2024

NON-CORE INFRASTRUCTURE ASSET MANAGEMENT PLAN

TOWN OF
HALTON HILLS

Contents

KEY INSIGHTS

$328.2 million

Replacement cost of non-core infrastructure

62%

Percentage of non-core infrastructure estimated to be in **Good or Very Good** condition

$12.7 million

Annual non-core infrastructure deficit

With the development of this asset management plan, the Town of Halton Hills has achieved compliance with O. Reg. 588/17 to the extent of the requirements that must be completed by July 1, 2024.

EXECUTIVE SUMMARY

Municipal infrastructure is crucial to the well-being and growth of a community because it provides essential services. The objective of municipal asset management is to deliver these services efficiently and cost-effectively through the development and implementation of asset management programs, plans, and long-term financial strategies.

In 2018, the Province of Ontario introduced Regulation 588/17. This regulation is a mandated driver of asset management planning and reporting for municipalities, aiming to enhance organizational performance and foster sustainable communities. It emphasizes the importance of levels of service and lifecycle costs associated with service delivery.

The regulation defines core infrastructure as assets that support the delivery of the following core services: roads, bridges, culverts, stormwater, wastewater, and water. All the other asset types, including facilities, fleet, machinery and equipment, are defined as non-core infrastructure.

This Non-Core Asset Management Plan serves as the follow up to the 2022 Core Infrastructure Asset Management Plan and ensures compliance with the 2024 requirements of Ontario Regulation 588/17. It includes key elements of an industry-standard plan and provides an overview and analysis of the Town's non-core infrastructure.

State of Local Infrastructure

Infrastructure assets included in this plan are listed below:

Facilities	Parks and Open Space
• Aquatic Facilities • Community Centres • Miscellaneous Facilities	• Recreation and Parks • Open Spaces • Cemeteries
Fire Services	**Transportation and Public Works**
• Facilities • Fleet • Machinery and Equipment	• Facilities • Fleet • Machinery and Equipment • Parking Lots
Library Services	**Administration**
• Facilities • Information Technology Assets	• Civic Centre Facility • Information Technology Assets

Replacement Value

The total replacement value of non-core assets is **$328.2 M** as shown in Figure E-1.

Figure E-1 Asset Replacement Cost Profile by Service Area

Facilities — $ 125.8
Parks and Open Spaces — $ 75.1
Fire Services — $ 40.1
Transporation and Public Works — $ 36.7
Library Services — $ 28.2
Administration — $ 22.2

Replacement Cost (2023$) Millions
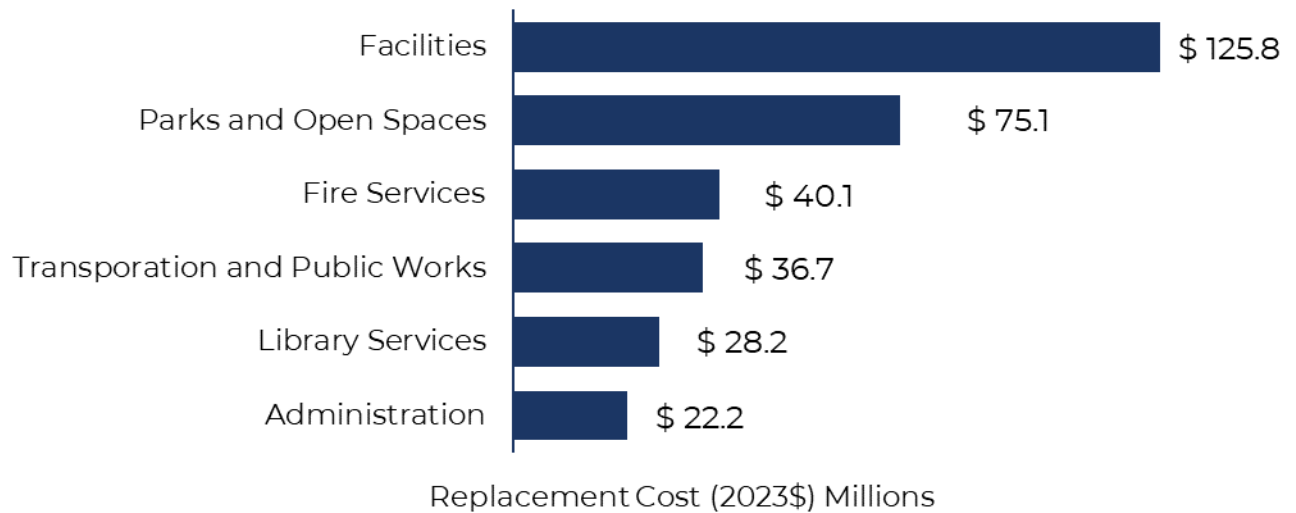
Condition Profile

The majority of the Town's non-core assets are in Good or Very Good condition as outlined below and shown in Figure E-2:

- 62% of assets are in Good or Very Good Condition
- 12% of assets are in Fair Condition
- 26% of assets are in Poor or Worse Condition

Figure E-2 Asset Condition Profile by Service Area

Legend: Very Good | Good | Fair | Poor | Very Poor | Unknown

Facilities
Parks and Open Spaces
Fire Services
Transporation and Public Works
Library Services
Administration

$- $50 $100 $150

Replacement Cost (2023$) Millions
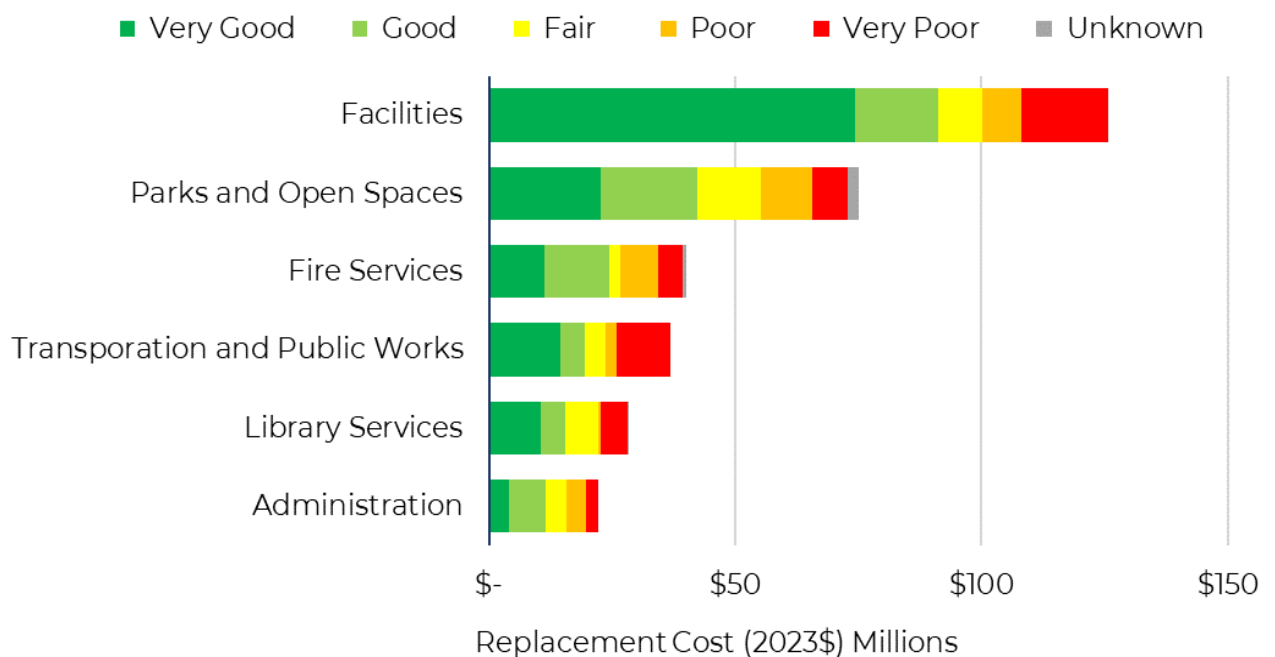
Levels of Service

Levels of Service (LOS) are statements that describe the outputs and objectives the Town intends to deliver to its residents, businesses, and other stakeholders. Developing, monitoring, and reporting on LOS are integral parts of an overall performance management program aimed at improving service delivery and demonstrating accountability to the Town's stakeholders.

Staff have formalized these key performance indicators (KPIs) to ensure compliance with O. Reg 588/17 and started gathering them for reporting. These initial KPIs are intended to establish a baseline, but it is important to note that they are subject to change.

Tables E.1 below provides some examples of the Town's current customer and technical LOS for non-core infrastructure.

Table E.1 Customer and Technical Levels of Service

Service Area	Level of Service Type	Performance Measure
Facilities	Technical	Number of programs, non-programs and events provided
Parks & Open Spaces	Technical	% of playgrounds that meet CSA standards
Fire Services	Customer	Annual # of Fire Safety Education Engagements
Transportation & Public Works	Customer	Compliant with Legislative Requirements (O. Reg. 199/97)
Library Services	Technical	Collection size (collection size/capita)
Administration	Technical	% of facility assets in fair or better condition by replacement value

Current performance is based on existing resource provision and work processes. Levels of service are expected to change over time due to shifts in customer priorities and technology used to complete work. Updating customer and technical levels of service metrics and their associated performance is an ongoing process.

Future Demand

Factors influencing the future demand of core and non-core infrastructure assets include:

- Population growth
- Economic, demographic, and transportation preference changes
- Climate and environmental factors

Future demands will be managed using a combination of interventions used to address capacity and use, and function discrepancies. These interventions include:

- Managing, upgrading, and expanding existing assets
- Acquisition of new assets
- Implementing policy, design, operations and maintenance changes

Risk Management

The Town's risk strategy provides a framework for quantifying asset risk exposure, enabling prioritization of projects. Asset criticality, or the relative importance of assets for service delivery, guides the asset management strategy. Criticality is assessed based on the impact of asset failure on service delivery, health and safety, the environment, finances, and reputation. Risk exposure is calculated by multiplying the consequence of failure (CoF) by the probability of failure (PoF).

Lifecycle Management Planning

Maintaining service levels, meeting future demand, and managing risk guide the Town's lifecycle management of infrastructure assets. These activities include planning, acquisition, installation, operations, maintenance, renewal, replacement, and disposal. Asset lifecycle management affects finances and requires both short-term and long-term financial planning. These needs are forecasted and included in the Town's Operational and Capital budgets and the Long-Range Financial Plan.

Financial Summary

The Non-Core Infrastructure AM Plan defines the infrastructure deficit as the difference between the planned budget and the whole lifecycle needs of the assets. When comparing the forecasted whole lifecycle needs to the planned Capital and Operating budgets, the Non-Core Infrastructure AM Plan identified an infrastructure deficit of $12.7 million per year. Changes or enhancements to lifecycle management activities will impact this figure and will need to be considered in short- and long-term financial planning.

Figure E-4 shows a summary of the operational and capital needs compared to the planned budget for the Town's non-core infrastructure assets over the next 10 years.

Figure E-4 10-year Lifecycle Summary
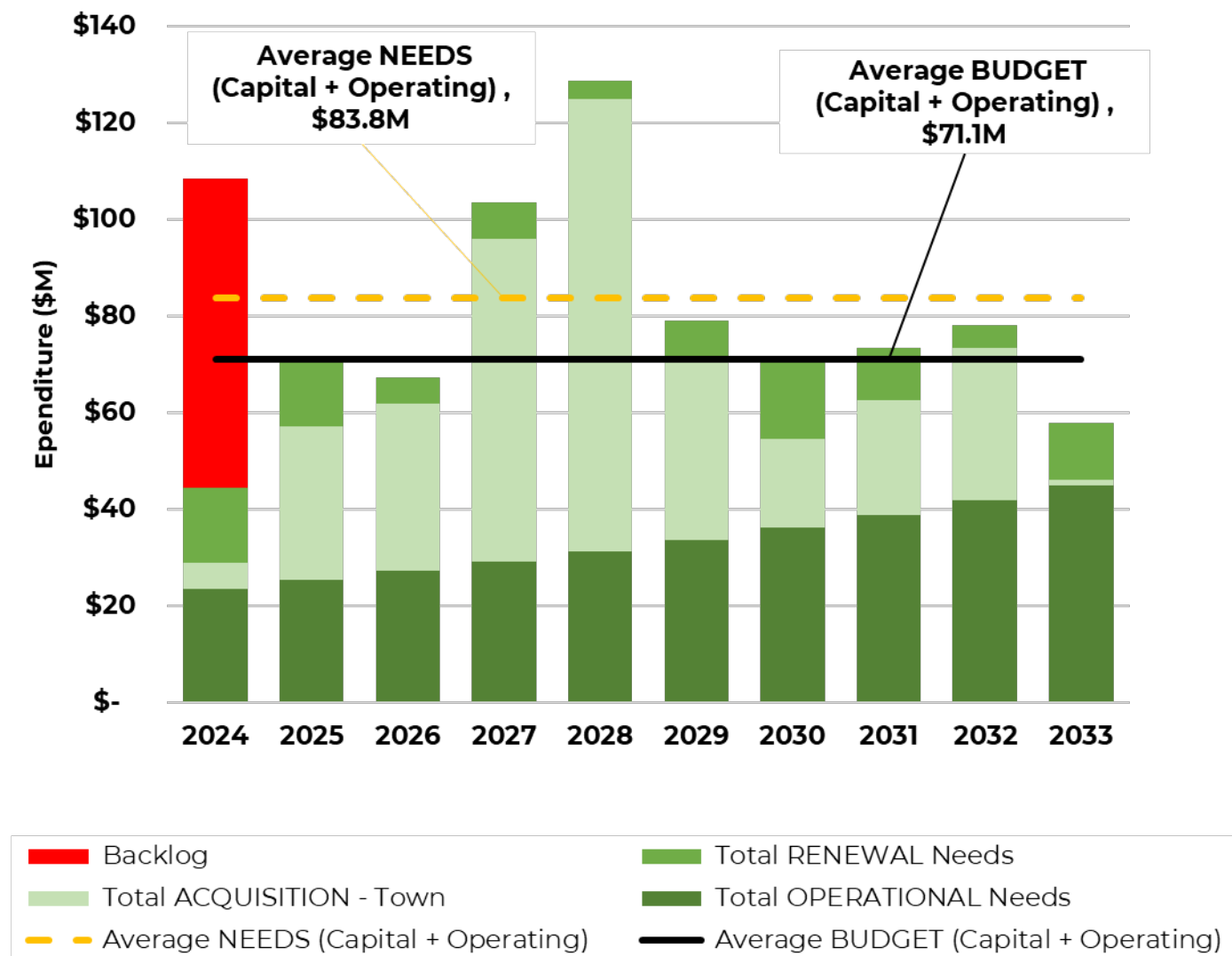
What will we do?

The infrastructure deficit indicates inadequate capital and operational spending on the lifecycle activities required to maintain service levels, meet future demand, and minimize risk. Inadequate capital and operational spending pose a risk to services provided by non-core infrastructure assets in terms of capacity and use, function, and quality.

To address the infrastructure deficit, the Town prioritizes the needs of existing assets over the addition of new assets where appropriate. This approach targets funding towards maintaining current infrastructure in a state of good repair. The Town also prioritizes its existing assets based on asset criticality, which is described in more detail in the 'Risk Management' section of the AM Plan.

Limitations and Constraints

Data gaps are inevitable when developing asset management plans, therefore key assumptions were made in the development of the Non-Core Infrastructure AM Plan:

- The capital projects that are funded by development charges in the 2024-2033 10-year Capital forecast, and future development plans represent new asset value to be acquired for 2024-2033.

- The planned budget for operations and maintenance is based on the 2024 approved Operational budget.

- Forecasted operations and maintenance costs were derived from projected asset growth over the next 10 years.

- Renewal and replacement budgets were allocated for each capital project in the 2024-2033 Capital Plan

- Where no engineering-based needs assessments were conducted, the renewal year was calculated by adding the useful life to the installation year.

- Unknown installation dates were estimated based on condition ratings.

- Age-based condition was used in the absence of formal condition assessment information wherever applicable.

- Inflation factors (i.e. StatsCan Inflationary tables) were used to update replacement costing in the absence of a formal inventory and condition assessment information.

- Unknown renewal/replacement costs were based on benchmarks and industry best practices.

- Population growth was estimated using data from the Town's 2021-2022 Development Charges Study.

- The extent of new infrastructure assets required, and the subsequent lifecycle costing requirements will become clearer as development plans are finalized.

- Missing information and data gaps were resolved by substituting institutional knowledge from Town stakeholders.

The confidence level in the data regarding accuracy and completeness is considered to be "Moderate". Areas requiring improvement are noted in the Improvement Plan.

Continuous Improvement

Development of AM Plans is an iterative process that includes improving data, processes, systems, staff skills, and organizational culture over time. This section provides an overview of recommended improvements to the Town's asset management practices.

Asset management is an evolving process that seeks continuous improvement to enable data-driven decisions. The following improvement items have been documented as a result of preparing this plan:

- Track and document current customer and technical levels of service

- Determine proposed levels of service and identify performance gaps

- Improve accuracy and completeness of core, non-core asset, and natural asset data by addressing inventory and condition data gaps

- Formalize a more robust condition and inspection monitoring program for all assets to help determine true infrastructure needs

- Determine more accurate lifecycle costing that is tracked at the asset level

- Determine operational budget impacts of proposed growth projects

- Bridge the gap between asset management planning processes and executing the capital and operating budgets

- Proactively update asset unit replacement costs based on latest industry data

Conclusion

The Non-Core Infrastructure AM Plan communicates the interconnected relationship between levels of service, risk, lifecycle activities, and the associated costs to establish to inform planning and decision-making to realize best value from its non-core infrastructure assets.

It is an important planning and communication tool for staff with Council and the community about the sustainable management of its non-core infrastructure assets to continue deliver required levels of service while optimizing costs and minimizing risks.

Town staff will continue to work collaboratively to address the infrastructure deficit and performance gaps and to achieve sustainable service delivery as part of its continuous improvement process.

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1.0 INTRODUCTION

Asset Management at the Town

What is Asset Management?

Asset management is defined as the coordinated activity of an organization to derive value from its assets. It combines financial, economic, engineering, and other practices to manage physical assets, while balancing costs and risks against the established level of service to achieve organizational objectives. This approach involves data-driven decision-making and activities throughout the whole lifecycle of assets.

Corporate Asset Management Program

The Town's Corporate Asset Management (CAM) Program is a strategic, comprehensive approach to managing assets across the organization. It aims to maximize consistency among diverse service areas and create efficiency by harmonizing service levels and business processes while addressing associated risks.

This program treats all assets as essential components of an interconnected system rather than isolated parts. Service areas evaluate, enhance, and maintain assets using a common framework and collaborative processes.

The program guides everyone at the Town to focus on these fundamental goals:

- o Providing efficient, effective, and sustainable services to meet the needs of our community
- o Optimizing asset value while minimizing lifecycle costs
- o Managing risks to service delivery
- o Committing to continual improvement of the CAM Program
- o Achieving sustainable funding through integrated asset management planning

The program supports the Town's strategic priorities, ensures effective stewardship of public assets and meets service commitments to current and future residents in an efficient and sustainable manner.

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Corporate Asset Management Policy

In accordance with the requirements outlined in O. Reg 588/17, the Town developed its Corporate Asset Management Policy in 2018 and updated it in 2024. The policy expresses the commitment and guiding principles to apply a whole lifecycle approach to managing the Town's infrastructure assets, ensuring sound stewardship of public assets while providing a consistent level of service and improving the quality of life for the community. As per O.Reg. 588/17, the Town will continue to review and/or update the policy on a 5-year review cycle to ensure it remains current and effective.

The CAM program is committed to the following objectives:

1. **Service Focused**
   Provide assurance to the community through clearly defined levels of service and adhere to optimal asset management processes and practices, including investment, that are supported by continually updated asset data and performance measures.

2. **Innovative**
   Continually improve our asset management approach, rededicating ourselves to innovation as new tools, techniques and solutions are developed.

3. **Fact-based Decision Making**
   Uses of a formal but flexible, consistent, and repeatable approach to cost effectively manage our infrastructure assets.

4. **Optimal**
   Make informed decisions between competing factors such as service delivery, asset quality & value, cost and risk by determining which option will deliver the optimal lifecycle value.

5. **Whole Lifecycle Perspective**
   Consider the full impact of asset management activities on services, risks, and costs through their whole lifecycle phases from acquisition, operations, maintenance, renewal to disposal.

6. **Integrated System Focused**
   Evaluate infrastructure assets in terms of its role and value within the context of the greater system, as opposed to examining individual assets in isolation, taking into consideration operating and capital budgets, masterplans, official plan and departmental strategic plans.

7. **Forward Looking & Sustainable**
   Incorporate social, legislative, environmental, and economic considerations into decisions to adequately address present and future land use planning framework, to protect and preserve natural areas and green spaces, to enhance biodiversity through environmental stewardship, and to foster a thriving economy.

8. **Risk-based**
   Comply with all relevant legislative, regulatory, and statutory requirements to minimize risks. Direct resources, expenditures, and priorities in a way that achieves the established levels of service at an acceptable level of risk to build a safe and welcoming community.

To achieve these objectives, the CAM program applies the guiding principles as per below.

- Take an optimized approach to asset related decisions, including acquisitions, disposals and value-realization, which considers all revenues and costs (including operation, maintenance, replacement and decommissioning) and strives to minimize the total life cycle costs of assets.
- Establish organizational accountability and responsibility for asset management, including for asset inventory and data management, asset condition monitoring, asset utilization and maintenance of asset performance levels.
- Define and articulate asset service, maintenance, and replacement levels in relation to service delivery objectives and desired Customer Service outcomes.
- Implement and maximize the utilization of AMIS across all service areas in alignment with the Corporate Technology Strategy to document and share asset data and information and provide essential outputs for effective asset management.
- Minimize risks to asset users, and risks associated with infrastructure and asset failures.
- Integrate corporate, financial, business, and technical requirements in budgetary planning for all asset classes.
- Plan for and provide stable long-term funding through the utilization of capital reserves while aligned with the long-term financial plan.
- Ensure that the Town's asset management planning process is aligned with the provincial policy statements related to growth.
- Ensure coordination with the Region of Halton, area municipalities and other agencies for a holistic asset management system.
- Manage assets in a sustainable manner through the best use asset management enablers such as data, people, technology and the implementation of best practices.
- Integrate stakeholder input, climate change impact, environmental goals and social and sustainability objectives into a comprehensive asset management strategy.
- Utilize the Town's Public Engagement charter to fully involve/engage the public in the CAM process.
- Report on the performance of the CAM program for review and approval by Council.

The successful implementation of the CAM program relies on collaboration and coordination between many key stakeholders and processes across the Town.

The Corporate Asset Management Framework in Figure 1-1 shows the overarching approach the Town is taking to promote collaboration and alignment between stakeholders.

Figure 1-1 Corporate Asset Management Framework
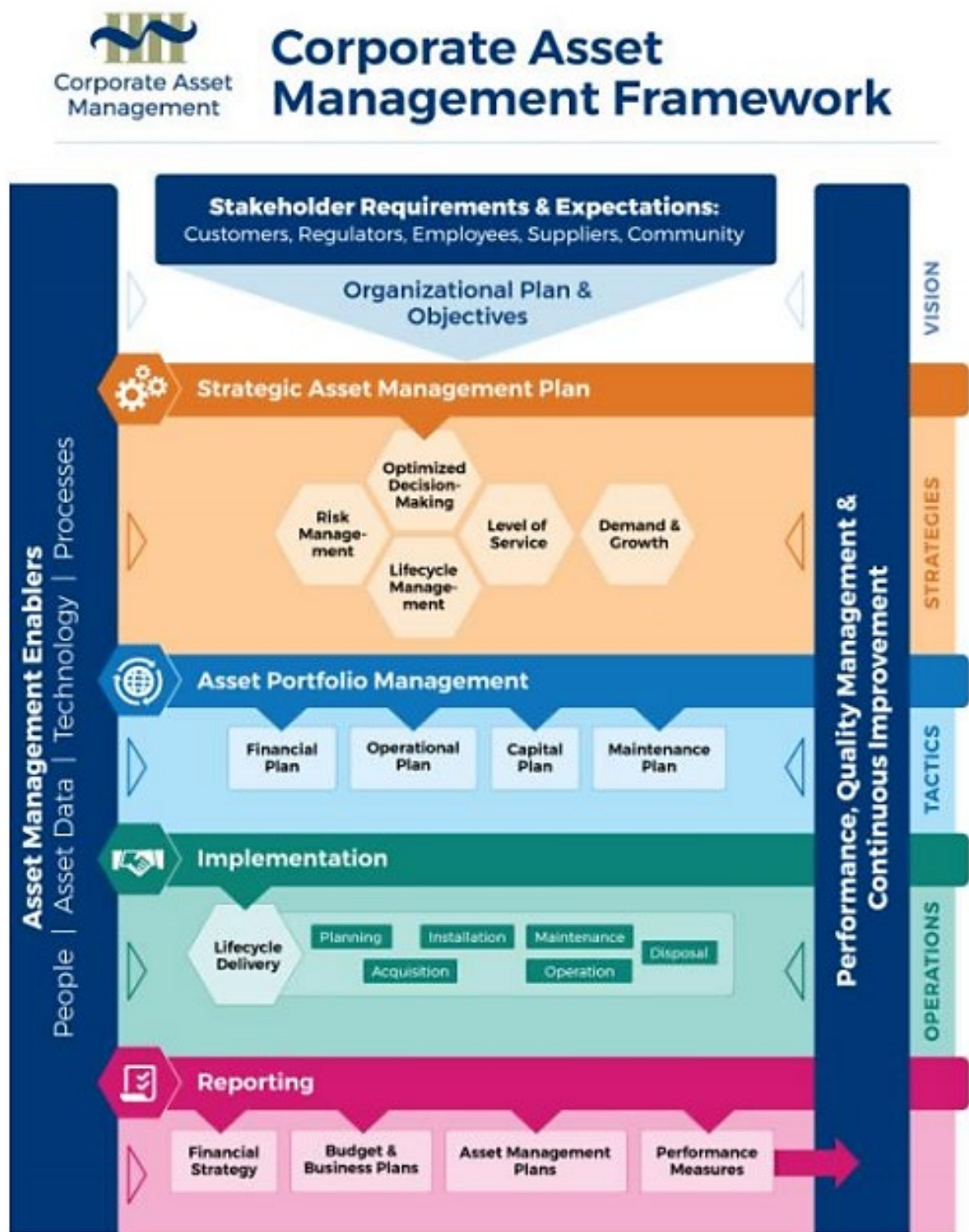
Key stakeholders in the preparation and implementation of this Non-Core Infrastructure AM Plan are shown in Table 1.1.

Table 1.1 Key Stakeholders in the Non-Core Infrastructure AM Plan

Key Stakeholder	Role in Asset Management Plan
▪ Council, ▪ CAO ▪ Senior Management Team	▪ Represent needs of community/shareholders ▪ Allocate resources to meet planning objectives in providing services while managing risks ▪ Support and endorse initiatives that support the goals and vision of the Town of Halton Hills ▪ Provide strategic direction, integration, and alignment
Climate Change and Asset Management	▪ Ensure a collaborative and integrated approach is maintained between all stakeholders ▪ Implement the strategic asset management practices across all asset groups ▪ Present documentation to senior management and Council
Finance	▪ Supports the financial needs of the various stakeholders to ensure sustained service delivery ▪ Supports the Capital and Operating budgeting process
▪ Administration, ▪ Library Services, ▪ Fire Services, ▪ Parks & Open Spaces, ▪ Facilities ▪ Transportation & Public Works	▪ Lead and manage key lifecycle activities including planning, acquisition, maintenance, operations, and disposal of assets ▪ Supports the daily decisions related to assets

Ontario Regulation 588/17

As part of the *Infrastructure for Jobs Prosperity Act, 2015,* the Ontario government introduced Regulation 588/17 – Asset Management Planning for Municipal Infrastructure (O. Reg. 588/17). This regulation was established to address the challenges of underfunded municipal infrastructure needs.

Implementing consistent asset management practices is a Town-wide priority. Integrating the planning phase of asset management through a coordinated effort is an important step towards ensuring value from the Town's assets.

This asset management plan is produced in alignment with, and to comply with, the requirements of O. Reg. 588/17 (see Table 1.2 below).

Table 1.2 Ontario Regulation 588/17 Requirements and Reporting Deadlines

Requirements	2019	2022	2024	2025
Asset Management Policy	●		●	
Asset Management Plans		●	●	●
State of infrastructure for core assets		●		●
State of infrastructure for non-core assets			●	●
Current levels of service for core assets		●		●
Current levels of service for non-core assets			●	●
Proposed levels of service for all assets				●
Lifecycle costs for current levels of service		●	●	●
Lifecycle costs for proposed levels of service				●
Growth impacts		●	●	●
Financial strategy				●

See Appendix C for a detailed checklist of O. Reg. 588/17

Organization of the Document

This non-core asset management plan is structured to meet the requirements of O. Reg. 588/17 (Current Levels of Service). The contents of this plan follow the recommended elements of a detailed asset management Plan:

Executive Summary: Summary of AM Plan

1 - Introduction: Outlines scope, background information, relationship to other Municipal documents and plans, and applicable legislation

2 – State of Local Infrastructure: Summarizes the inventory, valuation, condition, and remaining life of the assets in the inventory by service and asset type

3 - Levels of Service: Defines levels of service through performance indicators and targets, and outlines current performance

4 – Future Demand: Looks at the Town's ability to meet the changing needs of the industry and their customers over time.

5 – Risk Management Strategy: Defines the framework for identifying critical assets and quantifying risk to enable prioritization of lifecycle activities

6 – Lifecycle Management Strategy: Summarizes the asset management strategies (i.e., planned actions) that will enable the assets to provide the required levels of service in a sustainable way, while managing risk, at the lowest lifecycle cost

7 – Financial Projection: Summarizes the infrastructure gap based on the determined infrastructure needs and associated budget.

8 – AM Plan Monitoring and Improvement: Summarizes the next steps including monitoring of AM Plan implementation progress and improving future iterations of the AM Plan.

Background

The Non-Core Infrastructure Asset Management Plan communicates the activities undertaken by the Town to ensure the sustainable delivery of services that support the quality of life of its residents and in compliance with regulatory requirements.

The Non-Core Infrastructure AM Plan is to be read with the Town of Halton Hills' documents. This should include the following strategic documents:

- Town of Halton Hills Strategic Plan (2023-2026)
- 2022 Core Infrastructure Asset Management Plan
- Corporate Asset Management Policy
- Town of Halton Hills Official Plan
- 2023 and 2024 Town of Halton Hills Business Plans and Budgets
- State of Infrastructure Report 2018

Scope of Work

The infrastructure assets covered by this Non-Core Infrastructure AM Plan include the assets listed in Table 1.3. For a detailed summary of the assets covered in this Non-Core Infrastructure AM Plan refer to Table 2.1 in Section 2.

Table 1.3 Summary of Assets

Service Areas	Asset Class
Administration	Administrative Facilities
	IT Infrastructure
Library Services	Library Facilities
	IT Infrastructure
Fire Services	Fire Machinery and Equipment
	Fire Facilities
	Fire Vehicles
Parks & Open Spaces	Cemeteries
	Open Spaces
	Recreation and Parks
Facilities	Aquatic Facilities
	Community Centres
	Miscellaneous Facilities
Transportation & Public Works	Parking Services
	Public Works Facilities
	Public Works Vehicles
	Public Works Machinery and Equipment

Administration

Administration helps enable the planning, development, delivery or management of the Town's policies, programs, services or other activities directed to the Public Service. The Administrative Services assets included within this plan are:

Table 1.4 Summary of Administration Assets

Asset Class	Asset Type
Administration Facilities	• Civic Centre Facility
IT Infrastructure	• Network • PC • Printers • Servers • Storage • Telephones

Library Services

Library Service means provide reading materials for convenient use; circulation of reading materials; service to help provide users with library materials, and educational and recreational audiovisual materials. The Library Services assets included within this plan are:

Table 1.5 Summary of Library Services Assets

Asset Class	Asset Type
Library Facilities	• Acton Public Library • Georgetown Public Library
IT Infrastructure	• RFID Readers • AWE Stations • Computers • Printers • Scanners • Video Projectors

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Fire Services

Fire Services provides Town residents, visitors and businesses with protection against loss of life, property and the environment from the effects of fire, illness, accidents, and all other hazards through preparedness, prevention, public education, and emergency response, with an emphasis on quality services, efficiency, effectiveness, and safety. The Fire Services assets included within this plan are:

Table 1.6 Summary of Fire Services Assets

Asset Class	Asset Type
Fire Facilities	• Acton Fire Hall • Maple Fire/EMS Station • South Headquarters Station
Fire Equipment	• Ancillary Equipment • Communication and Control Systems • Computer Equipment • Personal Firefighter Equipment
Fire Vehicles	• Fire Apparatus • Light Vehicles

Parks & Open Spaces

Parks and Open Spaces provide natural, semi-natural or planted space set aside for resident enjoyment and recreation or for the protection of wildlife or natural habitats. The Parks & Open Space assets included within this plan are:

Table 1.7 Summary of Parks & Open Spaces Assets

Asset Class	Asset Type
Cemeteries	• Hillcrest Cemetery • Greenwood Cemetery • Fairview Chapel • Non-Active Cemeteries
Open Spaces	• Town Trails
Parks and Recreation	• Community Parks • Equipment • Neighbourhood Parks • Parkettes

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Facilities

Facilities help manage the prevision of creation space for Town residents, as well as deliver recreation activities for all abilities. This is done by identifying community needs and interests, and maintain and operating associated facilities to provide a setting for recreation and culture activities The Recreation & Culture assets included within this plan are:

Table 1.8 Summary of Facilities Assets

Asset Class	Asset Type
Aquatic Facilities	- Acton Arena & Community Centre - Georgetown Indoor Pool - Norval Park Community Centre
Community Centres	- Acton Arena & Community Centre - Cedarvale Park Community Centre / Daycare - Cultural Centre - Gellert Community Centre - Hornby Community Hall / Daycare - Mold-Masters Sports Complex - Norval Park Community Centre
Miscellaneous Facilities	- Ambulance Station House - Cedarvale Park Artisan House / Caretaker's Residence - Devereaux House

Transportation & Public Works

Transportation & Public Works assets enhance connectivity through the safe and efficient movement of people, goods, and services on well-maintained transportation infrastructure. The Transportation & Public Works assets included within this plan are:

Table 1.9 Summary of Transportation & Public Works Assets

Asset Class	Asset Type
Public Works Facilities	- Acton Yard - Central Yard - Old Garage - Central Yard - Sand/Salt Dome and Warm/Cold Storage - PW Operations Centre (Robert C. Austin)
Parking Services	Parking Lots
Public Works Fleet	- Licensed Vehicles - ActiVan Vehicles
Public Machinery and Equipment	- Minor Equipment - Small Engines - Specialty Equipment

This plan relies on the replacement value as its basis for the funding requirements discussed in Section 7. The replacement value is the cost that would be incurred to replace the asset in its current state. The replacement value is based on industry pricing and is adjusted on an annual basis to incorporate inflationary factors.

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2.0 STATE OF LOCAL INFRASTRUCTURE

The State of Local Infrastructure section of the AM Plan describes the Town's asset inventory, and provides a snapshot of the valuation, age distribution and condition of the non-core assets. Recommendations for the sustainment of data collection and reporting are provided in the Plan Improvement and Monitoring section.

Asset Valuation

The non-core infrastructure assets included in this plan have a total replacement value of $328.2 million dollars.

Table 2.1 Summary of Assets

Service Area	Asset Class	Replacement Value (M$) (2023)
Administration	Civic Centre Facility	$19.8
	IT Infrastructure	$2.4
Library Services	Library Facilities	$27.8
	IT Infrastructure	$0.4
Fire Services	Fire Equipment	$3.2
	Fire Facilities	$23.8
	Fire Fleet	$13.1
Parks & Open Spaces	Cemeteries	$1.3
	Open Spaces	$3.5
	Recreation and Parks	$70.3
Facilities	Aquatic Facilities	$0.6
	Community Centres	$121.4
	Miscellaneous Facilities	$3.8
Transportation & Public Works	Parking Services	$3.4
	Public Works Facilities	$9.3
	Public Works Fleet	$21.6
	Public Works Machinery and Equipment	$2.4
TOTAL		**$328.2**

Asset Age

The age profile of the assets included in this Non-Core Infrastructure AM Plan are shown in Figure 2-1. The bars in the graph represent the amount of total replacement value of assets installed each year.

Figure 2-1 Asset Age Distribution
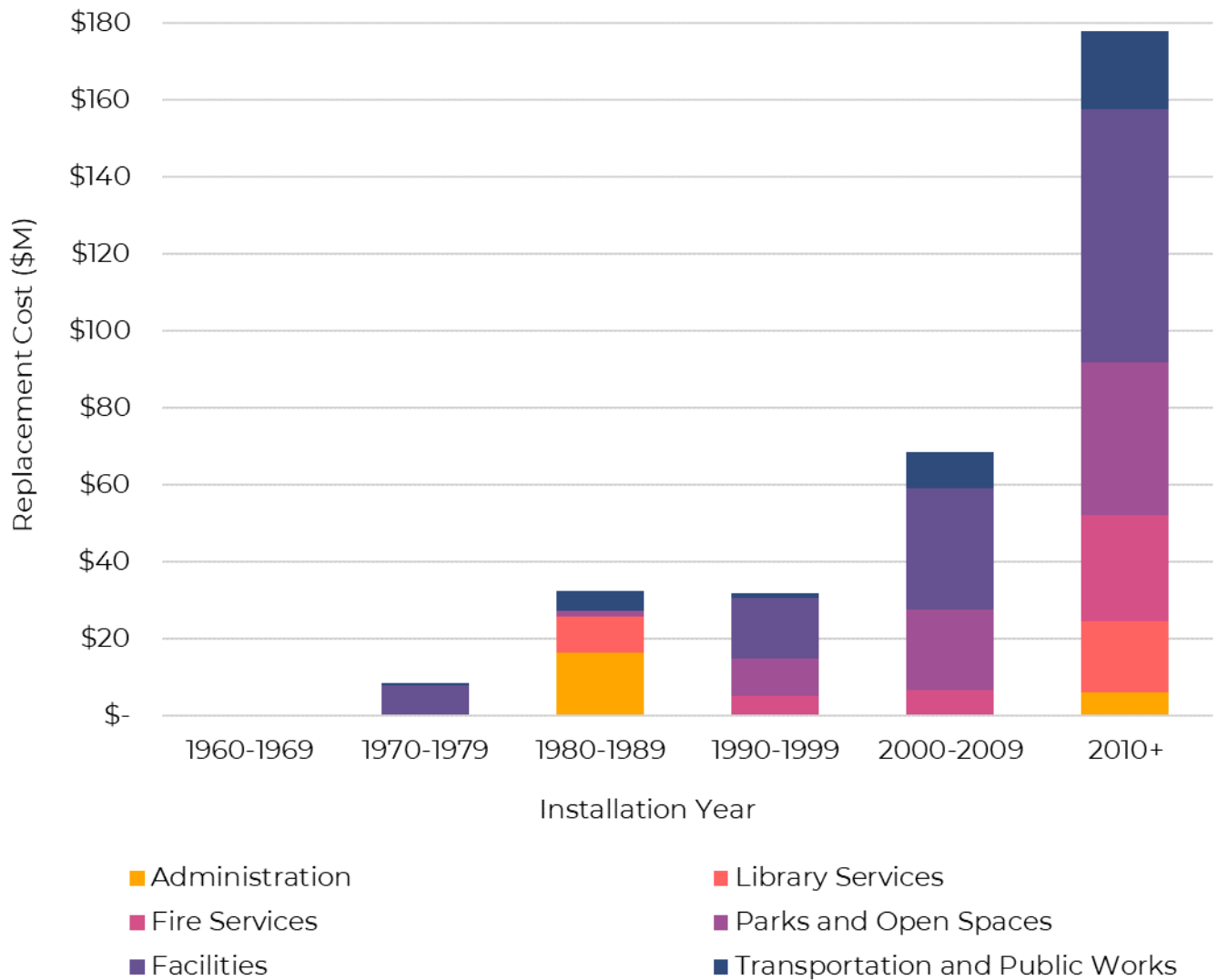
This graph shows that many of the Town's non-core infrastructure assets have been installed during the 2010s and onwards. Although community infrastructure needs and expectations can evolve significantly over decades, understanding past investment patterns can be informative in planning for future needs.

Asset Condition

Condition is measured using a 1 – 5 rating system as detailed in Table 2.2. This condition rating framework is used consistently across all asset types to ensure uniform assessment. The table also includes the corresponding remaining useful life percentages for each condition grade.

Table 2.2 Condition Rating Framework

Condition Grading	Description of Condition	Remaining Useful Life (all asset types)
1	**Very Good**: Fit for the future. Well maintained, in good condition. Newly or recently rehabilitated.	>75 – 100%
2	**Good**: Good working condition. Generally approaching mid-stage of expected service life.	>50 – 75%
3	**Fair**: Signs of deterioration, some elements exhibit deficiencies. Mid-stage of expected service life.	>25 – 50%
4	**Poor**: Condition below standard, large portion of system exhibits significant deterioration. Approaching end of service life.	>0 – 25%
5	**Very Poor**: Widespread signs of advanced deterioration, asset may be unusable. Near or beyond expected service life.	<= 0%

For this Non-Core Infrastructure AM plan, condition assessment data was incorporated where available, specifically for facilities based on the Building Condition Assessment Study conducted in 2016 and a facility inventory data collection update in 2023. For the remaining assets, condition was calculated from remaining life based on age.

The condition profile of the Town's non-core infrastructure assets is shown in Figure 2-8.

Figure 2-8 Asset Condition Profile
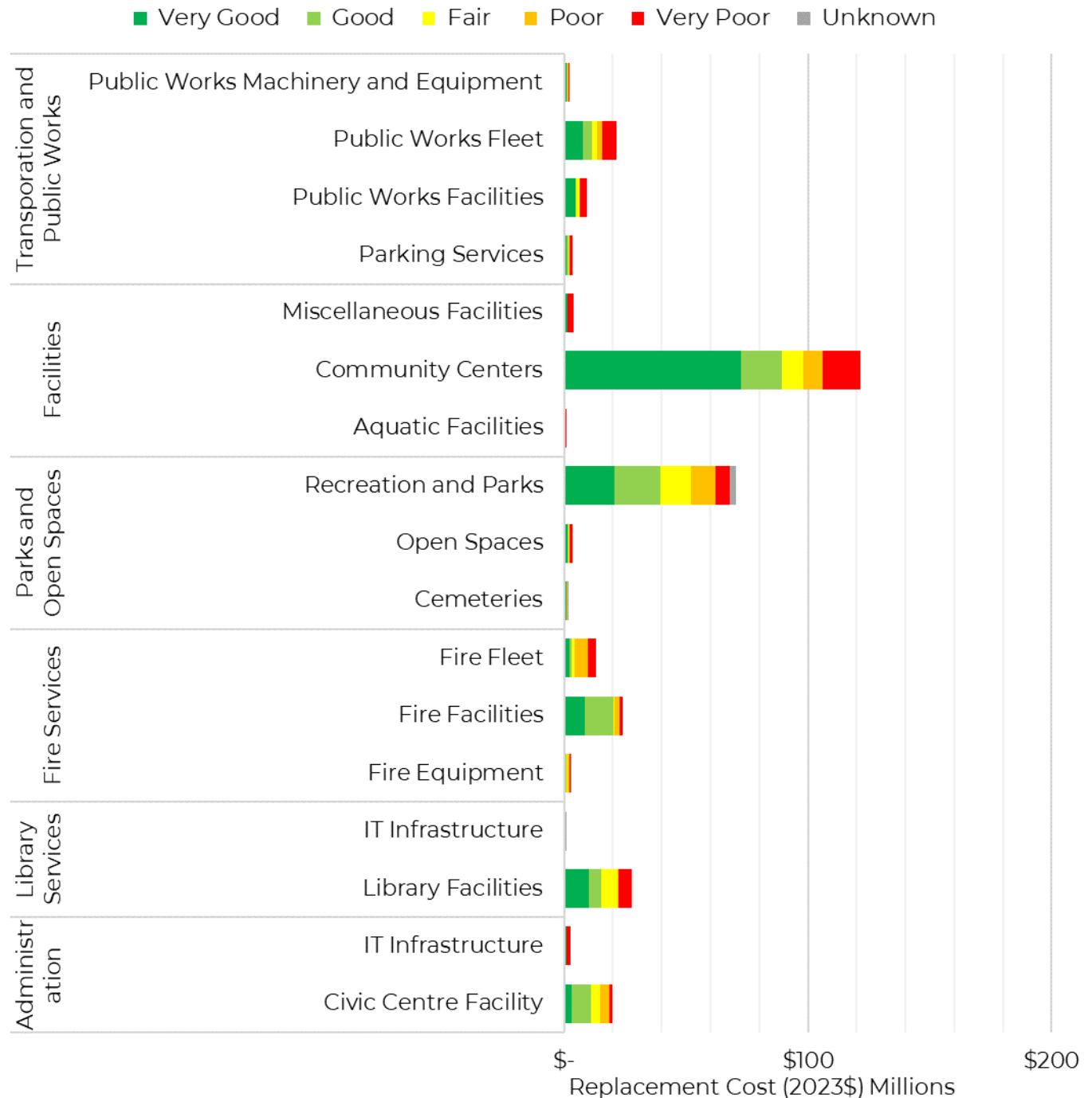
Most of the Town's non-core infrastructure assets are in Good or Very Good condition, with a total replacement value of $204 million. Assets in Fair condition have a total replacement value of $39 million, and those in poor or worse condition amount to $82 million.

In the absence of formal condition assessments, age-based estimates were used to gauge asset condition. This method may not accurately reflect the true condition, as assets may be in better physical state than indicated by age alone, continuing to perform their intended functions effectively.

Portfolio Forecast

Figure 2-9 shows a summary of the operational and capital needs compared to the planned budget for the Town's non-core infrastructure assets over the next 10 years

Figure 2-9 Portfolio 10-year Forecast
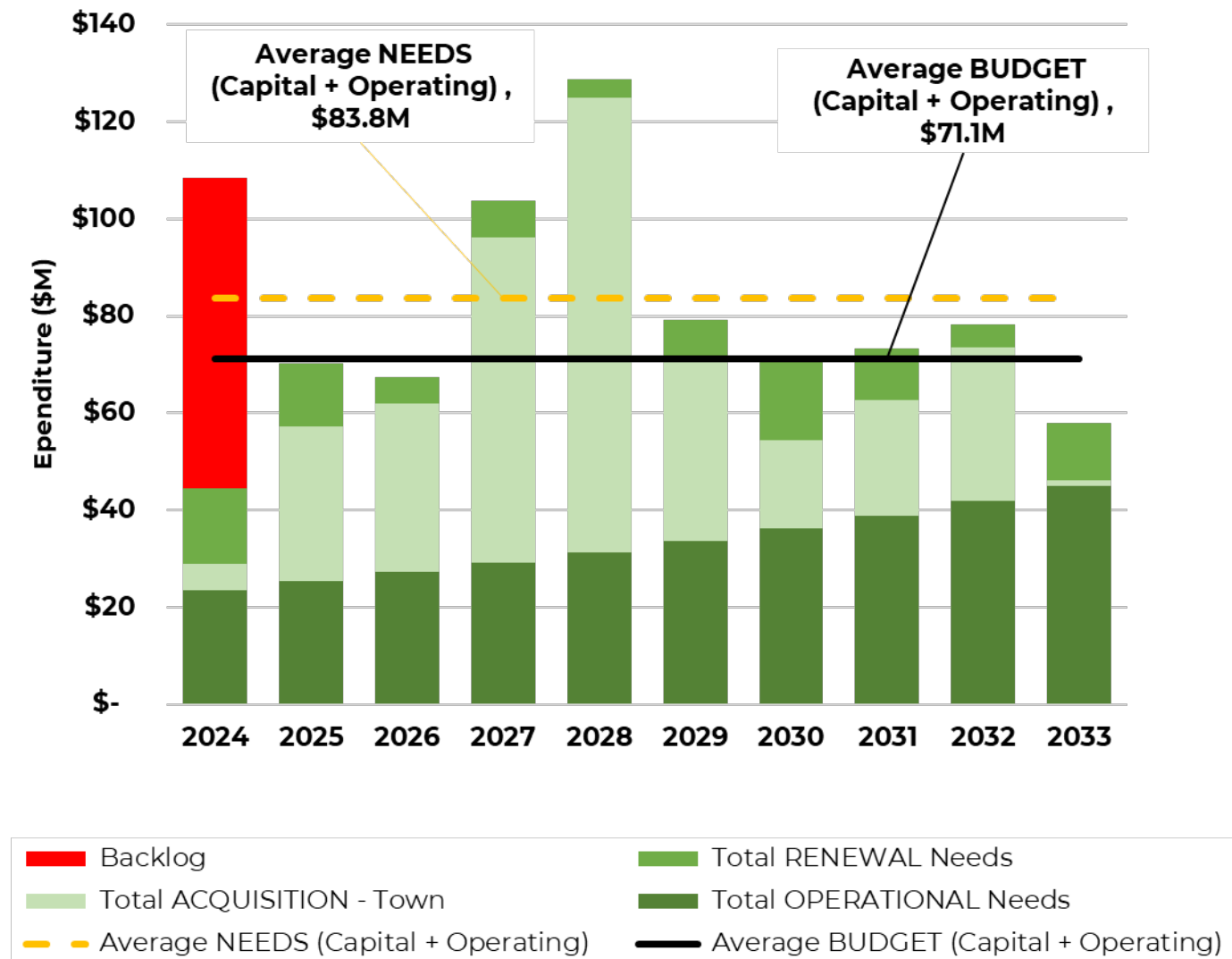
Natural Assets

The Town is embarking on a strategic initiative to integrate additional natural assets into its asset management practices. Recognizing the vital role of green infrastructure, the Town has formally acknowledged these assets within this Asset Management Plan and the Town's most recent Strategic Plan. Green infrastructure assets, including those in parks and open spaces, have already been fully incorporated in the plan. Other natural assets are being incorporated into the asset management policy, laying the foundation for a systematic and holistic approach to managing these critical resources. This inclusion demonstrates the Town's commitment to valuing natural assets as integral components of its infrastructure.

Efforts are underway to inventory and value the Town's natural assets, focusing on improving data quality and availability for analysis. By enhancing the accuracy, completeness, and quality of this data, the Town aims to create a robust foundation for informed decision-making. These actions ensure that natural assets are accurately represented within the broader asset management framework, facilitating better planning and management.

Looking ahead, the Town is committed to fully integrating natural assets into its asset management processes, guiding the transition from policy incorporation to the creation and implementation of a dedicated Natural Asset Management Plan. The strategic plan emphasizes the need to renew and maintain green infrastructure, ensuring these assets are managed with the same diligence and precision as traditional infrastructure. This approach underscores the Town's dedication to sustainability and resilience, safeguarding the long-term health and viability of its natural and green infrastructure.

3.0 LEVELS OF SERVICE

Levels of Service (LOS) measure how well an asset meets functional or user requirements. LOS consists of statements that describe the outputs and objectives the Town intends to deliver to the community. Developing, monitoring and reporting on LOS are integral parts of an asset management program that is aimed at maintaining/improving service delivery and demonstrating accountability to the Town's stakeholders.

LOS are guided by a combination of customer expectations, legislative requirements, and internal guidelines, policies and procedures. In many cases, LOS are also implied based on past service delivery, community expectations, and infrastructure system design.

Effective asset management planning requires that LOS be formalized and supported through a framework of performance measures, key performance indicators (KPIs), targets, and timeframes to achieve targets, and that the costs to deliver the documented LOS be understood and communicated.

In alignment with O. Reg. 588/17, this Non-Core asset management plan discusses LOS under community (i.e. customer) and technical LOS categories, defined as:

- **Community LOS:** Qualitative descriptions that demonstrate customer and other stakeholder expectations of services provided from the assets.

- **Technical LOS:** Technical metrics that translate customer expectations into technical objectives and performance measures.

Levels of Service Framework and Line of Sight

Figure 3-1 outlines the LOS framework and shows the line of sight from the Town's strategic priorities to detailed asset-specific Technical LOS.

The Town's strategic priorities, along with legislated LOS guide the Community LOS that describe the services that the assets need to deliver to the Town's residents, businesses, and other stakeholders. Community LOS can typically be categorized to one of the following service attributes:

- **Scope and Function:** Services have capacity to meet community needs while limiting impacts and with assets that perform their intended function.

- **Quality and Reliability:** Services are reliable and supported by well-maintained assets.

- **Safety and Accessibility:** Services are safe and accessible to everyone, with assets that are in compliance with regulatory requirements.

- **Financial Sustainability:** Services are affordable and efficient, with assets that are adequately funded.

- **Environmental Resiliency and Stewardship:** Services are resilient to climate volatility and committed to environmental stewardship, with assets managed for enhanced sustainability.

Figure 3-1 Levels of Service Framework

Corporate Levels of Service	Legislated Levels of Service	Community Levels of Service	Technical Levels of Service
		Scope and Function	
		Services have enough capacity and meet customer needs while limiting impacts.	Assets of sufficient capacity are available and perform their intended function.
		Quality and Reliability	
Strategic Plan (2023 - 2026)	**Government Regulations**	Services are reliable and responsive to customers.	Assets are in adequate condition, are maintained as required and respond to customer needs.
		Safety and Accesibility	
		Services are safe and accessible to everyone.	Assets are safe, accessible and in compliance with regulations.
		Financial Sustainability	
		Services are affordable and provided in an efficient manner.	Assets are adequately funded in the both short- and long-term.
		Environmental Resiliency and Stewardship	
		Services are resilient to climate volatility and committed to environmental stewardship.	Assets are managed with a focus on environmental resiliency and sustainability.

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Town of Halton Hills Strategic Plan 2023 - 2026

This Non-Core asset management plan is prepared under the direction of the Town of Halton Hills vision, mission, values, strategic priorities and objectives.

Vision

The Town of Halton Hills is a growing, nature-rich community that is proud of its small-town feel and urban rural mix where all people are welcomed, safe and connected.

Mission

To efficiently provide services that foster a higher quality of life for residents, making Halton Hills a desirable place to live, work and invest.

Values

- **Integrity and honesty:** Truthful, fact-based decisions in the Town's best interests.
- **Transparent and accessible:** Open and receptive communication and information sharing.
- **Effective stewardship:** Achieving the best outcomes as stewards of the community, corporate assets, resources and the natural environment.
- **Connected:** Staying informed and engaged with the community.
- **Respectful and caring:** Inclusive and collaborative support for all.

Strategic Priorities and Objectives

Thriving Economy	Natural Areas and Heritage
- Attract and retain businesses - Promote commercial area growth - Support agricultural viability - Development of employment lands	- Increase access to parks and green spaces - Protect biodiversity and landforms - Preserve heritage features
Infrastructure and Asset Management	**Safe and Welcoming Communities**
- Attract and retain businesses - Promote commercial area growth - Support agricultural viability - Development of employment lands	- Expand facilities and programs to meet evolving community needs - Support community-driven and partnered recreation and sport programming - Align emergency services are aligned with Town growth - Enhance community outreach and engagement

Legislative Requirements

There are many legislative requirements relating to the management of assets. Legislative requirements that impact the delivery of the Town's non-core infrastructuree assets outlined in Table 3.1.

Table 3.1 Legislative Requirements

Legislation	Requirement
Ontario Regulation 588/17 The Infrastructure for Jobs and Prosperity Act, 2015	The Act sets out the principles for the provincial government to regulate that asset management planning for municipalities.
Municipal Act, 2001	The Act sets out the authority for a municipality to establish, operate, and maintain a transportation system.
Accessibility for Ontarians with Disabilities Act (AODA)	Developing, implementing, and enforcing accessibility standards in order to achieve accessibility for Ontarians with disabilities with respect to goods, services, facilities, accommodation, employment, buildings, structures and premises on or before January 1, 2025
Public Section Accounting Board Standard 3150	Standards on how to account for and report on tangible capital assets in government financial statements.
Ontario Regulation 472/10 Public Transportation and Highway Improvements Act	This legislation requires the design, evaluation, construction, or rehabilitation of a bridge to conform to: (a) the standards set out in the Canadian Highway bridge Design Code; and (b) the most current accepted engineering standards guidelines, procedures, and practices. The structural integrity, safety and condition of every bridge is determined through the performance of one inspection every second calendar year under the direction of a professional engineer and in accordance with the *Ontario Structure Inspection Manual*.
Ministry of Transportation: Transit-Supportive Guidelines	Provides processes for planning Complete Streets.
Canadian Environmental Protection Act (CEPA)	An Act respecting pollution prevention and the protection of the environment and human

Legislation	Requirement
	health in order to contribute to sustainable development.
Building Code Act, 1992, S.O. 1992, c.23	The Building Code Act, 1992 (BCA) lays out the legislative framework governing the construction, renovation, demolition and change of use of buildings in Ontario. The Building Code is a regulation made under the Building Code Act. It sets out technical and administrative requirements
Fire Protection and Prevention Act, 1997, S.O. 1997, c. 4	Provides standards for fire prevention, fire services, and fire safety for all buildings (including commercial, residential, personal use, landlords, etc.) which are governed by the Fire Protection and Prevention Act (the "FPPA").
Public Parks Act, R.S.O. 1990, c. P.46	States that a park, or a system of parks, avenues, boulevards and drives, or any of them, may be established in any municipality, and the same, as well as existing parks and avenues, may be controlled and managed in the manner hereinafter provided.

Customer Levels of Service

Customer levels of service are centered around the customer experience of all stakeholders. Customer levels of service are a measure of the actual service received by customers. The focus is on maintaining the service that the asset or assets together provide.

Technical Levels of Service

Technical levels of service are centered around maintaining the physical asset or assets together to ensure continuity of service. The metrics are leading indicators and can provide insight on potential future asset failure.

Levels of Service for Non-Core Infrastructure

In addition to the mandated O. Reg 588/17 Level of Service metrics for core infrastructure assets, municipalities are encouraged to develop their own metrics for non-core infrastructure assets to align with their goals and vision. The Town has updated its Levels of Service Framework, initially developed in 2018 and revised in 2021, to better align these metrics with its Strategic Goals and Vision.

To establish a baseline for measuring the levels of service for non-core infrastructure assets, initial Key Performance Indicators (KPIs) have been drafted. These KPIs serve as a starting point for assessing performance and identifying areas for improvement. As the regulation transitions into a monitoring and reporting phase, these indicators will be refined to ensure they remain relevant and accurately reflect the evolving needs and conditions of the Town's infrastructure and services, as well as its strategic objectives.

Staff are currently validating some of these metrics, resulting in certain KPIs marked as "TBD" (To be determined). The next iteration of the Asset Management Plan, scheduled for 2025, will include both current and target levels of service, providing a more comprehensive assessment of the Town's performance.

Tables 3.2 and 3.3 provide the proposed Customer and Technical Levels of Service and associated performance levels for the Town's non-core infrastructure assets.

Table 3.2 Customer Levels of Service

Asset Group	Customer Performance Measure	2024 Customer LOS Performance
Library Services	Service population per library (Total population/# of libraries)	62,951 (2021) / 2 Libraries
	Annual # of complaints/service requests from unsafe libraries	TBD
Fire Services	# of Fire Safety Inspections successfully completed in the first attempt	TBD
	Annual # of Fire Safety Education Engagements	TBD
Parks & Open Spaces	Annual # of distinct RFS (Request for Service) regarding service quality and reliability	TBD
	Annual # of community participation events in sustainability-oriented programs (e.g. tree planting, clean-up drives, etc.)	TBD
Facilities	Number of service requests fulfilled.	TBD

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Asset Group	Customer Performance Measure	2024 Customer LOS Performance
Transportation & Public Works	Compliant with Legislative Requirements (O. Reg. 199/97: Commercial Motor Vehicle Inspections)	Compliant

Table 3.3 Technical Levels of Service

Asset Group	Technical Performance Measure	2024 Technical LOS Performance
Administration	% of facility assets in fair or better condition by replacement value	70%
Library Services	% of facility assets in fair or better condition by replacement value	79%
	Collection size (collection size/capita)	TBD
Fire Services	% of facility assets in fair or better condition by replacement value	68%
	Meeting compliance set by the "Emergency Management Program" and OEM guidelines	Compliant
Parks & Open Spaces	% of parks, trails and cemeteries cleaned and maintained as scheduled	100%
	% of playgrounds that meet CSA standard	100%
	Annual # of trees planted on parks and open spaces	TBD
Facilities	Number of programs, non-programs and events provided	TBD
	% of assets in fair or better condition by replacement value	80%
Transportation & Public Works	% of fleets assets within optimal service life	64%
	% of legislated MTO maintenance inspections met	100%

Current performance is based on existing resource provision and work processes. Levels of service metrics are expected to change over time due to shifts in customer priorities, enhancements to the asset data, and technologies used to complete work. This AM Plan emphasizes the continuous monitoring and updating of these metrics. Council and community engagement will be systematically integrated into this process as asset management practices are refined.

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4.0 FUTURE DEMAND

Future demand looks at the Town's ability to meet the changing needs of the industry and their customers over time. Drivers affecting demand include technological changes, regulatory changes, population change, environmental awareness, changes in demographics, seasonal factors, consumer preferences and expectations, economic factors, etc. These external trends and drivers may affect LOS or the Town's ability to meet the proposed LOS in the future.

Demand Drivers

Demand drivers can affect the future services required from a group of assets. They can change how frequently or how much we use current existing assets, as well as how we use and interact with the assets and plan for future needs.

Demand Forecasts

Demand forecasting takes into consideration the demand drivers to ensure that continuity of service is maintained now and in the future.

The present position and forecasted demand drivers that may impact future service delivery and use of assets have been documented.

Demand Impact

The demand drivers affecting the assets covered by this plan are documented below along with their potential impact.

Population and Employment Increase

The Town of Halton Hills has a current population of approximately 64,000 and is growing. According to information extracted from the Town's Development Charge Study, the net population is expected to increase to 83,823 people by mid-2032, and 91,885 by mid-2026. This will result in increased demand for the services provided by the Town's core and non-core assets and may result in faster deterioration of these assets and possible capacity issues.

The Town of Halton Hills has a thriving local economy that continues to grow. Employment is expected to rise to 29,289 by mid-2032 and 32,873 by mid-2036 through growth in the local economy and in the 401 corridor. Increased economy increases the impacts of moving people, goods, and services across the Town.

Figure 4-1 Residential and Non-Residential Growth Summary

Time Horizon	Residential		Non-Residential[1]	
	Net Population	Residential Units	Employment	Gross Floor Area (Square Feet)
Mid 2022	64,001	22,564	21,096	
Mid 2032	83,823	30,353	29,289	
Mid 2036	91,885	33,401	32,873	
Incremental Growth				
10-year (2022-2032)	19,822	7,789	8,193	8,780,300
14-year (2022-3036)	27,884	10,837	11,777	12,714,700

1. Excludes Work at Home (W.A.H) and No Fixed Place of Work (N.F.P.O.W.)

Change in Demographics

The demographics of the Town's population is expected to change. According to the Economic Development and Tourism Strategy, the proportion of the population aged 55 or older is expected to increase over the next 5 years.

Figure 4-2 Change in Demographics

		Halton Hills	5 yr. change
	Median age	40.9	+4%
	Population >55	27%	+14%
	Population <20	25%	-8%

This will result in increased demand for accessibility and access to multi-use transportation routes.

Transportation Preferences

Current travel patterns for the Town of Halton hills indicate:

- 84% use automobiles
- 7% use school bus, walking, cycling
- 2% use transit

Travel pattern projections for 2031 indicate:

- 82% will use automobiles
- 7% will walk and cycle
- 7% will use school buses
- 4% will use transit

Currently, transportation users account for 41% of total emissions in the Town. In future, even higher emissions due to increased population and increased personal vehicle use are predicted. This will result in demand for infrastructure that supports low-carbon transportation. Increased congestion and sharing of roadways and sidewalks by active transportation users will impact the quality of life and safety concerns.

Climate and Environmental Factors

Climate volatility is another key demand driver. Figure 4-3 depicts the current position as well as the expected future state of the climate in Halton Hills.

In short, the climate will become warmer, wetter, and wilder. Changing climate patterns will put pressure on many of the Town's non-core infrastructure's ability to handle increased temperatures, precipitation, and intense weather events.

Figure 4-3 Climate Change Trends

WARMER

	Average Temperature	Days Above 25°C	Number of Heat Waves
2050s	+3.8°	99	5
2020s	+2°	79	3
NOW (since 1980)	+0.6°	56	1

WETTER

	TOTAL RAINFALL	HEAVY RAIN DAYS
2050s	+ 157mm	28
2030s	+80mm	26
NOW (since 1980)	+ 29-34mm	24

WILDER

MORE HOT DAYS ABOVE 40°

INCREASE IN STORM INTENSITY

MORE ICE AND HAIL STORMS
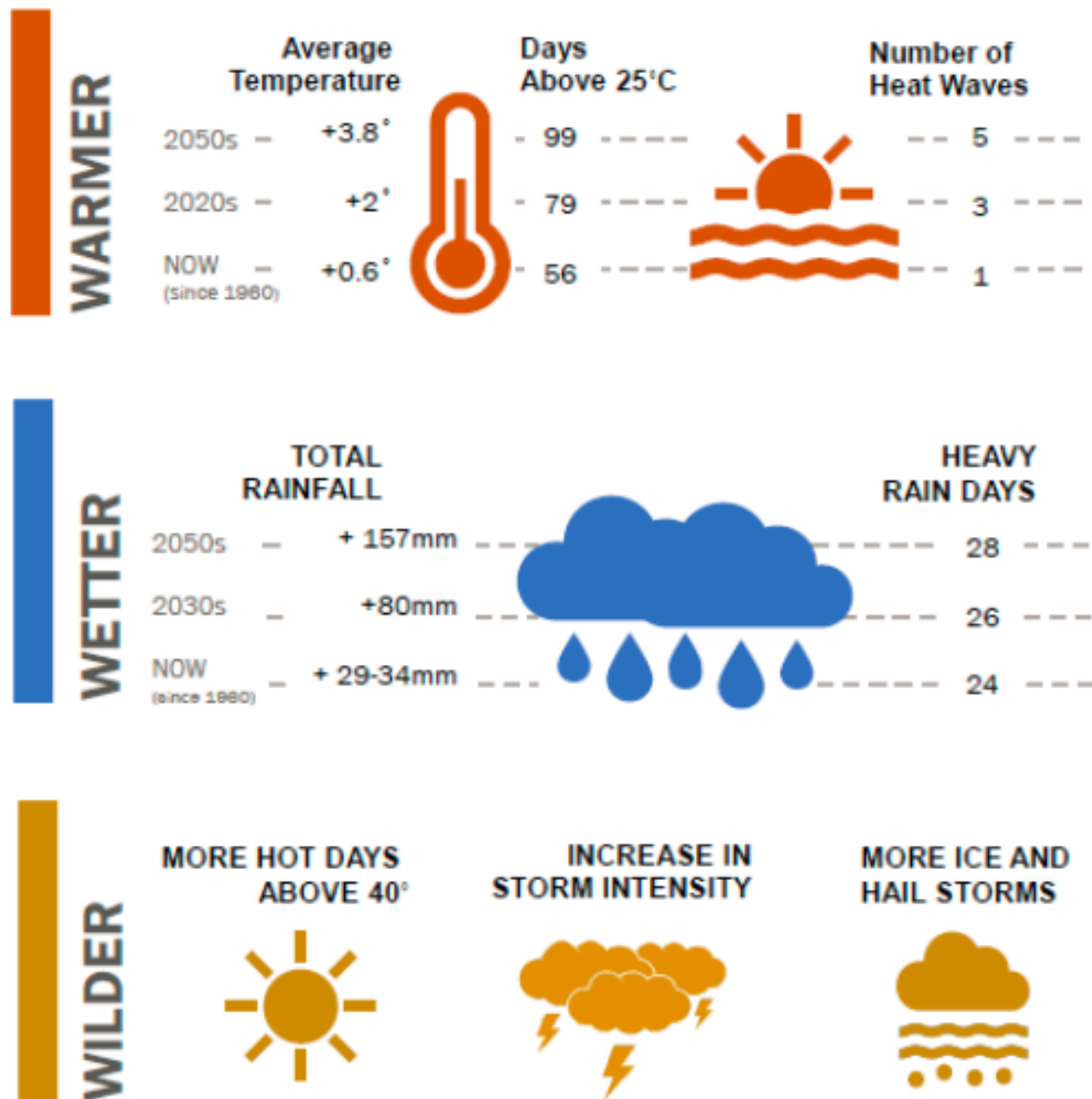
The Town of Halton Hills is made up of protected countryside and escarpment areas, urban and hamlet areas. Installation of new infrastructure cannot negatively impact the natural environmental resources. This could cause conflicts when proposing the upgrade or expansion of assets.

Demand Management Plan

Demand for new services will be managed through a variety of different interventions which can include:

- Management of existing assets
- Upgrade of existing assets
- Acquisition of new assets
- Policy and design changes
- Operation and maintenance changes

To manage the demand drivers outlined above, the demand management plan outlined in Table 4.1 are options for the Town to explore. Further opportunities will be developed in future revisions of this Non-Core Infrastructure AM Plan.

Table 4.1 Demand Management Plan

Demand Driver	Demand Management Plan
Population Increase	- Ensure design of new assets accounts for the increased demand due to population increase. - Shorten the time between rehabilitation. - Consider expansion opportunities during renewal/rehabilitation projects. - Monitor demand to capacity limits to ensure a sufficient number of Parks, Recreation and Cultural services are provided for communities. - Monitor demand to capacity limits to ensure sufficient Fire Services provided for communities.
Change in demographics	- The Transit Service Strategy is exploring a customized public transit system to meet the service requirements of Town of Halton Hills residents. - Continue to refine Recreation and Culture programs to meet population requirements.
Transportation Preferences	- The Transportation Master Plan considers active transportation and multi-use transportation routes to ensure future service levels can meet demands. - Promote the use of low-carbon transportation options. - Encourage electric vehicle charging stations and other facilities to promote low-carbon transportation within the right-of-way

Demand Driver	Demand Management Plan
Climate Change Factors	• Ensure that new projects and rehabilitations consider future climate conditions by updating material standards and design parameters, increasing the resilience of electrical systems, and encourage Low Impact Development. • Update and enhance operations and maintenance procedures and provide training programs for climate event response.
Environmental Factors	• Future projects must identify existing environmental features that may be impacted by non-core infrastructure assets (i.e. facility commissioning). Conservation Authorities are included in asset construction planning, and their permission is required for the acquisition, upgrade or enhancement of new assets in designated areas.

Climate Change Adaptation

As noted above, climate change is a significant demand driver. In the context of the Asset Management Planning process climate change can be considered as both a future demand and a risk.

In 2020, the Town completed an Infrastructure Vulnerability Assessment for its transportation, environmental, and parks & open spaces assets, detailing current and future climate impacts. The Town's approach to addressing climate change includes adaptation, mitigation, and resilience strategies, focusing on policy, design, operations and maintenance to meet the five goals of the Climate Change Adaptation Plan.

In 2018, a Facilities Climate Change Vulnerability Assessment revealed variability in resilience across the Town's facilities, with the Cultural Centre, Town Hall, and Acton Library showing lower levels of resilience. Common adaptation solutions include developing pre- and post-disaster assessment procedures, enabling tele-working, improving stormwater drainage systems, and creating strategies for warming and cooling centers. These measures aim to enhance the overall resilience of the Town's infrastructure to climate impacts anticipated over the next few decades.

While the financial impact of these adaptation actions is currently unknown, future asset management plans will incorporate these costs. This will provide a clearer picture of the forecasted lifecycle activities and their associated expenses, ensuring that the Town is better prepared to manage the financial implications of building climate resiliency.

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5.0 RISK MANAGEMENT

In 2021, the Town developed a Risk Management Strategy aimed at providing a consistent approach to identifying, assessing, and managing risks for all Town assets. An enterprise approach to Risk management will help the Town better understand and manage the probability of various threat events impacting its ability to deliver levels of services that customers need.

Risk events, such as an asset's failure to have sufficient capacity, function, or quality, are events that may compromise the delivery of the Town's strategic objectives. Lifecycle management activities are used to manage the risk of failure by reducing the chance of asset failure to acceptable levels. The impact of asset failure on the Town's ability to meet its strategic objectives dictates the type and timing of lifecycle management activities.

Risk Assessment

The Town used the Risk Rating Matrices shown in Table 5.1 and 5.2 to assess risk for all Town assets. Risk is assessed in terms of Capacity & Use, Function, and Quality as aligned with the key service attributes outlined in O. Reg 588/17.

Table 5.1 Probability of Failure

Probability of Failure (PoF)	Rating	Capacity & Use	Function	Quality
Rare	1	Demand corresponds well with actual capacity and no operational problems experienced. Meets current and future capacity needs within planning horizon.	The infrastructure in the system or network meets all program/service delivery needs in a fully efficient and effective manner. (Health, safety, security, legislative etc.)	Asset is physically sound and is performing its function as originally intended. Asset is new or at the beginning of it's service life.
Unlikely	2	Demand is within actual capacity and occasional operational problems experienced.	The infrastructure in the system or network meets program/service delivery needs in an acceptable manner. (Health, safety, security, legislative etc.)	Asset is physically sound and is performing its function as originally intended. Typically, asset is within mid-stage

Probability of Failure (PoF)	Rating	Capacity & Use	Function	Quality
				of its expected life.
Possible	3	Demand is approaching actual capacity and/or operational problems occur frequently. Meets current capacity needs but not future without modifications.	The infrastructure in the system or network meets program/service delivery needs with some inefficiencies and ineffectiveness present. (Health, safety, security, legislative etc.)	Asset is showing signs of deterioration and is performing at a lower level than originally intended.
Likely	4	Demand exceeds actual capacity and/or significant operational problems are evident.	The infrastructure in the system or network has a limited ability to meet program/service delivery needs. (Health, safety, security, legislative etc.)	Asset is showing significant signs of deterioration and is performing to a much lower level than originally intended.
Certain	5	Demand exceeds actual capacity and/or operational problems are serious and ongoing. Does not meet Current capacity Requirements.	The infrastructure in the system or network is seriously deficient and does not meet program/service delivery needs and is neither efficient nor effective. (Health, safety, security, legislative etc.)	Asset is physically unsound and/or not performing as originally intended. Asset has reached end of life and failure is imminent.

Table 5.2 Consequence of Failure

Consequence Categories	(Triple Bottom Line)	C1	C2	C3	C4	C5
		Insignificant	**Minor**	**Moderate**	**Major**	**Catastrophic**
Economic	Financial	Damages, losses (including 3rd party) or fines from $1k to $10k	Damages, losses (including 3rd party) or fines $10k to $100k	Damages, losses (including 3rd party) or fines $100k to $1M	Damages, losses (including 3rd party) or fines $1M to $10M	Damages, losses (including 3rd party) or fines > $10M
Social	Health & Safety	No obvious potential for injury or affects to health.	Potential for minor injury or affects to health of an individual. Full recovery is expected; or minor medical attention may be required	Potential for serious injury or affects to health. May affect many individuals and / or result in short term disability; or Hospitalization may be required for a short period of time.	Potential for serious injury or affects to health of one or more individuals with a possibility of loss of a life and the certainty of long-term disability; or Emergency hospitalization required for one or more individuals.	Potential for death or multiple deaths with probable permanent damage; or Emergency and long-term hospitalization required for several individuals.

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Consequence Categories	(Triple Bottom Line)	C1	C2	C3	C4	C5
		Insignificant	Minor	Moderate	Major	Catastrophic
	Availability/	Small number of customer experiencing disruption / impact (less than 100 people or up to a few hours)	Localized service disruption / impact (100 to 1000 people or up to 1 day)	Significant localized disruption / impact (1,000 to 10,000 people or less than 1 week)	Major service disruption / impact 15,000 to 50,000 people or for more than a week)	Town wide service disruption / impact (greater than 50,000 people or permanent loss of services)
Environmental	Environment	Very negligible impact or can be restored within 1 week	Minor (within 1 month) very isolated damage / impact to the environment, local importance	Significant short-term impact (up to 2 months), local importance	Significant long-term impact (up to 1 year), Provincial importance.	Major long-term impact (greater than 1 year), Federal importance.

The risk ratings can be prioritised into the following categories below and on the 5 x 5 grid shown in Figure 5-1:

Low Risk: Status Quo no formal response. Risk is documented and will be reviewed periodically.

Low-Medium: Status Quo. Identify assets that are candidates for "run to failure". Continue with current maintenance and performance / condition monitoring.

Medium Risk: Extend life & monitor threat events. Review maintenance strategies & plans (e.g., predictive, time based). Continue to maintain & monitor performance / condition.

Medium-High: Extend life & monitor / respond to threat events. Review maintenance strategies & plans (e.g., proactive). Review renewal strategies (NPV options analysis), spares strategy, available redundancy & monitoring programs.

High Risk: Respond to threat events. Identify capital renewal options, confirm spares strategy & available redundancy, & review monitoring programs.

Figure 5-1 Proposed Risk Thresholds

			Consequence of Failure				
			Insignificant	Minor	Moderate	Major	Catastrophic
			1	2	3	4	5
Probability of Failure	Improbable	1	1	2	3	4	5
	Unlikely	2	2	4	6	8	10
	Possible	3	3	6	9	12	15
	Likely	4	4	8	12	16	20
	Highly Probable	5	5	10	15	20	25

A risk assessment has been completed for the Town's non-core infrastructure assets, which are shown in Figures 5-2 & 5-7.

Figure 5-2 Risk Assessment – Administration

Asset Hierarchy			Capacity and Use				Function				Quality			
L1	L2	L3	PoF	CoF	Risk Rating	Risk Value	PoF	CoF	Risk Rating	Risk Value	PoF	CoF	Risk Rating	Risk Value
Administration	IT Infrastructure													
Administration	IT Infrastructure	Servers	2	3	6	Low-Medium	2	3	6	Low-Medium	2	3	6	Low-Medium
Administration	IT Infrastructure	Storage & Backup	2	3	6	Low-Medium	2	3	6	Low-Medium	2	3	6	Low-Medium
Administration	IT Infrastructure	Wireless (Wi-Fi access points)	2	2	4	Low-Medium	1	2	2	Low	1	2	2	Low
Administration	IT Infrastructure	Network Infrastructure	2	3	6	Low-Medium	2	3	6	Low-Medium	2	3	6	Low-Medium
Administration	IT Infrastructure	Communication Systems	2	2	4	Low-Medium	2	2	4	Low-Medium	2	2	4	Low-Medium
Administration	End User IT													
Administration	End User IT	PCs	1	1	1	Low	2	1	2	Low	2	1	2	Low
Administration	End User IT	Tablets & Laptops	4	2	8	Medium	3	2	6	Low-Medium	2	2	4	Low-Medium
Administration	End User IT	Monitors	3	2	6	Low-Medium	1	2	2	Low	2	2	4	Low-Medium
Administration	End User IT	Printers/Photocopiers	2	1	2	Low	2	1	2	Low	3	1	3	Low
Administration	End User IT	Mobile Phones	2	2	4	Low-Medium	2	2	4	Low-Medium	3	2	6	Low-Medium
Administration	Business Systems													
Administration	Business Systems	Small Equipment	2	2	4	Low-Medium	1	2	2	Low	3	2	6	Low-Medium
Administration	Business Systems	Software	2	3	6	Low-Medium	3	3	9	Medium	2	3	6	Low-Medium
Administration	Administration Facilities	Town Hall	5	2	10	Medium	3	2	6	Low-Medium	3	3	9	Medium

Figure 5-3 Risk Assessment – Library Services

Asset Hierarchy			Capacity and Use				Function				Quality			
L1	L2	L3	PoF	CoF	Risk Rating	Risk Value	PoF	CoF	Risk Rating	Risk Value	PoF	CoF	Risk Rating	Risk Value
Library Services	Library													
Library Services	Library	Library Content (books, electronic reso	3	4	12	Medium-High	2	4	8	Medium	2	4	8	Medium
Library Services	Library	Library Furniture (Chairs, desks etc.)	2	1	2	Low	1	1	1	Low	2	1	2	Low
Library Services	Library	Library IT and Equipment (Town) - prin	2	4	8	Medium	4	4	16	Medium-High	2	4	8	Medium
Library Services	Library	Library IT and Equipment (Public)	3	4	12	Medium-High	4	4	16	Medium-High	3	4	12	Medium-High
Library Services	Library Facilities													
Library Services	Library Facilities	Acton Public Library	1	2	2	Low	1	2	2	Low	2	2	4	Low-Medium
Library Services	Library Facilities	Georgetown Public Library	1	2	2	Low	1	2	2	Low	3	2	6	Low-Medium

Figure 5-4 Risk Assessment – Fire Services

Asset Hierarchy			Capacity and Use				Function				Quality			
L1	L2	L3	PoF	CoF	Risk Rating	Risk Value	PoF	CoF	Risk Rating	Risk Value	PoF	CoF	Risk Rating	Risk Value
Fire Services	Fire Equipment													
Fire Services	Fire Equipment	Major Equipment	2	5	10	Medium	2	5	10	Medium	2	5	10	Medium
Fire Services	Fire Equipment	Minor Equipment	1	2	2	Low	1	2	2	Low	2	2	4	Low-Medium
Fire Services	Fire Equipment	Personal Firefighter Equipment	1	2	2	Low	1	2	2	Low	2	2	4	Low-Medium
Fire Services	Fire Equipment	Communications & Control Systems	2	3	6	Low-Medium	1	3	3	Low	1	3	3	Low
Fire Services	Fire Fleet	Fire Apparatus												
Fire Services	Fire Fleet	Fire Apparatus	3	5	15	Medium-High	2	5	10	Medium	2	5	10	Medium
Fire Services	Fire Fleet	Fire Apparatus	3	5	15	Medium-High	2	5	10	Medium	2	5	10	Medium
Fire Services	Fire Fleet	Fire Apparatus	3	5	15	Medium-High	2	5	10	Medium	2	5	10	Medium
Fire Services	Fire Fleet	Fire Apparatus	2	3	6	Low-Medium	2	3	6	Low-Medium	2	3	6	Low-Medium
Fire Services	Fire Fleet	Fire Apparatus	1	2	2	Low	2	2	4	Low-Medium	2	2	4	Low-Medium
Fire Services	Fire Fleet	Fire Apparatus	3	5	15	Medium-High	5	5	25	High	3	5	15	Medium-High
Fire Services	Fire Fleet	Light Vehicles												
Fire Services	Fire Fleet	Light Vehicles	1	2	2	Low	2	2	4	Low-Medium	2	2	4	Low-Medium
Fire Services	Fire Fleet	Light Vehicles	2	2	4	Low-Medium	2	2	4	Low-Medium	2	2	4	Low-Medium
Fire Services	Fire Fleet	Light Vehicles	2	2	4	Low-Medium	2	2	4	Low-Medium	2	2	4	Low-Medium
Light Vehicles	Light Vehicles	Light Vehicles	4	3	12	Medium-High	1	3	3	Low	2	3	6	Low-Medium
Fire Services	Fire Facilities													
Fire Services	Fire Facilities	Acton Fire Hall	5	5	25	High	5	5	25	High	4	5	20	High
Fire Services	Fire Facilities	Maple Fire/EMS S	2	5	10	Medium	2	5	10	Medium	2	5	10	Medium
Fire Services	Fire Facilities	South Headquarters	3	5	15	Medium-High	3	5	15	Medium-High	2	5	10	Medium

Figure 5-5 Risk Assessment – Parks & Open Spaces

Asset Hierarchy			Capacity and Use				Function				Quality			
L1	L2	L3	PoF	CoF	Risk Rating	Risk Value	PoF	CoF	Risk Rating	Risk Value	PoF	CoF	Risk Rating	Risk Value
Parks & Open Spaces	Recreation & Parks													
Parks & Open Spaces	Recreation & Parks	Community Parks	4	4	16	Medium-High	1	4	4	Low-Medium	2	4	8	Medium
Parks & Open Spaces	Recreation & Parks	Neighbourhood Parks	3	3	9	Medium	3	3	9	Medium	3	3	9	Medium
Parks & Open Spaces	Recreation & Parks	Parkettes	3	3	9	Medium	3	3	9	Medium	3	3	9	Medium
Parks & Open Spaces	Open Spaces	Trails	3	3	9	Medium	2	3	6	Low-Medium	2	3	6	Low-Medium
Parks & Open Spaces	Cemeteries													
Parks & Open Spaces	Cemeteries	Active Cemeteries	3	3	9	Medium	1	3	3	Low	2	3	6	Low-Medium
Parks & Open Spaces	Cemeteries	Inactive Cemeteries	1	1	1	Low	1	1	1	Low	2	1	2	Low

Figure 5-6 Risk Assessment – Facilities

Asset Hierarchy			Capacity and Use				Function				Quality			
L2	L3	L4	PoF	CoF	Risk Rating	Risk Value	PoF	CoF	Risk Rating	Risk Value	PoF	CoF	Risk Rating	Risk Value
Recreation Services														
Recreation Services	Program Equipment (Category 1 - Furniture, Pool Tables, Rescue Equipment etc.)		3	2	6	Low-Medium	2	2	4	Low-Medium	2	2	4	Low-Medium
Recreation Services	Program Equipment (Category 2 - life jackets, games, books etc.)		2	1	2	Low	2	1	2	Low	2	1	2	Low
Culture Services														
Culture Services	Library Art Collection		1	3	3	Low	1	3	3	Low	1	3	3	Low
Culture Services	Town Art Collection		2	3	6	Low-Medium	2	3	6	Low-Medium	1	3	3	Low
Culture Services	Helson Collection		3	3	9	Medium	1	3	3	Low	1	3	3	Low
Culture Services	Climate Control Unit (Storage)		4	3	12	Medium-High	4	3	12	Medium-High	3	3	9	Medium
Culture Services	Climate Control Unit (Exhibition)		4	3	12	Medium-High	2	3	6	Low-Medium	2	3	6	Low-Medium
Culture Services	Town Public Art		3	2	6	Low-Medium	3	2	6	Low-Medium	3	2	6	Low-Medium
Recreation & Culture Facilities	Community Centres													
Recreation & Culture Facilities	Community Centres	Acton Arena & Community Centre	3	3	9	Medium	3	3	9	Medium	2	3	6	Low-Medium
Recreation & Culture Facilities	Community Centres	Acton Seniors Centre (Inside Area Only)	1	1	1	Low	2	1	2	Low	4	3	12	Medium-High
Recreation & Culture Facilities	Community Centres	Cedarvale Park Community Centre / Daycare	4	3	12	Medium-High	5	3	15	Medium-High	5	3	15	Medium-High
Recreation & Culture Facilities	Community Centres	Gellert Community Centre	5	3	15	Medium-High	2	3	6	Low-Medium	4	3	12	Medium-High
Recreation & Culture Facilities	Community Centres	Hornby Community Hall / Daycare	4	3	12	Medium-High	5	3	15	Medium-High	4	3	12	Medium-High
Recreation & Culture Facilities	Community Centres	Mold-Masters SportsPlex	4	3	12	Medium-High	4	3	12	Medium-High	3	3	9	Medium
Recreation & Culture Facilities	Community Centres	Norval Park Community Centre	3	2	6	Low-Medium	4	2	8	Medium	5	3	15	Medium-High
Recreation & Culture Facilities	Aquatic Facilities													
Recreation & Culture Facilities	Aquatic Facilities	Acton Indoor Pool	5	2	10	Medium	4	5	20	High	4	4	16	Medium-High
Recreation & Culture Facilities	Aquatic Facilities	Georgetown Indoor Pool	5	2	10	Medium	4	5	20	High	4	4	16	Medium-High
Recreation & Culture Facilities	Misc. Facilities													
Recreation & Culture Facilities	Misc. Facilities	Ambulance Station House	3	2	6	Low-Medium	2	2	4	Low-Medium	5	2	10	Medium
Recreation & Culture Facilities	Misc. Facilities	Cedarvale Park Artisan House / Cottage	4	2	8	Medium	4	2	8	Medium	4	2	8	Medium
Recreation & Culture Facilities	Misc. Facilities	Cedarvale Park Caretaker's Residence	2	1	2	Low	3	3	9	Medium	4	2	8	Medium
Recreation & Culture Facilities	Misc. Facilities	Devereaux House	2	1	2	Low	3	2	6	Low-Medium	5	2	10	Medium

Figure 5-7 Risk Assessment – Transportation & Public Works

Asset Hierarchy			Capacity and Use				Function				Quality			
L2	L3	L4	PoF	CoF	Risk Rating	Risk Value	PoF	CoF	Risk Rating	Risk Value	PoF	CoF	Risk Rating	Risk Value
Parking Services														
Parking Services	Parking Lots		2	2	4	Low-Medium	2	2	4	Low-Medium	3	2	6	Low-Medium
Speciality Equipment														
Speciality Equipment	Survey Equipment & Monuments		1	1	1	Low	1	1	1	Low	1	1	1	Low
Transit	ActiVan		2	4	8	Medium	1	4	4	Low-Medium	2	4	8	Medium
Public Works Facilities														
Public Works Facilities	Robert C. Austin Operation's Centre		4	4	16	Medium-High	3	4	12	Medium-High	2	2	4	Low-Medium
Public Works Facilities	Indoor Parking		5	4	20	High	4	5	20	High	5	4	20	High
Public Works Facilities	Storage/Salt Dome		5	4	20	High	4	5	20	High	5	4	20	High
Public Works Facilities	Acton Yard		4	4	16	Medium-High	4	5	20	High	5	4	20	High
Public Works Fleet														
Public Works Fleet	Heavy Duty Licensed Vehicles	Flusher (1)	4	2	8	Medium	1	2	2	Low	1	2	2	Low
Public Works Fleet	Heavy Duty Licensed Vehicles	Gradall (1)	1	3	3	Low	1	3	3	Low	2	3	6	Low-Medium
Public Works Fleet	Heavy Duty Licensed Vehicles	Grader (2)	1	3	3	Low	1	3	3	Low	3	3	9	Medium
Public Works Fleet	Heavy Duty Licensed Vehicles	Loader (3)	2	4	8	Medium	1	4	4	Low-Medium	3	4	12	Medium-High
Public Works Fleet	Heavy Duty Licensed Vehicles	Packer (1)	2	4	8	Medium	3	4	12	Medium-High	5	4	20	High
Public Works Fleet	Heavy Duty Licensed Vehicles	Roller (1)	1	2	2	Low	2	2	4	Low-Medium	2	2	4	Low-Medium
Public Works Fleet	Heavy Duty Licensed Vehicles	Single Axle (5)	1	2	2	Low	1	2	2	Low	3	2	6	Low-Medium
Public Works Fleet	Heavy Duty Licensed Vehicles	Small Dump (9)	1	2	2	Low	1	2	2	Low	3	2	6	Low-Medium
Public Works Fleet	Heavy Duty Licensed Vehicles	Sweeper (3)	1	2	2	Low	3	2	6	Low-Medium	3	2	6	Low-Medium
Public Works Fleet	Heavy Duty Licensed Vehicles	Tandem (17)	2	3	6	Low-Medium	2	3	6	Low-Medium	4	3	12	Medium-High
Public Works Fleet	Light Duty Licensed Vehicles	Van (5 w/ Town Hall + Survey Van)	1	3	3	Low	1	3	3	Low	3	3	9	Medium
Public Works Fleet	Light Duty Licensed Vehicles	Crew Cab (9)	1	2	2	Low	1	2	2	Low	3	2	6	Low-Medium
Public Works Fleet	Light Duty Licensed Vehicles	Riding Mower	1	2	2	Low	1	2	2	Low	3	2	6	Low-Medium
Public Works Fleet	Light Duty Licensed Vehicles	Tractor	1	2	2	Low	1	2	2	Low	3	2	6	Low-Medium
Public Works Fleet	Light Duty Licensed Vehicles	Pickup (19 including Facilities)	1	2	2	Low	1	2	2	Low	3	2	6	Low-Medium
Public Works Fleet	Trailers	Trailer (16)	1	2	2	Low	1	2	2	Low	3	2	6	Low-Medium
Public Works Machinery & Equipment														
Public Works Machinery & Equipment	Minor Equipment		1	2	2	Low	1	2	2	Low	3	2	6	Low-Medium
Public Works Machinery & Equipment	Small Engines		1	2	2	Low	1	2	2	Low	3	2	6	Low-Medium

Critical Assets

Completing the risk assessment results in the identification of critical assets. Critical assets are defined as those which have a high consequence of failure causing significant loss or reduction of service. Specifically, critical assets in the Town have been identified as having a high consequence of failure score. The most critical non-core infrastructure assets (consequence of failure of 4 or higher) are:

- Aquatic Facilities
- ActiVan Vehicles
- Community Parks
- Fire Facilities
- Heavy Duty Licensed Vehicles (Loaders and Packers)
- Library Content, IT and Equipment
- Major Fire Apparatus (Pumpers, Heavy Rescue Vehicles, Tankers and Aerial Truck)
- Major Fire Equipment
- Public Works Facilities

Critical assets receive priority risk management planning to minimize the risk exposure for the Town. Addressing these risks can include condition inspection programs and maintenance management programs. The Town has taken steps to address the risks posed by its critical assets through the risk treatment plans shown in Table 5.3.

Table 5.3 Risks and Treatment Plans

Service or Asset at Risk	Risk Treatment Plan
Facilities	Buildings Condition Assessments that include inspections of all Facilities (and components) within the Town on a 5-year cycle.
Transportation and Public Works	Lifecycle/Maintenance Management Program (In progress)
Parks and Open Spaces	Routine inspections and reporting of issues, implementation of a maintenance schedule, and development of community engagement programs to encourage public reporting and participation.
Fire Services	Regular inspections and maintenance of assets, ensuring compliance with legislative requirements, and training programs for staff on emergency response and safety protocols.
Library Services	Regular inspections and maintenance of library facilities and equipment, ensuring accessibility compliance, and updating safety and emergency protocols.

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Climate Change Risks

As discussed in the previous Section, climate change can be considered both a demand driver and a risk to the Town's core and non-core infrastructure assets. The resilience of core and non-core infrastructure assets is vital to maintaining service levels.

The Infrastructure Vulnerability Assessment evaluated the adaptive capacity and vulnerability of these assets, focusing on hazards such as higher temperatures, increased precipitation, ice storms, and high winds. Risks were scored based on the Probability of Occurrence and Severity, resulting in overall risk scores that guided the adaptation options for medium-high risks.

Key adaptation options include:

- Policy adjustments
- Design improvements
- Changes in operations and maintenance

Specific strategies for ice storms and high winds involve managing trees around intersections, burying utility supply lines, and ensuring adequate wind and ice load designs. Increased precipitation risks are addressed through inspections, maintenance, and designing for higher capacity. Higher temperatures require natural or built shade features, the use of native and adaptive plants, and drought-tolerant species to reduce water consumption.

The 2018 Facility Vulnerability Assessment provided additional recommendations, including:

- Replacing the Town Hall's generator and roof membrane
- Providing secondary road access to Town Hall
- Installing backup power at designated warming and cooling centers
- Upgrading roof drainage at fire stations
- Addressing stormwater management issues at Mold-Masters SportsPlex

Implementing these recommendations will help the Town maintain critical infrastructure in a changing climate. The cost of these adaptation options is currently unknown, but financial forecasts will be updated as more information becomes available. By proactively addressing these risks, the Town aims to enhance the resilience and functionality of its infrastructure to better serve the community.

6.0 WHOLE LIFECYCLE MANAGEMENT

Whole lifecycle management details how the Town manages assets through all phases of an asset's life. These activities are undertaken to ensure that the Town's non-core infrastructure assets can sustain service levels while minimizing costs. In 2021, the Town developed a Lifecycle Management Strategy that formalized how the Town is managing their assets in accordance with the key activities in Figure 6-1. The following section details the lifecycle activities that the Town uses to manage its non-core infrastructure assets.

Figure 6-1 Whole Asset Lifecycle
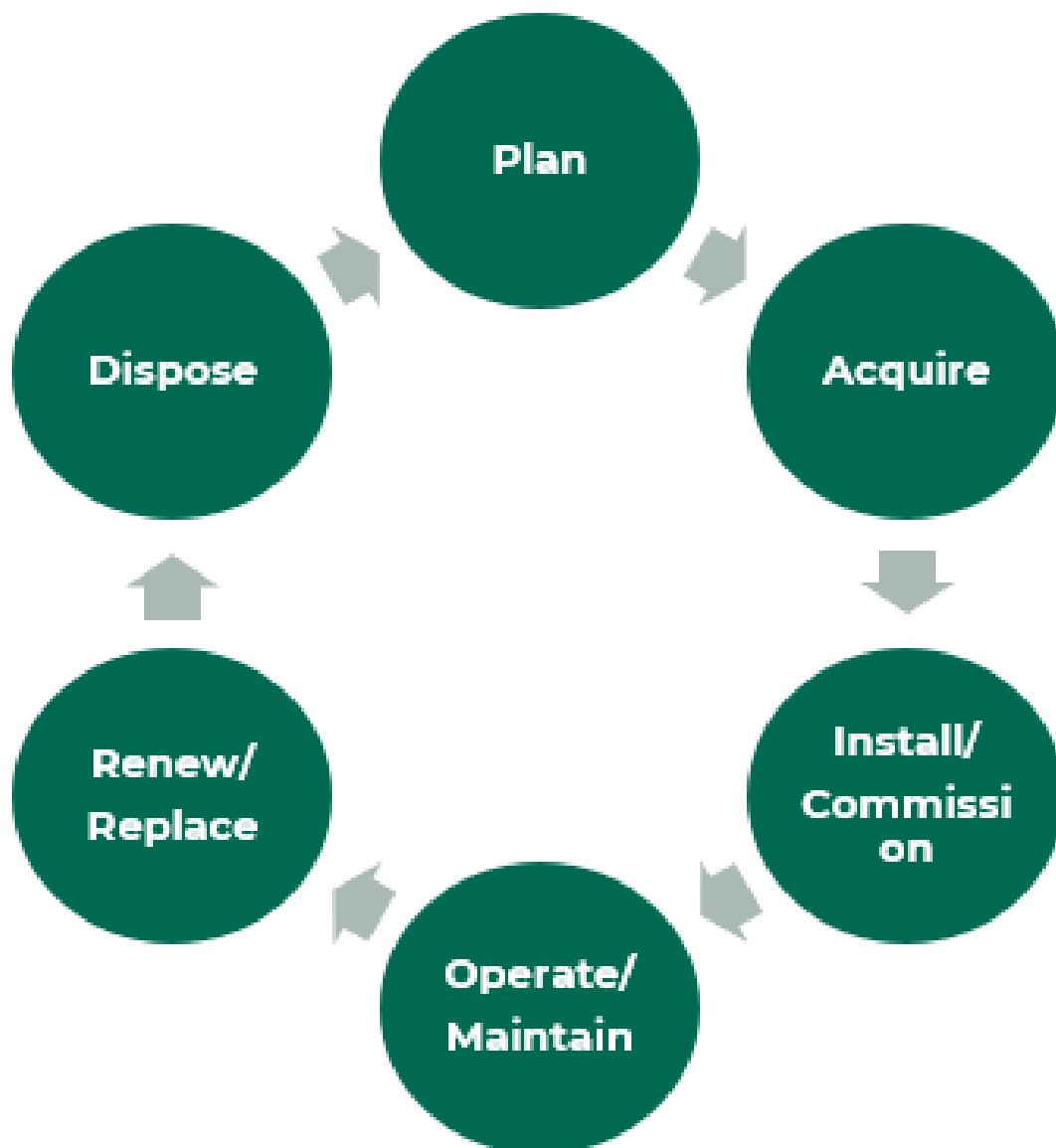
Plan

Planning involves determining the needs, funding, and timing of lifecycle management activities to achieve best outcomes that maintain service levels while also encouraging cost savings. Planning can be informed by policies, procedures, design standards, master plans, studies, new regulations, etc. The Town has adopted several strategic and operational solutions to support its asset lifecycle activities including:

- Consultation and coordination with the Region of Halton, Ministry of Transportation and other Municipalities on matters which will have a direct impact on the Town. For example, studies and related plans.
- Project coordination with the Region of Halton to reduce the impact of construction activities on residents and benefit from cost savings.
- Joint contracts with the Region and other Municipalities to conduct inspections/assessments and procure winter control materials to achieve economies of scale
- Development of Master Plans for strategic oversight of programs
- Boundary Agreements with adjacent Municipalities which defined the responsibilities of both parties and facilitate shared costs associated with managing roadway assets.
- Board Agreements with the Canadian Transportation Agency which defined the responsibilities of both parties and facilitate shared costs associated with managing bridge assets.
- Improvements in operations as well as employee capabilities, communications training, etc.

These solutions are used to inform lifecycle management activities and financial planning for non-core infrastructure assets.

Acquire

Recommendations in strategic or master plans as well as increased need for assets due to changing demands can result in the acquisition of new assets. The portion of an upgraded existing asset used to increase capacity can also be considered a new asset. Assets may also be donated to the Town. New non-core infrastructure assets are acquired as discussed below.

Procurement

Acquired non-core infrastructure assets are often required to go through the Town's Procurement process. Potential upgrade of or installation of new assets are reviewed to verify that they are essential to the Town's needs, and meet design specifications. The priority ranking of new assets is focused on the service and corporate risks associated with the proposed project. Service and corporate risks are discussed in detail later under Renewal & Replacement Ranking.

Asset Donations

Assets can also be acquired by the Town through donations. Donated assets are acquired through the assumption of assets constructed in new developments. Other methods can include the donation of assets to the Town from higher levels of government. An example of this is the Regional Road Rationalization.

Install & Commission

Installation and commissioning of non-core infrastructure assets involves the building, constructing, and installation of new assets according to the desired design specifications outlined by the Town.

Asset Acquisition

Proposed new assets include assets owned by the Town which are identified within the forecasted Capital Plan. Figure 6-2 and Table 6.1 below provide a summary of the combined growth expected at the Town over the next 10 years.
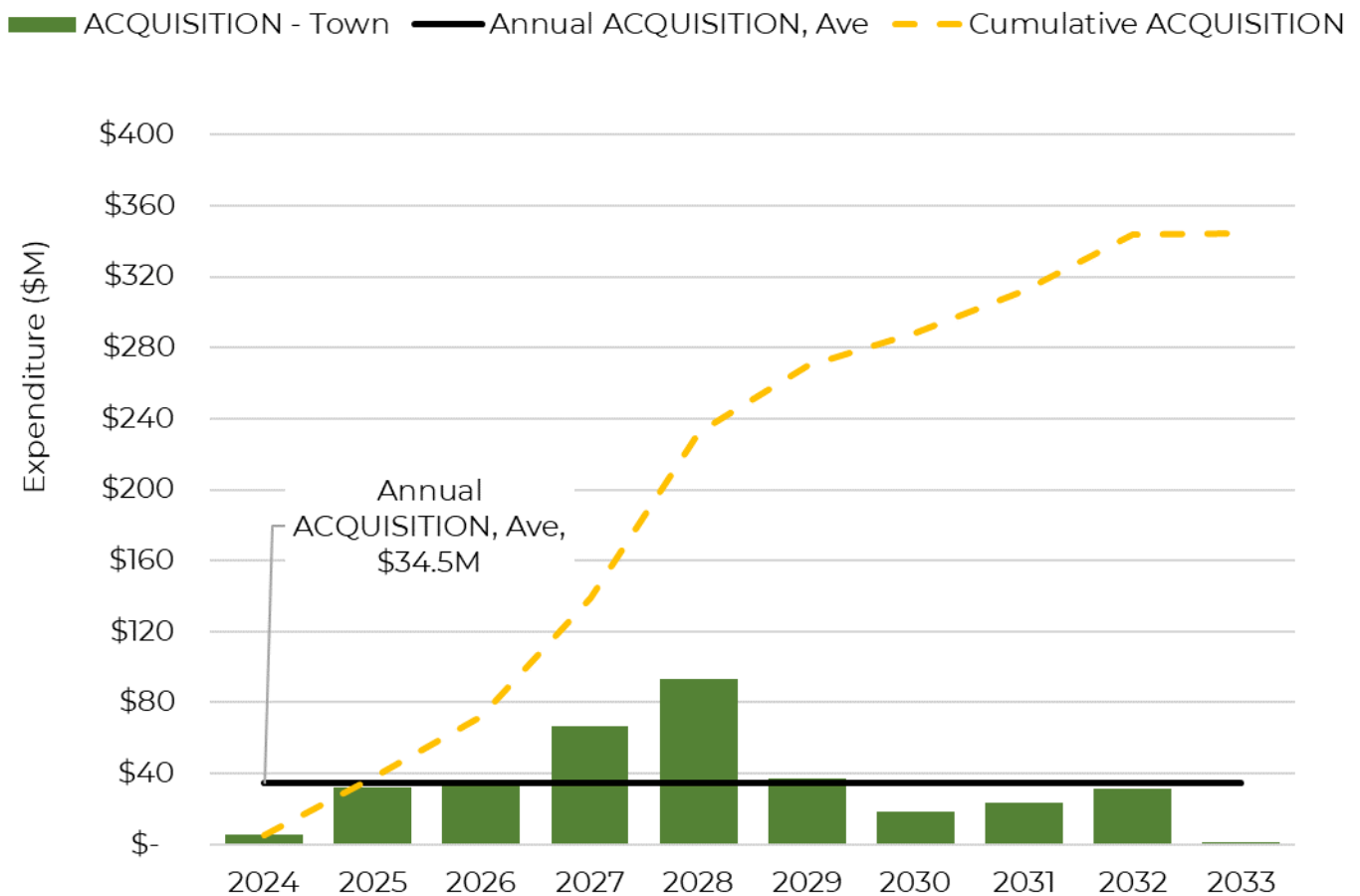
Figure 6-2 Acquired Assets

Table 6.1 Acquired Assets Summary

Year	Acquired Assets ($M) – Town	Cumulative Acquisition ($M) – Town
2024	$5.3	$5.3
2025	$31.9	$37.3
2026	$34.8	$72.1
2027	$66.9	$139.0
2028	$93.6	$232.6
2029	$37.3	$269.9
2030	$18.3	$288.2
2031	$23.7	$311.9
2032	$31.6	$343.5
2033	$1.3	$344.8
TOTAL	$344.8	

The projected new construction and acquisition of new assets from the Town is based on the projects identified in the 2024 Capital Budget and 2024-2033 Capital Forecast project with funding from development charges. Expenditure on new assets and services in the 2024 Capital Budget will be accommodated as approved through the 2024 budget process. The estimated expenditures identified in the forecast will be funded to the extent that there is available funding as assessed through the LRFP process.

Operate & Maintain

Operations & maintenance activities help to ensure that assets are kept in working service condition. These activities decrease the likelihood of asset failure and the subsequent need for significant and often costly repairs. The Town currently practices the following maintenance activities for its non-core infrastructure assets:

- Scheduled preventive maintenance programs
- Corrective maintenance as required
- Reactive maintenance and repairs as required

As discussed in Section 5, critical assets are prioritized and have preventive maintenance programs. For the Town's less critical assets, assessment and priority of corrective and reactive maintenance is undertaken by staff using experience and judgement.

The Town performs preventive maintenance on its critical assets. Routine maintenance for assets consists of repair and rehabilitation activities that are designed to extend the useful life and maintain the level of service provided by the asset.

Historical Operational Budget
Maintenance activity costs are covered under the Town's Operating Budget. The trend in operational budgets are shown in Table 6.2.

Table 6.2 Operational Budget Trends

Year	Operational Budget (M$)
2022	20.4
2023	21.9
2024	23.6

Operational budget levels are planned to maintain current service levels as outlined in Section 3 as well as accommodate growth. As the Corporate Asset Management program at the Town matures, operational budget planning will be linked to achieving proposed levels of service.

Summary of forecast operations and maintenance costs
Forecasted operational budget needs are based on the current inventory of non-core infrastructure assets. As new assets are acquired by the Town, the forecasted operational budget needs will increase. Similarly, if assets are disposed of, the forecasted operational budget need will decrease. Figure 6-3 and Table 6.3 show the forecasted operations and maintenance costs relative to the planned Operational Budget.

Figure 6-3 Operations and Maintenance Summary
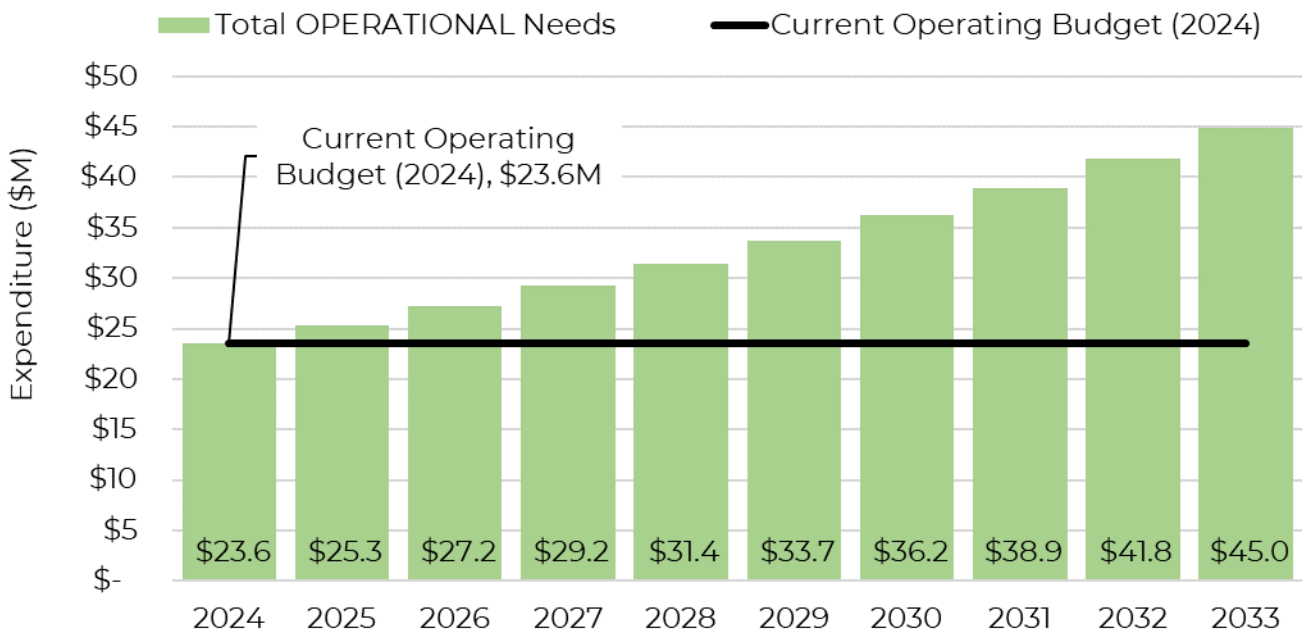
Table 6.3 Operational Forecast Summary

Year	Operational Needs ($M)	2024 Operational Budget ($M)	Expected Shortfall ($M)
2024	$23.6	$23.6	$0.00
2025	$25.3	$23.6	($1.70)
2026	$27.2	$23.6	($3.60)
2027	$29.2	$23.6	($5.60)
2028	$31.4	$23.6	($7.80)
2029	$33.7	$23.6	($10.10)
2030	$36.2	$23.6	($12.60)
2031	$38.9	$23.6	($15.30)
2032	$41.8	$23.6	($18.20)
2033	$45.0	$23.6	($21.40)
TOTAL	$332.3	$236.0	($96.30)

The forecasted operations and maintenance costs are based on current needs as well as assumptions around the new asset value to be acquired. Forecasted operations and maintenance for new assets are estimated based on a percentage of the new asset value to be acquired. As the Town gains more clarity around the quantity and extent of new assets to be acquired, operational budget planning will be better informed and more accurately reflect operations and maintenance needs for non-core infrastructure assets.

Asset Condition Monitoring

Condition monitoring is an important step in assessing an asset's maintenance and renewal needs. Inspections provide insight on the timing and magnitude of the interventions required. This information is then used to inform maintenance and investment planning. Table 6.4 outlines the various condition monitoring approaches used by the Town.

Table 6.4 Asset Condition Monitoring

Asset Category	Condition Monitoring Frequency	Methodology
Facilities	5 years	Building Condition Assessment – updated on a 5-year basis
Other Assets	Varied	Inspections based on asset criticality, legislative requirements, and formalized schedules

Renew & Replace

Renewal is major capital work which does not significantly alter the original service provided by the asset but restores or renews an existing asset to its original useful life potential. Assets requiring renewal are identified using the Town's Asset Register data to project the renewal costs and renewal timing (acquisition year plus useful life to determine the renewal/rehabilitation year).

Renewal Activities

Renewal activities are interventions that are completed at different points in an assets' useful life. Completing these activities provides the benefit of an extended useful life. The Town performs the activities outlined in Table 6.5 to extend the useful life of its non-core infrastructure assets. The timing of these interventions is flexible based on asset condition data and staff professional judgement.

Table 6.5 Renewal Activities

Asset	Activity
Facilities	Activities identified as per the 2016 Building Condition Assessment and scheduled staff inspections

Replacement

Asset replacement occurs once the asset has reached the end of its useful life and renewal activities are no longer an option. Replacement of assets involves a review of required service levels to ensure capacity and function can support service levels now, and in the future.

Renewal & Replacement Ranking

Renewal and replacement activities often have a large impact on the Town's Capital Budget and are subject to project prioritization or ranking. There are a

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variety of factors that influence renewal and replacement ranking. When ranking renewal and replacement projects, the Town focuses on asset, service, and corporate risks, which are discussed below. For each proposed renewal project, these three risk scores are calculated. All risk scores are combined into a single score that is compared against the scoring of other projects.

1. Asset Risk refers to the asset management approach that considers:
    a. The overall consequences that would result from an asset deteriorating to a point where it no longer provides an acceptable level of service; and
    b. The current condition of an asset compared to the condition state that would result in the asset being deemed in a 'below its acceptable condition' state.

2. Assets with a higher consequence of failure score will be prioritized for renewal or replacement at an earlier point in their asset lifecycle versus assets with a low consequence of failure.

3. Service Risk refers to the consequences of a group of assets failing to provide an attribute of a service at the expected level to the community, as well as the likelihood of the asset group not providing an attribute of a service. The consequence of a service delivery failure is established for each Service Attribute by evaluating the degree to which the Service Attribute aligns with the Principles and Commitments in the Town's Corporate Asset Management Policy.

4. Corporate Risk intends to quantify risks for the broad spectrum of risk categories that are considered in municipalities, including:
    a. Service Delivery
    b. Employees
    c. Public
    d. Physical Environment & Climate Change
    e. Reputation
    f. Financial
    g. Regulatory

The rating framework for these risks are shown in Figure 6-5.

Figure 6-5 Corporate Risk Rating Framework

Impact is quantified as:		Likelihood is quantified as:	
Scale 4:	Catastrophic	Scale 5:	Almost Certain
Scale 3:	Major	Scale 4:	Likely
Scale 2:	Moderate	Scale 3:	Somewhat likely
Scale 1:	Minor	Scale 2:	Unlikely
		Scale 1:	Rare

External agencies can also influence renewal ranking. The Town coordinates with the Region as well as neighbouring municipalities on some projects. These projects can receive priority ranking due to the cost savings achieved through project coordination.

Summary of Future Renewal & Replacement Costs

Forecast renewal and replacement costs are projected to increase over time if the asset inventory increases. The forecast costs associated with renewals and replacements are shown relative to the planned budget in Figure 6-6 to Figure 6-11.

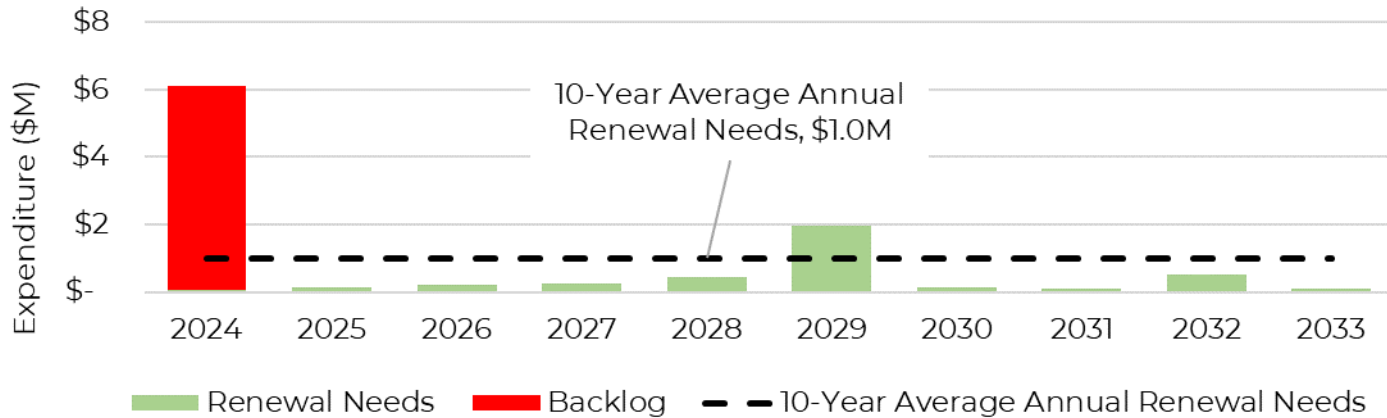**Figure 6-6 Forecast Renewal & Replacement Costs (Administration)**

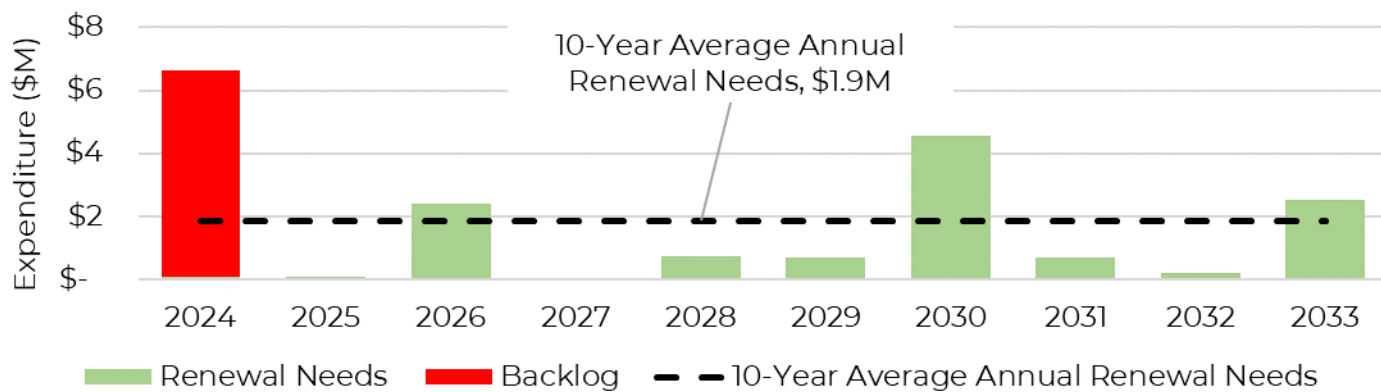**Figure 6-7 Forecast Renewal & Replacement Costs (Library Services)**
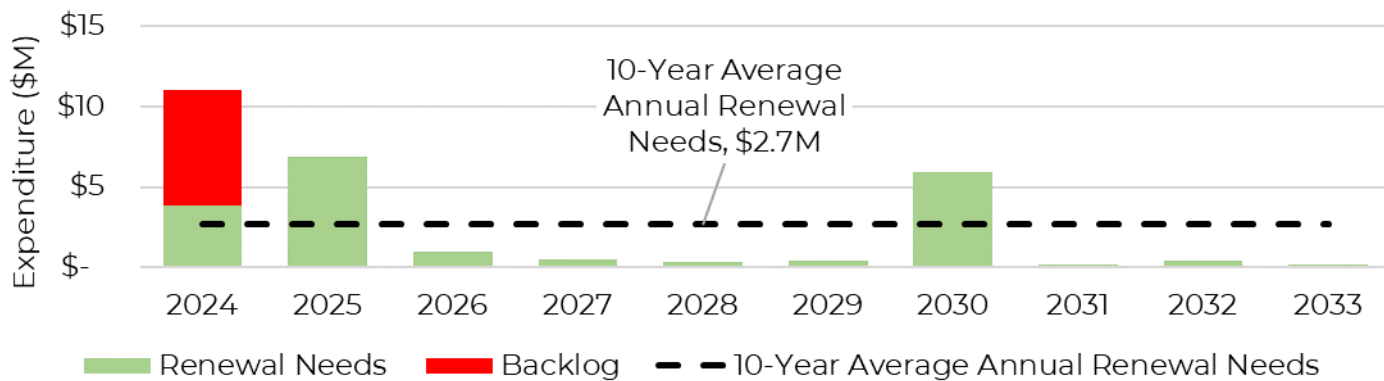

Figure 6-8 Forecast Renewal & Replacement Costs (Fire Services)

Figure 6-9 Forecast Renewal & Replacement Costs (Parks & Open Spaces)
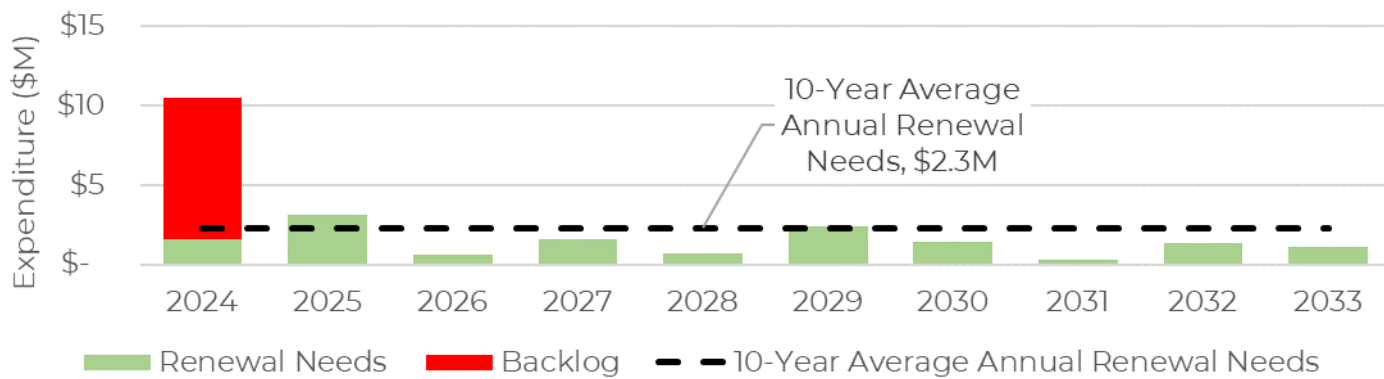
Figure 6-10 Forecast Renewal & Replacement Costs (Facilities)
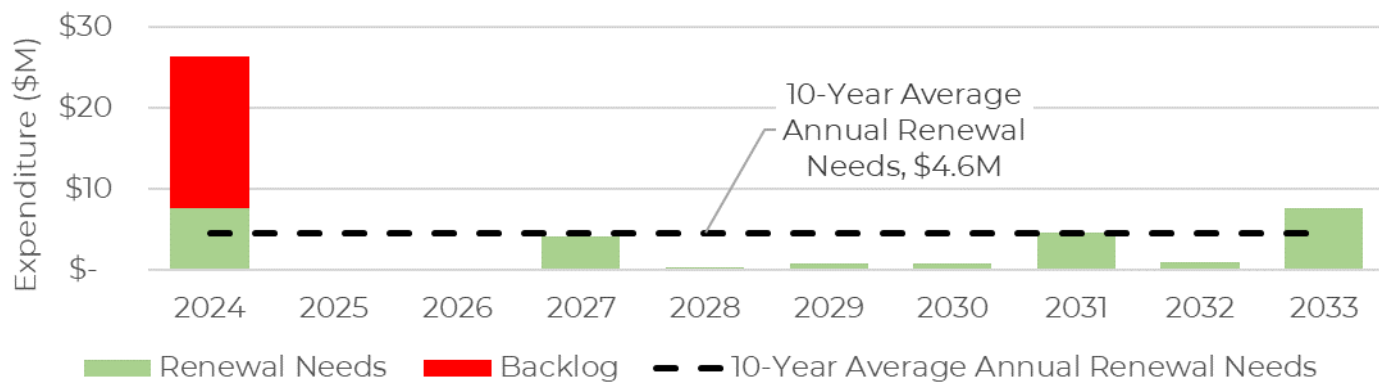
Figure 6-11 Forecast Renewal & Replacement Costs (Transportation & Public Works)
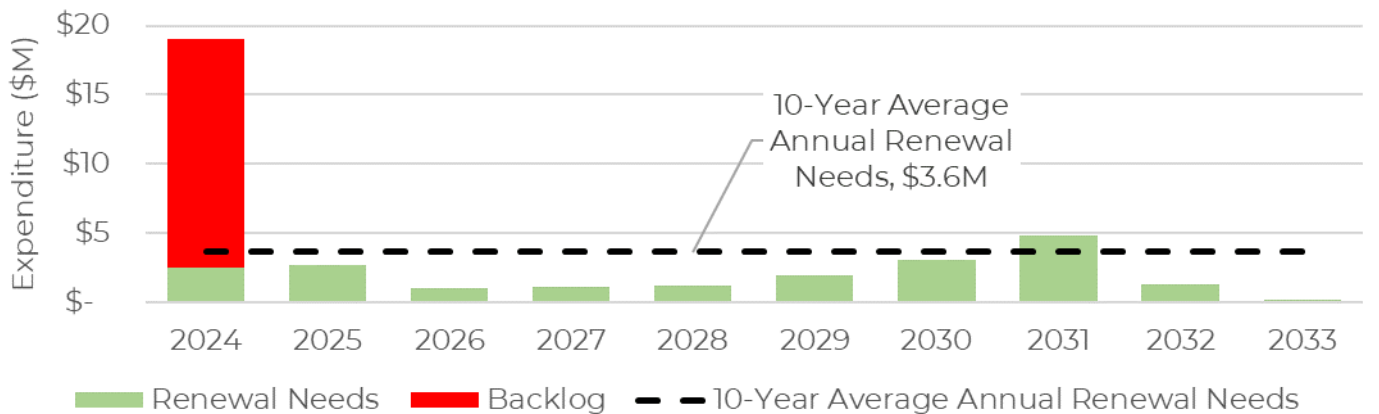
Although renewal and replacement are two different lifecycle activities, they both fall under the Town's Capital Budget. In years where the renewal/replacement bar is higher than the planned budget line, there is an infrastructure deficit, meaning the forecasted renewal and replacement needs are higher than the planned budget. Unfunded projects are deferred to future years and reviewed to assess needs and criticality. Higher risk or critical assets take priority and will be renewed

or replaced earlier than lower risk assets. This approach over time addresses the infrastructure deficit and dollar amount of unfunded projects while managing risks. Figure 6-12 and Table 6.7 below show the renewal and replacement needs compared to the budgeted amount.

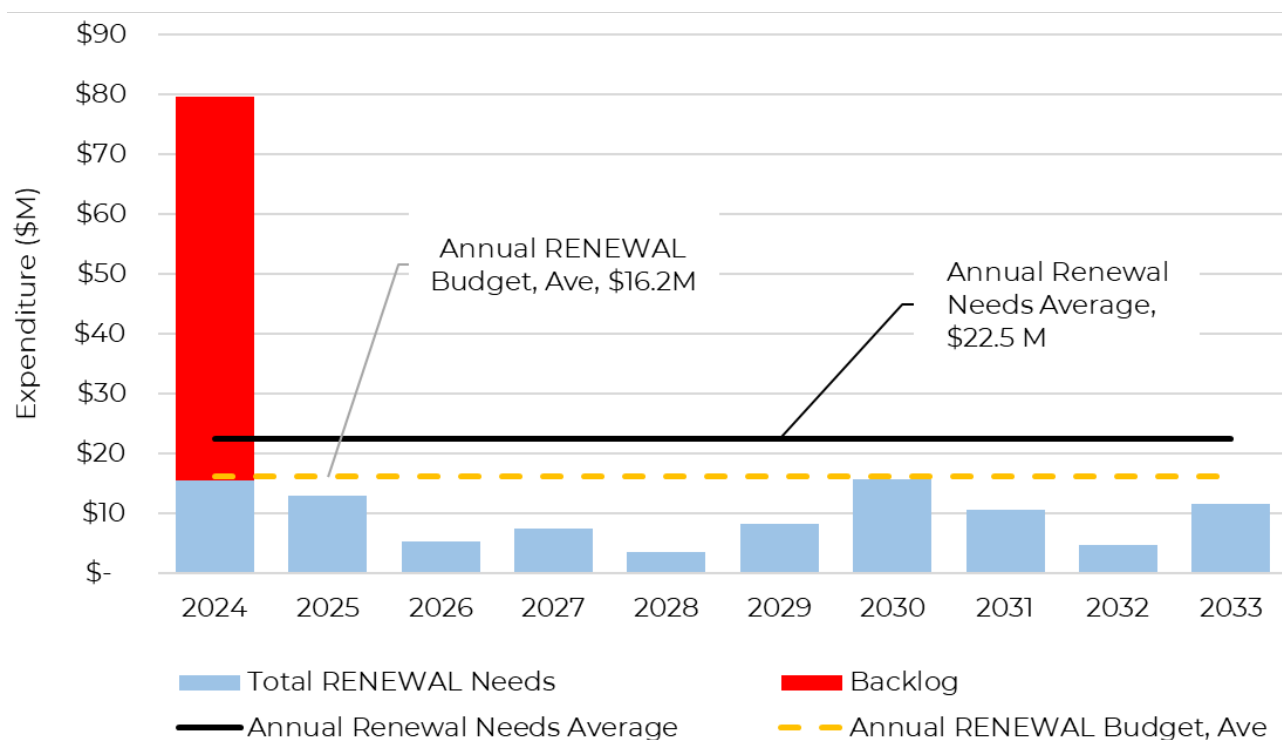**Figure 6-12 Forecast Renewal & Replacement Funding**

Table 6.7 Renewal Forecast Summary

Year	Backlog ($M)	Renewal Need ($M)	Renewal Budget ($M)	Annual Variance ($M)
2024	$64.0	$15.6	$10.9	$(4.7)
2025	$0.0	$13.0	$17.7	$4.7
2026	$0.0	$5.3	$24.2	$18.8
2027	$0.0	$7.6	$15.1	$7.5
2028	$0.0	$3.7	$17.8	$14.1
2029	$0.0	$8.2	$13.3	$5.0
2030	$0.0	$15.8	$19.1	$3.2
2031	$0.0	$10.7	$15.1	$4.4
2032	$0.0	$4.7	$15.8	$11.1
2033	$0.0	$11.7	$12.9	$1.2
	$64.0	$96.6	$161.9	$65.3

Dispose

Disposal
Disposal includes any activity associated with the disposal of an asset once it has reached the end of its useful life or is no longer needed. This can include sale, decommissioning or demolition. Any costs or revenue gained from asset disposals is included in the LRFP.

Infrastructure Asset Disposals
Critical infrastructure assets vital to the Town are frequently replaced at the end of their lifecycle with similar asset types to ensure sustained or enhanced service. As part of this replacement process, there are often decommissioning, or demolition costs associated with removing old assets to make room for new installations. These costs are included within the replacement cost.

New regulations on Asset Retirement Obligations (ARO), specifically Section PS 3280, have been introduced for Ontario municipalities. These regulations require municipalities to identify and account for costs associated with the decommissioning, removal, and disposal of infrastructure assets at the end of their useful life. Effective for fiscal years beginning on or after April 1, 2022, this standard ensures that the financial implications of retiring assets are accurately reflected in financial statements.

For the Town, this means systematically accounting for decommissioning or demolition costs during infrastructure asset replacements, providing a clearer picture of long-term financial commitments and ensuring compliance with provincial standards.

7.0 FINANCIAL PROJECTION

The financial projection is informed by the preceding sections of the Asset Management Plan: the state or condition of the assets, the proposed levels of service, the risks to service delivery, and the lifecycle management activities needed to reduce the risks to service delivery to acceptable levels. The Financing strategy considers how the Town will fund the planned asset management actions to meet the current service levels. It is expected that the financial projections will improve over time as more accurate data becomes available and discussions on levels of service and asset performance mature.

Financial Sustainability and Projections

Cost of Whole Lifecycle Activities

The Town's non-core infrastructure assets have annual costs associated with all lifecycle management activities. These costs are budgeted annually through the Town's budget process. These costs include capital and operations & maintenance costs which make up the required budget. The investment required to maintain the current levels of service and immediate needs of the Town's non-core infrastructure assets are shown in Figure 7-1 and outlined in Table 7.1.

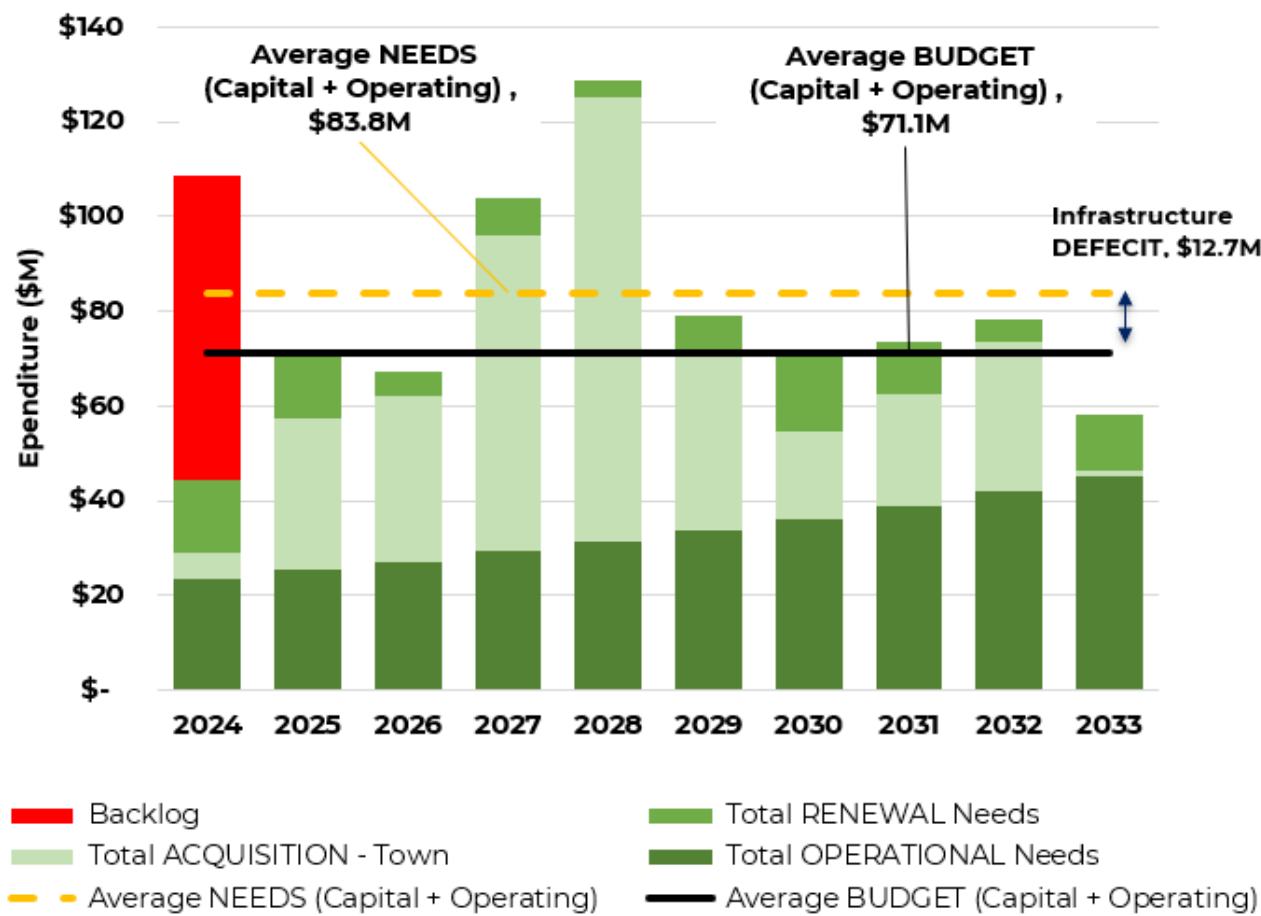**Figure 7-1 Current Investment Requirement**

Table 7.1 Current Investment Requirement Summary

Year	Backlog ($M)	Acquisition ($M) - Town	Operating Need ($M)	Renewal Need ($M)	Average Needs ($M)	Average Capital /Operating Budget + ($M)
2024	64.0	$5.3	$23.6	$15.6	$83.8	$71.1
2025	$0.0	$31.9	$25.3	$13.0	$83.8	$71.1
2026	$0.0	$34.8	$27.2	$5.3	$83.8	$71.1
2027	$0.0	$66.9	$29.2	$7.6	$83.8	$71.1
2028	$0.0	$93.6	$31.4	$3.7	$83.8	$71.1
2029	$0.0	$37.3	$33.7	$8.2	$83.8	$71.1
2030	$0.0	$18.3	$36.2	$15.8	$83.8	$71.1
2031	$0.0	$23.7	$38.9	$10.7	$83.8	$71.1
2032	$0.0	$31.6	$41.8	$4.7	$83.8	$71.1
2033	$0.0	$1.3	$45.0	$11.7	$83.8	$71.1
	$64.0	**$344.8**	**$332.1**	**$96.6**	**$838.0**	**$711.0**

For many asset groups within this plan, asset age is used as a proxy for condition. While age can provide a general indication of an asset's lifecycle stage, it often understates or overstates the actual asset condition. Factors such as maintenance history, environmental exposure, and usage patterns significantly influence an asset's condition beyond its chronological age. As updated asset condition data is obtained, these figures will change to more accurately reflect the true state of the assets.

Infrastructure Deficit

Providing services in a financially sustainable manner requires a balance between the forecasted whole lifecycle needs required to maintain service levels with the planned budget allocations. Infrastructure deficit is defined as the difference between the planned budget and the whole lifecycle needs of the assets. The forecasted whole lifecycle needs are calculated based on the Town's Lifecycle Management Strategy which relies on industry best practice and key asset data including expected useful life, installation date and replacement value.

When comparing the forecasted whole lifecycle needs (required budget) to the planned Capital and Operating budgets, the Non-Core Infrastructure AM Plan identified an infrastructure deficit of $12.7 million dollars per annum. Changes or enhancements to lifecycle management activities will impact this figure and will need to be considered in short and long term financial planning.

Addressing the infrastructure deficit to achieve sustainable service delivery is part of the continuous improvement process and requires further work and adjustments. This work is dependent on the specific challenges of the asset group and can include:

- Updating asset inventory and asset condition data
- Identification of optimum lifecycle management strategies
- Refining of estimates and cost information
- Adjustments to service levels
- Adjustments to the Long-Range Financial Plan
- Review of prioritization and timing of projects

Long Range Financial Plan

The Long-Range Financial Plan (LRFP) is linked to the Town's budget and asset management planning by taking a holistic, long-term view of the Town's infrastructure needs. The Non-Core Infrastructure AM Plan assists the LRFP by anticipating the lifecycle needs of the Town's infrastructure assets, and planning for their financial needs.

As the CAM Program continues to mature at the Town, the integration between asset management and budgeting will strengthen. Evidence-based decision making will drive informed business cases for Town assets resulting in long term financial forecasts that support financial sustainability.

Figure 7-2 Relationship between Asset Management Planning, Budget, Long Range Financial Plan
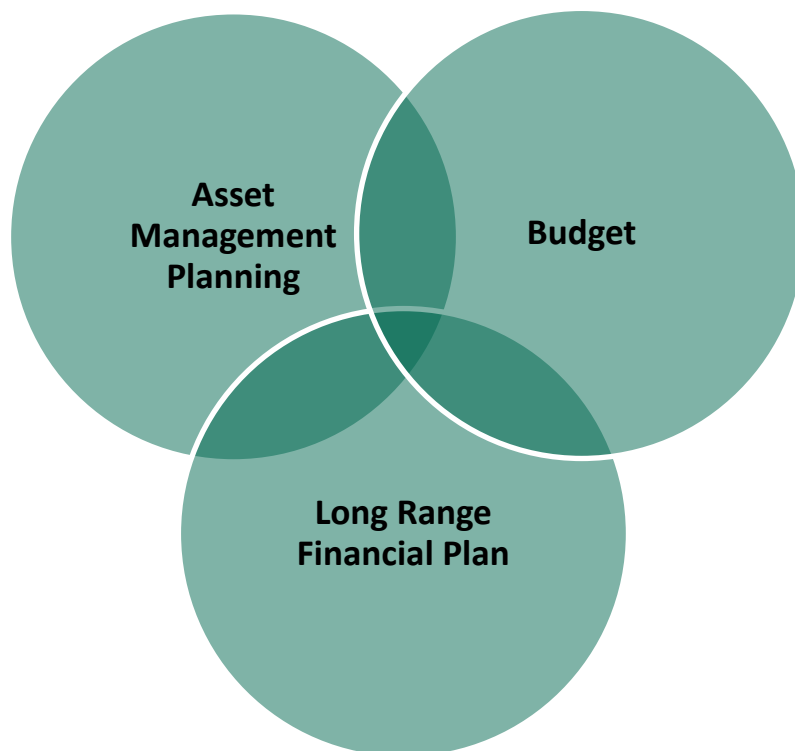
Funding Strategy

The funding required to support the lifecycle management activities (acquisition, operations, maintenance, renewal) of the non-core infrastructure assets comes from many sources.

- Tax-based
- Reserves and Reserve Funds
- Development Charges
- Special Infrastructure Gap Levy
- Grants

Funding constraints are always a factor when balancing a municipality's demand for services and the assets' ability to provide them. To manage funding constraints and address the infrastructure deficit given the Town's financial position, capital projects that require funding from development charges are often deferred to years when the development charges are received by the Town. Debt financing is also used to bridge timing challenges related to the receipt of revenues. Maintaining current infrastructure in a state-of-good-repair and replacing infrastructure when required is given greater priority over the addition of new infrastructure that does not have external funding. Figure 7-3 depicts the prioritization model that the Town follows for asset financial planning.

Figure 7-3 Budget Prioritization Model

The benefit of this approach will allow funds to be directed towards maintaining and renewing assets that the Town currently owns while addressing the infrastructure deficit. The impacts to the operating budget associated with construction and acquisition of new assets will be minimized.

Financial data sources

The Non-Core Infrastructure AM Plan utilizes financial data. The source of the data is the Town's Finance department. The 2024 Capital budget along with the 2024-2033 Capital forecast financial data was used to develop the financial forecasting for acquisition, installation/commission, renewal/replacement, and disposal activities. The planned 2024 Operating budget was used to inform the financial forecasting for maintenance and operating activities. This data is updated annually and is considered up to date.

In compiling this Plan, it was necessary to make some assumptions. The key assumptions made in the development of this Non-Core Infrastructure AM Plan as well as the level of confidence in the data behind the financial forecasts are discussed below.

Key assumptions made in this Non-Core Infrastructure AM Plan are:

- The capital projects that are funded by development charges in the 2024-2033 10-year Capital forecast, as well as future development plans were used to represent new asset value to be acquired for 2024-2033.
- The planned budget for operations and maintenance was based on the 2024 Operational planned budget.
- Forecasted operations and maintenance were derived based on new asset growth at the Town over the next 10 years.
- The planned budget for renewal and replacement was determined by designating renewal amounts each Capital project in the 2024-203 Capital Plan
- Carry over budgets previously funded capital projects (but not yet completed) were included in estimating the 10-year average budgets.
- Where no engineering-based needs assessments were conducted - forecasted renewal year for assets were calculated by adding the useful life to the installation year of the asset.
- Unknown installation dates were estimated based on condition ratings.
- Age-based condition was used in the absence of formal condition assessment information wherever applicable.
- Inflation factors (i.e. StatsCan Inflationary table) were used to update previous replacement costing in the absence of current replacement costing.
- Unknown renewal/replacement costs were based on benchmarks and industry best practice.
- Population growth was estimated using data obtained during the development of the Town's 2021-2022 Development Charge Study. Actual population and employment growth will impact demand for the services provided by the Town's non-core assets.
- Population growth will result in new infrastructure. The extent of new infrastructure assets required, and the subsequent lifecycle costing requirements will become clearer as development plans are finalized.
- Missing information and data gaps were resolved by substituting institutional knowledge from Town stakeholders.

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Data Confidence

The forecast costs, planned budgets, and valuation projections in this Non-Core Infrastructure AM Plan are based on the best available data. Information that is current and accurate is an enabler of best-in-class asset management. Data confidence is measured in terms of accuracy and completeness. Table 7.2 outlines the data confidence for each asset class's forecast evaluated in this plan.

Table 7.2 Data Confidence Scale

Asset Category	Forecast Assumption	Data Confidence
Administration	Forecast based on asset age and installation year	LOW
Library Services	Forecast based on asset age and installation year	MODERATE
Fire Services	Forecast based on asset age and installation year	MODERATE
Parks & Open Spaces	Forecast based on asset age and installation year	LOW
Facilities	Forecast based on asset age and installation year	MODERATE
Transportation & Transit	Forecast based on asset age and installation year	MODERATE

Overall confidence is considered to be MODERATE.

Records of Data for Asset Register

The source of the data for this Non-Core Infrastructure AM Plan is the Town's Asset Register. The register is updated as new condition assessment information is received to ensure the inventory, condition, and costing data are up to date. Inventory and condition assessment information is received from the departments. Table 7.3 outlines the various data sources.

Table 7.3 Data for Asset Register

Asset Type/Group	Data Source	Comments
Facilities	Building Condition Assessments, Financial Information Returns,	The latest Building Condition Assessment was 2016, so inventory is still quite outdated. Facilities inventories be updated as part of the Town's 2023 facility component data collection initiative.
Other Assets	Departmental spreadsheets, Financial Information Returns	Assets like fleet, equipment etc. have traditionally been collected by internal departments. The latest asset register compilation was completed in 2017, with additional assets added within the

Asset Type/Group	Data Source	Comments
		inventory via the Town's annual Financial Information Returns.

8.0 Continuous Improvement

Development of AM Plans is an iterative process that includes improving data, processes, systems, staff skills, and organizational culture over time. This section provides an overview of recommended improvements to the Town's asset management practices. As summarized in Table 8.1, this AM Plan is compliant with O.Reg. 588/17 Current Levels of Service requirements for July 1st, 2024. A more detailed assessment of this AM Plan's compliance with the O. Reg is provided in Appendix C.

Table 8.1 O.Reg. 588/17 Compliance for Current Levels of Service

AM Plan Section	O.Reg. 588/17 Compliance	Comment
State of Local Infrastructure	Compliant	The AM Plan provides a summary of the assets, the replacement cost of the assets, the average age of the assets, the condition of the assets, and the approach to assessing condition of assets.
Levels of Service	Compliant	The AM Plan provides the qualitative community description and technical metrics as required by O.Reg. 588/17, and the current performance.
Asset Management Strategy	Compliant	The AM Plan provides the population and employment forecasts as set out in Schedule 3 to the 2017 Growth Plan for the Greater Golden Horseshoe. It also provides the lifecycle activities that would need to be undertaken to maintain the current LOS for each of the next 10 years, based on an assessment of lowest lifecycle cost options and risks.
Financing Plan	Compliant	The AM Plan provides the financial forecast for the next 10 years based on the costs of the lifecycle activities to maintain current levels of service.

Improvement Plan

It is important to recognize areas of the Non-Core Infrastructure AM Plan and planning process that require future improvements to ensure effective asset management and informed decision making. The improvement plan generated from this Non-Core Infrastructure AM Plan is shown in Table 8.2.

Table 8.2 Improvement Plan

Task	Task	Timeline
1	Implement an asset management information software (AMIS) that includes a work management system as well as decision support software	In Progress
2	Implement Data, Risk, and Lifecycle Management Strategies	In Progress
3	Improve accuracy and completeness of non-core asset data by addressing inventory and condition data gaps	2023-2025
4	Integrate climate change into levels of service for core and non-core assets	2024-2025
5	Determine proposed levels of service and identify performance gaps as well as the corresponding financial strategy	2024-2025
6	Improve accuracy and completeness of natural asset and green infrastructure data by addressing inventory and condition data gaps	2025-2027
7	Determine more accurate lifecycle costing that is tracked at the asset level	2025-2027
8	Determine operational and capital budget impacts of proposed growth projects	Ongoing
9	Bridge the gap between asset management planning processes and executing the capital and operating budgets.	Ongoing
10	Proactively update asset unit replacement costs based on latest industry data and capital projects	Ongoing

Monitoring and Review

The Non-Core Infrastructure AM Plan will be reviewed and updated as new budgets, strategies, frameworks, and service area plans are developed to incorporate recommendations and document their impact on lifecycle management activities and financial planning. This Non-Core Infrastructure AM Plan has a maximum life of 5 years and is due for complete revision and updating within the next year to adhere to more advanced O.Reg 588/17 requirements.
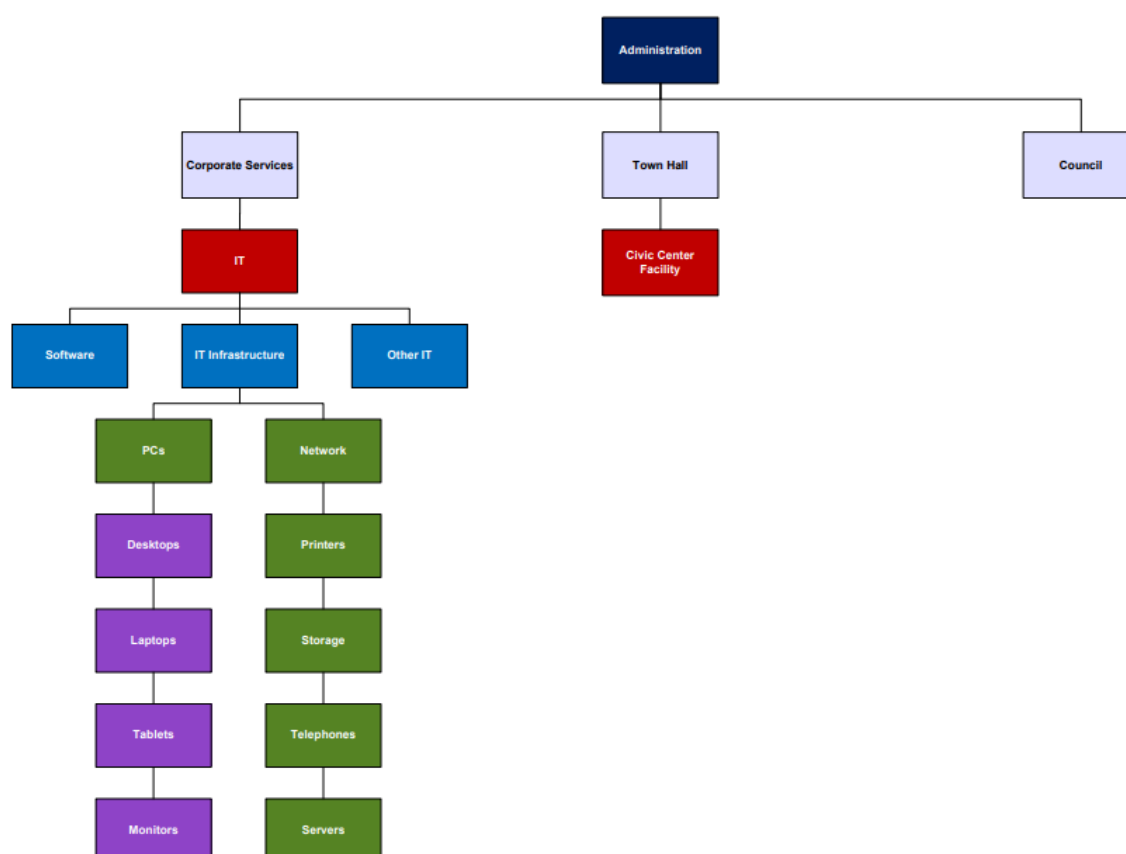
APPENDICES

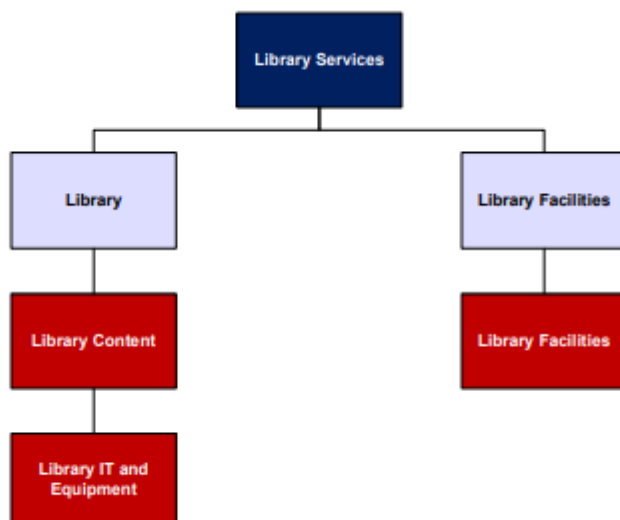## Appendix A – Condition Rating Translations & Asset Hierarchy

Condition Rating Translation

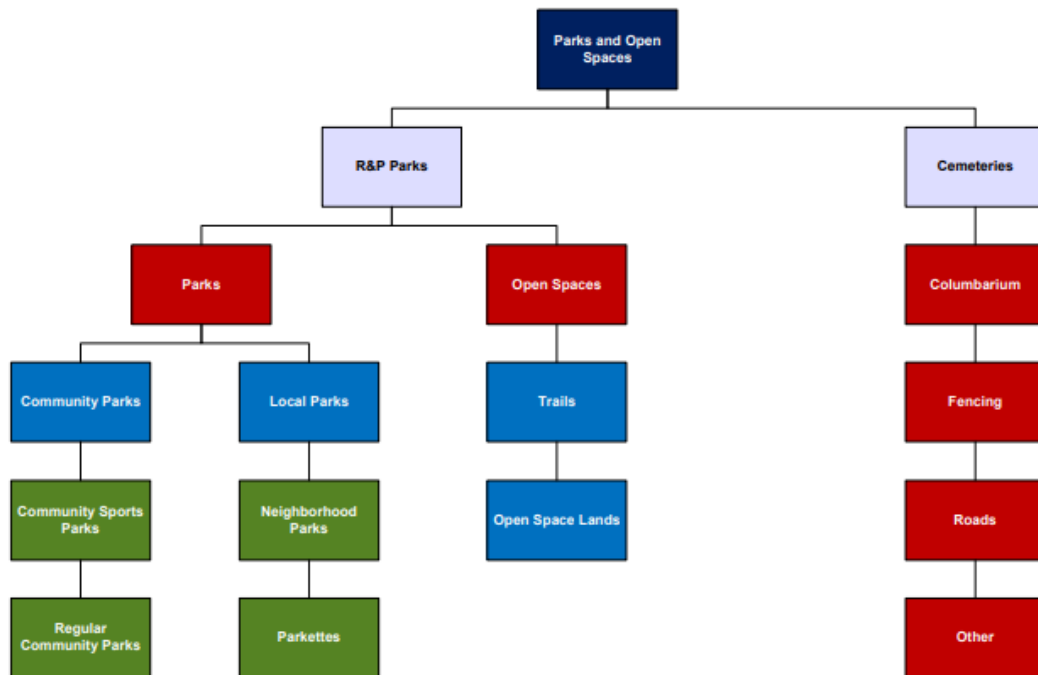| Condition Grade	Remaining Useful Life (all asset types)	Building Condition Index (BCI)
Very Good	>75 – 100%	1
Good	>50 – 75%	2
Fair	>25 – 50%	3
Poor	>0 – 25%	4
Very Poor	<= 0%	5

Administration Asset Hierarchy
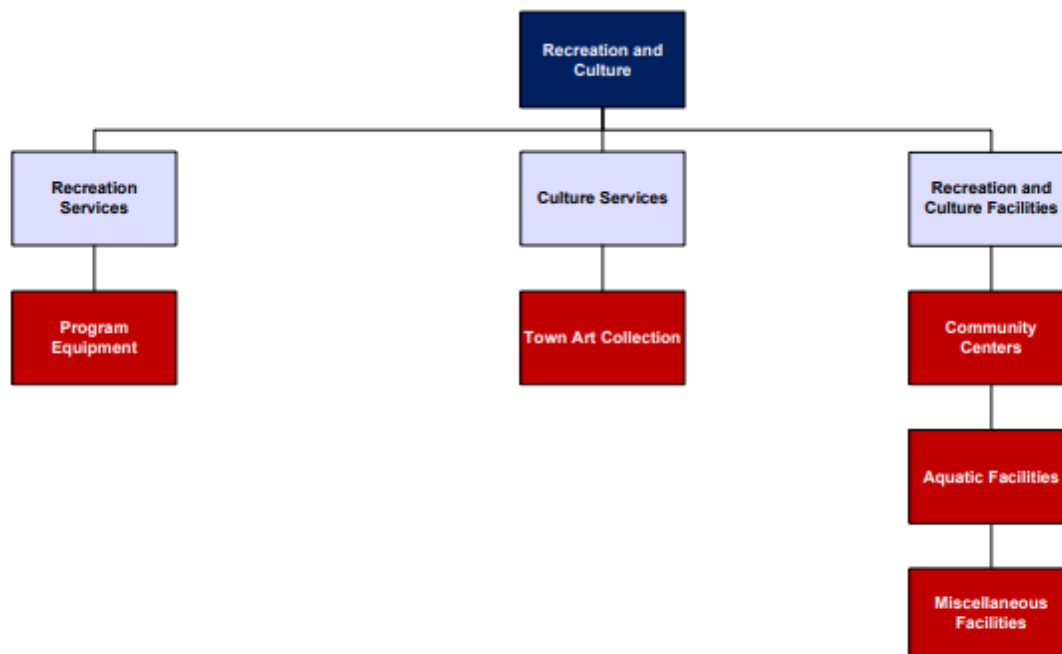
Library Services Asset Hierarchy
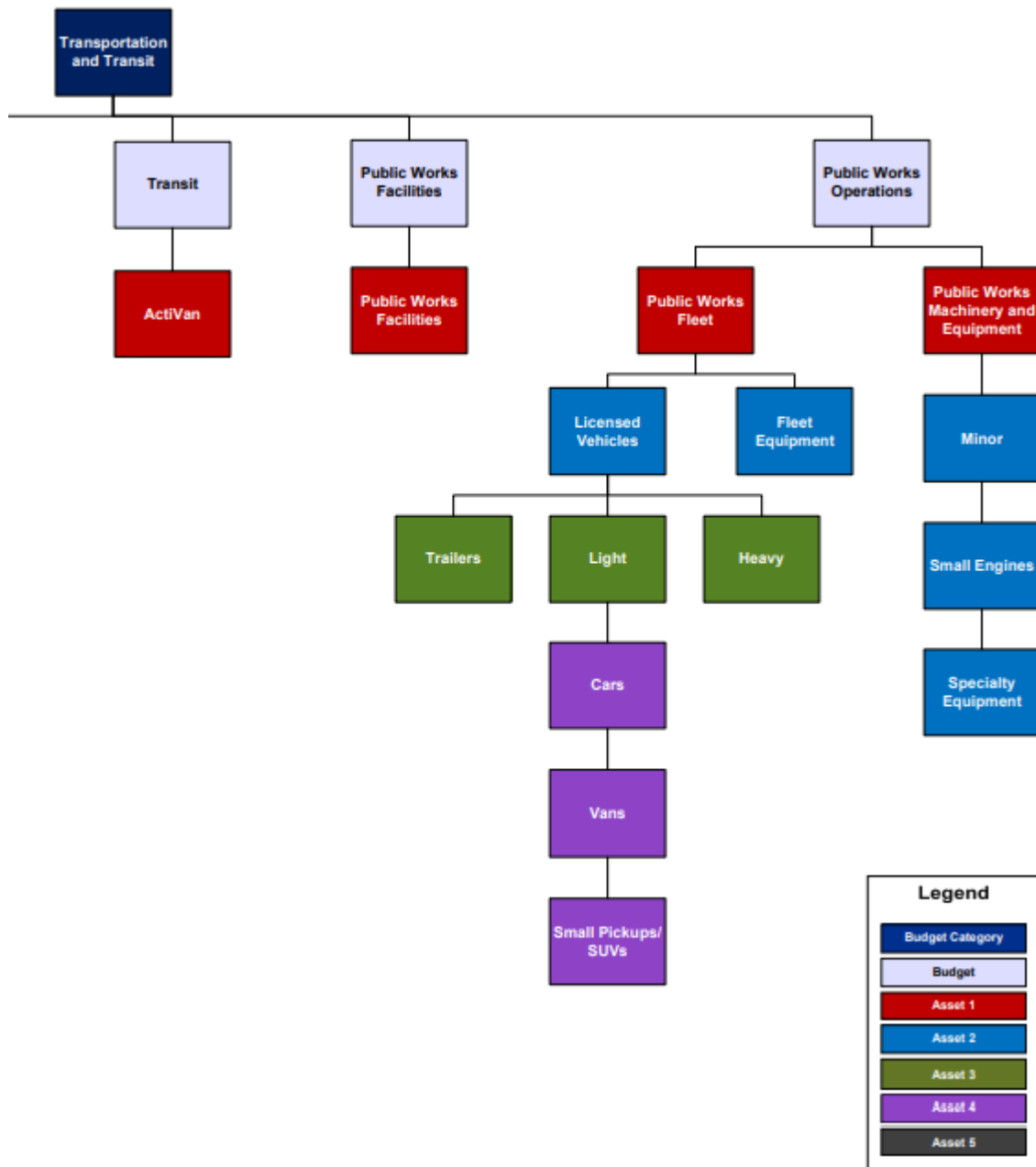

Fire Services Asset Hierarchy

Parks & Open Spaces Asset Hierarchy

Facilities Asset Hierarchy

Transportation & Public Works Asset Hierarchy

Appendix B – Risk Matrices

Consequence of Failure Matrix

Consequence Categories (Triple Bottom Line)		C1 Insignificant	C2 Minor	C3 Moderate	C4 Major	C5 Catastrophic
Economic	Financial	Damages, losses (including 3rd party) or fines from $1k to $10k	Damages, losses (including 3rd party) or fines $10k to $100k	Damages, losses (including 3rd party) or fines $100k to $1M	Damages, losses (including 3rd party) or fines $1M to $10M	Damages, losses (including 3rd party) or fines > $10M
Social	Health & Safety	No obvious potential for injury or affects to health.	Potential for minor injury or affects to health of an individual. Full recovery is expected; or minor medical attention may be required	Potential for serious injury or affects to health. May affect many individuals and / or result in short term disability; or Hospitalization may be required for a short period of time.	Potential for serious injury or affects to health of one or more individuals with a possibility of loss of a life and the certainty of long-term disability; or Emergency hospitalization required for one or more individuals.	Potential for death or multiple deaths with probable permanent damage; or Emergency and long-term hospitalization required for several individuals.
	Availability/ Reliability	Small number of customer experiencing disruption / impact (less than 100 people or up to a few hours)	Localized service disruption / impact (100 to 1,000 people or up to 1 day)	Significant localized disruption / impact (1,000 to 10,000 people or less than 1 week)	Major service disruption / impact (10,000 to 50,000 people or for more than a week)	Region wide service disruption / impact (greater than 50,000 people or permanent loss of services)
Environmental	Environment	Very negligible impact or can be restored within 1 week	Minor (within 1 month) very isolated damage / impact to the environment, local importance	Significant short-term impact (up to 2 months), local importance	Significant long-term impact (up to 1 year), Provincial importance.	Major long-term impact (greater than 1 year), Federal importance.

Probability of Failure Matrix

Probability of Failure	Rating	Description		
		Capacity & Use	Function	Quality
Rare	1	Demand corresponds well with actual capacity and no operational problems experienced. Meets current and future capacity needs within planning horizon.	The infrastructure in the system or network meets all program/service delivery needs in a fully efficient and effective manner. (Health, safety, security, legislative etc.)	Asset is physically sound and is performing its function as originally intended. Asset is new or at the beginning of it's service life.
Unlikely	2	Demand is within actual capacity and occasional operational problems experienced.	The infrastructure in the system or network meets program/service delivery needs in an acceptable manner. (Health, safety, security, legislative etc.)	Asset is physically sound and is performing its function as originally intended. Typically, asset has been used for some time but is within mid-stage of its expected life.
Possible	3	Demand is approaching actual capacity and/or operational problems occur frequently. Meets current capacity needs but not future without modifications.	The infrastructure in the system or network meets program/service delivery needs with some inefficiencies and ineffectiveness present. (Health, safety, security, legislative etc.)	Asset is showing signs of deterioration and is performing at a lower level than originally intended.
Likely	4	Demand exceeds actual capacity and/or significant operational problems are evident.	The infrastructure in the system or network has a limited ability to meet program/service delivery needs. (Health, safety, security, legislative etc.)	Asset is showing significant signs of deterioration and is performing to a much lower level than originally intended.
Certain	5	Demand exceeds actual capacity and/or operational problems are serious and ongoing. Does not meet Current capacity Requirements.	The infrastructure in the system or network is seriously deficient and does not meet program/service delivery needs and is neither efficient nor effective. (Health, safety, security, legislative etc.)	Asset is physically unsound and/or not performing as originally intended. Asset has reached end of life and failure is imminent.

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Appendix C – Regulatory Compliance

The following Table 9.1 represents the Town's position with respect to the asset management requirements identified in O.Reg. 588/17 for Non-Core Infrastructure Assets for July 2, 2024.

Table 9.1 Compliance with O.Reg. 588/17 (2024 Deadlines)

Plan Section	O.Reg. 588/17 Compliance Practices (Current LOS)	Section
State of Local Infrastructure	For each asset category, the AM Plan provides • a summary of the assets, • the replacement cost of the assets, • the average age of the assets, • the condition of the assets, • the approach to assessing condition of assets.	Section 2
Levels of Service	For each asset category, the AM Plan reports the current LOS performance. For core assets, the AM Plan provides the qualitative community descriptions and technical metrics as required by O.Reg. 588/17, and the current performance.	Section 3
Asset Management Strategy	For each asset category, the AM Plan provides the lifecycle activities that would need to be undertaken to provide the proposed LOS for each of the next 10 years.	Section 6
Financial Strategy	A description of assumptions regarding future changes in population or economic activity. For each asset category, the AM Plan provides the costs of providing the lifecycle activities that would need to be undertaken to maintain the current LOS for each of the next 10 years.	Section 7
Background Information	The AM Plan indicates how the background information and reports upon which the state of infrastructure section is based will be made available to the public.	Section 1.2