email and phone, digital file storage and access, maintenance, repair, refresh and replacement of technology assets and 24/7 x 365 support	• Network and data centre devices (network switches, phones, firewalls, routers, servers and storage) • Software (data backup, operation system maintenance, system management tools for network and infrastructure monitoring)	Network and data centre operations:		
		• Percentage of uptime	99%	TBD (Work is underway to track performance against levels of service expectations. Updated results expected in 2024).
		• Percentage of aggregated availability of key corporate services	99.9%	
		• Availability to support client services	Monitoring metric for trending purposes only	
		• Number of alerts		
		• Speed access acceptance		

Cybersecurity

Customer Levels of Service	Asset Categories	Technical Levels of Service: Performance Metric *(monitoring metrics for trending purposes only)*	Current Service Level Target	Current Performance
Build, operate and maintain the Region's corporate technology infrastructure ensuring it is safe and secure. This includes procuring, operating, maintaining and disposing of end-user devices, network switches, firewalls, routers, servers, software and data centres that make up the technology infrastructure	• Cybersecurity devices (wired configuration, servers, network, endpoint) • Software (firewalls, identity and access management, email and web security, VPN and remote access, database security monitoring, security information and event management)	Number of cyberbreach attempts	Monitoring metric for trending purposes only	3 million
		Number of emails filtered		4.9 million
		Number of malwares stopped from entering the network		394
		Response to privacy and cyber breaches		80
		Response to service desk tickets		51
		Review data leaving the network		*

**Efforts to establish the performance metric currently in progress.*

Risks and treatment options

Network and data centre operations:

- Reliability of 911 call connections for staff safety: Critical components are supported by 24/7 x 365 maintenance contracts and IT on-call staff. Redundancy and backup systems are in place, and routine testing is performed. If required, 911 calls can be answered by backup call centres
- Uninterruptible power supply (UPS) failure/outages: IT has invested in redundant power supplies and batteries. UPS equipment and maintenance practices are in place to reduce single points of failure
- Network breaches: Security devices (firewalls) are deployed (with redundancies) throughout the network to monitor and prevent unauthorized access and address any failures

Cybersecurity:

- Threats and cyber risk: IT protects the Region's assets through network software, monitoring and investigating suspicious activity, performing security and cloud security assessments, application vulnerability scans, and audits to verify and promote best security practices. IT alerts employees to current threats and investigates possible phishing links. It also provides education to support secure and effective hybrid working environments
- Incidents and breaches: Where incidents and breaches related to cybersecurity have occurred, IT activates the Cyber Breach Framework Team to identify priority level, forensics support, and responsibilities of each participant

Lifecycle activities to maintain current levels of service

Of 21 ITS Branch services, nine are deemed critical. The first three to focus on are network operations, data centre operations, and cybersecurity.

The table below provides lifecycle activities to maintain current levels of service over the next 10 years while minimizing costs and risks. These activities are based on lifecycle management options contained in Table z of Section 4.1. The lifecycle activities shown are a small sample of the risk treatment strategies used. Other forms of basic inspections and maintenance occur on a day-to-day basis.

Lifecycle activity — network and data centre operations

Year	Inspections	Maintenance	Capital (rehab, replace, expand, upgrade)
2023 to 2032	• Data collection and reporting • Device Appliance System to monitor the network • Systems are used to monitor the network operations for speed and access; alerts are immediately sent out when a network disruption occurs	• Maintenance contract agreements with third party vendors to mitigate risks, such as network failures (when issued, contracts are 24/7 x 365) • Disruptive maintenance activities performed after hours • Repairs performed during or after business hours as appropriate	***Annually*** Purchase all equipment support extensions as needed • Update software subscriptions as appropriate • Upgrade all equipment and associated software as appropriate to maintain performance, reliability, and vendor support ***Every five years*** • Refresh all equipment in accordance with established lifecycles • Renew associated support agreements as appropriate

Lifecycle activity—cybersecurity

Year	Inspections	Maintenance	Capital (rehab, replace, expand, upgrade)
2023 to 2032	• Regular monitoring of the Region's network, end points and emails to mitigate threats and vulnerabilities, and reduce cybersecurity incidents • Forensic analyses of incident-related data to understand the underlying causes and business impacts; and manage approaches, policies, and controls that safeguard the integrity, confidentiality, accessibility, accountability, and usability of the Region's information resources	• Conduct support application security audits • Database security maintenance and support • Firewall (Internet registry) • Information security KPIs, security questionnaires • Security maintenance contracts with third party vendors, risk assessments (Cyber Risk Information Tool/Cyber Risk Exposure Tool), information security assessments	***Every Three Years*** • Renew endpoints protection ***Every five years*** • Firewall hardware and software replacement • Purchase security filtering tools/ firewalls/solutions, certificates, cloud security control points; and audit software and risk management tools

18.5 Proposed levels of service

Proposed customer levels of service

There are no changes to the current customer levels of service over the next 10 years.

Proposed technical levels of service

There are no changes to the current technical levels of service over the next 10 years. Ongoing activity monitoring metrics may change in the future depending on circumstances, such as increases (or decreases) in the number of cyberbreach attempts or emails filtered out.

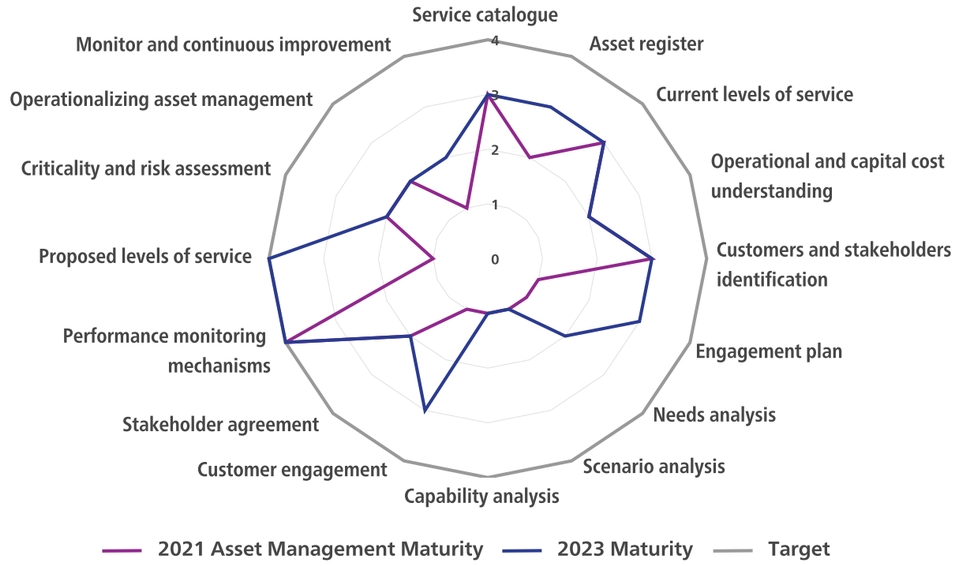
Lifecycle activities to achieve proposed levels of service

See lifecycle activities detailed in the Lifecycle Activities to Maintain Current Levels of Service section.

18.6 Service area asset management maturity

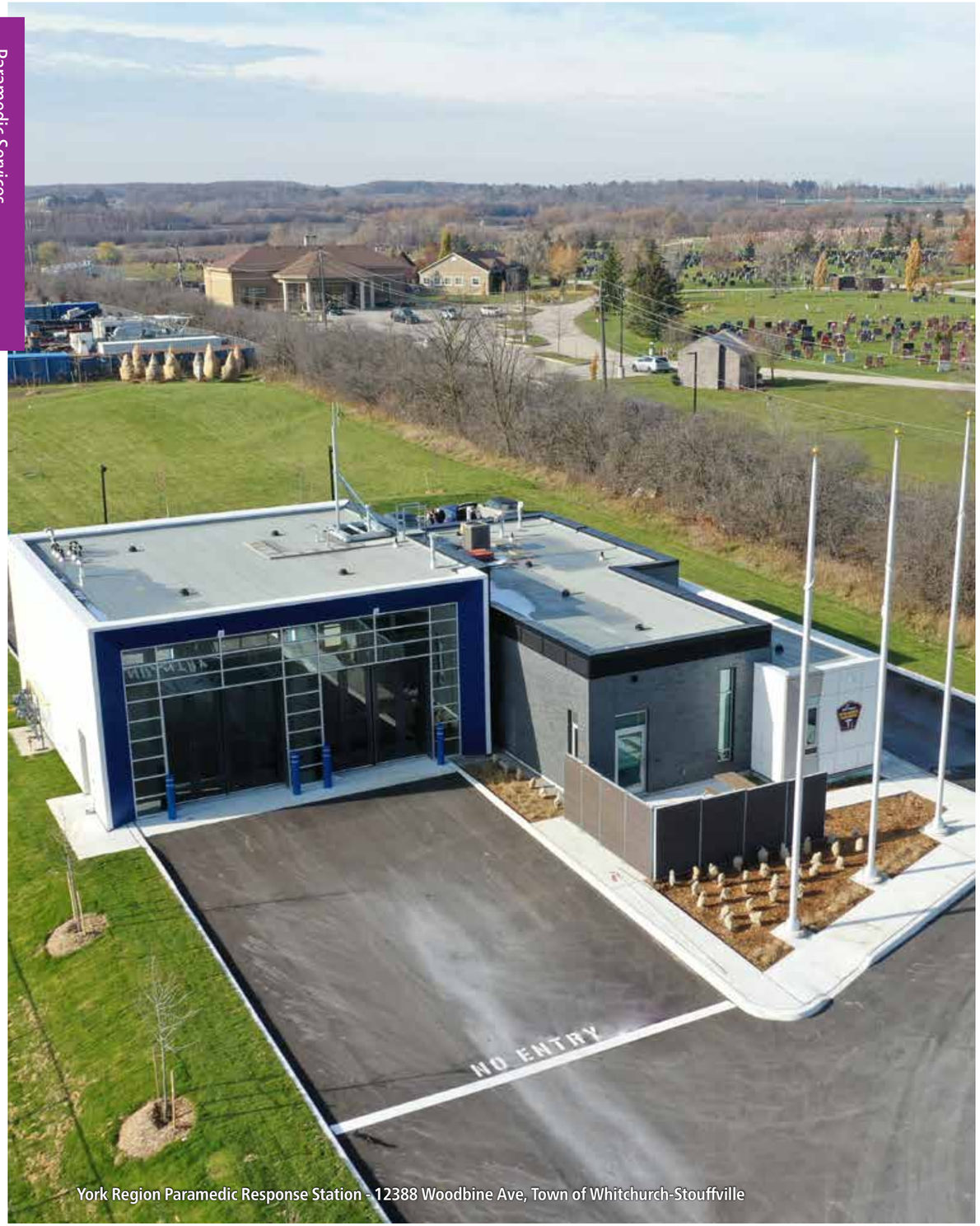
There are 16 categories labeled in the circle graph, each scored on maturity. Scores range from 0, the lowest maturity, at the centre of the circle, to 4, the highest, at the perimeter.

Figure 64: Asset management maturity graph



18.7 Monitoring and continuous improvement

		Priority Area				
Area and Action	**Target completion year**	**Engage more fully with customers**	**Embed risk management/ build response readiness**	**Use the best possible evidence in making decisions**	**Standardize processes**	**Build asset management skills and competence**
Review Renewal/Refresh Service Delivery (Technology Asset Management Governance and Target Operating Model Program)	Ongoing	•			•	•
License and Compliance Management Program Strategy (Technology Asset Management Governance and Target Operating Model Program)	2026		•	•	•	•
Corporate IT Service Management Implementation (Services KPI Planning - Technology Asset Management Planning Frameworks a Methodologies)	2026	•	•	•		
Develop Technology Master Plan (Informs Technology Asset Management Governance and Target Operating Model Program)	2027		•	•		



York Region Paramedic Response Station - 12388 Woodbine Ave, Town of Whitchurch-Stouffville

Paramedic Services

Replacement cost:
$35.6 M

Performance grade:
A

Condition (fair or better)
92%

Asset portfolio:

- One trailer
- One emergency support unit
- One all terrain
- Two multi-patient ambulances
- Two logistic vehicles
- Eight special response units
- 19 Paramedic Response Stations (reported under Property Services)
- 37 sport utility vehicles
- 93 ambulances
- 544 other equipment (defibrillators, stretchers, stair chairs, powered air purifying respirators (PAPRs))

Changes in asset portfolio:

- One special response unit
- One multi-patient ambulance
- Three ambulances
- Six pieces of other equipment
- Nine sport utility vehicles

Future outlook:

The Region has several upcoming capital projects planned to enhance its ability to meet current paramedic response times, including replacing of medical equipment based on the annual replacement program and updated the 10-year Paramedic Services Master Plan (2021-2031), which includes the addition of 53 vehicles and six stations by 2031 - including five planned, and one additional proposed station in South Keswick in the Town of Georgina.

19.1 State of the infrastructure

York Region provides emergency and non-emergency medical response services to the cities and towns within York Region through Paramedic Services. These services include patient assessment, lifesaving treatment and monitoring, safe and timely transport to appropriate medical facilities and community paramedicine.

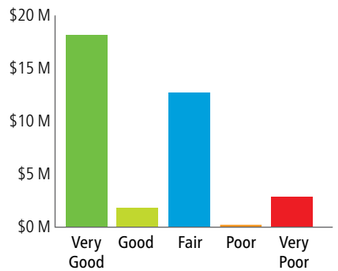
Replacement cost summary:

2021 Replacement cost		$33.2 M
Changes:		$2.4 M
New and upgraded assets	$4.8 M	
Asset evaluation improvements and inflation	$0.6 M	
Decommissioned assets	($3.0) M	
2022 Replacement cost		$35.6 M

Performance grade:

Criteria	Grade	Trend
Reliability	A	→
Capacity	A	→
Condition	A	→

Condition ($M)

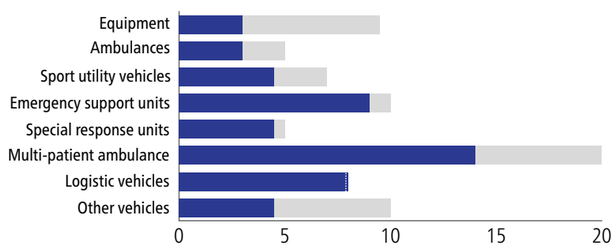


13% of total replacement cost was spent on rehabilitation and replacement.

The Region adheres to strict legislative and regulatory requirements related to its fleet and equipment.

Assets have reached 66% of their useful life.

Average age and useful life expectancy (years)



Where the average age of the asset class exceeds its Useful Life Expectancy, the blue bar extends beyond the gray bar and is noted by a hatched white line.

19.2 Strategy

Paramedic Services operates in accordance with the Paramedic Services Master Plan, which serves as the guiding mandate for strategic decision-making. This comprehensive plan outlines key priorities to ensure the delivery of high-quality care, such as integrating Paramedic Services into the broader healthcare system, enhancing accessibility to care, meeting patient needs, and building the capacity to address future demands.

Paramedic Services develops, monitors, and reports on levels of service in the context of asset capacity and use, function, quality and reliability, and financial sustainability.

A paramount objective of Paramedic Services is to offer all residents equitable access to emergency medical services across the nine municipalities it serves. Paramedics, certified through the Central East Prehospital Care Program, are empowered to perform specific delegated medical procedures in accordance with the Advanced Life Support Patient Care Standards. In response to the growing and diversifying population of York Region, Paramedic Services faces an increasing volume of complex emergency calls. To meet this escalating demand, it must plan for the future, ensuring coordinated, patient-centric care delivery while managing costs.

Asset management must factor in the region's growing and aging population, as well as the aging infrastructure. As the demand for emergency health services continues to rise, York Region expects a substantial increase in the number of daily paramedic responses, from 211 incidents in 2019 to a projected 450 by 2031. Meeting this surge in demand necessitates adding fifty ambulances to the fleet, along with the associated medical equipment and supporting infrastructure.

Paramedic Services uses a risk framework, primarily relying on asset age and mileage (where applicable), to determine asset condition and likelihood of failure over a lifecycle. Paramedic Services will be undertaking a critical asset review initiative, using weighted criteria to analyze and rank asset condition. Once complete, Paramedic Services will conduct Failure Modes, Effects and Criticality Analysis (FMECA) for the most critical assets to manage those risks.

To maintain compliance with Ministry of Health standards related to vehicles, equipment, and consumables, Paramedic Services follows preventative maintenance programs and scheduled repairs. All work orders and repair histories are recorded in asset management enterprise programs called FleetFocus M5 and Operative IQ. These records help identify equipment trends and highlight historical maintenance data, ensuring that all equipment and vehicles remain in a state of readiness.

This comprehensive approach to service delivery and asset management underscores Paramedic Services' commitment to delivering top-notch emergency medical care in the face of evolving community needs and challenges.

Meeting asset management policy objectives

Paramedic Services is aligned to the Corporate Asset Management Policy objectives through activities such as:

- Defining levels of service that balance costs and risks
- Ensuring reliable, effective and efficient delivery of services through monitoring and review of levels of service
- Delivering and promoting environmentally sustainable services by implementing initiatives to move towards corporate greenhouse gas emission targets
- Improving access to health and social support services by working with Ministry of Health to improve paramedic dispatch

Alignment with corporate strategic goals

The Region's Paramedic Services area directly supports all four strategic plan priority areas: Economic Vitality, Healthy Communities, Sustainable Environment and Good Governance and several of the strategic plan objectives including:

Areas of Focus	Objective	Alignment with Paramedic Services
ECONOMIC VITALITY	**Attract and retain businesses, develop employment opportunities, and grow a skilled workforce**	• Paramedic Services builds and sustains capacity to meet the changing health care, demographic, socioeconomic and medical needs of the communities served
HEALTHY COMMUNITIES	**Support safe communities**	• Paramedic Services provides residents with equitable access to emergency medical services across all municipalities
	Protect and promote residents' well-being	• Paramedic Services improves access to care by collaborating with patients and linking them to primary and community care
SUSTAINABLE ENVIRONMENT	**Deliver and promote environmentally sustainable services**	• Asset-based strategies reduce energy and fuel consumption of fleet vehicles and facilities
GOOD GOVERNMENT	**Deliver fiscally sustainable services**	• Paramedic Services provides coordinated and connected care that puts patients first, while managing costs. Asset management plans, including this plan, demonstrate financially sustainable lifecycle management

Innovation Story - "Reducing emissions"

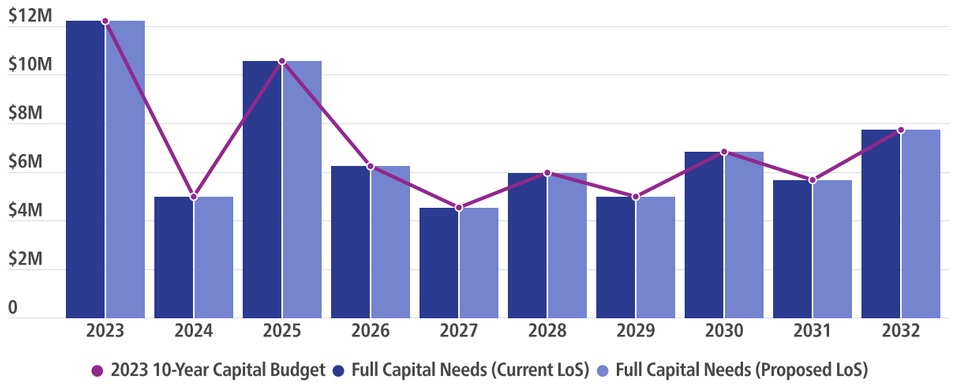
Careful planning, comprehensive staff training, leading-edge monitoring and targeted maintenance have helped the Region realize major operating savings and reduce greenhouse gas emissions by 140 tonnes by adding 16 hybrid ambulances to its paramedic fleet. The service area is now looking at piloting a fully electric vehicle, which could yield greater financial and environmental benefits, in line with the Region's Energy Conservation Demand Management Plan. Equipping every ambulance in the fleet with anti-idling technology has reduced gas consumption by 338,692 litres and greenhouse gas emissions by 858 tonnes since installed.

19.3 Financial outlook

The 10-year financial highlights include:

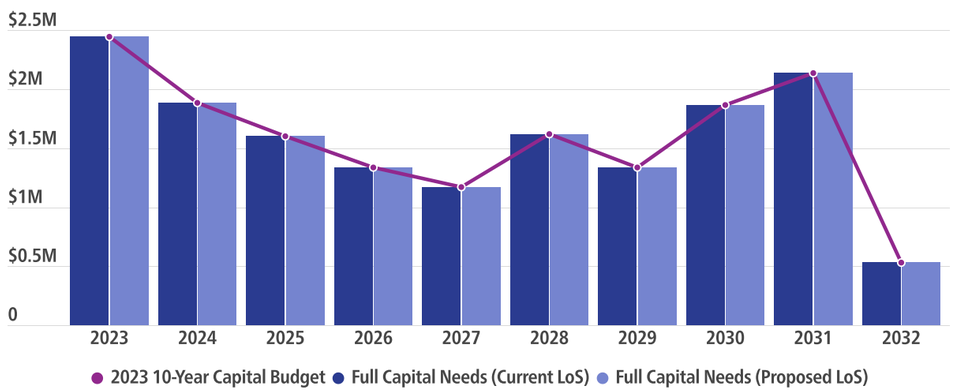
- The 10-year Financing Plan is a summary of projected capital, operational and maintenance budgets and forecasted costs to deliver current and proposed levels of service
- The Capital Budget, which describes financial resources needed for fleet growth, including acquiring new paramedic vehicles and equipment needed to meet increasing demand for services. It also includes funding needed for current levels of service

Figure 65: Capital budget vs. full capital needs (existing assets)



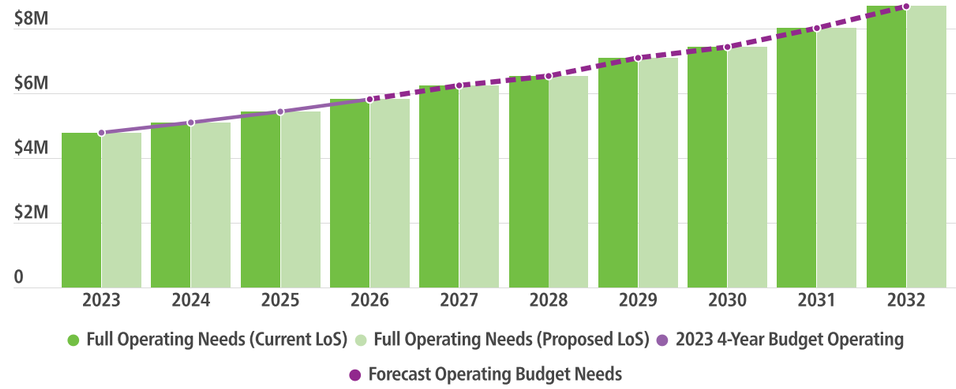
Current and proposed levels of service are nearly identical. Paramedic Services plans to maintain these levels from 2023 to 2032. Full funding is expected, ensuring levels of service are maintained Capital Budget vs. Full Capital Needs (Future Assets).

Figure 66: Capital budget vs. full capital needs (future assets)



The operation budget includes day-to-day expenses such as gas and oil consumption, waste disposal, insurance, and repair and maintenance costs for equipment and vehicles Operating Budget vs. Full Operating Needs (Existing and Future Assets).

Figure 67: Operating budget vs. full operating needs (existing and future assets)



The capital and operational budgets will meet the current and proposed levels of service. The Region will be able to provide quality services to the community without compromising its financial stability.

19.4 Current levels of service

Current customer levels of service

The current customer levels of service are:

- Provide 24-hour response to emergency and non-emergency requests for service, delivering out-of-hospital medical care and transport to people who are injured or ill. Paramedic Services provides basic and advanced life support, emergency and non-emergency medical care and patient transport. Paramedic Services objectives are to meet legislated and Council-approved response times and to achieve equitable response times in each local city and town (capacity-related level of service)
- Adapt to the changing health-care, demographic, socioeconomic and medical needs in the Region (function-related level of service)
- Maintain assets in a state of good repair to provide reliable services to the community that meet the required safety and quality standards (reliability-related level of service)

Current technical levels of service

Paramedic Services has identified the following technical levels of service for asset decision making:

- Emergency response time: under Regulation 257/00, the MOH sets specific targets based on the Canadian Triage Acuity Scale (CTAS). CTAS is a five-level assessment tool to determine the severity of a patient's condition and the need for timely care. CTAS level 1 is the most severe (resuscitation) and CTAS level 5 is the least severe (non-urgent). The following Current Technical Levels of Service table provides response time targets for sudden cardiac arrests and each CTAS level for York Region
- Percentage of critical assets beyond replacement year (by replacement cost): the proportion of critical assets that have exceeded their replacement year compared to the total replacement cost of all assets within this category. These assets include ambulances and all vehicles. They don't include logistics and equipment

- Percentage of lower-critical assets beyond replacement year (by replacement cost): the proportion of lower-critical assets exceeding their replacement year as compared to the total replacement cost of all assets within this category. These assets include logistics vehicles and trailers
- Ratio of standby fleet: the ratio of standby fleet to active fleet
- Reliability percentage: the percentage of scheduled or unscheduled maintenance work orders compared to total work orders
- Service interruptions: average number of unplanned downtime hours per ambulance

Current technical levels of service

		Technical Levels of Service		
Customer Levels of Service	**Asset Categories**	**Performance Metric**	**Current Service Level Target**	**Current Performance**
Provide 24-hr response to emergency and non-emergency requests for service, delivering out-of-hospital medical care and transport to those individuals suffering injury or illness. This includes basic and advanced life support, emergency and non-emergency medical care and patient transport. Meet legislated and Council-approved response times and achieve equitable response times in each local municipality. **Adapt to the changing health-care, demographic, socioeconomic and medical needs in the Region.**	All assets	Sudden cardiac arrest AED	>60%	66%
		Canadian Triage and Acuity Scale (CTAS 1) (8 Minute Response Time)	>75%	74%
		Canadian Triage and Acuity Scale (CTAS 2) (10 Minute Response Time)	>80%	78%
		Canadian Triage and Acuity Scale (CTAS 3) (15 Minute Response Time)	>90%	89%
		Canadian Triage and Acuity Scale (CTAS 4) (20 Minute Response Time)	>90%	93%
		Canadian Triage and Acuity Scale (CTAS 5) (25 Minute Response Time)	>90%	96%
	Ambulances	Ratio of standby fleet to active fleet	>39%	37%
		Service interruptions (average number of unplanned downtime hours per ambulance) (monitoring metric used for trending purposes only)	N/A	99.7 hours/ unit
Maintain assets in a state of good repair to provide reliable services to the community that meet the required safety and quality standards	All assets	Percentage of critical assets beyond replacement year (by replacement cost) for ambulances and all vehicles except logistics and equipment	0%	3%
		Percentage of lower-critical assets beyond replacement year (by replacement cost) for logistics vehicles and trailers	<15%	75%
		Reliability percentage (the percentage of scheduled or unscheduled maintenance work orders compared to total work orders)	>95%	99%

Risks and treatment options

- There is a risk that the current infrastructure (fleet and facilities) cannot adequately support the expected growth in demand. Paramedic Services is working with stakeholders to assess impacts from changes to legislation and determine an appropriate growth plan.
- There is a risk that the reliability and performance standards of services will be adversely affected by aging infrastructure or a failure to expand services to meet demand. Paramedic Services will work with stakeholders to ensure reserves are adequate, and continue to monitor levels of service and asset performance for any signs of slipping standards.
- There is a risk of underestimating the full costs of delivering proposed levels of service. Paramedic Services is working closely with Finance team and other stakeholders to ensure more accurate estimates for future renewal activates.

Lifecycle activities to maintain current levels of service

The table below provides lifecycle activities to maintain current levels of service over the next 10 years while minimizing cost and risk considerations. These activities are based on lifecycle management options contained in Table z of Section 4.1. The list is not exhaustive. The lifecycle activities shown are risk treatment strategies that reduce risks related to providing current levels of service. Daily inspections and maintenance help to monitor asset vitality. Operations and maintenance personnel can make adjustments when needed. Full operation, maintenance, and capital lifecycle activity plans are housed in the Operative IQ and M5 computerized maintenance management software (CMMS).

Lifecycle activities—asset class/facility: paramedic fleet and equipment

				Capital - Fleet (rehab, replace, expand, upgrade)			
Inspections	**Year**	**Maintenance**	**Capital - Land (rehab, replace, expand, upgrade)**	**New Ambulance**	**Other New Vehicle**	**Ambulance Rep.**	**Other Vehicle Rep.**
Regular daily inspections performed by staff for stairchairs, stretchers, defibrillators, powered stairchairs. **All items inspected by manufacturer after accidents or incidents.**	2023	Preventative maintenance performed quarterly on vehicles, stairchairs, stretchers, and powered stairchairs; and annually on defibrillators.	New PRSs #27, #32 and #33; Current rehab/ refresh	4	7	14	16
	2024		Land acquisition for PRS #35; New PRSs #20, #27, #32, #14 and #33; Current rehab/refresh	6	1	13	2
	2025		New PRS #14 and current rehab/refresh	6	N/A	17	5
	2026		Current rehab/refresh	5	N/A	18	4
	2027		Current rehab/refresh	4	1	14	4
	2027		Current rehab/refresh	5	1	20	3
	2028		Land acquisition for station at Sutton and Nobleton; Current rehab/refresh	5	N/A	17	9
	2029						
	2030		PRS #35 and current rehab/refresh	7	N/A	23	4
	2031		Future station replacement and expand rebuilds; Current rehab/refresh	8	N/A	23	N/A
	2032		Future station replacement and expand rebuilds; Current rehab/refresh	2	N/A	23	9

19.5 Proposed levels of service

Proposed customer levels of service

Current customer levels of service will remain the same over the next 10 years.

Proposed technical levels of service

Current technical levels of service will remain the same over the next 10 years.

Lifecycle activities to achieve proposed levels of service

The Region is now meeting the proposed service levels for response time. However, incidents are projected to increase 119% by 2031 compared to 2021 according to the 2020 foundational Demand and Capacity Study. Therefore, additional investments in assets and staffing will be required to maintain these service levels considering the increasing population and call volumes expected over the next 10 years.

Furthermore, the additional ambulances provide spares to ensure there is sufficient surge capacity to support frontline operations. The Region plans to expand the existing portfolio with 50 additional ambulances, two Special Response Units and one logistics vehicle to address the increase in demand, meet the legislated and Council-approved response time targets and ensure equitable response times across all nine local cities and towns.

Lifecycle activities—asset class/facility: paramedic fleet and equipment

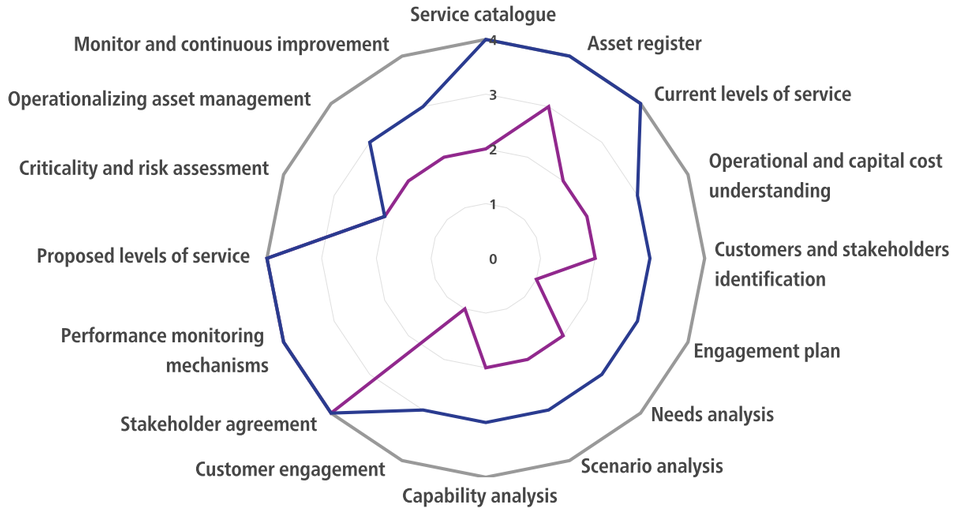
Inspections	Year	Maintenance	Capital - Land (rehab, replace, expand, upgrade)	Capital - Fleet (rehab, replace, expand, upgrade)
Regular daily inspections performed by staff for stairchairs, stretchers, defibrillators, powered stairchairs. All items inspected by manufacturer post accident/ incident.	2023	Preventative maintenance performed on quarterly on vehicles, stairchairs, stretchers and powered stairchairs; and annually on defibrillators.	New PRSs #27, #32 and #33; Current rehab/refresh	• Medical Equipment Replacement • New Paramedic Vehicles • Paramedic Vehicles Replacement
	2024		Land acquisition for PRS #35; New PRSs #20, #27, #32, #14 and #33; Current rehab/refresh	
	2025		New PRS #14 and current rehab/refresh	
	2026		Current rehab/refresh	
	2027		Current rehab/refresh	
	2028		Current rehab/refresh	
	2029		Land acquisition for station at Sutton and Nobleton; Current rehab/refresh	
	2030		PRS #35 and current rehab/refresh	
	2031		Future station replacement and expand rebuilds; Current rehab/refresh	
	2032		Future station replacement and expand rebuilds; Current rehab/refresh	

The system map of current and proposed Paramedic Services stations can be found in Appendix L at the end section of this Plan.

19.6 Service area asset management maturity

There are 16 categories labeled in the circle graph, each scored on maturity. Scores range from 0, the lowest maturity, at the centre of the circle, to 4, the highest, at the perimeter.

Figure 68: Asset management maturity graph



19.7 Monitoring and continuous improvement

Area and Action	Target completion year	Priority Area: Engage more fully with customers	Embed risk management/build response readiness	Use the best possible evidence in making decisions	Standardize processes	Build asset management skills and competence
Identify mission-critical assets and conduct failure mode cause and effect analysis.	2024		•			
Detailed lifecycle analysis of assets, moving away from age- or mileage-based service life.	2025			•		
Integrate Asset Management and Maintenance Management software applications	2026				•	

Seniors Services (LTC)

Replacement cost:
$13.7 M

Performance grade:
B

Condition (fair or better)
72%

Asset portfolio:

- Two long-term care homes (reported under Property Services)
- Newmarket Health Centre - 132 long-term care beds
- Maple Health Centre - 100 long term care beds
- 32 equipment – environmental*
- 97 equipment – kitchen
- 196 resident rooms
- 248 pieces of equipment – communications*
- 282 pieces of equipment – lifts, scales
- 1,282 pieces of equipment – other*

* Inventory count may be understated as some assets are pooled and not itemized separately.

Changes in asset portfolio:

- Security Systems are now included in asset portfolio (non-accounted in the previous report)

Future outlook:

The Region has several minor capital projects planned in accordance with the asset replacement schedule, including ceiling lifts, flooring in resident rooms, kitchen equipment, movable furnishings, a new nurse call system, portable lifts and resident beds.

20.1 State of the infrastructure

York Region owns and operates two Long-Term Care Homes (LTC), Newmarket and Maple Health Centres, providing support and senior resident care services.

Replacement cost summary:

2021 Replacement cost		$10.2 M
Changes:		$3.5 M
New and upgraded assets	$0.4 M	
Asset evaluation improvements and inflation	$3.08 M	
Decommissioned assets	$0 M	
2022 Replacement cost		$13.7 M

Performance grade:

Criteria	Grade	Trend
Reliability	B	↗
Capacity	A	→
Condition	B	→

Condition ($M)

The average asset has reached 60% of its useful life.

In 2022, 3.2% of replacement cost was spent on rehabilitation and replacement.

Average age and useful life expectancy (years)

20.2 Strategy

The Seniors Services Strategy is a pivotal framework that shapes the direction of Seniors Services' activities, with a strong focus on four key objectives:

1. **Balance the needs of seniors with all residents:** This is about making sure the limited subsidies available are geared to those who need them most, regardless of age.
2. **Keep seniors healthier, longer:** The goal is to encourage seniors to stay active, promoting healthy living and lowering the risk factors associated with chronic diseases. Better living reduces the odds of common injuries, such as falls. Healthier living also helps divert non-emergency 911 calls.
3. **Support age-friendly, complete communities:** Such communities work to create accessible spaces, affordable housing options, convenient transportation routes, and programs that support independence, diversity, and inclusion.
4. **Connect seniors and caregivers to the right services at the right times:** Needs change over time. Seniors and caregivers need to know what supports are available to them throughout the full range of the aging journey.

The primary goal of Seniors Services is to enhance the quality of life and safety for residents. It delivers high-quality, resident-centered care within municipal long-term care (LTC) homes and offers programs designed to meet the needs of individuals who can no longer live independently. Legislation mandates each regional municipality to operate an LTC home, and all LTC operators adhere to the provincial funding and governance framework, along with the standards set by the Ministry of Health and Long-Term Care.

The asset management strategy for Seniors Services is driven by two key factors. First, Seniors Services foresees increased demand due to future population growth and the aging population. This is a major driver for planning and managing assets. Second, aging infrastructure requires greater attention to ensure full value is gained over the life of an asset, such as LTC facilities.

Seniors Services employs a risk management framework to assess and manage risks associated with asset rehabilitation and replacement throughout a lifecycle. Asset condition and performance are continually monitored to identify critical conditions and address potential issues through maintenance.

To optimize maintenance operations and enhance asset management, Seniors Services utilizes MainBoss from Thinkage Ltd. This computerized maintenance management software (CMMS) tool enables effective maintenance operations by managing work orders, scheduling inspections and preventive maintenance, tracking work requests, controlling inventory (including optimizing restocking and sourcing spare parts), supervising purchasing and receiving, and providing web access to vital information.

Meeting asset management policy objectives

Seniors Services is aligned to the Corporate Asset Management Policy objectives through activities such as:

- Defining levels of service that balance costs and risks
- Demonstrating financially sustainable lifecycle management through annual tracking, monitoring and reporting of asset condition
- Ensuring reliable, effective, and efficient delivery of services through regular review of levels of service
- Improving access to health and social support services such as:
    - Advocating to improve policy planning and decision-making for long-term care beds by developing a forecast for York Region, including required number, type, and location
    - Working with local cities and towns, community agencies, private sector and Province of Ontario's health agencies to design and implement a multi-service centre or hub that will locate services near each other to respond to the needs of seniors

Alignment with corporate strategic goals

The Region's Senior Services (LTC) area directly supports all four strategic plan priority areas: Economic Vitality, Healthy Communities, Sustainable Environment and Good Governance and several of the strategic plan objectives including:

Areas of Focus	Objective	Alignment with Seniors Services
HEALTHY COMMUNITIES	Support safe communities	• Seniors Services supports age-friendly, complete communities
	Protect and promote residents' well-being	• Seniors Services keep seniors healthier longer, and seeks to connect seniors and caregivers to the right programs and services at the right time
GOOD GOVERNMENT	Deliver fiscally sustainable services	• Needs of seniors are balanced with needs of all residents. Completion of asset management plans, including this plan, demonstrates financially sustainable lifecycle management to gain full value from assets

20.3 Financial outlook

The 10-year financial highlights include:

- The 10-year Financing Plan is a summary of projected capital, operational and maintenance budgets and forecasted costs to deliver current and proposed levels of service
- In 2023, capital funding will peak significantly because federal and provincial funding grants under the Investing in Canada Infrastructure Program must be completed by December 2023. In addition, nurse call systems at both long-term care homes are being replaced
- The capital funding gap between the budget and full capital needs to deliver current levels of service is relatively small ($4.7 million). The gap is driven by asset replacement needs, which is currently based on age of the assets and where the Region is legislatively required to replace assets at end of service life
- Seniors Services is moving to a condition-based assessment and replacement program. This change may allow the service area to manage the funding gap
- There are no plans for growth of the asset base

Figure 69: Capital budget vs. full capital needs (existing assets)

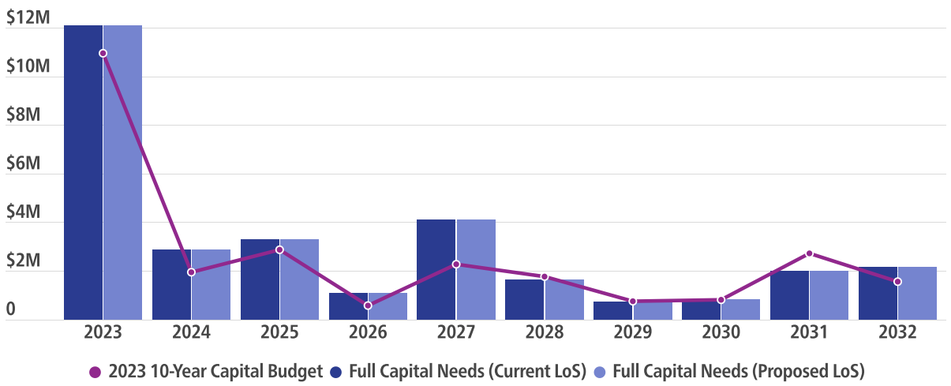
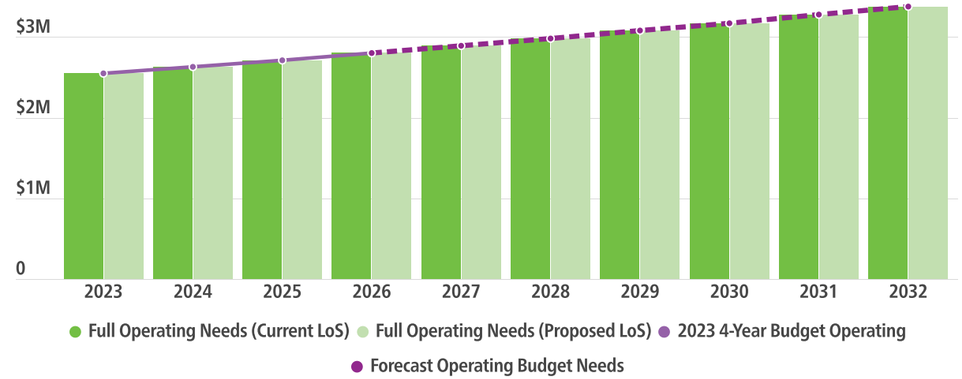


Figure 70: Operating budget vs. full operating needs (existing and future assets)



20.4 Current levels of service

Current customer levels of service

The current customer levels of service statement is:

- Provide safe, timely, effective, efficient, equitable and client/resident/patient-centered care to seniors living in York Region, and residents of the Region's long-term care homes

Current technical levels of service

Seniors Services has identified the following technical levels of service for asset decision making:

- Nurse call system service interruptions: number of days of nurse call system down time
- Percentage of critical assets beyond replacement year (by replacement cost): the proportion of wandering alert systems, nurse call systems, and lifts that have exceeded their replacement year, compared to the total replacement cost of all assets within this category
- Percentage of lower-critical assets beyond replacement year (by replacement cost): the proportion of kitchen, cleaning, laundry equipment, cleaning, and wireless phones that have exceeded their replacement year compared to the total replacement cost of all assets within this category
- Percentage of moderately critical assets beyond replacement year (by replacement cost): the proportion of mattresses, beds, tubs, and security systems that have exceeded their replacement year compared to the total replacement cost of all assets within this category
- Wandering alert service interruptions: number of days of wander alert system down time

Current technical levels of service

Customer Levels of Service	Asset Categories	Technical Levels of Service: Performance Metric	Current Service Level Target	Current Performance
Provide safe, timely, effective, efficient, equitable and client/resident/patient-centered care to residents of the Region's long-term care homes	Long-term care homes	Capacity: Number of available beds	232	232 Maple: 100 beds Newmarket: 132 beds
	All assets	Functional: Number of Seniors Services asset-related compliance findings	0	0
		Functional: Operating cost per long-stay bed day (monitoring metric used for trending purposes only)	N/A	$328
		Functional: Percentage of overall satisfaction	>95%	100% Maple: 100% Newmarket: 100%
	Equipment (wander alert system, nurse call system, beds)	Reliability: Percentage of critical assets beyond replacement year (by replacement cost)	0%	57%*
	Equipment (mattresses, beds, tubs, security systems)	Reliability: Percentage of moderately critical assets beyond replacement year (by replacement cost)	<15%	6%
	Equipment (kitchen, cleaning, laundry equipment, cleaning, wireless phones)	Reliability: Percentage of lower critical assets beyond replacement year (by replacement cost)	<15%	23%
	Equipment (nurse call system)	Reliability: Number of days of nurse call system down time	0 days	8 days (Five events at Maple HC)
	Equipment (wander alert system)	Reliability: Number of days of wander alert system down time	0 days	0 days

**Percentage measures by asset value which include two nurse call systems, both of which have active capital projects under way.*

Risks and treatment options

With an aging and growing population, there is a risk of diminished compliance with Residence Care Standards if funding falls short for renewing infrastructure or expanding services. To mitigate this risk, Seniors Services will collaborate with stakeholders to secure adequate reserves for renewing aging infrastructure and sustaining service levels at the targeted standards.

If the full costs of delivering service levels are underestimated it could have a detrimental effect on financial management, including funding requirements. To address this concern, Seniors Services is closely coordinating with the Finance team and other stakeholders to improve cost estimation accuracy for future renewal activities.

Lifecycle activities to maintain current levels of service

The table below shows lifecycle activities to maintain current levels of service over the next 10 years while minimizing cost and risk considerations. These activities are based on lifecycle management options contained in Table 5 of Section 5.2. The list is not exhaustive. The activities shown are risk treatment strategies that reduce risks related to providing current levels of service. Daily inspections and maintenance help to monitor asset vitality. Operations and maintenance personnel can make adjustments when needed. Full operation, maintenance, and capital lifecycle activity plans are housed in the MainBoss computerized maintenance management software (CMMS).

Lifecycle activities - LTC equipment

Inspections	Year	Maintenance	Capital (rehab, replace, expand, upgrade)
Regular inspections performed by staff for beds, lifts, mattresses, and residential rooms	2023	• Scheduled preventative maintenance programs such as: • Building renovation • Electrical repair/maintenance • Foundation repairs in Newmarket Health Centre • Mechanical repair/maintenance • Plant equipment repair/ maintenance • Repair/maintenance of building internals • Security equipment repair/ maintenance	• New Unionville Seniors Hub • Resident beds and lifts replacement
	2024		• Resident beds and lifts replacement • Technology upgrade
	2025		• Resident beds and lifts replacement • Technology upgrade
	2026		• Resident beds and lifts replacement • Building rehab/replacement
	2027		• Resident beds and lifts replacement • Building rehab/replacement Technology upgrade
	2028		• Resident beds and lifts replacement • Building rehab/replacement • Technology upgrade
	2029		• Resident beds and lifts replacement • Technology upgrade
	2030		• Resident beds and lifts replacement • Building rehab/replacement
	2031		• Resident beds and lifts replacement • Technology upgrade
	2032		• Resident beds and lifts replacement • Building rehab/replacement • Nurse call system replacement • Technology upgrade

A system map of long-term care homes operated by Seniors Services can be found in Appendix J towards the end of this Plan.

20.5 Proposed levels of service

Proposed customer levels of service

Current customer levels of service remain unchanged over the next 10 years.

Proposed technical levels of service

Current technical levels of service remain unchanged over the next 10 years.

Lifecycle activities to achieve proposed levels of service

Maintaining current levels of service over the next 10 years will require capital renewal, upgrade and operations, and maintenance activities.

Region surveys of resident satisfaction identified a need to modernize resident rooms and adult day program facilities. The Modernization Project and LTC Regulation Compliance Project are the two main projects planned to upgrade Seniors Service facilities.

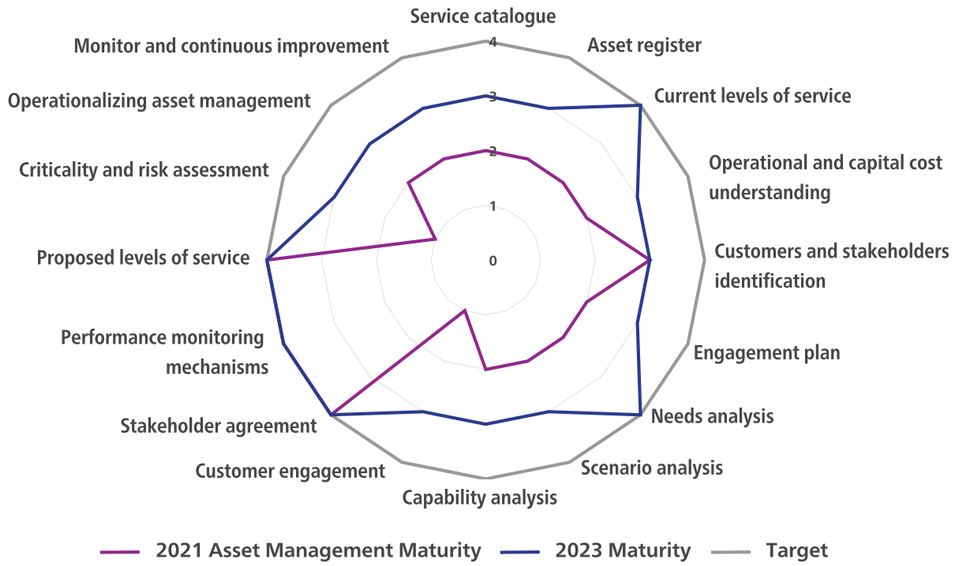
The average cost of renewal is about $1.11 million per year for 2023-2032. All critical assets are to be replaced at their estimated end-of-life and 15% of lower- and moderately critical assets may be carried over as backlog. This proposed service level reduces the need slightly by about $40,000 per year to $1.07 million per year. Seniors Services will develop an internal condition assessment inspection program to extend asset replacement intervals where possible while meeting legislated requirements.

Seniors Services inspects, repairs, and maintains its assets as the law requires. It makes minor repairs to equipment like beds, lifts, cleaning equipment, cooking equipment, and other assets as needed. Seniors Services is also responsible for inspecting, repairing, and replacing parts for building systems like sprinklers, roofs, electrical systems, siding, insulation, HVAC, doors, walls, flooring, and lighting.

20.6 Service area asset management maturity

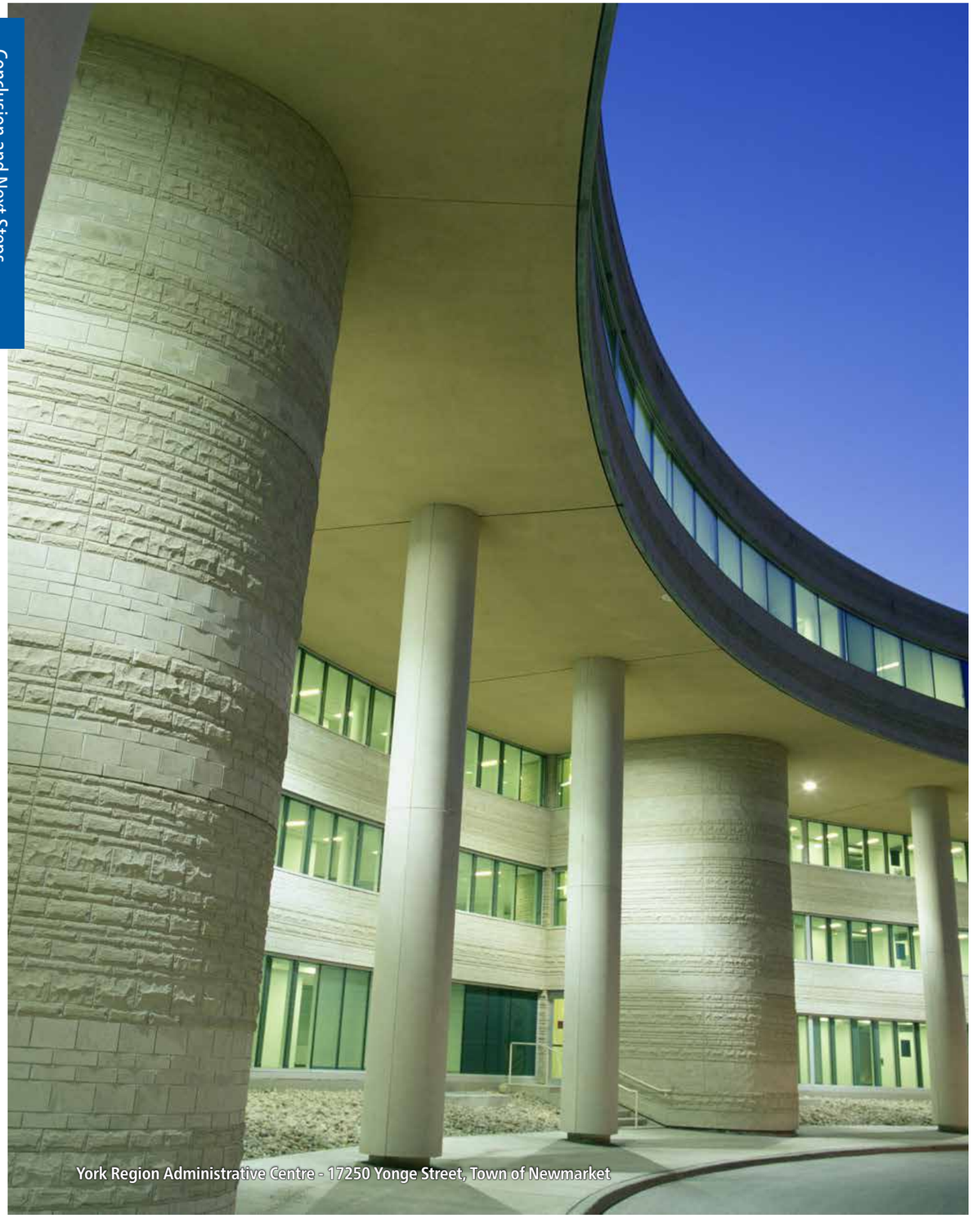
There are 16 categories labeled in the circle graph, each scored on maturity. Scores range from 0, the lowest maturity, at the centre of the circle, to 4, the highest, at the perimeter.

Figure 71: Asset management maturity graph



20.7 Monitoring and continuous improvement

Area and Action	Target completion year	Priority Area: Engage more fully with customers	Embed risk management/ build response readiness	Use the best possible evidence in making decisions	Standardize processes	Build asset management skills and competence
Conduct first annual asset condition assessments, build detailed inventory of asset needs and associated costs to assist in the short- and medium-term capital planning activities	2024			•		
Identify mission-critical assets and conduct failure mode cause and effect analysis	2025		•			
Integrate Asset Management and Maintenance Management software applications	2026				•	



York Region Administrative Centre - 17250 Yonge Street, Town of Newmarket

Conclusion and Next Steps

21.1 Overview

This plan fulfills legislative requirements for a municipal asset management plan, including core and non-core assets. It provides the state of infrastructure, customer and technical levels of service, and the strategies the Region will use to provide the defined service levels to meet existing and future demand, at the best possible cost while managing risk.

21.2 Annual reporting

The Region has already built significant capability through its asset management practices. Asset management is a journey and an evolving approach to managing asset-enabled services. Legislation requires a review of asset management planning progress be conducted annually. An update to the plan will also be provided in accordance with regulatory requirements. By continuing to develop, the Region will further deepen its asset management maturity to support efficient and effective service delivery.

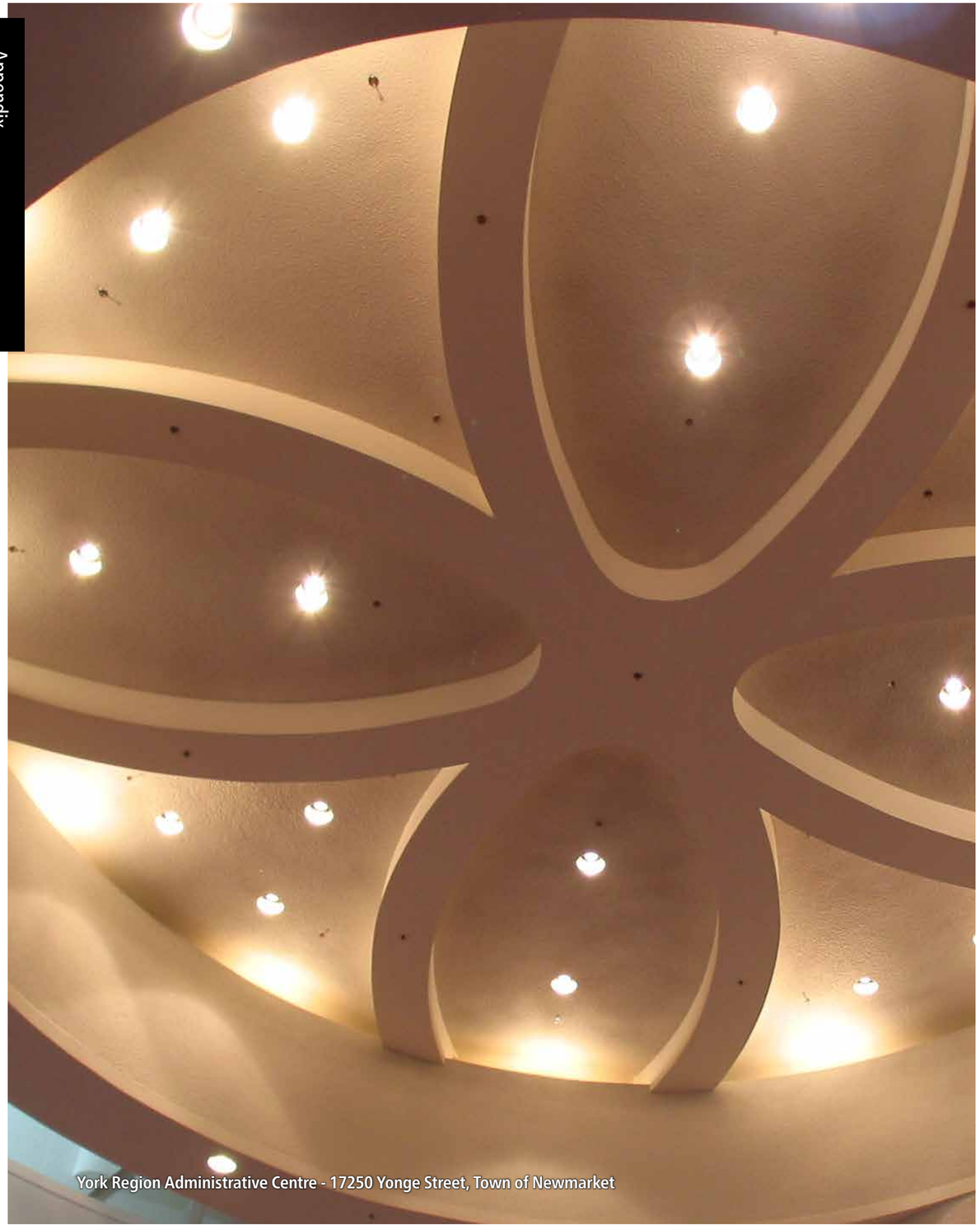
According to O. Reg. 588/17, every municipality shall conduct an annual review which must address:

The annual review must address,

- (a) the municipality's progress in implementing its asset management plan;
- (b) any factors impeding the municipality's ability to implement its asset management plan; and
- (c) a strategy to address the factors described in clause (b).

21.3 Availability of information

This Corporate Asset Management Plan and the Corporate Asset Management Policy are posted on york.ca and available in hard copy format upon request. All background information and reports upon which this plan is based are also available upon request.



York Region Administrative Centre - 17250 Yonge Street, Town of Newmarket

Appendix

Appendix A – CAM Policy

York Region

Status: Final

Corporate Asset Management Policy

Approved By: Council

Approved On: May 23, 2024

Policy Statement

York Region aims to establish consistent, coordinated, and sustainable asset management practices across all regional service areas to minimize risks and deliver the services necessary to meet customer expectations.

Application

This policy applies to all Regional staff involved in asset life cycle management, which includes planning, design/construction/acquisition, operation and maintenance, rehabilitation, renewal/disposal, and monitoring/reporting of owned in whole or in part, leased or operated Regional assets.

Purpose

The purpose of the Corporate Asset Management Policy is to meet Ontario Regulation 588/17 which states that every municipality shall prepare a strategic asset management policy. It serves as a guiding framework for asset management planning within the Region to facilitate informed decision-making, ensure compliance with legislation and promote responsible stewardship throughout the entire lifecycle of Regional assets.

Definitions

Asset[1]: Item, thing or entity that has potential or actual value to an organization. Value can be tangible or intangible, financial or non-financial, and includes consideration of risks and liabilities.

Asset Management[1]: Coordinated activity of an organization to realize value from assets [existing and future]. Realization of value will normally involve an appropriate balancing of costs, performance and risks, opportunities and performance benefits.

Asset Management Framework: Illustrates the integrated relationship between strategic, tactical, and operational levels. It represents the interconnected elements of an effective asset management system and emphasizes the critical role of information management, lifecycle management, risk management and financial management in the stewardship of Regional assets.

Asset Management Plan[1] (AMP): Documented information that specifies the activities, resources, and timescales required for an individual asset, or grouping of assets, to achieve the organization's asset management objectives.

[1]*Adapted from ISO/IEC (2014) 55000 – Asset Management, International Organization for Standardization (ISO).*

Asset Management Strategy: A Strategy developed to help the Region achieve its strategic asset management policy objectives.

Cost: Monetary amount that is incurred or expended to acquire, maintain, operate, renew, and retire an asset.

Customer: Any person who uses an asset or service. Customers can be internal or external.

Level of Service[1] (LOS): Parameters or a combination of parameters, which reflect social, political, environmental and economic outcomes that an organization delivers from their assets.

Customer LOS: Customer service goals and outcomes currently being provided by the service area. Usually pertains to the quality, satisfaction, and overall customer service experience, as performed by service enabled assets.

Technical LOS: Internal technical metrics to deliver the customer LOS. Metrics usually pertain to performance, condition, and reliability of physical asset systems, subsystems, assets and equipment used to deliver the service.

Lifecycle[1]: Phases involved in the management of an asset.

Lifecycle data: Includes cost, performance and risk data collected and managed through business processes required to help make well informed, evidence-based decisions in all phases of an asset's life cycle.

Risk[1]: The effect of uncertainty on objectives. It can be positive, negative, or both, and can address, create, or result in opportunities and threats.

Service Area: An organizational division responsible for providing specific services or executing defined functions. Service areas are responsible for managing specific categories or types of assets within the Corporate Asset Management Plan.

Tangible Capital Asset2 (TCA): Per the Region's Tangible Capital Asset (TCA) Policy, TCAs are non-financial assets having physical substance that are acquired, constructed or developed including land, land improvements, roads, buildings, vehicles, equipment, water mains, sewer mains and capital assets acquired by capital lease or through donation.

Value: Worth, utility, or significance of an asset. The value of an asset is related to its performance, lifecycle cost, measured expectation and surrounding risk. Typically used in prioritization setting and not in financial record keeping.

Description

The Region is responsible for providing diverse services to the community that depend on a large portfolio of assets. The Corporate Asset Management Policy offers guidance for the effective management of both existing and future Regional assets in accordance with regulations and industry best practices. This policy standardizes and ensures consistency in asset management practices and plans across the organization to ensure the long-term sustainability of its assets to meet the needs of our communities.

Further to the principles set out in Section 3 of the Infrastructure for Jobs and Prosperity Act, 2015, the Region will follow the policy principles below:

- **Leveraging Data and Innovation:** The Region will adopt industry-leading asset management practices, creating opportunities to make use of innovative technologies and approaches, in alignment with standards and legislation. The region will leverage asset data analysis to identify infrastructure priorities and inform decision-making.
- **Financially Sustainable Lifecycle Management:** The Region's asset management planning will be coordinated with the Regional Budget and Fiscal Strategy, so that assets provide suitable levels of service at a cost the community can afford, while managing risk.
- **Climate Change Mitigation and Adaptation:** The Region will proactively identify climate change adaptation and mitigation actions, and review emergency management and contingency funding opportunities. Infrastructure should minimize the impacts on the environment and designed to be resilient to the effects of climate change. The Region should minimize waste and conserve resources throughout an asset's lifecycle to advance the circular economy.
- **Customer Engagement for Accountability:** The Region will engage customers to enhance organizational accountability and transparency in asset management planning.

The Corporate Asset Management Policy is supported by the Asset Management Framework (Appendix 1).

- **The Asset Management Framework:** Supports the Region in meeting the policy principles by outlining the Region's organizational requirements and provides direction and guidance for decision-making to ensure the realization of value in the management of Regional assets.

Responsibilities

Council

- Serve as representative of customers' needs
- Approve asset funding to ensure required financial sustainability for asset management through the annual budget
- Conduct an annual review of the Region's asset management progress, including progress in implementing the Corporate Asset Management Plan, any challenges encountered and how to address them

Executive Lead (co-sponsors of the program)

- Comprised of the Commissioners of Public Works and Finance
- Hold overall ownership for ensuring compliance with this policy and delegate to the Corporate Asset Management Coordinating Committee responsibility for implementation of service area asset management programs

Corporate Asset Management Steering Committee

- Comprised of directors responsible for service area asset management programming
- Communicate the vision and goals of asset management at a corporate level, and provide the guidance necessary to ensure alignment and integration across the organization
- Hold overall ownership and accountability for ensuring compliance with this policy and delegates responsibility to the Corporate Asset Management Coordinating Committee the responsibility for the implementation of Departmental Asset Management Programs
- Deliver key objectives as stated in the Region's strategic and business plans in relation to asset management (Strategic Plan, Vision 2051, etc.) and allocate appropriate resources for the achievement of the policy objectives
- Provide a forum for senior level cross-departmental collaboration on initiatives or projects related to asset management

[1] *Adapted from ISO/IEC (2014) 55000 – Asset Management, International Organization for Standardization (ISO).*
[2] *Region's Tangible Capital Asset Guideline per Generally Accepted Accounting Practices (GAAP)*

Corporate Asset Management Unit (CAM)

- Coordinate asset management program deliverables and objectives, and provide project and deliverable updates to the CAM Steering Committee
- Review, implement and report on legislative requirements
- Update Corporate Asset Management Policy in line with regulatory requirements
- Update Corporate Asset Management Strategy and Plan
- Promote asset management knowledge across all stakeholders
- Work collaboratively with Service Areas and Chief Administrative Officer's (CAO's) office to gather customer-level needs and establish level of service targets
- Lead and support the CAM Coordinating Committee in their roles and responsibilities
- Advance opportunities to improve service delivery coordination across the Region, including data sharing, business process alignments, resource sharing, and data management systems consolidation
- Conduct asset maturity assessments in collaboration with service areas, providing guidance and tools to evaluate the current state and maturity level of assets, and identify areas for improvement
- Monitor for Corporate Asset Management Policy compliance

Corporate Asset Management Coordinating Committee & Service Area Leads

- Comprised of managers responsible for service area asset management implementation
- Report to the CAM Steering Committee; responsible for the development, implementation, and continuous improvement of service area asset management programs and plans
- Integrate service area AMPs into Corporate Asset Management Plan
- Provide corporate collaboration with asset management best practices and expertise to guide service area AMPs and initiatives
- Champion corporate asset management policy objectives within the respective service areas and support groups
- Oversee the Region's assets in compliance with the Corporate Asset Management Policy and Strategy
- Liaise with Planning to ensure alignment with the Regional Official Plan and Ontario's land-use planning framework
- Liaise with Finance to ensure a sustainable financial strategy for LOS metrics
- Liaise with Controllership Office and Risk Management to update requested TCA and risk registry information, and update service area AMPs accordingly
- Liaise with Emergency Management to identify critical infrastructure and ensure mitigation measures are in place
- Engage customers and stakeholders to obtain and incorporate feedback on LOS and asset management planning

Customers

- Participate in stakeholder engagement initiatives, where possible
- Provide feedback related to LOS, service experience, and service expectations!

Compliance

Failure to adhere to this policy may result in non-compliance with regulatory requirements, potentially exposing the Region to the risk of penalties. Further, it may introduce additional risks in managing the Region's assets, potentially negatively impacting the Region's levels of service. Non-compliance with this policy may also lead to the loss of funding from other levels of government and agencies. Compliance with the Corporate Asset Management Policy will be monitored by the Corporate Asset Management Unit as required.

Reference

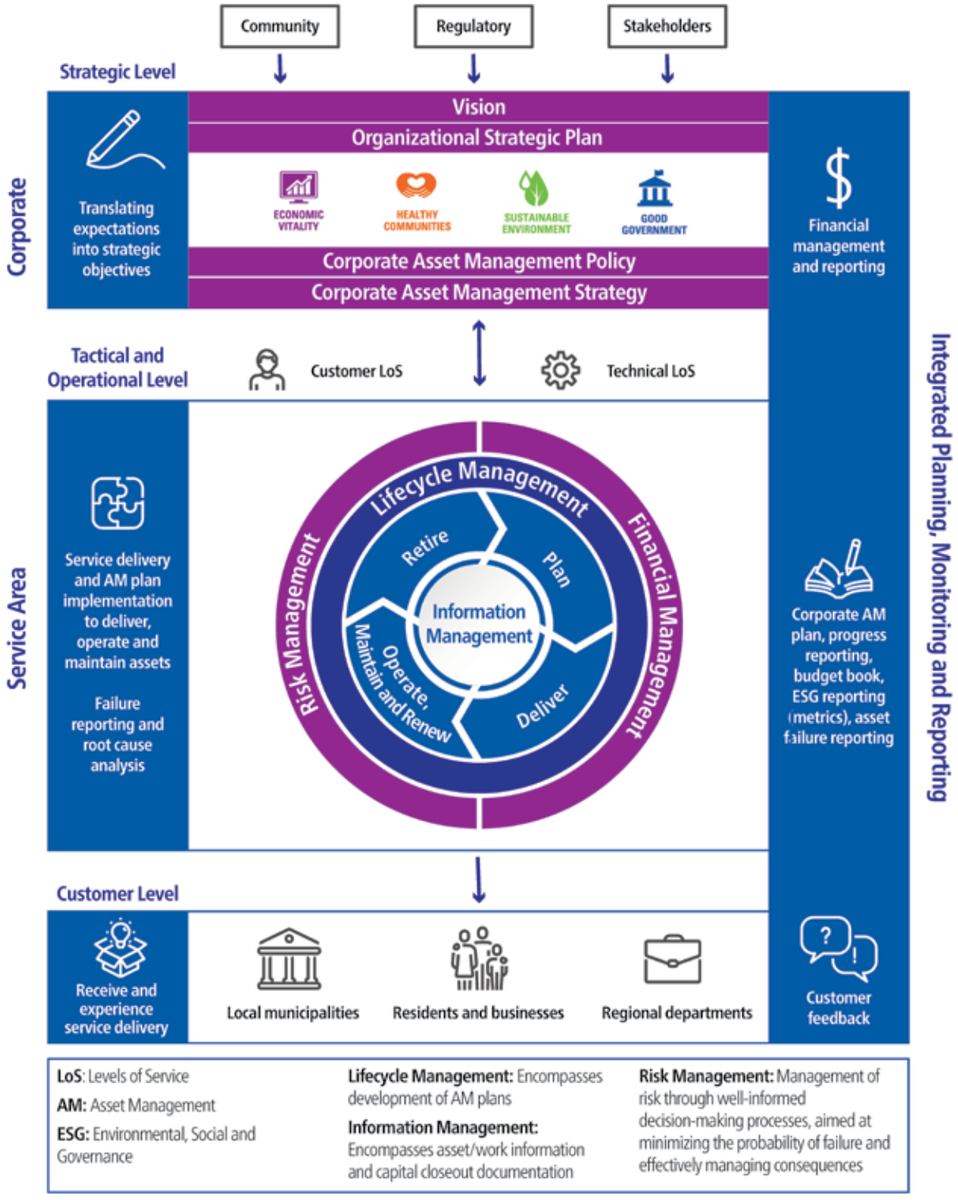
Legislative and other authorities

Capital Financing and Debt Policy
Tangible Capital Asset Guideline
Municipal Asset Management Planning Regulation
Infrastructure for Jobs and Prosperity Act, 2015
Energy Conservation & Demand Management Plan
Regional Fiscal Strategy
Investment Policy
Reserve and Reserve Fund Policy
Planning Act
Places to Grow Act
Climate Change Action Plan
Development Charges Act, 1997

Appendices

- Corporate Asset Management Framework

Appendix 1: Corporate Asset Management Framework



Appendix B - 2018 Actions table

Action	Action	Completion by 2021	Completion by 2022	Status
1	Improve asset inventories for non-core assets	•		Completed and ongoing
2	Develop current level of service for non-core assets	•		Completed and ongoing
3	Develop a life cycle strategy for non-core assets	•		Completed and informs the life cycle activity plans that have been adopted for the Region's assets
4	Document a financing strategy for non-core assets	•		Completed, as part of the Region's fiscal strategy
5	Create or finalize asset management plans for service areas that currently do not have them		•	AM plans continue to be developed through service area maturity improvements and consolidated information contained in the Corporate AM Plan.
6	Ongoing update of asset inventories	•		Completed and ongoing
7	Document proposed levels of service for core and non-core assets	•		Completed and ongoing
8	Document lifecycle strategies for core and non-core assets	•		Completed and ongoing
9	Document financing strategy for lifecycle activities, core, and non-core assets	•		Completed
10	Update corporate and departmental asset plans		•	Completed Corporate AM Plan update along with service area executive summaries
11	Improve corporate asset management strategy	•		Completed and ongoing
12	Improve coordinated effort across the organization in asset management	Ongoing		Ongoing via cross-departmental committees and working groups
13	Develop and improve asset management processes	Ongoing		Completed via templates, tools and guideline documents
14	Evaluate cost, risk, and performance	•		Completed and ongoing (see Strategy/CI sections for further information)
15	Further develop and implement the fiscal strategy	Ongoing		Completed and ongoing
16	Strengthen corporate data management capabilities		•	Completed and ongoing through the Digital Transformation Strategy
17	Lead Region-wide asset management collaboration	•		Ongoing via cross-departmental committees and working groups
18	Include business software in the next corporate asset management plan update		•	Ongoing and identified for further review, along with data as an asset strategy
19	Include data in the next CAMP update		•	Data management activities are ongoing

Appendix C - Grading definitions and methodology

Grading definitions

Grade			Definition
(A)		Very Good	**Fit for the future:** well maintained, very good condition, new or recently rehabilitated.
(B)		Good	**Adequate for now:** acceptable, generally approaching mid-stage of expected service life.
(C)		Fair	**Requires attention:** signs of deterioration, some elements exhibit deficiencies.
(D)		Poor	**Increasing potential of affecting service:** approaching end of service life, below standard, significant deterioration.
(F)		Very Poor	**Near of past service life:** advanced deterioration, assets may be unusable.

Grading methodology: forecast future state definitions

Forecast	Definition
Improving ↗	**State is expected to improve:** infrastructure investments and asset management practices are improving in order to rehabilitate and replace aging infrastructure.
Maintaining ➔	**State to be maintained:** infrastructure investments and asset management practices are established and the performance of assets is expected to remain in order to maintain the grade.
Degrading ↘	**State expected to degrade:** infrastructure may be at risk – opportunities exist to improve future asset performance to prevent a declining grade.

Appendix D – Water maps

Figure 71: Current system map

The current water system map was generated in 2023. More information on the system can be found in the master plan at: https://www.york.ca/media/108161/download?attachment

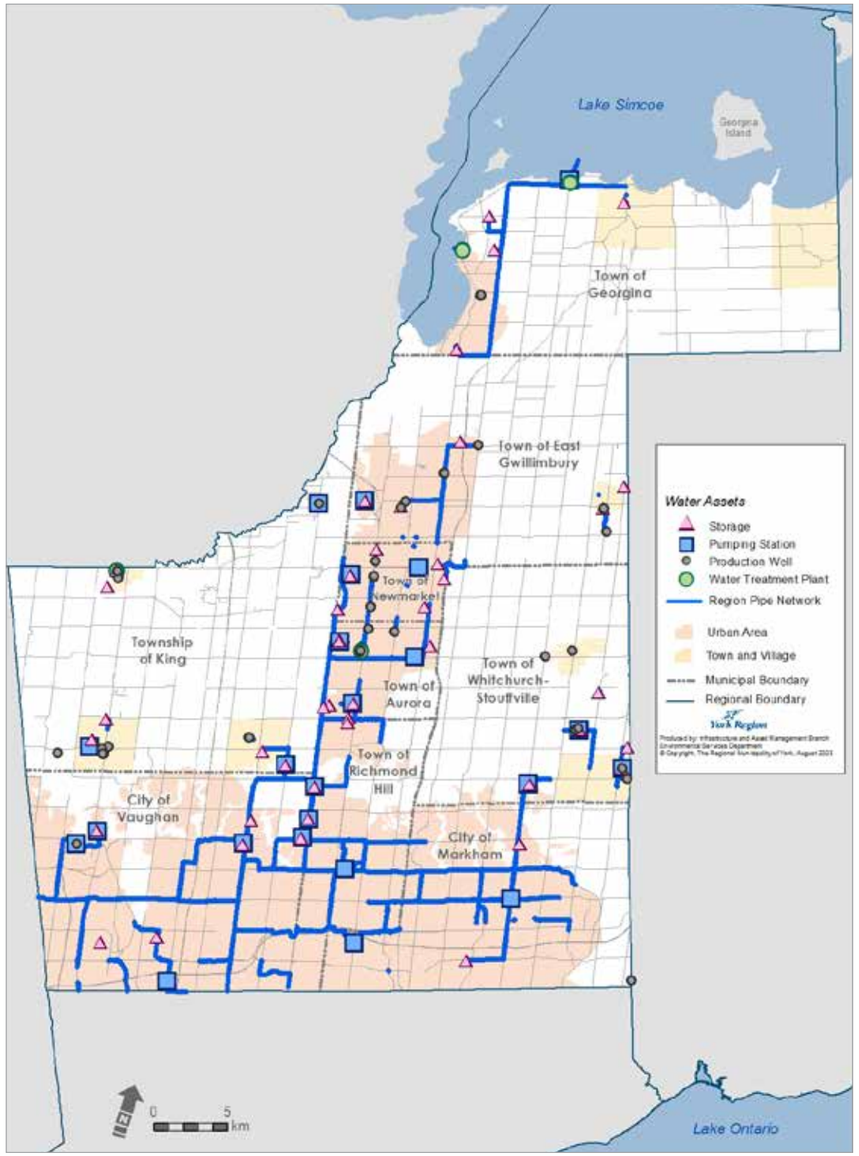
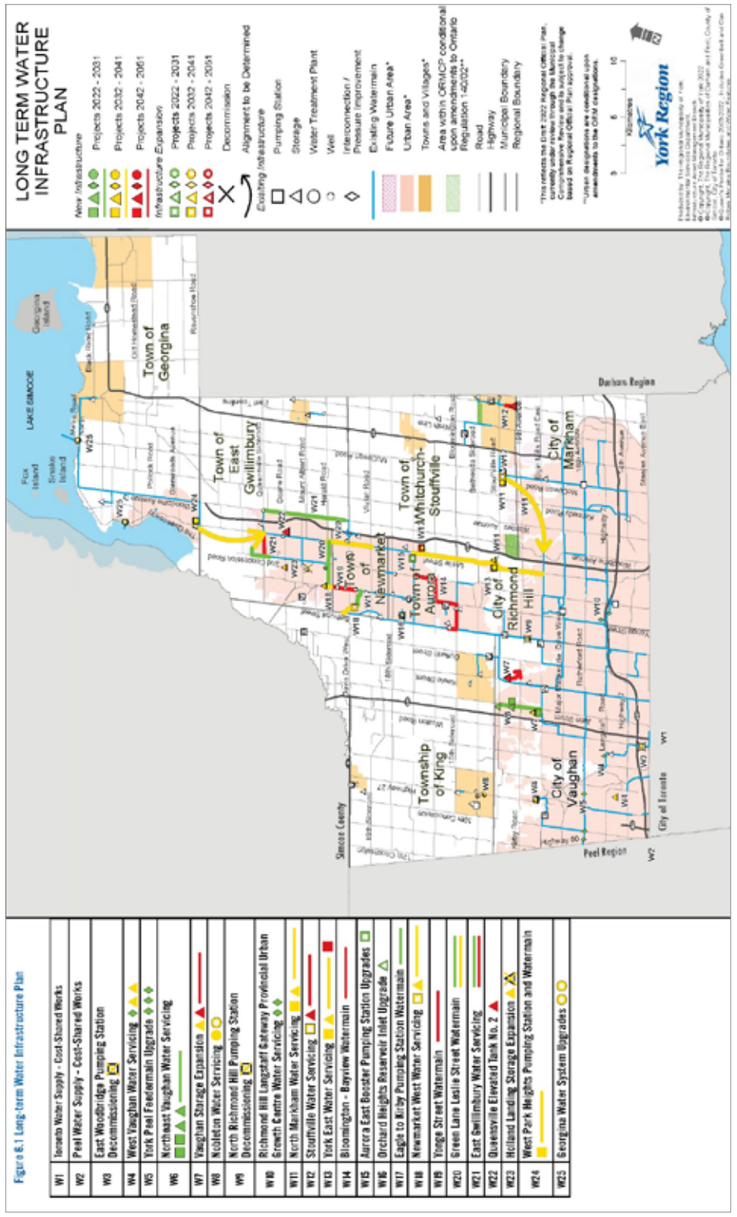


Figure 72: Expanded system map

The expanded water system map was generated in 2022. The information in this map may be subject to changes in system areas, planned construction, completion dates, and others. More information on the system can be found in the master plan at: https://www.york.ca/media/108161/download?attachment



Appendix E - Wastewater system maps

Figure 73: Current system map

The current wastewater system map was generated in 2023. More information on the system can be found in the master plan at: https://www.york.ca/media/108161/download?attachment

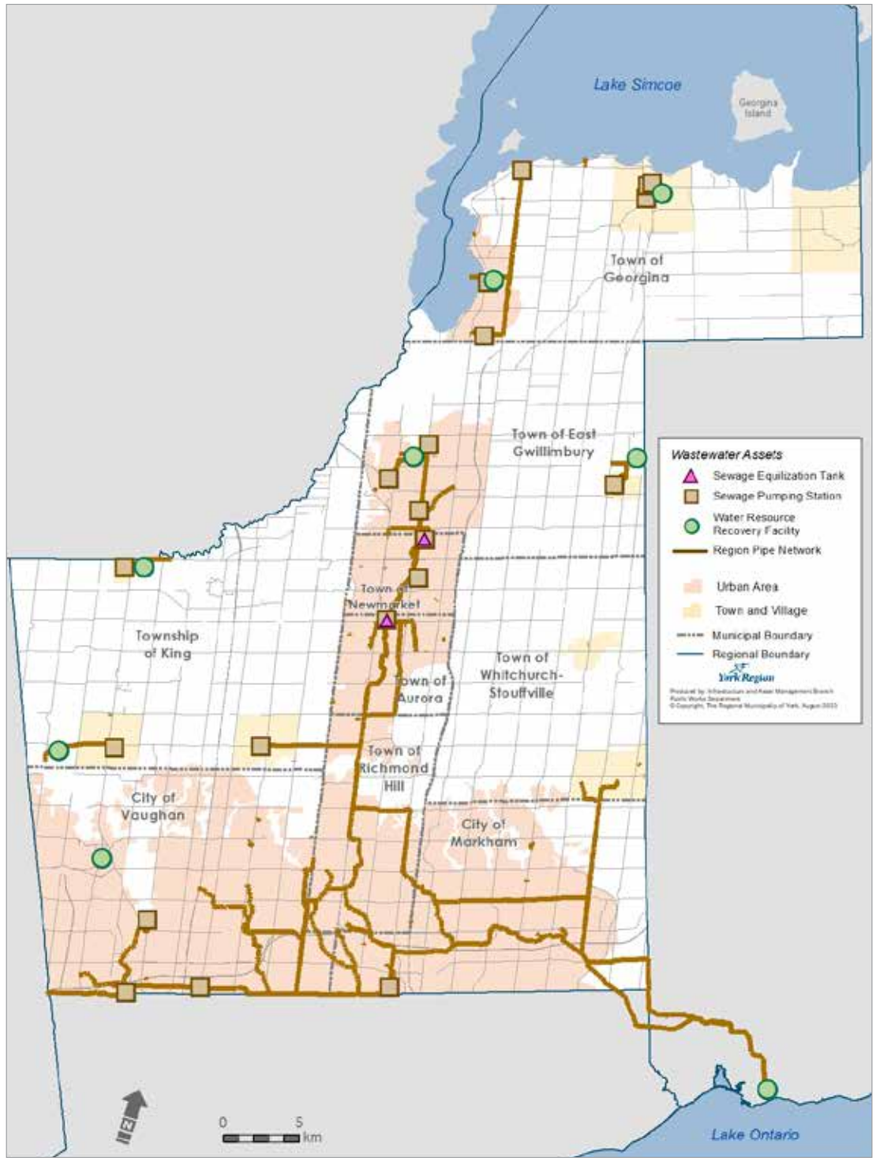
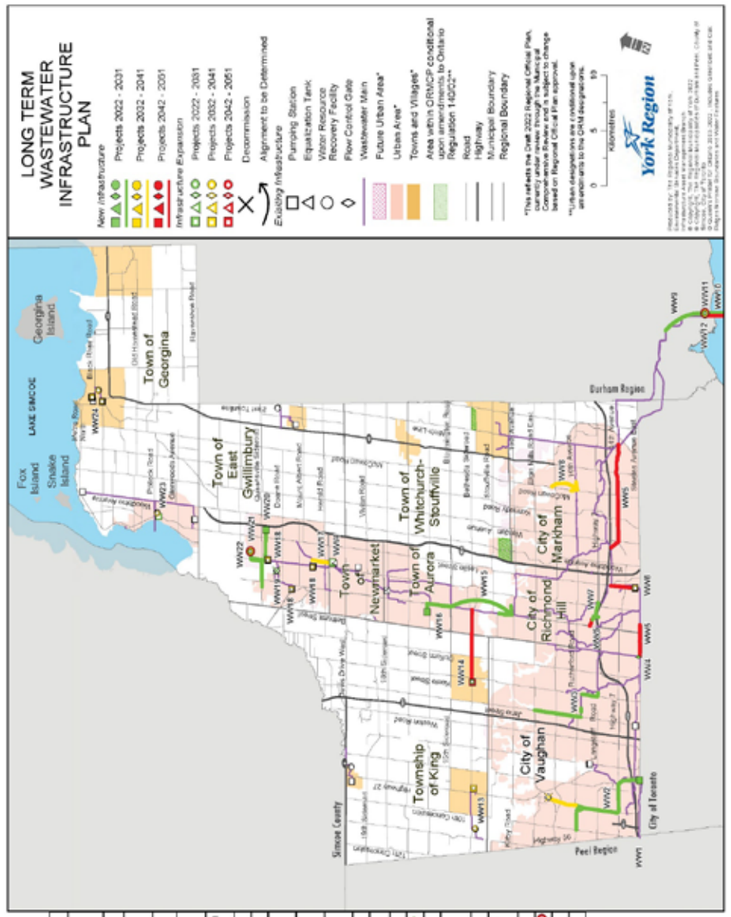


Figure 74: Expanded system map

The expanded wastewater system map was generated in 2022. The information in this map may be subject to changes in system areas, planned construction, completion dates, and others. More information on the system can be found in the master plan at: https://www.york.ca/media/108161/download?attachment



Appendix F – Roads maps

Figure 75: Current system

The current roads system map was generated in 2023. More information on the system, and interactive maps, can be found at: https://www.york.ca/transportation/roads/regional-roads

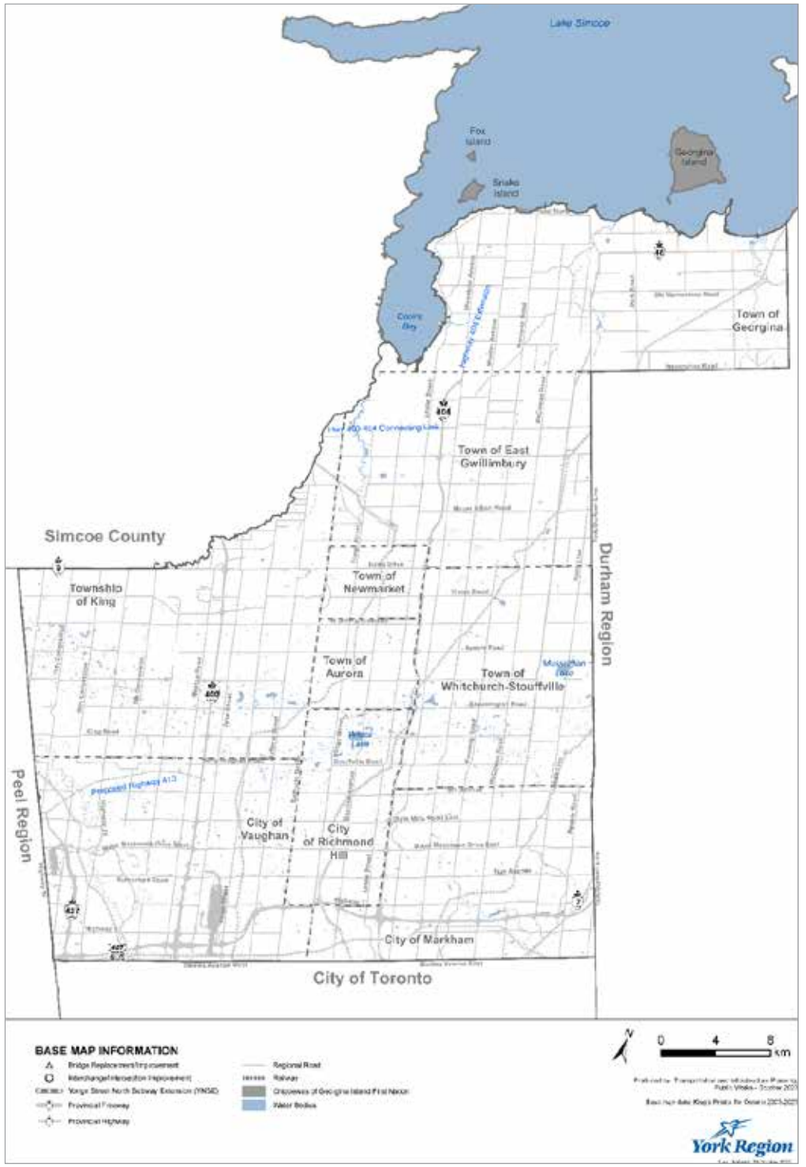
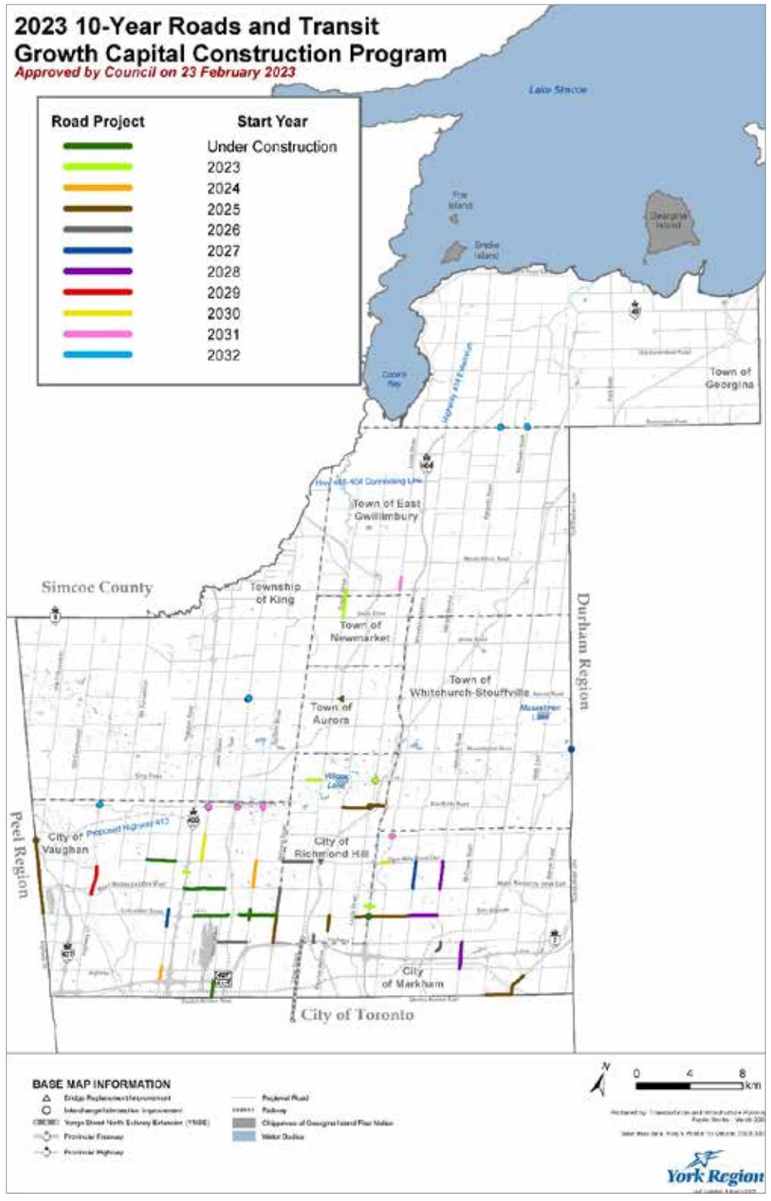


Figure 76: Expanded system

The expanded roads system map was generated in 2023. This map may be subject to changes in routes and build years. More information on the system, along with the 10-year plan, can be found at: https://www.york.ca/transportation/roads/regional-roads



Appendix G – Stormwater and culverts systems maps

Figure 77: Current system

The current stormwater structures system map was generated in 2023. More information on the system in the interactive maps can be found at: https://ww4.yorkmaps.ca/

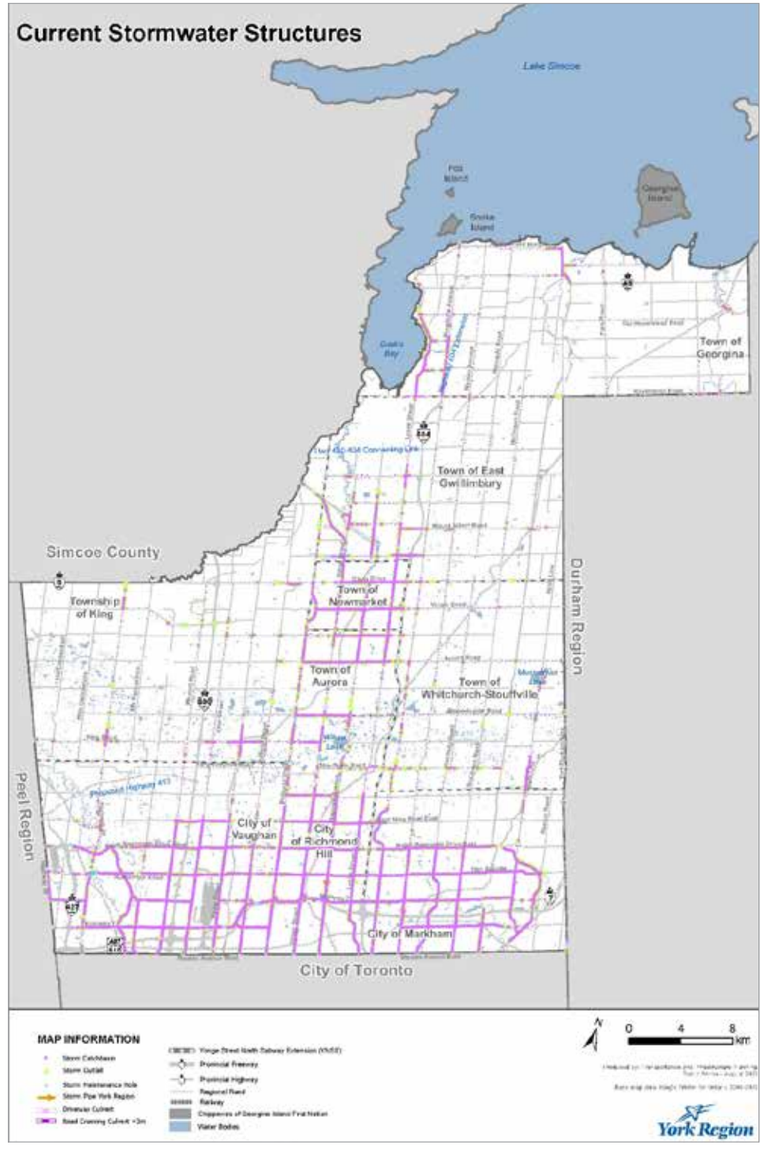
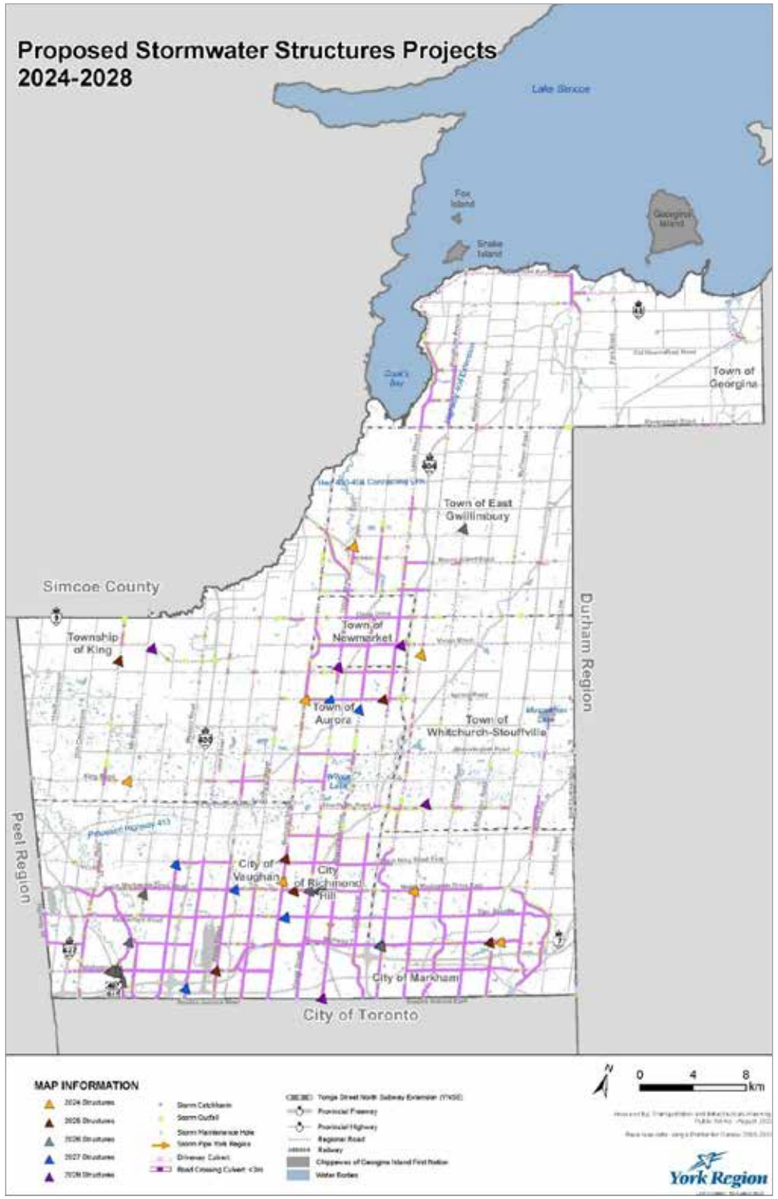


Figure 78: Expanded system

The expanded stormwater system map was generated in 2023. This map may be subject to changes in routes and build years. More information on the system, along with the 10-year plan, can be found at:
https://www.york.ca/transportation/roads/regional-roads https://www.york.ca/media/108161/download?attachment



Appendix H – Transit system map

Figure 79: Current system

The current transit system map was generated in 2023. More information on the system can be found at
https://www.york.ca/transportation/york-region-transit-yrt

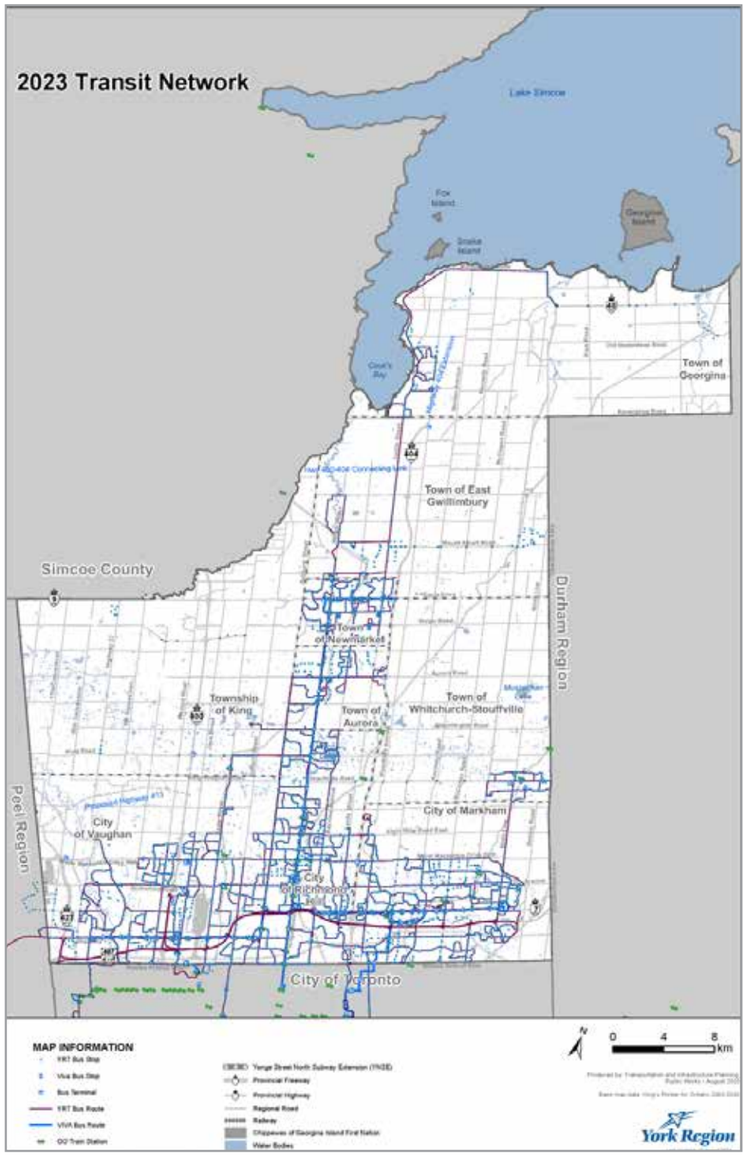
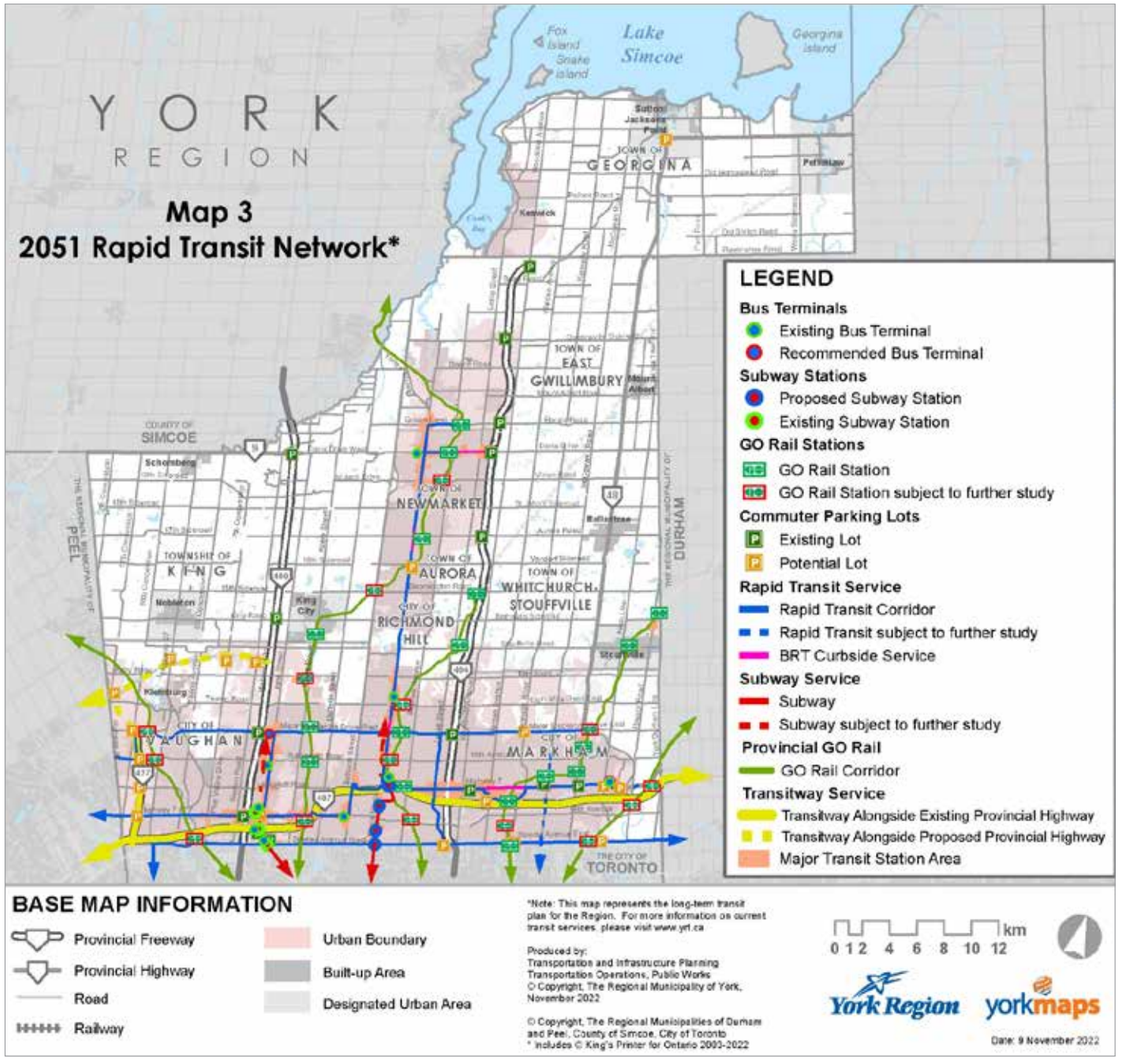


Figure 80: Expanded system

The expanded transit system map was generated in 2022. This map may be subject to changes in routes and build years. More information on the system, along with the 10-year plan, can be found at: https://www.york.ca/york-region/plans-reports-and-strategies/transportation-master-plan



Appendix I – YorkNet system maps

Figure 81: Current system

The current YorkNET system map was generated in 2023. More information on the system can be found at: https://www.yorklink.ca/york-region-innovation-portal/yorknet/

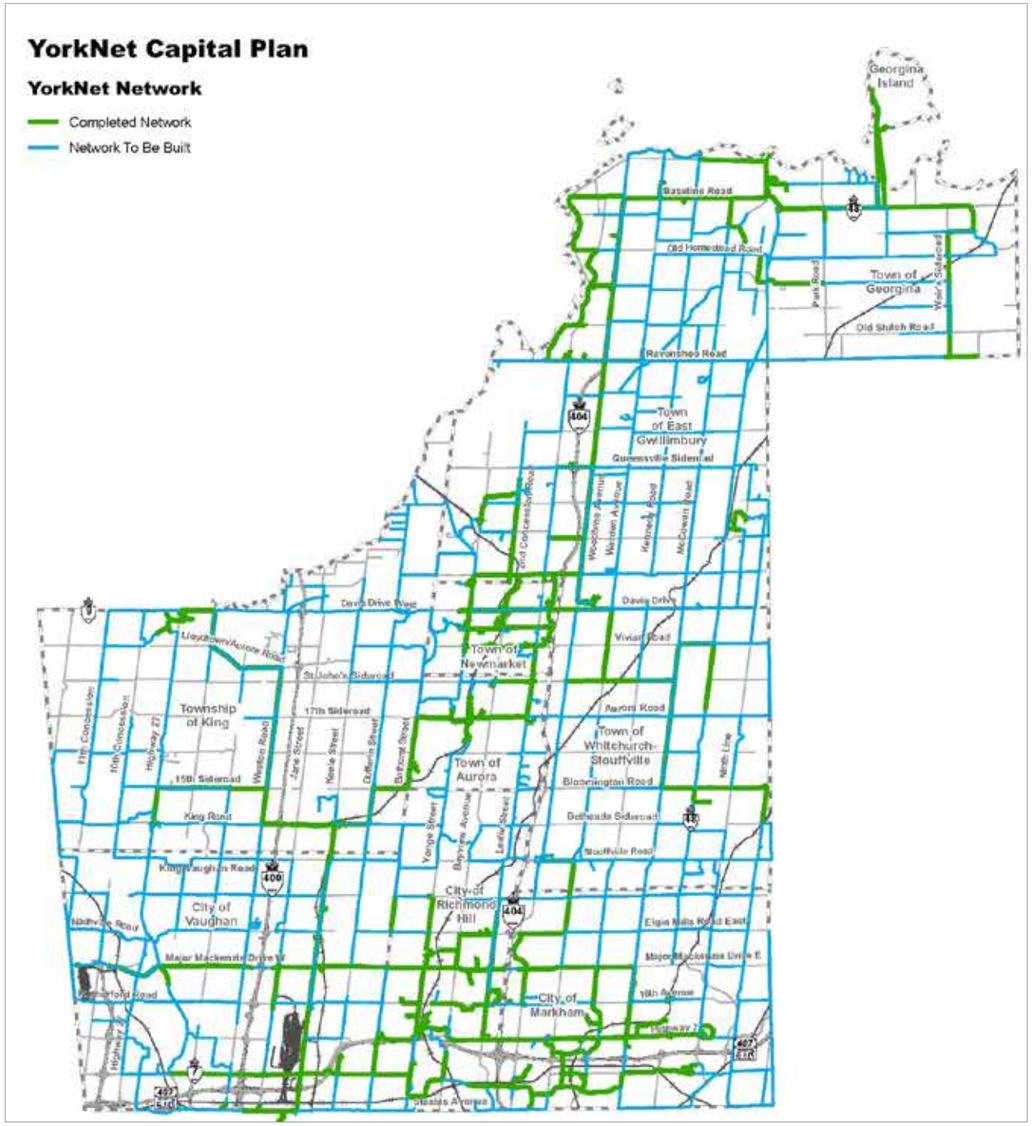
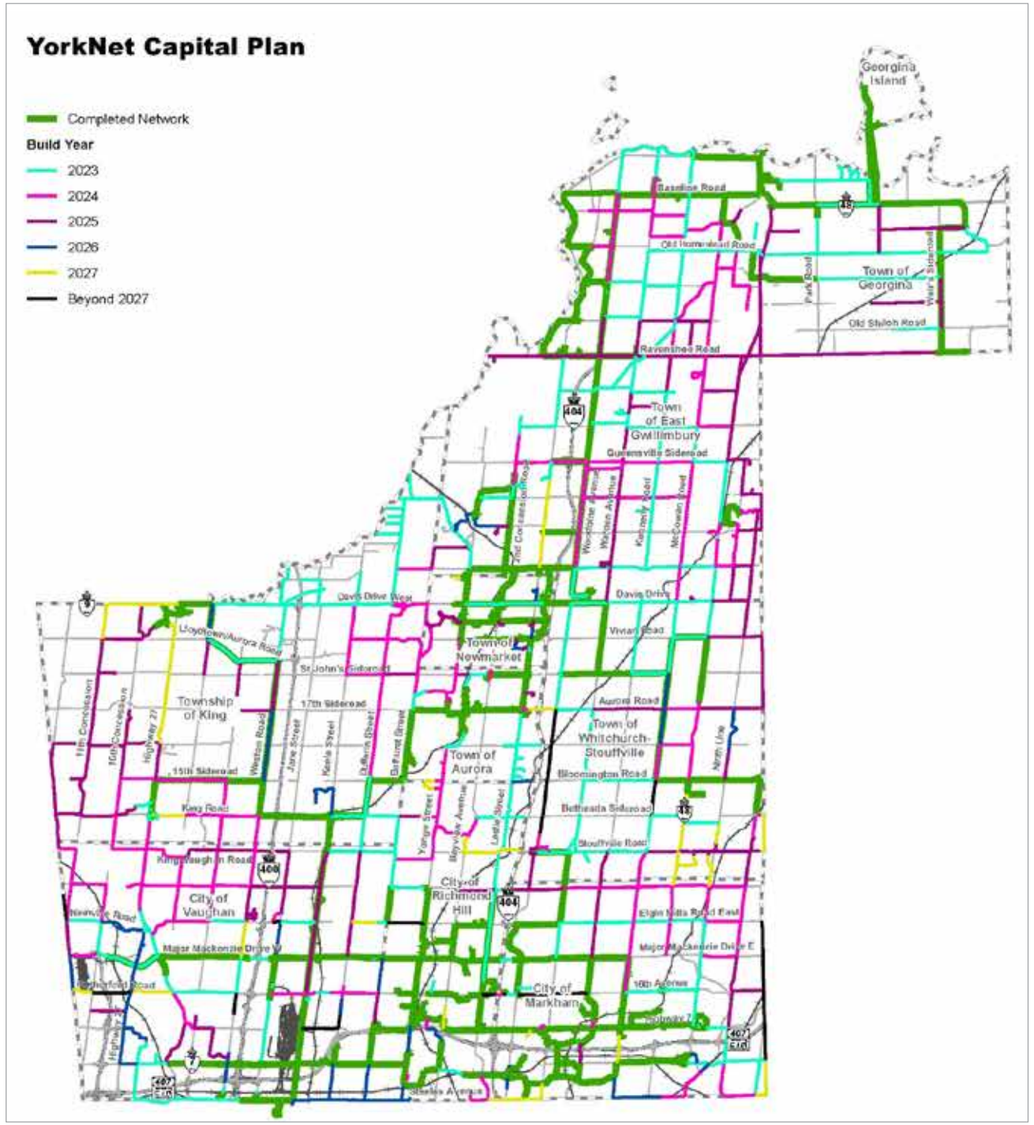


Figure 82: Expanded system

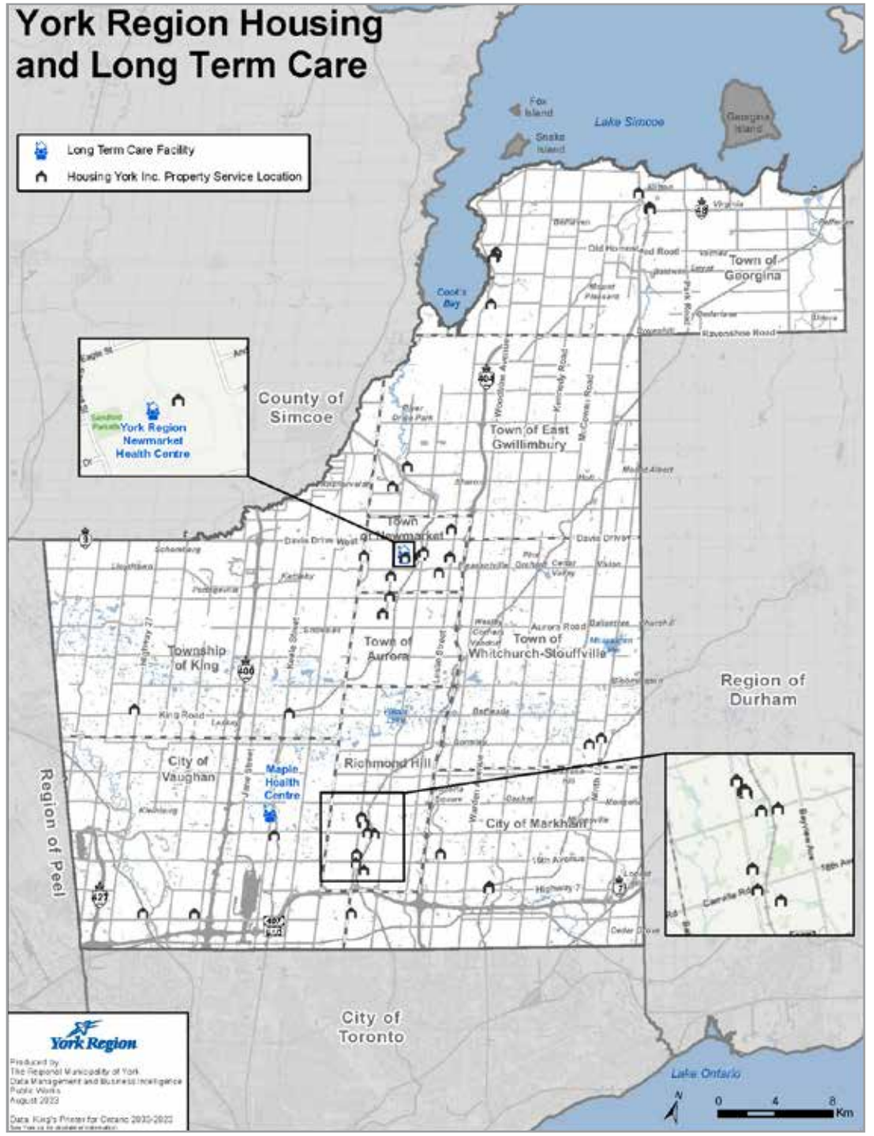
The expanded YorkNET system map was generated in 2023. This map may be subject to changes in routes and build years. More information on the system can be found at: https://www.yorklink.ca/york-region-innovation-portal/yorknet/



Appendix J – York Region housing and long-term care

This system map was generated in 2023. The addresses on this map may be subject to changes. More information can be found at: https://www.york.ca/support/housing/housing-york-inc and https://www.york.ca/health/long-term-care-and-supports/long-term-care-homes

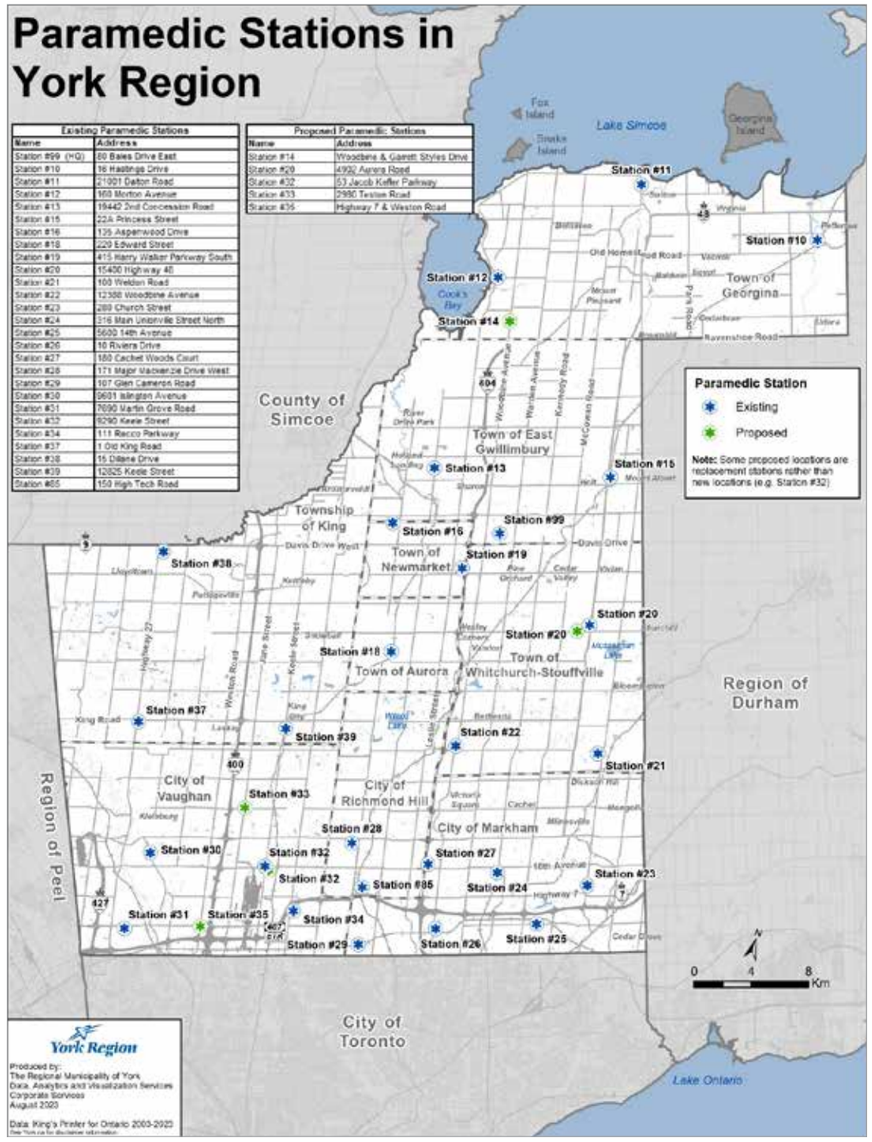
Figure 83:



Appendix L – York Region paramedic services stations

This system map was generated in 2023. The stations on this map may be subject to changes. More information can be found at: https://www.york.ca/health/paramedic-services

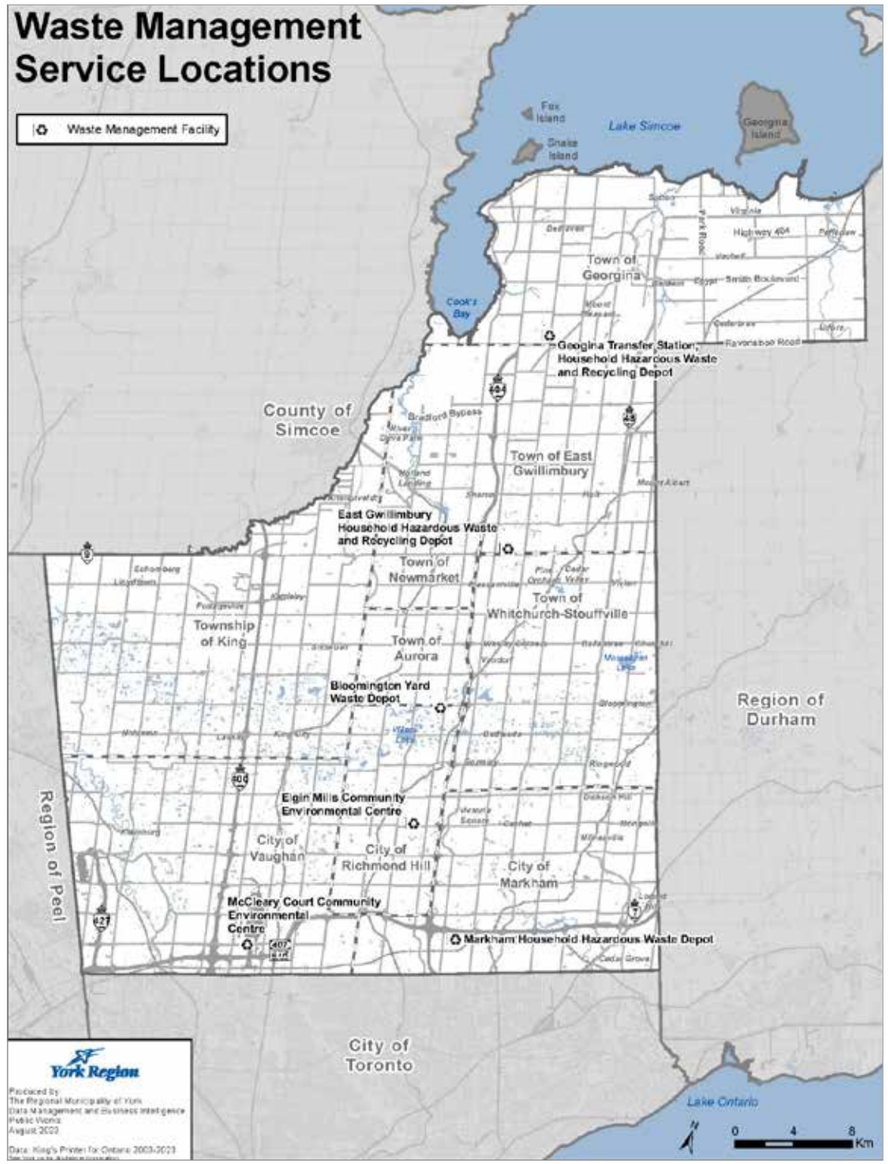
Figure 84:



Appendix K – York Region waste management services

This system map was generated in 2023. More information can be found at: https://www.york.ca/environment/garbage-and-recycling

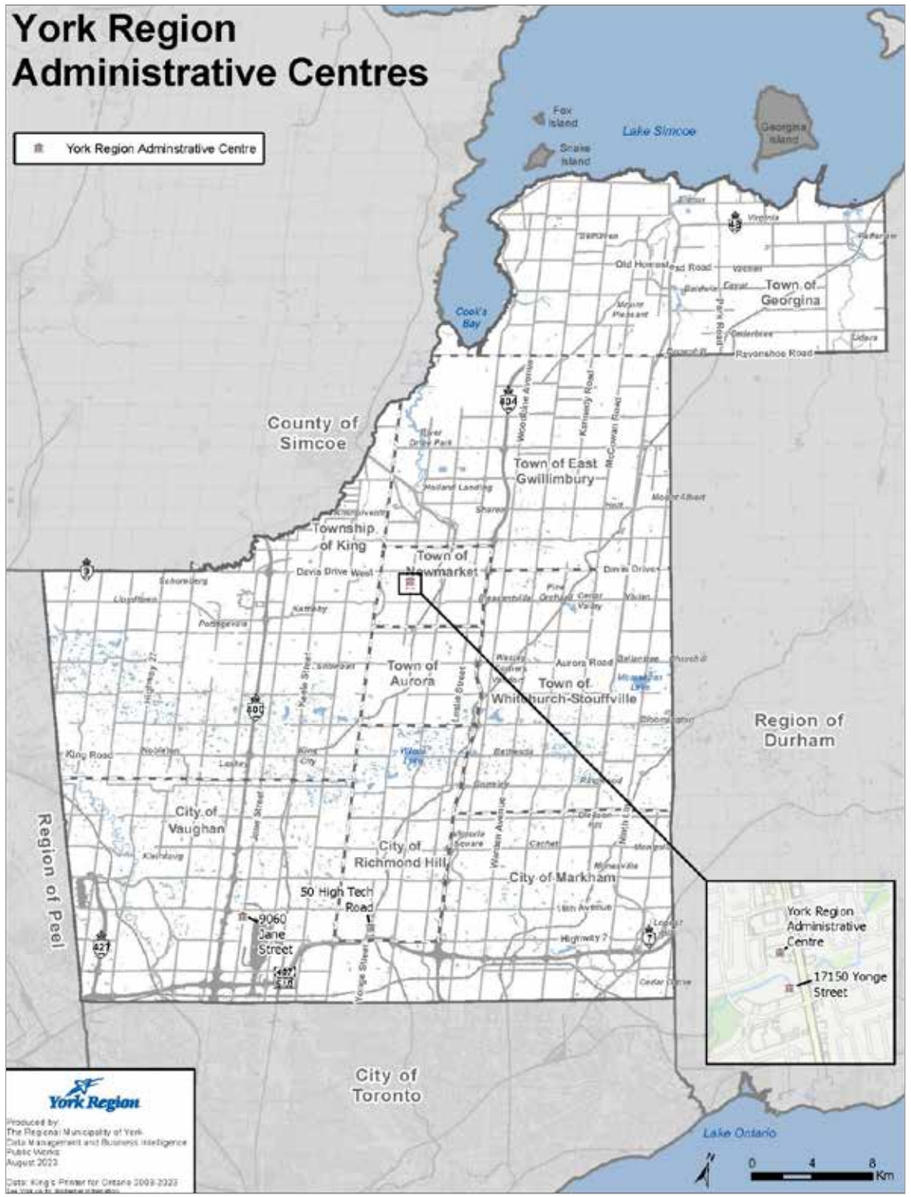
Figure 85:



Appendix L – York Region administrative centres

This system map was generated in 2023. More information can be found at: https://www.york.ca/york-region

Figure 86:



Appendix M – Definitions

Term	Acronym	Definition
ArcGISPro	-	GIS mapping software from Esri used by the Region
Archibus	-	Integrated Workplace Management software used in Property Services
Asset	-	Item, thing, or entity that has potential or actual value to the Region. Value can be tangible or intangible, financial or non-financial, and considers risks and liabilities (ISO 55000). The Region's infrastructure assets deliver an array of services to local municipalities, residents, businesses, and Regional departments.
Asset life	-	Period from asset creation to asset end-of-life (ISO 55000)
Asset lifecycle	-	Phases involved in the management of an asset, including: • Plan • Design, construct, acquire • Operate and maintain • Rehabilitate • Renew or dispose
Asset lifecycle costs	-	Total cost over the life of an asset, which includes costs for each phase of the asset lifecycle
Asset lifecycle data	-	Includes cost, performance, and risk data collected and managed through business processes required to help make well informed, evidence-based decisions in all phases of an asset's lifecycle
Asset management	AM	Coordinated activities by the Region to realize value from assets. Realization of value normally involves an appropriate balancing of cost, performance, and risk, and opportunities and performance benefits (ISO 55000)
Asset management plan	AMP	Documented information that specifies the activities, resources, and timelines required for an individual asset, or group of assets, to achieve the Region's asset management objectives (ISO 55000) In accordance with O. Reg. 588/17, York Region's asset management plan must include, for each asset category: **A. Service delivery to the existing population (excluding growth)** State of the assets, including: • Current performance • A summary of the assets in the category • Replacement cost • Average age • Condition, including how it is assessed • Current levels of service Lifecycle activities to be undertaken to maintain current levels of service for the next 10 years, and associated capital and operating costs, based on: • Full lifecycle of assets • Options to maintain current levels of service • Risks associated with the options • Lifecycle activities that can be undertaken for the lowest cost to maintain the current levels of service • Proposed performance for the next 10 years

Term	Acronym	Definition
Asset management plan (continued)	AMP	Proposed levels of service for the next 10 years, including how they were identified, based on: • Options and associated risks • How the proposed levels of service differ from the current levels of service • Whether the proposed levels of service are achievable • York Region's ability to afford the proposed levels of service Lifecycle management and financial strategy, including: • Lifecycle activities to provide proposed levels of service, including a review of full lifecycle of the assets, options, and associated risks, and lifecycle activities that can be undertaken for the lowest cost to achieve proposed levels of service • Capital expenditure and operating cost estimates for the selected lifecycle activities over the next 10 years • Identification of annual funding projected to be available and options examined to maximize funding • If a funding shortfall is identified, an identification of lifecycle activities that York Region will undertake and how the risks associated with not undertaking any of the lifecycle activities will be managed (if applicable) **B. Service delivery to accommodate growth** • Capital expenditure and operating cost estimates to achieve proposed levels of service to accommodate increased demand due to growth • Funding projected to be available, by source, to meet additional growth costs • Risks and proposed mitigation actions
Asset management system	AMS	Consists of a set of interrelated elements that interact to establish the asset management policy, objectives, and processes to achieve those objectives. System elements include the organization's structure, roles and responsibilities, planning, operation, etc. (ISO 55000)
Bridge condition index	BCI	Measure of the condition of the bridges and culverts that range from 0 to 100, with 100 being excellent condition
Budget	-	Planned expenditures for a specified time period, along with the proposed means of financing these expenditures
Capital budget	-	Multi-year program adopted by Regional Council comprising an approved capital program for the current year and a planned program for the succeeding nine years. The multi-year plan covers longer-term and one-time expenditures for projects to meet growth needs and renewal of existing assets
Cityworks	-	Computerized work order and maintenance management software used in the roads, transit, and green infrastructure service areas
Climate change	-	A change in the state of the climate that can be identified (e.g. using statistical tests) by changes in the mean and/or the variability of its properties, and that persists for an extended period, typically decades or longer. Climate change may be due to natural processes or external factors, or to persistent anthropogenic changes in the composition of the atmosphere or in land use
Close circuit television	CCTV	Use of video cameras to monitor and assess infrastructure assets
Consequence of failure	CoF	Impacts resulting from the failure of the asset (KPMG's Asset Management Risk Framework for York Region)
Continual improvement	CI	Recurring activity to enhance an asset's ability to meet levels of service (ISO 55000)

Term	Acronym	Definition
Core asset infrastructure	-	In accordance with O. Reg 588/17, core assets are: • Water assets • Wastewater assets • Stormwater management assets • Roads • Bridges and culverts
Corporate asset management	CAM	Program developed in the Region to foster excellence in public infrastructure asset management planning and delivery
Corporate asset management coordinating committee	CAMCC	Led by the Corporate Asset Management Unit, comprising delegates from service areas and support groups within the Region. The committee reports to the Corporate Asset Management Steering Committee and is responsible for the development, implementation, and continual improvement of asset management programs in each service area
Corporate asset management policy	-	York Region aims to establish consistent, coordinated and sustainable asset management practices across all regional service areas to minimize risks and deliver the services necessary to meet customer expectations. This policy serves as a guiding framework for asset management planning within the Region to facilitate informed decision-making, ensure compliance with legislation and promote responsible stewardship throughout the entire lifecycle of Regional assets.
Corporate asset management steering committee	CAMSC	Acts as the executive lead for asset management, which is a required role per O. Reg 588/17. The Steering Committee holds overall ownership and accountability for ensuring compliance with the Region's asset management policy. The committee consists of directors/managers from service areas and support groups within the Region
Computerized maintenance management software	CMMS	Software used to execute inspection and maintenance activities, and related transactions; and to store data needed to support asset, work and cost decisions
Development charges	DC	Fees collected by the Region for new development and redevelopment of land to help fund growth-related capital costs
Geographic information system	GIS	System for spatially mapping assets
Green infrastructure	-	Consists of the urban forest (street trees, shrubs, and supporting irrigation systems) and the York Regional Forest (forests, wetlands, prairies, and supporting human-made features, such as trails, parking lots, fences, and culverts)
Greenhouse gases	GHG	Gases in Earth's atmosphere that trap heat. These gases let sunlight through the atmosphere, but they prevent the heat that the sunlight brings from leaving. The main greenhouse gases are carbon dioxide, chlorofluorocarbons, methane, nitrous oxide, and water vapour
Inflow and infiltration	I&I	Occurs when rain or groundwater sneaks into the sanitary sewer system
Levels of service	LoS	Parameters or a combination of parameters, which reflect social, political, environmental, and economic outcomes that the Region delivers from its assets (ISO 55000) In accordance with O. Reg 588/17, levels of service are either qualitative descriptions (community levels of service) and/or technical metrics

Term	Acronym	Definition
Probability of failure	-	Likelihood of asset failure occurring either directly applied or calculated depending on the type of information available (KPMG's Asset Management Risk Framework for York Region)
M5 FleetFocus	-	Asset management software used in roads, transit, paramedic and Police service areas
Maximo	-	Computerized work order and maintenance management software used in Water, Wastewater, and Waste Management service areas
New infrastructure	-	Acquisition of a new asset required by the Region to support new regulatory requirements, growth, or to enhance a level of service not currently provided by an existing asset
Non-core asset infrastructure	-	Any asset that is not defined as a core asset in O. Reg 588/17, such as transit buses, administrative buildings, and community housing
Pavement quality index	PQI	Overall score given to a section of pavement that ranges from 0 to 100 (where 100 means a road in excellent condition that is free of potholes and cracks, such as a newly paved road)
PowerBI	-	Data visualization tool used by the Region
Region	-	Corporation of the Regional Municipality of York
Rehabilitation	-	Restoring an asset to its former condition
Replacement cost	-	Cost to replace assets at the current price, taking into account updated construction costs and current design best practices
Resilience	-	The capacity of social, economic, and environmental systems to cope with a hazardous event or trend or disturbance, responding or reorganizing in ways that maintain their essential function, identity, and structure, while also maintaining the capacity for adaptation, learning, and transformation
Risk	-	Effect of uncertainty on objectives, often expressed as a combination of the consequences of an event and the likelihood of an occurrence (ISO 31000 and 55000)
Risk management	-	Coordinated activities to direct and control risk (ISO 31000)
Service	-	Delivery of an output that addresses the needs of local municipalities, residents, businesses, and Regional departments. Many of the important services delivered by the Region rely on its infrastructure assets.
State of good repair	SOGR	Condition where a capital asset is able to operate and maintain the expected levels of service
State of infrastructure report	SOIR	Document produced annually to highlight the condition of Region-owned assets
Stormwater	-	Water from rainfall or snowmelt that does not naturally soak into the ground or evaporate. Stormwater is carried directly to lakes and streams through storm sewers to prevent streets from flooding.
Stormwater management	-	Techniques, methods, and policies for control planning, maintenance, and regulation of stormwater runoff to reduce the potential for flooding and erosion, to ensure the safety of the public will not be threatened, and to achieve water quality and quantity objectives

Term	Acronym	Definition
Strategic plan	-	Roadmap emphasizing the Region's priorities in alignment with the term of York Regional Council, and contains specific, measurable, achievable, and time-based objectives and action plans
Tangible capital asset	TCA	Per the Region's Tangible Capital Asset (TCA) Policy, TCAs are physical non-financial assets that are acquired, constructed, or developed, including land, land improvements, roads, buildings, vehicles, equipment, watermains, sewer mains, and capital assets acquired by capital lease or through donation

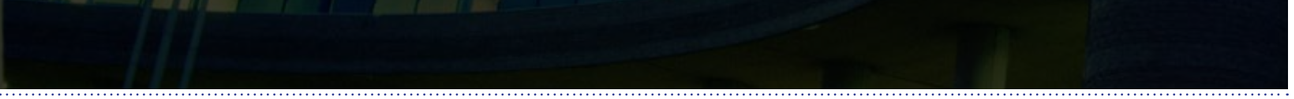
Appendix P – Ontario Regulation 588/17 – Asset Management Planning for Municipal Infrastructure

View and download Ontario Regulation 588/17 – Asset Management Planning for Municipal Infrastructure at: https://www.ontario.ca/laws/regulation/r17588

Appendix Q – Infrastructure for Jobs and Prosperity Act, 2015 and O. Reg. 588/17

This list is not comprehensive. A complete list of legislation and ISO standards followed by the Region.

Jurisdictional Level	Name of the Act, Regulation or ISO Standard	Purpose
Federal	Canadian Environmental Protection Act, 1999	Provides legislative basis for federal environmental and health protection programs
Federal	Wastewater Systems Effluent Regulations	Provides standards for wastewater effluent quality
Federal	Fisheries Act	Manages and protects Canada's fisheries resources
Provincial	Infrastructure for Jobs and Prosperity Act, 2015	Provides long-term infrastructure planning mechanisms
Provincial	O. Reg. 588/17	Sets out requirements for municipal asset management planning
Provincial	Ontario Regulation (O. Reg.) 239/02	Establishes minimum maintenance standards for municipal highways
Provincial	Ontario Regulation (O. Reg.) 104/97	Establishes standards for bridges
Provincial	Ontario Regulation (O. Reg.) 424/97	Establishes requirements for operating commercial vehicles
Provincial	Safe Drinking Water Act, 2002	Regulates drinking water systems and drinking water testing for the protection of human health
Provincial	Clean Water Act, 2006	Protects existing and future sources of drinking water
Provincial	Ontario Water Resources Act, 1990	Provides for the conservation, protection and management of Ontario's waters



Jurisdictional Level	Name of the Act, Regulation or ISO Standard	Purpose
Provincial	Environmental Protection Act, 1990	Provides for the protection and conservation of the natural environment
Provincial	Environmental Assessment Act, 1990	Provides for the protection, conservation and management of the environment
Provincial	Development Charges Act, 1997	Enables municipalities to enact by-laws to impose development charges against lands to be developed to pay for growth-related capital costs for municipal services
Provincial	Planning Act, 1990	Sets out rules for land use planning in Ontario
Provincial	Municipal Act, 2001	Governs the extent of municipal powers and duties
Provincial	Lake Simcoe Protection Act, 2008	Promotes actions to address environmental issues in the Lake Simcoe watershed
Provincial	Greenbelt Act, 2005	Provides for the protection, conservation and management of the Greenbelt
Provincial	Oak Ridges Moraine Conservation Act, 2001	Provides for the protection, conservation and management of the Oak Ridges Moraine
Provincial	Accessibility for Ontarians with Disabilities Act, 2005	Establishes accessibility standards in public spaces
Provincial	Fire Protection and Prevention Act, 1997	Governs fire prevention, fire services, and fire safety of all buildings
Provincial	Fixing Long-Term Care Act, 2021	Governs long term care homes
Provincial	Ontario Building Code	Sets building construction and maintenance standards
Provincial	Ontario Fire Code	Sets fire safety standards
Provincial	Public Transportation and Highway Improvement Act, 1990	Public transportation and highway standards
Provincial	Waste Free Ontario Act, 2016	Enacted the Waste Diversion Transition Act, 2016 and the Resource Recovery & Circular Economy Act, 2016
Provincial	Waste Diversion Transition Act, 2016	Promote the reduction, reuse and recycling of products and goods and provides for the transition of existing waste diversion programs into the new producer responsibility framework
Provincial	The Resource Recovery & Circular Economy Act, 2016	Implements a producer responsibility framework for products and packaging
Provincial	Provincial Plans, including the Growth Plan for the Greater Golden Horseshoe, 2017, the Greenbelt Plan, and the Oak Ridges Moraine Conservation Plan	These plans work together to manage growth and protect the natural environment. They are established under the Places to Grow Act, 2005, the Greenbelt Act, 2005 and the Oak Ridges Moraine Conservation Act, 2001. [The provincial government has announced that the Growth Plan will be merged with the Provincial Planning Statement.]
International	ISO 9001	Quality Management Systems Standard
International	ISO 14001	Environmental Management Systems Standard
International	ISO 55000 Series	Asset Management Standards (used by the Region for guidance only)

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