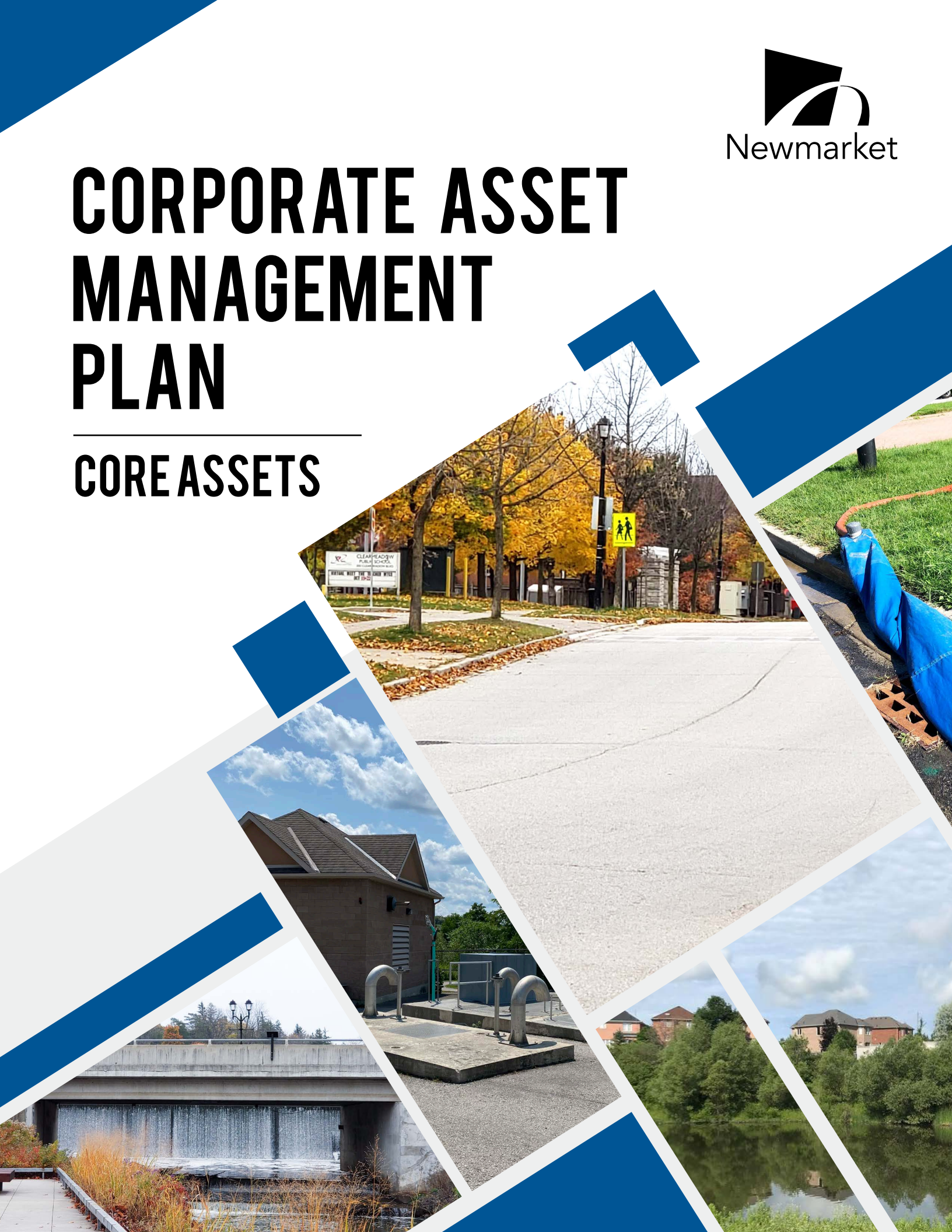


CORPORATE ASSET MANAGEMENT PLAN

CORE ASSETS





EXECUTIVE SUMMARY

Newmarket's asset management planning process advances the Town's Strategic Priorities for financial sustainability, and demonstrates a commitment to Town values of being Well Beyond the Ordinary. The Town is implementing its vision for supporting a thriving community through the management of infrastructure using asset management practices and continuous improvement.

Asset management plans guide Newmarket's processes to reflect sound and accountable governance of its municipal infrastructure. They provide strategic plans for leaders, practical tools for service areas, and a platform for public discourse about infrastructure, services, and affordability.

The 2021 Core Asset Management Plans include Town-owned roads, bridges, water, wastewater, and stormwater assets. Each plan includes four chapters that build a holistic understanding of the Town's assets and their future:

- **Know Your Assets:** Establishes the baseline of what the Town owns, its condition, and replacement cost to inform subsequent analysis, reporting, and decisions.
- **Manage Service Delivery:** Brings visibility to levels of service, risk, and activities that support services through a framework for managing asset-related services holistically.
- **Future Ready:** Showcases ongoing and future trends that will impact the Town's assets and services. This includes growth in the core asset base, and the impacts of climate change core assets.
- **Financial Strategy:** Uses capital financial modeling to show the cost of maintaining core assets at their current level of service, the outcomes of current levels of funding, and options for future financial decisions.

The key findings for core assets have been summarized within the Executive Summary.

KNOW YOUR ASSETS

What was once a small but thriving Town, today Newmarket is the owner of hundreds of thousands of assets. These assets were historically constructed, purchased, or acquired by the Town in order to provide services to the community. If all Town core assets were replaced today, it would cost more than \$2 billion. Understanding future replacement budgets for Town assets start with the **State of the Infrastructure**, before adding risk and Level of Service (LoS) considerations.

Quantifying the asset inventory is the beginning of the Town's asset management journey. Each section of the **State of the Infrastructure** tells a story.

What Do We Own?

Assets exist to provide services, and Town owns a lot of them! The quantities show what assets the Town has become stewards of to date, which in turn determine the number of assets that need to be inspected, operated, maintained, and one day replaced with capital reinvestment.



249 Kilometers of
Roads



68 Bridges and
Culverts



303 Kilometers of
Watermain



262 Kilometers of Wastewater
Sewers

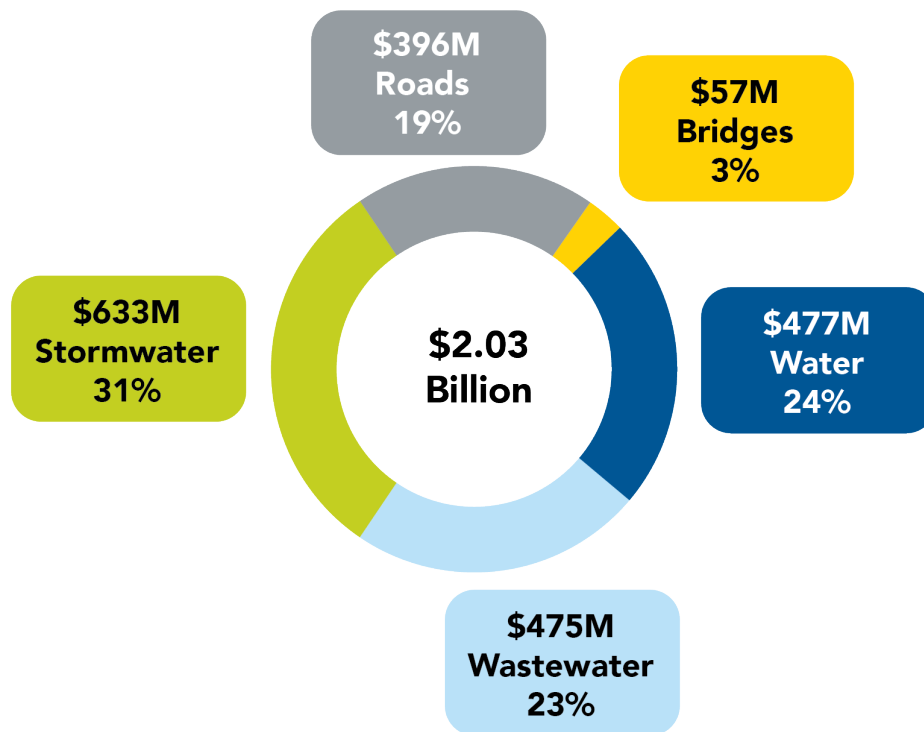


284 Kilometers of Storm Sewers

What Is It Worth?

Replacement value is the current market cost to replace existing assets ensuring similar service levels for these assets into the future. Replacement unit cost represent the 2021 total contracted cost of replacing each asset the Town owns and does not consider staff time, maintenance, growth, climate change, service enhancements, or other cost factors.

TOTAL REPLACEMENT COST OF CORE ASSETS

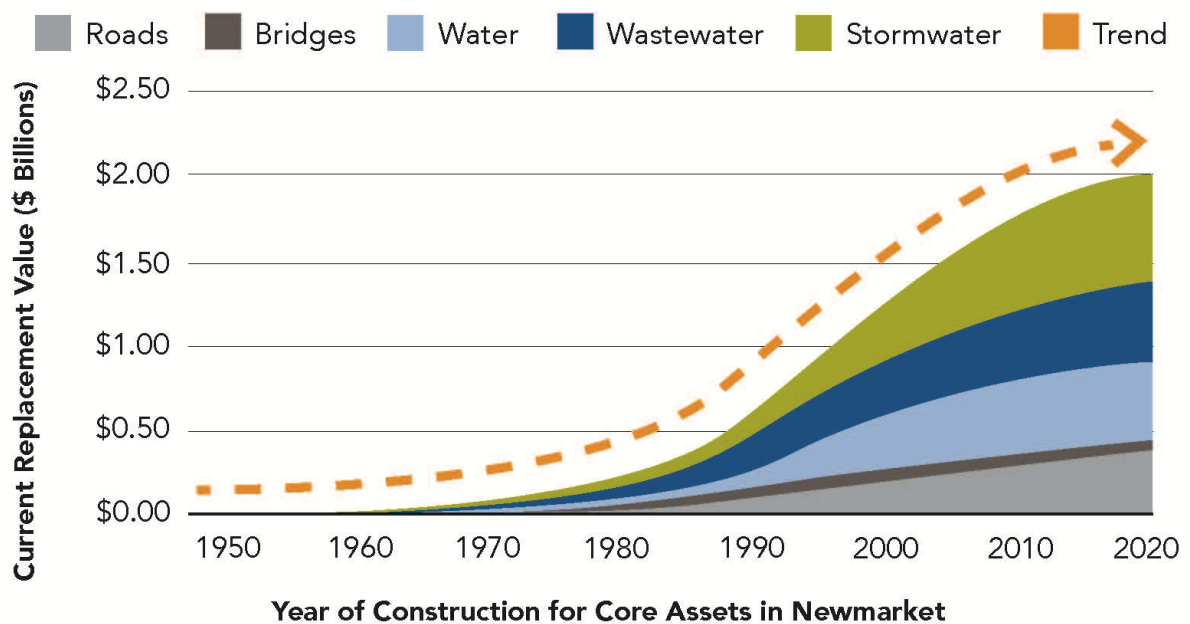


* Stormwater has a higher replacement cost than water and wastewater. Results from Town data were verified against several GTA municipalities exhibiting the same trend using like-for-like comparisons. The reasons for the higher cost include owning stormwater ponds, extra assets like catchbasins and oil grit separators, and storm pipes generally being larger than water and wastewater.

How Old Is It?

Brand new assets and aging assets vary in their ability to provide services, their maintenance need, and their replacement urgency. Understanding the age of assets allows the Town to plan for the future. Most Town assets were constructed in the 1980s, 1990s, and 2000s, meaning many assets are approaching the midpoint of their life resulting in higher repair requirements.

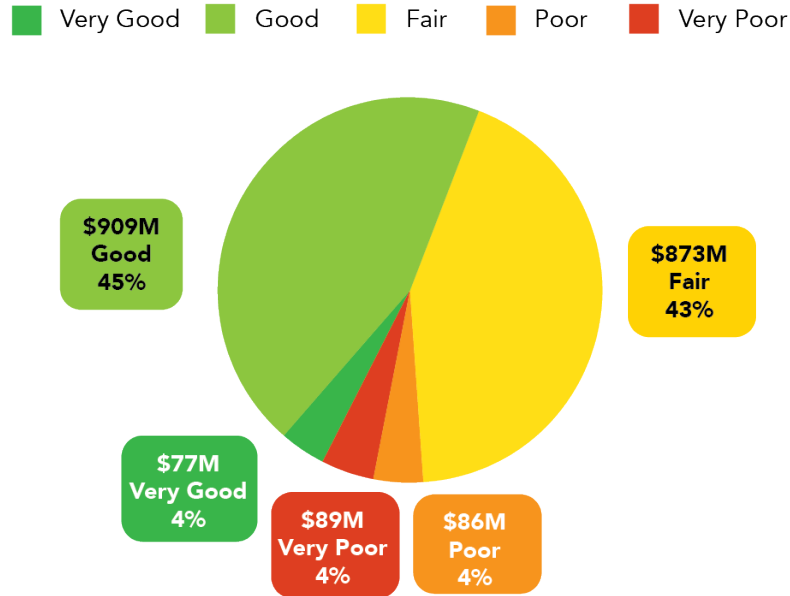
**The Town's Core Asset Inventory Has Expanded Over Decades:
If Replaced Today It Would Cost \$2 Billion**



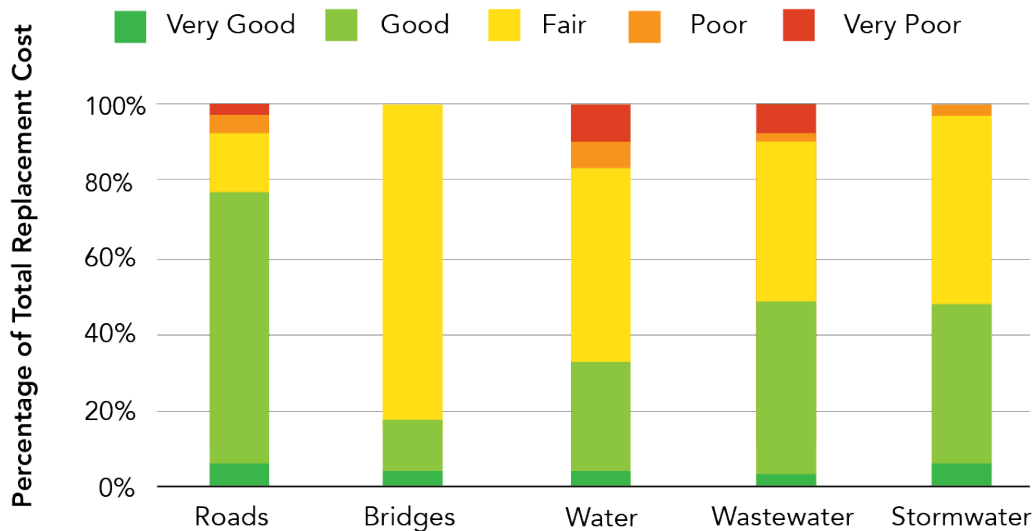
What Condition Are Assets In?

All assets have a finite life. As assets provide services, operate, and age, they will usually deteriorate and the need for reinvestment will arise (signified by a reduced condition rating). Condition benchmarks the age and investment need of assets, and can support other decisions such as LoS.

OVERALL CONDITION FOR CORE ASSETS



SERVICE AREA COMPARISON OF ASSET CONDITIONS (REPLACEMENT COST / 100%)



Condition Assessments

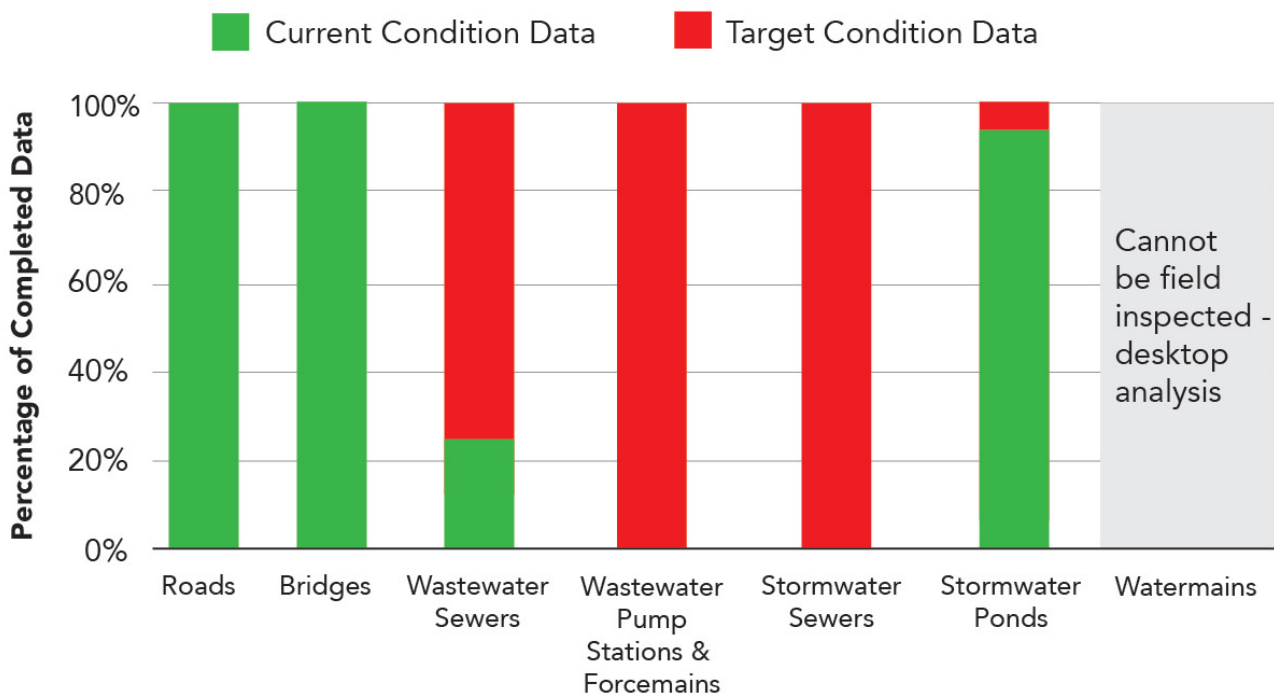
The foundation of good asset management practice is based on having comprehensive and reliable information on the current condition of the infrastructure. Without this information, financial and capital plans carry a significant amount of uncertainty

Condition data is derived from field observations by qualified engineers who can provide information about the remaining useful life of the assets. When this information is unavailable, age is used as a proxy with a lower level of confidence.

The Town has made good progress in establishing baseline conditions for roads and bridges. Rate supported assets like wastewater sewers and stormwater sewers do not have condition data – these assets could be performing worse or better than currently estimated. The figure below summarizes progress made to date.

To manage risk, optimize allocation of limited funds, and provide assurance to financial projections, condition assessments and data collection need to become a regular business process for the Town.

COMPLETENESS OF CONDITION ASSESSMENTS USED FOR FINANCIAL PLANS



MANAGE SERVICE DELIVERY

Assets exist to deliver value. Asset management is not just about the asset itself, but the creation of value that the asset can provide to the community. The expenses the Town incurs over the lifecycle of the asset are done with the goal of ensuring residents and business continue to receive exceptional service from the Town. However, providing services like transportation or clean drinking water through assets is not a cost-free or risk-free enterprise. Being good stewards of Town assets presents risks, costs, and opportunities that need to be managed.

Value realization is a balancing act – it often requires managing conflicting, interconnected drivers of risk, cost, and performance. The Town manages service delivery through a three-part framework:

- **Levels of service:** Outcomes customers experience and the underlying Town performance required to deliver the outcome.
- **Cost:** Expended Town resource on lifecycle activities that deliver services to affect the outcomes experienced by customers.
- **Risk management:** The mechanism by which the Town will balance cost and levels of service, and control risks associated with not achieving a level of service.

Decisions about what services to provide, what to spend, or what risks the Town will tolerate leads to changes in how the other factors are balanced.

There is no single correct way on how to manage this balance – the desired approach will depend on the goals of the organization. This balancing act is depicted in the graphic below.



Levels of Service

Levels of Service in the 2021 Asset Management Plan

For the 2021 Asset Management Plan, the Town has started by reporting on the O. Reg 588/17 requirements and select additional measures that will allow the Town to begin measuring performance and making decisions.

The focus of the 2021 Asset Management Plan's LoS is the condition of the assets as presented in **Know Your Assets** and forecasted in the Financial Strategy. The benefit of this approach is that condition is a good proxy for many service criteria. The condition of the assets can be linked to capital expenditure to rehabilitate and replace them, which is one of the Town's largest expenses. Condition is easily quantifiable and modelled, making it the logical first step for the Town's LoS analysis.

The link between condition of the asset and the service it provides is shown in the table below. Further examples are provided for each asset class in their Asset Management Plan (AMP) including pictures.

Condition Category	Condition Description*
Very Good	The asset is fit for the future. It is well maintained, in good condition, new or recently rehabilitated.
Good	The asset is adequate. It is acceptable and generally approaching the mid-stage of its expected service life.
Fair	The asset requires attention. The asset shows signs of deterioration and some elements exhibit deficiencies.
Poor	There is an increasing potential for its condition to affect the service it provides. The asset is approaching the end of its service life, the condition is below the standard and a large portion of the system exhibits significant deterioration.
Very Poor	The asset is unfit for sustained service. It is near or beyond its expected service life and shows widespread signs of advanced deterioration. Some assets may be unusable.

*Definitions are sourced from the Canadian Infrastructure Report Card and Statistics Canada, 2019.

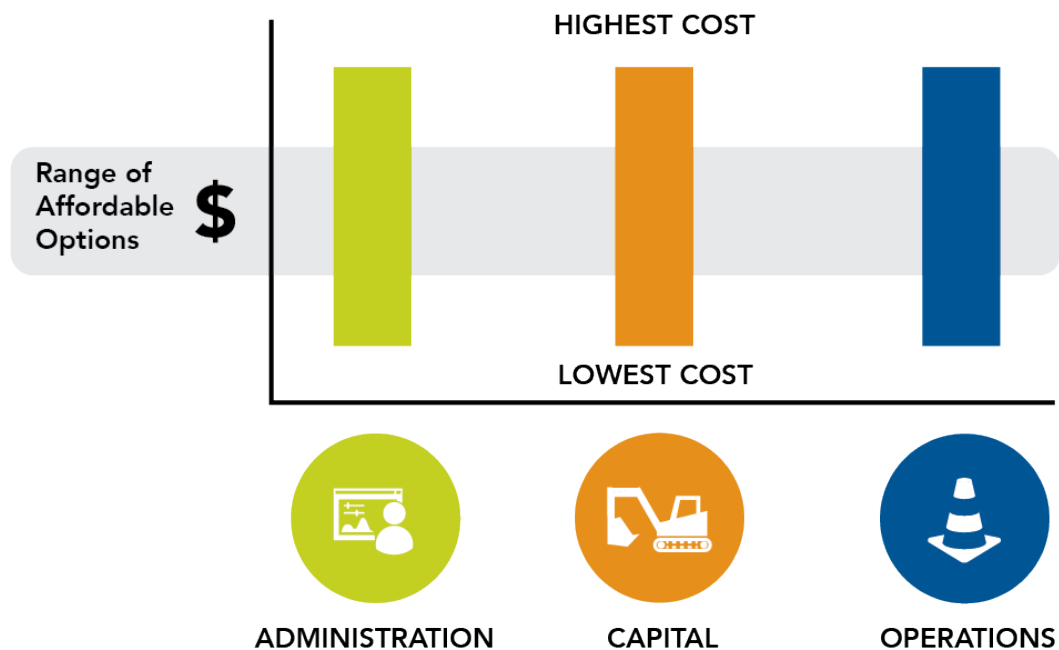
Levels of Service Decisions Affect Affordability

When targeting a LoS (improved services, decreased, or status quo), the Town will also be able to adjust the resources and funds allocated to that LoS. Conversely, decisions about removing or adding a budget mean that the Town is also deciding on a change in service levels. Therefore, LoS decisions are ultimately about desired outcomes and their affordability.

How the Town will use Levels of Service

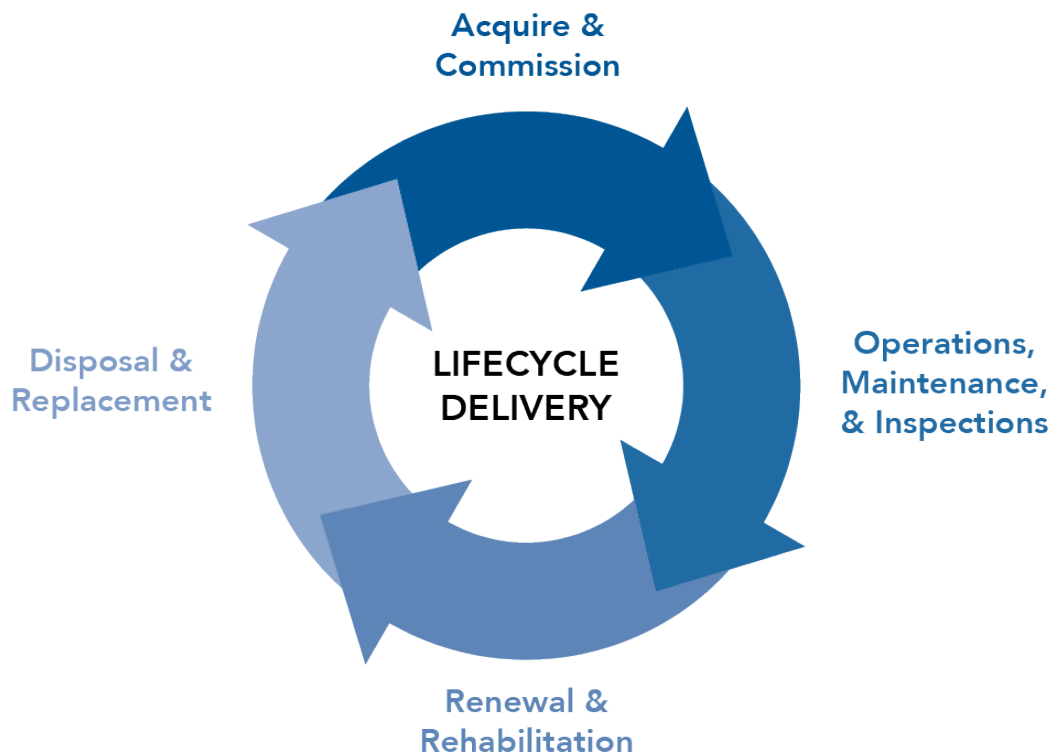
In 2025, the Town and Council will be required by Ontario Regulation 588/17 to define the LoS it wishes to achieve and the funding strategy it will employ for delivering that LoS over time. The Town and Council could simply choose to maintain the status quo of services or funding, or begin to set targets based on the direction set by leaders and customer expectations.

When targets are set, the Town will report on its planned pathway to achieve sustainable funding for that LoS. This process has been started in the Financing Strategy. The figure below shows the relationship between setting service levels and funding strategy:



Lifecycle Activities

Assets go through a series of distinct lifecycle phases from when they are created and eventually disposed of – in each of these, lifecycle activities are conducted and decisions are made about how value is delivered by an asset. This process involves many Town stakeholders who need to be aligned in what constitutes value and how it is achieved. The purpose of lifecycle strategies is to maintain the asset in an appropriate state that will deliver the required level of service for least overall cost, while keeping risk within agreed boundaries. A simplified Town asset lifecycle constitutes the following steps:



Risk

Risk is the potential of gaining or losing something of value. Values (such as services, environmental and community well-being, or financial wealth, etc.) can be gained or lost when acting or not acting in a certain situation with risks or opportunities.

Managing risk means taking a deliberate and structured approach to identifying, quantifying, and responding to risk. The ability to manage risk has the potential to exist at all levels of Town decision making:

Corporate or Strategic Risks - Guide the Senior Leadership Team in policy development. Focus on strategic risks such as events that could limit the Town's ability to achieve Council priorities. Supports senior leadership in decisions on budget allocations between service areas, to minimize risk accepted by the Town.

Service Level Risks – Help directors and asset managers to manage their services by tracking risks to service delivery. These risks are closely linked to Levels of Service and the associated performance measures. Service level risks quantify the likelihood and consequences of not achieving service commitments

Asset Level Risks – Help technical and operational staff make tactical decisions about lifecycle activities for specific assets at specific locations. Each asset provides a given service for a set of customers. The risks of an asset not providing its required service is influenced by its operating context and condition.



Well Equipped and Managed

Strategic risk example:
Provide services that meet existing & future needs.



Service level risk example:
Service availability is impacted by high-demands



Asset level risk example:
2018 watermain break at Water St. railroad crossing.

FUTURE READY

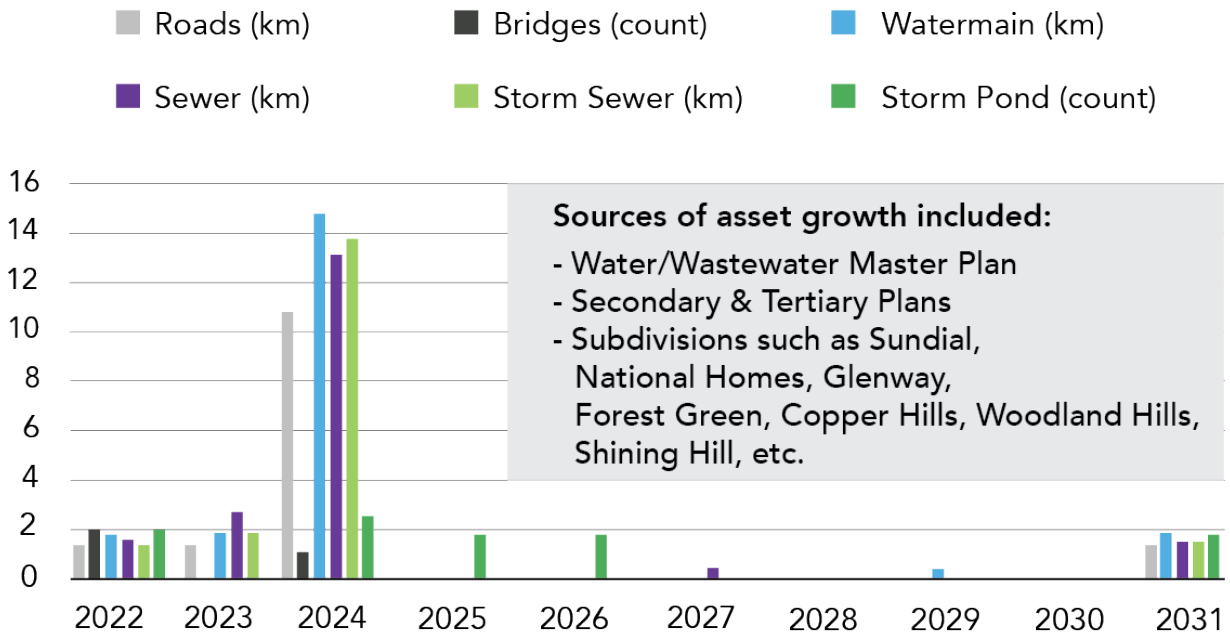
Trends in technology, society, climate and resources can shorten the life of assets and increase total cost of asset ownership. Considering these trends in asset management plans ensures the Town has a path to adequate funding, human resources with the needed skills, and industry networks to prepare for future changes. It can prepare our citizens for higher or lower levels of service; lower or higher rate increases or higher or lower risks of asset failure depending on actions of management.

Growth

Newmarket is poised for growth. The Town’s Census population is expected (pre-COVID-19 projection) to increase by about 8,830 people over the next ten years, reaching about 95,210 by 2028. Population will increase by 11,290 over the next 10 years, reaching 97,670 in 2031. When more or different assets to accommodate this growth are introduced to the town’s portfolio (“growth”), additional human resources, training and funding are required to operate, maintain, repair, and eventually rehabilitate or replace those assets.

Based on current plans and projections, the figure below shows the expected growth in asset quantities:

ASSET GROWTH (NEW OR UPSIZED) FORECAST 2022-2031



By building or assuming new assets, the Town is committing to the full lifecycle of an asset’s service delivery. Once an asset is constructed, it must be operated, maintained, and eventually replaced. For example, streets must be plowed, water infrastructure like hydrants must be serviced, sewers need to be inspected, and drainage features require cleaning. The responsibility for maintenance occurs when the Town assumes constructed assets from contractors or developers. By assuming assets, the Town is acquiring both a new source of service delivery and a set of liabilities that require funding and maintenance.

The level of effort and required resources to maintain growth assets has been quantified based on the total number of assets and a per-unit cost of maintenance.

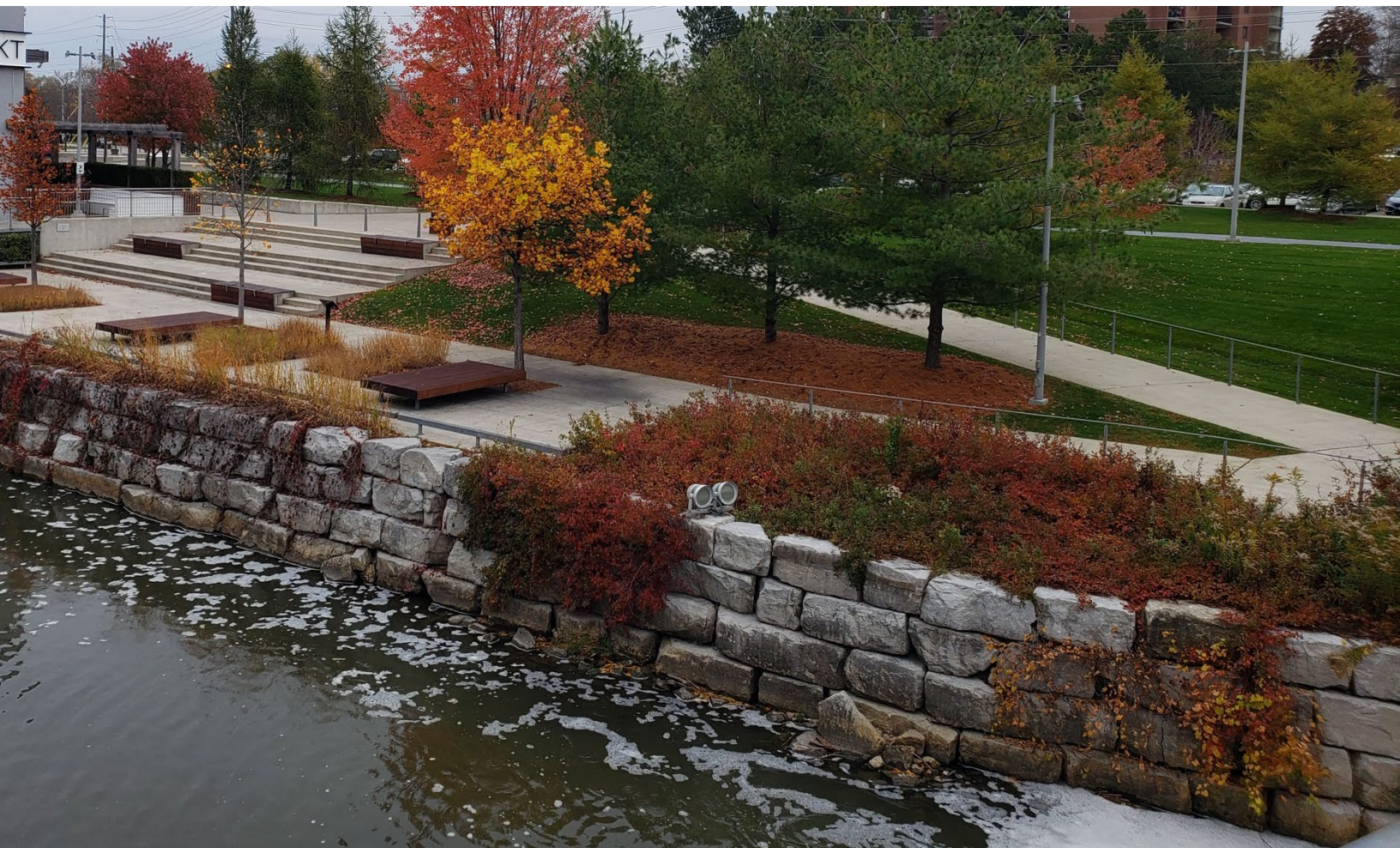
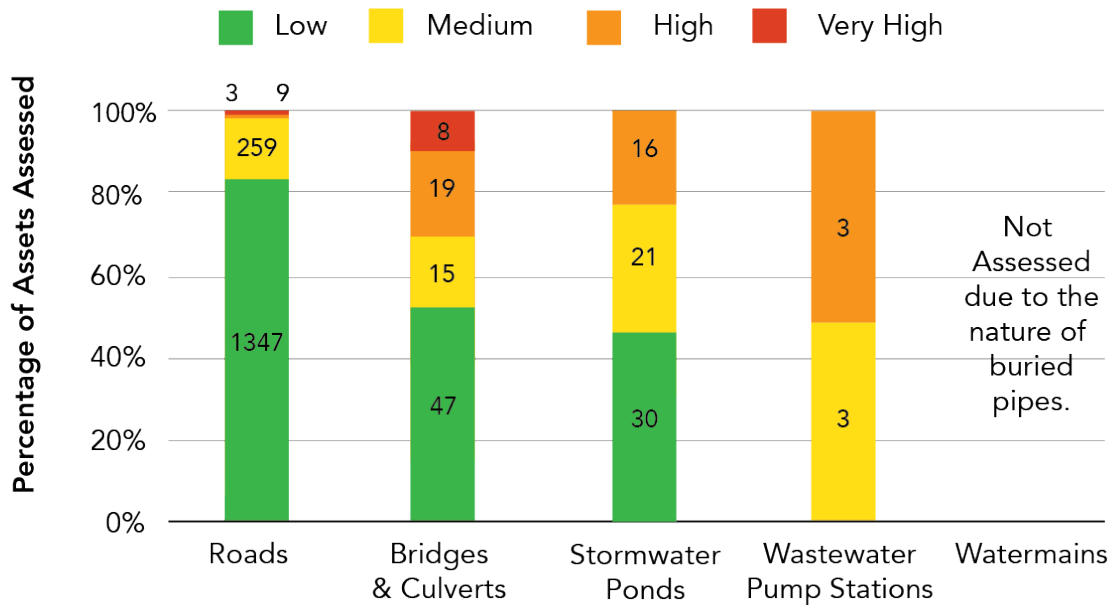
Growth of Core Assets	Operating Impact of Assets 2022 to 2024
Roads	\$248,000
Bridges	\$19,000
Tax Supported Subtotal	\$267,000
Water	\$265,000
Wastewater	\$197,000
Stormwater	\$100,000
Rate Supported Subtotal	\$562,000
Total Operating Impact of Assumed Assets by 2024	\$829,000

Climate Change

On January 13, 2020, the Town of Newmarket declared a climate emergency. This declaration underscores an understanding that climate change can impact all facets of life, including businesses, infrastructure, natural systems, and people’s health and well-being.

The Town engaged the Ontario Climate Consortium (OCC) in June 2019 to conduct a corporate-wide resilience assessment of Town-owned infrastructure. Understanding risks and vulnerabilities is a key first step to inform ongoing and future adaptation and resilience-building efforts. Flood risk has been selected as the focus of this assessment to leverage existing flooding-related data and develop a prototype of an approach that can be replicated in the future for other climate-related risks. Results are summarized as follows:

FLOOD RESILIENCE HAZARD-VULNERABILITY RATING FOR CORE ASSETS INCLUDED IN A CLIMATE CHANGE RESILIENCE ASSESSMENT



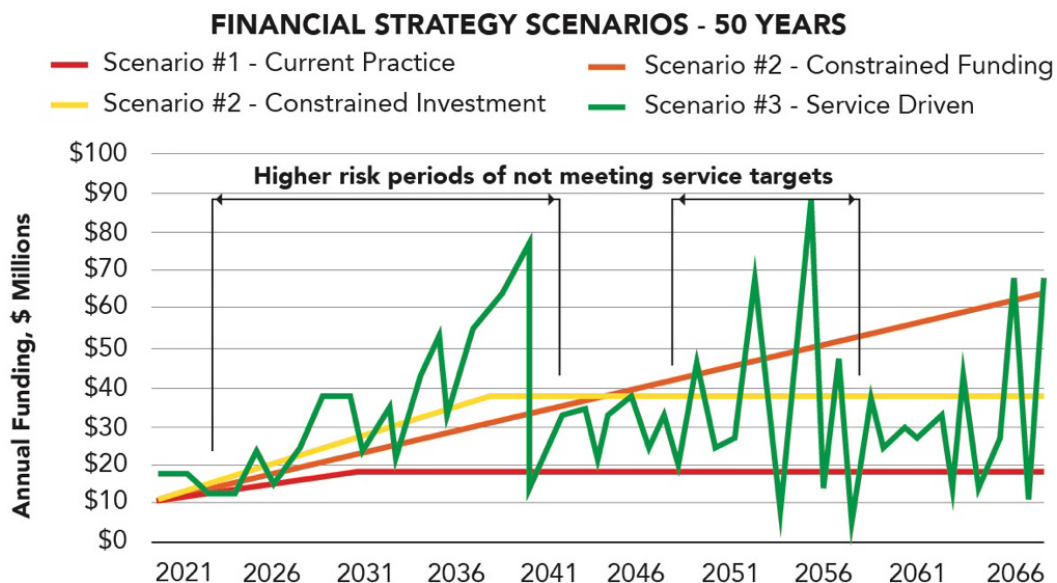
FINANCIAL STRATEGY

The Town of Newmarket has developed a Financial Strategy to evaluate the relationship between current investment levels, service outcomes and risk of service failures. The financing strategy reinforces a long-term perspective of levels of service. It considers required revenues associated with these service levels expectations versus affordability to the community.

The Strategy includes a 50-year financial analysis, forecasted outcomes, and options for managing increasing an infrastructure gap. 10-year plans and further details are provided in each AMP.

The findings of the analysis can be summarized as follows:

- Current service levels enjoyed by the Town are **unsustainable** given current levels of investment.
- Asset condition is forecast to **deteriorate in the near term** without a consistent increase in infrastructure investment and contributions to reserves.
- An **annual increase** in the Town's capital funding is required to achieve desired service outcomes.
- This annual funding increase could be **between +\$1.05M** (Constrained Investment scenario) **to +\$1.964M** (Service Driven Investment), before inflation, to fund increased investment and build the Town's reserves.
- Investment in core assets is recommended to be **+\$1.55M annually, before inflation**. This level of investment still may result in **some risk of service failures** as seen in the graph below.



KEY RECOMMENDATIONS TO ADVANCE ASSET MANAGEMENT MATURITY

Asset management is a continuous improvement process. Through iterations of development and implementation, new asset management capabilities can develop and others can improve.

The development of the core Asset Management Plans is part of a broader implementation of asset management capabilities by the Corporate Asset Management Office (CAMO). These improvements are directed by the Asset Management Policy and the Asset Management Strategy.

Throughout the development of the AMP, 104 recommendations were identified for individual service areas (e.g. roads, water) and support functions (e.g. Finance, IT). Recommendations will be implemented by service areas in accordance with work plans directed by leadership. The CAMO will provide support to those leading the implementations where applicable and monitor progress. Recommendations break down as follows:

34	29	18	23
Administrative Recommendations	Strategic Recommendations	Systems Recommendations	Tactical Recommendations

At the corporate level, broader actions to improve asset management of core assets were identified by the Asset Management Plans.

Implementation of these recommendations will be subject to the direction of the Asset Management Steering Committee. Corporate recommendations for asset management of core assets are:

Know Your Assets Recommendations

- Establish data management practices for core assets such as data owners, formats, collection and reporting frequencies, and links between data and decision making.
- Develop a condition assessment framework that supports asset-owning departments in developing condition scales and data collection programs and practices for their assets.

- Define the need for and develop options for implementing an asset registry tool that can support reporting of the State of the Infrastructure, as well as other functions like Financial Information Return. Options could include software or in-house extract-and-load tools.

Manage Service Delivery Recommendations

- Develop a governance model for AM at all levels of the organization, and clarify roles and responsibilities across the asset portfolios.
- Adopt the levels of service measures (KPIs) developed for core assets, and create processes to support their data collection, reporting, and use in decision making in preparation for 2025 O.Reg. 588/17 requirements.
- Develop Levels of Service targets for measures (KPIs) in the core asset management plans.
- Implement corporate risk management practices as suggested by the core asset management plans, (i.e. Corporate Risk Management Policy & Framework.)

Future Ready Recommendations

- Build greater connections between the planning and asset management processes.
- Advance climate change adaption and resilience policies to guide staff and inform on decision making.

Financial Strategy Recommendations

- Develop funding strategies for proposed Levels of Service targets to meet *O. Reg 588/17* 2025 requirements.
- Look for continuous improvement opportunities to extend the life of assets and prevent early replacement through condition assessments and rehabilitation technologies.
- Develop a strategy to increase capital core asset delivery capacity to deliver on AM Plans.

- Create risk management plans for the upcoming periods where renewal needs will exceed capital reinvestment capacity (e.g. 2024 – 2039).
- Create a reserve management strategy to inform how funds or new revenues are allocated to different reserves with different financial positions and different funding sources.
- Facilitate the defining and quantifying of human resource requirements for core asset lifecycle activities.



CONCLUSIONS

Infrastructure systems like roads, bridges, drinking water, sanitation, and stormwater drainage are critical services in the Town of Newmarket. Assets are the backbone of these services and the community. As the owners of more than \$2 Billion in core assets, the Town will need strong stewardship to secure these investments for future generations.

Current challenges include:

- Deteriorating assets providing service levels that are likely unsustainable;
- New assets that will add operating costs, and the impacts climate change;
- An immediate 10-year infrastructure gap of \$81 Million; and
- Decisions about how to adjust risk tolerance.

With these challenges come opportunity:

1. Asset management is providing visibility to risks and improvement opportunities, allowing the Town to take the proactive measures needed to manage these issues.
2. Asset management will provide alignment across the organization about a common set of business objectives, paving the way for continuous improvement opportunities.
3. New capabilities will be adopted, efficiencies will be developed, and new technologies or processes will be deployed.

These are the opportunities that lie within the immediate risks and challenges the Town faces.

The core asset management plans are a significant milestone but only one aspect of a broad spectrum of asset management practices. Asset management is not a document or a software. It is a way of doing business every day, and a lifelong journey to improve the Town. Through this journey, the Town can truly become *Well Beyond the Ordinary*.

This concludes the Executive Summary.