2025 ASSET MANAGEMENT PLAN

June 2025

Table of Contents

1. Acronyms

AM	Asset Management
AMP	Asset Management Plan
BCI	Bridge Condition Index
CCTV	Closed Circuit Television
DC	Development Charge
ESL	Estimated Service Life
GHG	Greenhouse Gases
IT	Information Technology
LOS	Levels of Service
MMS	Minimum Maintenance Standards for Municipal Highways (O.Reg. 239/02)
NFPA	National Fire Protection Association
NRBCPI	Non-Residential Building Construction Price Index
O.Reg.	Ontario Regulation
OSIM	Ontario Structure Inspection Manual
PACP	Pipeline Assessment and Certification Program
PCI	Pavement Condition Index
SME	Subject Matter Expert
SWM	Stormwater Management
TCA	Tangible Capital Asset

2. Definitions

Active Parks: An “Active Park” is any park that requires infrastructure for the purpose of recreational activities. An example of an active park would include infrastructure such as ball diamonds, playgrounds, soccer fields, courts etc.

Amenities: Amenities are physical features within parks that provide recreation and enjoyment such as ball diamonds, playgrounds, soccer fields, splashpads, skateparks etc.

Arterial Roads: Class 1 and Class 2 highways as determined under the Table in section 1 of Ontario Regulation 239/02 (Minimum Maintenance Standards for Municipal Highways) made under the Municipal Act, 2001.

Asset: Non-financial assets with physical substance that are acquired, constructed, or developed and:

- Are held for use in the production or supply of goods and services for rental to others, for administrative purposes or for the development, construction, maintenance or repair of other tangible assets.
- Have useful economic lives extending beyond an accounting period.
- Are used on a continuing basis.
- Are not used for resale in the ordinary course of operations.
- Beneficial ownership and control clearly rest with the County.
- The asset is utilized to achieve County plans, objectives, and services with the intention of being used on a continuous basis and is not intended for sale in the ordinary course of business.

Asset Category: A category of municipal infrastructure assets that is:

- An aggregate of assets described in each of clauses (a) to (e) of the definition of core municipal infrastructure asset.
- Composed of any other aggregate of municipal infrastructure assets that provide the same type of service.

Asset Management: An integrated approach, involving all organization departments, to effectively manage existing and new assets to deliver services to customers. The intent is to maximize benefits, reduce risks, and provide satisfactory levels of service to the community in a sustainable manner. Infrastructure assets exist to provide customer service to the community; managing assets to deliver those services is a part of asset management.

Capitalization Threshold: This threshold represents the minimum cost an individual asset must have before it is recorded as a capital asset on the Statement of Financial Position. Norfolk County Tangible Asset Policy (POLICY FS-16) established this value at $10,000.

Collector Roads: Class 3 and Class 4 highways as determined under the Table in section 1 of Ontario Regulation 239/02.

Combined Base: A “Combined Base” under Fire & Paramedic Services Buildings is a base that houses both Fire and Paramedic Services response teams.

Community Partners: Entities such as Conservation Authorities, Emergency Medical Services’ organizations, or utility companies where implementation of their mandate or corporate objectives would have an impact on

municipal infrastructure assets in which it is expected the County would be coordinating with them.

Connection-days: The number of properties connected to a municipal system that are affected by a service issue, multiplied by the number of days in which those properties are affected by the service issue.

Consequence of Failure: A measure of the direct and indirect impacts on the County in the event of an asset failure.

Core Asset: Defined by O.Reg. 588/17, any municipal infrastructure asset that is a:

- Water asset that relates to the collection, production, treatment, storage, supply or distribution of water.
- Wastewater asset that relates to the collection, transmission, treatment or disposal of wastewater including any wastewater asset that, from time to time, manages stormwater.
- Stormwater management asset that relates to the collection, transmission, treatment, retention, infiltration, control or disposal of stormwater.
- Road, Structures and Culverts over the span of 3.0m.

Critical Asset: An asset for which the financial, business, or service level consequences of failure are sufficiently severe to justify proactive inspection, rehabilitation, or replacement, and is considered a municipal infrastructure asset.

Cultural Buildings: A “Cultural Building” is a building of historical and/or cultural significance. Examples of cultural buildings in Norfolk County include both Norfolk Arts Centre and Carillon Tower.

Customer: Any person or entity who uses the municipal infrastructure asset or service, is affected by it, or has an interest in it either now or in the future.

Disposal / Decommissioning: Lifecycle activity which involves taking an asset out of service/ use because it has reached the end of its service life and can no longer be utilized.

Estimated Service Life: The duration during which the County foresees the asset being accessible for utilization and operational before requiring replacement or removal. Estimated Service Life is also referred to as Asset Life Expectancy or Useful Life, which is established through the Tangible Asset Policy (POLICY FS-16).

Green Infrastructure Asset: An infrastructure asset consisting of natural or human-made elements that provide ecological and hydrological functions and processes and includes natural heritage features and systems, parklands, stormwater management systems, street trees, urban forests, natural channels, permeable surfaces, and green roofs.

Growth: Planned activities required to extend services to previously unserved areas or expand services to meet growth demands. Planned investments are required to extend or expand these services.

Investment Type: The type of expenditure required related to assets, including investments to support growth, meet levels of service, and lifecycle activities.

Joint Municipal Water Board: A joint board established in accordance with a transfer order made under the Municipal Water and Sewage Transfer Act, 1997.

Lane-Kilometre: A kilometre-long segment of roadway that is a single lane in width.

Level of Service: A description of the municipal service provided through infrastructure assets, that usually reflects attributes that are important to the community—such as the quality, reliability, availability, and safety of the service.

Lifecycle Activity: Activities undertaken with respect to a municipal infrastructure asset over its service life, including constructing, maintaining, renewing, operating, and decommissioning, and all engineering and design work associated with those activities.

Local Roads: Class 5 and Class 6 highways as determined under the Table in section 1 of Ontario Regulation 239/02.

Maintain Current Levels of Service: The current quality and extent of services a municipality provides to its community, used to measure the performance of assets and to set goals for improvement.

Metrics: A measure that indicates how the County is performing, which may be based on Council, service area, or legislated metrics. May also be known as a Key Performance Indicator (KPI).

Municipality: Has the same meaning as defined in the Municipal Act, 2001.

Non-Core Asset: All other assets which are not part of the core asset group per O.Reg.588/17, such as:

- Fleet and Equipment: all licensed and unlicensed vehicles, and equipment owned by the County in multiple divisions with various specializations.
- General Facilities: all buildings owned by Norfolk County.
- Parks and Recreation: amenities within the parks, lakefront assets, natural assets (trees), parks, and specialized equipment related to park assets.
- Stormwater: assets that are not included as part of the core group, such as ditches, municipal drains, and culverts less than 3.0m in span.
- Transportation: assets that are not included as part of the core group, such as guiderails, retaining walls, sidewalks, signage, streetlights, traffic signals and walkways.

Ontario Structure Inspection Manual: The Ontario Structure Inspection Manual (OSIM), published by the Ministry of Transportation and dated October 2000 (revised November 2003 and April 2008) and available on a Government of Ontario website.

Operating Costs: The aggregate of costs, including energy costs, of operating a municipal infrastructure asset over its service life.

Passive Parks: A "Passive Park" is a public area designated as a park but does not contain facilities or equipment for exercise or play. An example of a passive park would include nature parks or greenspaces.

Proposed LOS: The proposed quality and extent of services the County will provide to the community within a defined time period, used to measure the performance of assets and to set goals for improvement.

Renewal: Lifecycle activities involving significant repairs or replacements that are designated to extend or refresh the life of the asset. This includes replacement and rehabilitation.

Replacement Value: Also referred to as “Replacement Cost” and “Current Replacement Value”. The cost the County would incur to completely replace a municipal infrastructure asset, at a selected point in time, at which a similar level of service would be provided.

Risk: The likelihood, probability, and/or consequence of impact resulting from a particular hazard or condition.

Service Life: The total period during which a municipal infrastructure asset is in use or is available to be used.

Shoreline Assets: Assets that relate to management of shoreline lands along the northern shore of Lake Erie that are subject to erosion and flood risks, that may require rehabilitation and/or creation of protective structures if/where they exist, that prevent land loss and damages to adjacent infrastructure (public and/or private).

Significant Operating Costs: Where the operating costs with respect to all municipal infrastructure assets within an asset category are in excess of a threshold amount set by the municipality.

Tangible Capital Assets (TCA): Assets the County owns that have a minimum value, as defined in the Norfolk County Tangible Asset Policy (POLICY FS-16). See Capitalization Threshold.

3. Executive Summary

The County's infrastructure provides the foundation for the economic, social, and environmental health and growth of the community, through the delivery of services. The goal of asset management is to deliver an adequate level of service to the community, in the most cost-effective manner, while managing risk, growth and other factors. This is all documented in this Asset Management Plan. Ontario municipalities are legislatively required to publish an Asset Management Plan.

This plan defines:

- The levels of service proposed to be provided, along with current performance.
- The assets owned to provide those services, and what assets are needed in the future.
- The strategies in place to manage those assets, and the costs associated to properly maintain them both now and in the future.
- Recommendations to improve asset management planning.

Through the implementation of sound asset management strategies, the County can ensure that the infrastructure is managed to sustain the delivery of municipal services, while accommodating growth, aging infrastructure, changing community needs, and fiscal challenges.

This AMP covers the assets used for all County services, categorized into seven Service Areas. For consistency and comparability, asset information is organized and analyzed by hierarchy, provided in Table 3-1.

Table 3-1 Asset Hierarchy

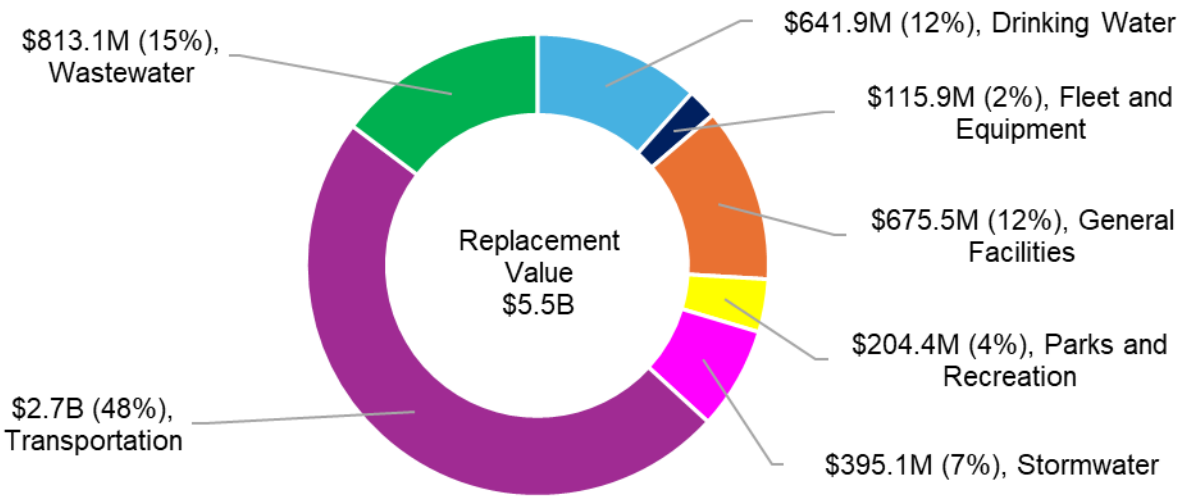
Core Assets				
Service Area	**Transportation**	**Drinking Water**	**Wastewater**	**Stormwater**
Asset Classes	• Roads • Structures	• Vertical • Linear	• Vertical • Linear	• Linear • Treatment & Control • Natural Assets

Non-Core Assets			
Service Area	**Fleet & Equipment**	**General Facilities**	**Parks & Recreation**
Asset Classes	• Equipment • Equipment Fire • Equipment Paramedics • Equipment Transit • Fleet • Fleet Fire • Fleet Paramedics	• Administration Buildings • Building Equipment & Interiors • Fire & EMS Buildings • Heritage & Culture Buildings • IT & Communications • Library Buildings • Long-Term Care Buildings • Miscellaneous Buildings • Parks & Recreation Buildings • Roads Operations Buildings • Storage Buildings	• Amenities • Lakefront Assets • Natural Assets • Parks • Specialized Equipment

*Assets not included at this time are vacant land, Haldimand Norfolk Housing Corporation (included in HN Housing Corporation Regeneration Master Plan, 2021), and Long Point Region Conservation Authority assets.

The figure below shows the overall value and condition of the Norfolk County asset portfolio, and how assets are allocated across Service Areas. Of the $5.5B in assets the County owns, Transportation assets are the largest in total value, and Fleet and equipment the smallest.

Figure 3-1 Total Asset Replacement Values of Norfolk County Asset Portfolio



Asset condition is one important measure for understanding how an asset is performing, and what may be needed in the future. Condition information is best provided by inspection, where an inspector assesses an asset through observations, tests, and measurements. The assets with condition data by inspection are roads, structures (bridges & culverts), and some facilities. As for the remaining assets, age was used to approximate condition, which provides an estimate but can introduce error. This is a data challenge that persists in most municipalities, however, in the absence of observed condition data, age may provide a good indication of when an asset may require replacement or rehabilitation.

The development of a long-term, sustainable financial plan requires an analysis of whole lifecycle costs. The County strives to balance effective lifecycle activities with costs while providing an acceptable level of service. Proposed and current levels of service are defined for each Service Area Plan in this AMP and are focused primarily around the state of good repair. A review of asset conditions, balanced with affordability, will drive decisions concerning service levels in future years.

The net financial summary in this AMP shows:

- The County is currently contributing $32.9 million to levy capital reserves and $7.8 million to rate capital reserves annually to pay for asset renewal projects.
- Given the estimated average annual renewal investments of $56.9 million for tax assets and $17.4 million for rate assets within this AMP, there is currently an annual funding shortfall of $24.0 million and $9.6 million respectively.
- It is recommended that the renewal gap for tax assets be closed over a period of 10 years, by increasing the net levy requirement by 2.5% annually on top of inflationary increases.
- The goal is to remodel rates based on any revised capital plans that will be present at the time of the rate study, while still considering the recommendations for annual renewal needs identified in the AMP. Therefore, there are no recommendations for long-term increases to water and wastewater rates at this time.

- The County has opted to focus the tax and rate increases towards addressing the renewal needs rather than closing the service improvement gap.

The Service Area Plans provide more details on the capital and operating needs for the respective assets used in those areas.

Where gaps exist between needs to provide levels of service and planned investment, options to address gaps include changing levels of service (and subsequent risk), re-allocating funding between service areas, or undertaking financial strategies (e.g., to increase infrastructure funding).

This AMP represents a snapshot in time and is based on the best and most current available processes, data, and information at the County. Asset management planning is a strategic and dynamic process that requires continual improvement and dedicated resources. Using the framework published in the International Infrastructure Management Manual (6th edition), recommendations have been developed to guide the continuous refinement of the County's asset management program.

These include:

- Levels of Service Framework
- Asset Financial Planning and Management
- Managing Risk and Resilience
- Developing Asset Management Lifecycle Strategies
- Analyzing the Strategic Direction
- Continual Improvement

The evaluation of the above items and further development of a data-driven, best-practice approach to asset management is recommended to ensure the County provides optimal value through management of infrastructure and delivery of services.

With the development of this plan, Norfolk County has achieved compliance with Ontario Regulation 588/17 related to the requirements for July 1, 2025, and the County will continue to develop and implement its asset management practices in line with the commitments of the Asset Management Policy.

4. Introduction

This Asset Management Plan (AMP) describes an approach to effectively plan for the investments in the various asset portfolios to meet strategic outcomes and to continue to deliver services into the future. This plan replaces all previous AMPs which were developed in 2014, 2016, 2023, and 2024.

4.1 Purpose

This AMP has been drafted in compliance with Ontario Regulation 588/17. It is a comprehensive, strategic document outlining how the assets are to be managed over a 10-year planning horizon (and beyond) to provide service delivery objectives.

The process of developing an AMP fosters a long-term perspective that enables capital and operational sustainability and efficiency. It seeks to achieve the following outcomes:

- **Commitment and Consistency**: Committing the County to support the implementation of asset management methods that are consistent with goals and objectives while ensuring consistency of the practices implemented.
- **Transparency and Accountability**: Provide transparency and accountability to stakeholders regarding the decision-making processes of Council and staff, which combine strategic plans, budgets, service levels, and risk.
- **Stakeholder Communication**: Communicate the endorsed asset management principles and approach to stakeholders.
- **Service Sustainability & Affordability**: Embed asset management principles to ensure a sustainable approach to service delivery that delivers optimal value for stakeholders while maintaining affordability.

4.2 Scope

The assets included in this AMP are categorized under the following service areas:

1. **Transportation**
2. **Drinking Water**
3. **Wastewater**
4. **Stormwater**
5. **Fleet & Equipment**
6. **General Facilities**
7. **Parks & Recreation**

Within the context of O.Reg.588/17, core assets are defined as roadways, bridges, culverts, water, wastewater, and stormwater assets, and non-core assets are all other assets.

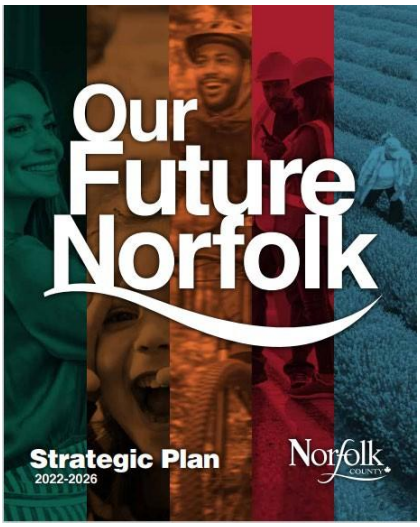
In accordance with the requirements of O.Reg.588/17, all County assets[1] are included within the scope of this AMP, which includes both core and non-core assets. Core and non-core assets are not differentiated in the Service Area Plans as the lens of the information and discussions is about all the assets needed to provide the whole service.

[1] Assets not included are vacant land, Haldimand Norfolk Housing Corporation (included in HN Housing Corporation Regeneration Master Plan, 2021), and Long Point Region Conservation Authority assets.

The AMP is divided into the main body, Service Area Plans, and additional supporting or background information in the Appendices. Each Service Area Plan outlines the Levels of Service, State of the Infrastructure, Lifecycle Management Strategy, and resulting financial needs.

This AMP covers all the services provided by Norfolk County and aligns with Our Future Norfolk, the Council Strategic Plan areas of focus are:

- Empowering Norfolk
- Building Norfolk
- Connecting Norfolk
- Serving Norfolk
- Sustaining Norfolk



The document consists of a series of chapters that include the following sections:

Levels of Service

- Defines the current performance for each asset category. The metrics outline the quality, reliability, and safety expected from the assets.
- Specifies measurable indicators (e.g., pavement condition, bridge load capacity used to assess the level of service).

State of the Infrastructure

- Provides a high-level inventory and insights on the overall age, condition, replacement value, and key metrics of the assets owned.

Lifecycle Management

- Describes the strategies for managing assets throughout their lifecycle including planning for construction, maintenance, rehabilitation, and eventual replacement/disposal.
- Outlines the total lifecycle cost for managing all assets within the portfolio to provide proposed levels of service.

Financial Summary

- Summarizes the financial investments needed to provide proposed levels of service.
- Describes the financial constraints and limitations and the risks related to asset performance, safety, and financial sustainability associated with not funding the levels of service identified.

4.3 Norfolk at a Glance

Norfolk County is a large, rural, single-tier municipality with several urban centers, and underwent restructuring in 2001 to incorporate several local communities. These communities include various townships and the six urban centres of Courtland, Delhi, Port Dover, Port Rowan, Simcoe, and Waterford.

Norfolk County covers over 1,600 square kilometers of land and boasts 142 kilometers of Lake Erie shoreline. Norfolk County is home to approximately 67,500 residents who reside in rural and urban areas. These unique demographics significantly influence how the County delivers services and this AMP, combined with the strategic plan, seeks to address these challenges.

4.4 Assumptions and Limitations

This AMP was developed based on the best available information and by employing professional judgement and assumptions to address gaps where necessary.

Where gaps or opportunities were identified, they have been included in the improvement plan. An overview of the assumptions made for the purposes of this AMP are summarized below:

- The scope of this AMP covers the assets owned by Norfolk County.
- Service improvement to an asset is generally not included in the replacement costs.
- The cost of climate change has not been included in replacement costs identified in this AMP. Unexpected events such as severe storms attributed to climate change can cause immediate infrastructure replacement/renewal needs not identified in this AMP. Also not included are the likely effects that climate change will have on the estimated service life of assets.
- Current Replacement Values are reflective of 2025 costing[2] estimates for assets.
- This AMP assumes that the current operating budget is sufficient to meet current operating needs and maintain current levels of service.

[2] Using Non-Residential Building Construction Price Index (NRBCPI) inflation factor to Q4 2023.

5. AMP Structure & Methodology

Despite the legislation and published guidance, there are many interpretations of methods to preparing a municipal AMP. This section provides background on the structure of this AMP and the methods behind its development.

5.1 State of the Infrastructure

The State of the Infrastructure section provides a quantitative assessment of the infrastructure owned by the County. The primary objective is to provide a high-level inventory and insights on the quantity, overall age, condition and replacement value.

The information is developed based on existing data and documents that were assessed for data confidence and discussed with County Subject Matter Experts (SMEs). A detailed breakdown of the state of infrastructure for all assets can be found in the Service Area Plans in this AMP.

Reporting the County's inventory is required from O.Reg.588/17, but the regulation does not prescribe specific quantitative requirements regarding the asset inventory, such as the number of assets, condition, or monetary value that are required. Rather, the regulation prescribes that each municipality must document, communicate, and update that inventory information. The emphasis is on having a structured and transparent record of asset information, not on meeting externally defined thresholds or benchmarks.

5.1.1 Asset Register

The asset register was developed by County staff, pulling information from multiple sources to compile the required information for asset management planning. Required information includes:

- Asset Identifier
- Installation Date
- Current Replacement Value
- Estimated Service Life
- Condition
- Asset type specific information

The resulting asset register, or inventory, provides the basis for the analysis completed for the AMP including State of the Infrastructure, Levels of Service, and Lifecycle Management Strategies.

5.1.2 Current Replacement Value

Current Replacement Value is the all-in cost including engineering, labour costs, materials, and studies (where applicable) to replace an asset in today's (2025) dollars.

All replacement costs are based on the cost to replace the asset with the exact same asset and do not take into consideration growth, technological changes, or enhancements, unless where identified.

The methodology used in determining the Current Replacement Values of assets included:

1. Original Installation Costs inflated using the Non-Residential Building Construction Price Index (NRBCPI).
2. Asset Specific Costing using a detailed assessment of the asset's components based on typical replacement costs.
3. Unit Costing which consists of dividing the total costs by a unit metric.

Variables such as growth/service enhancement possibilities such as expansion of roads, change in material used, or inclusion of bike lanes and other factors are considered service enhancements and/or growth-related

accommodations, which are included in budget forecasting initiatives where available, but are not considered in replacement costs of current assets.

5.1.3 Estimated Service Life

Estimated Service Life (ESL) in asset management planning refers to the anticipated duration over which the County foresees the asset being accessible for utilization and operational before necessitating replacement or removal. This estimate may be based on a variety of factors such as design specifications, historical performance data, maintenance practices, environmental conditions, and technological advancements.

The purpose of estimating service life for asset management planning is to enable organizations to allocate resources for maintenance, repairs, replacements, and new acquisitions over the course of the asset's lifecycle. It allows for budgeting long-term capital expenditures through replacement planning, risk management, optimizing maintenance and performance evaluation.

For the purpose of this AMP, the values used for estimated service life were derived from the County's Tangible Capital Assets Policy (Policy FS-16, Asset Life Expectancy List). Where these values were not available, typical values from similar agencies or industry best practices were used.

5.1.4 Asset Condition

Assigning condition ratings to assets across each asset category using a consistent rating scale is a crucial step in asset management. By using standardized scales, Norfolk County can facilitate benchmarking with other Canadian municipalities and gain insights into the overall condition of its assets regardless of the asset category.

Condition rating scales consist of a numerical or categorical value that represents the condition of the assets. Where condition assessment data was available, these condition values were used to derive the condition rating scale.

Where assessed condition was not available, the asset condition was determined based on its age compared to its estimated service life. This assessment involves categorizing the percentage of remaining life into different condition categories, as outlined in Table 5-1.

Table 5-1 Condition Rating Scale

Life Remaining (Age/ESL)	Condition	Description
>85%	**Very Good**	The asset is well maintained, in very good condition, new or recently rehabilitated.
60-85%	**Good**	The asset is in good condition. It is acceptable and generally within the mid-stage of its expected service life.
30-60%	**Fair**	The asset may require attention. The asset shows signs of deterioration, and some elements exhibit deficiencies.
0-30%	**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.
Past Estimated Service Life	**Very Poor**	Sustained service is at risk. It is beyond its expected service life and may show widespread signs of advanced deterioration of condition, quality, or performance, including financial performance. Some assets may be unusable, and risk of failure is increased.

An asset that has exceeded its service life is designated as Very Poor. Assets considered to be in a state of good repair are those that have not reached their estimated service life.

5.2 Levels of Service

Levels of Service (LOS) are measures for what the County provides to its customers, residents, and visitors. They support the County's strategic goals and are derived from customer needs and expectations, Council objectives, policies, legislative and regulatory requirements, and standards, along with the financial capacity of the municipality to deliver those LOS.

The proposed levels of service reported in the AMP were derived through consultation with County staff, review of approved County initiatives, and consideration of LOS metrics prescribed in O.Reg.588/17 — the regulation requires that the AMP must include current levels of service determined in accordance with qualitative descriptions and technical metrics published within the regulation itself.

Reporting the County's levels of service is required from O.Reg.588/17, but the regulation does not prescribe specific quantitative requirements regarding minimum levels of service. Rather, the regulation prescribes that each municipality must document, communicate, and update that information, and connect it to lifecycle and financial planning. The emphasis is on having a connected and transparent framework, not on meeting externally defined thresholds or benchmarks.

Levels of service provide the platform for all lifecycle decision-making. Defining levels of service establishes the baseline for rationalizing the County owned infrastructure, the lifecycle activities required to sustain that infrastructure, and the costs of those activities, while managing risk.

Discussions in the AMP are based on delivering on the commitments made to providing proposed levels of service. The time horizon for these forecasts is the next 10 years, as required by legislation. Costs and lifecycle strategies to maintain current levels of service are also included, as required by legislation.

The LOS section for each Service Area provides metrics that support the provision of the respective service for each of the asset groups. O.Reg.588/17 has prescribed LOS metrics to be considered for core assets and does not prescribe metrics to be considered for non-core assets.

5.2.1 Defining Proposed Levels of Service

Service levels are not defined on an ad hoc basis, but instead they are evaluated carefully, taking into account various options, associated costs, financial sustainability, and potential risks. Staff regularly examine opportunities to adjust service levels by:

- Monitoring asset performance trends and patterns,
- Assessing the evolving conditions under which assets must operate, including climate change, shifting demand, and new usage patterns,
- Considering community feedback,
- Engaging with industry peers,
- Aligning with master plans and strategic direction,
- Analyzing lifecycle cost trends,
- Reviewing input from consultants, audits, Council, and other sources, and
- Evaluating risk exposure.

Council approves new service levels only after these factors are considered, typically through staff reports, planning documents, studies, or other formal recommendations. The proposed LOS included in this AMP are

drawn from:

- Council-approved initiatives that introduced different service levels,
- Capital projects in the 10-year forecast that represent new or expanded service levels,
- Infrastructure investments tied to community growth, and
- Findings from state of good repair assessments and forecasts.

To define proposed LOS, workshops involving staff from Service Areas, Asset Management, Finance, SLT, and Council were held to review the options, metrics, and current performance, how the proposed LOS compare to current levels, their feasibility, achievability, and their affordability. Documentation of these sessions is maintained by the Asset Management team.

Service level metrics are based on both statutory requirements and internal indicators that reflect the County's service delivery. These metrics are continuously refined to more accurately capture the quality and scope of services, as asset management practices mature across the organization.

5.3 Asset Lifecycle Management Strategies and Risk

To enable municipal assets to perform as expected to provide proposed levels of service, it is important to establish a lifecycle management strategy to proactively reduce and manage asset deterioration.

Over time, asset condition and performance deteriorate. Asset deterioration has a negative effect on the ability of an asset to fulfill an intended function, such as storm pipe sufficiently conveying stormwater or a fleet vehicle reliably operating to transport staff and materials. Deterioration may lead to increased costs, risks, and service disruption. Therefore, understanding and planning for the deterioration process is a foundational part of asset management. The rate of deterioration depends on a range of factors, which are considered in how assets are planned, procured, and managed. These may include:

- Asset characteristics such as material or size.
- The environment in which assets are installed or exposed to, such as soil type in the case of pipes.
- Use and operation such as traffic or visitor flows, frequency of cycling on or off, or seasonal use.

5.3.1 Lifecycle Activities

A lifecycle management strategy attempts to manage or even reduce asset deterioration. This begins before the assets are purchased or built, by planning long-term needs based on forecasted demands throughout an asset's lifetime and then extends to the end of an asset's life, when assets become obsolete or are no longer effective for providing a service. During this lifecycle, there are intervention activities that may be available to extend the life of an asset, such as rebuilding a motor or re-lining a sewer or water pipe.

The types of lifecycle activities are further described in this section. It should be noted that:

- Some lifecycle activities are common across all the asset categories, based on principles of state of good repair, or industry leading practices, which are described below. Specific lifecycle activities that are tailored to asset categories are described in the Service Area chapters in this AMP.
- When feasible, the County strives to coordinate and synchronize work across multiple assets or asset categories, which can result in cost and service efficiencies. With significant projects, the County also strives to optimize asset use and redundant capacity, often achieved through risk-benefit-cost analysis.
- The integrated approach is iterative with data informing workflows and updates throughout systems to ensure consistency, ongoing visibility of asset condition and continuous improvement.

In order to promote financial efficiency, consideration is continually given to alternatives so that the County strives to apply lifecycle activities that are done for the lowest cost. For example, the County applies roads surface treatment as interventions on candidate roads, that extends the road's service life and reduces overall

lifecycle costs. The County also began outsourcing that program as the contractor was able to deliver the same amount of treatment at a lower cost than using internal resources.

Non-Infrastructure Activities

These are activities that do not involve directly 'touching' the infrastructure, but rather are actions, initiatives, studies, programs, or policies that can lower costs, reduce wasted capacity/redundancy, extend service lives or ensure appropriate sizing/suitability of needed assets. Activities include strategic plans, models, demand analysis, demand management programs, conservation programs, usage restriction policies, or coordinated capital projects, for example.

Operations and Maintenance

These activities involve operation, minor maintenance, and monitoring of the assets, including regularly scheduled inspection or minor repairs due to unexpected events or breakdowns. Funded through capital and operating budgets, maintenance is pivotal, as assets spend much of their life in this stage of the lifecycle, generating significant costs in inspection, planned maintenance, and requiring response to unplanned events influenced by a wide variety of factors.

Effective operational and maintenance practices present opportunities to enhance value, extend service life and minimize risks to service delivery. As such, Norfolk County is investing in industry standard techniques to inform of asset condition that will allow for adoption of a more proactive approach to repairs and capital renewals of infrastructure to reduce instances of unplanned maintenance events and failures impacting residents.

County staff regularly inspect assets using industry standard practices and technology to identify any risks to asset condition and subsequent service delivery. This approach supports early identification and resolution of risks to asset operation. Major maintenance needs are identified through prescribed maintenance of the assets, and through inspection programs.

Renewal Activities - Rehabilitation and Replacement

Renewal includes replacement and rehabilitation activities. Replacement activities are expected to occur once an asset has reached the end of its service life and rehabilitation is no longer an option. As performance of an asset declines, it begins to periodically require rehabilitation and replacement to ensure their capability to provide service delivery. County staff engage in comprehensive, risk-based planning processes aligned with leading practices to identify the condition of the assets through inspection programs which inform investment planning and decision making. The process for targeting rehabilitation and renewal of an asset consists of assessing needs on an annual basis.

Disposal Activities

These are activities associated with permanently taking an asset offline or disposing (and not replacing) an asset once it has reached the end of its service life and is otherwise no longer needed. These are also referred to as removals or decommissioning. In some cases, when an asset has reached its end of life, it may be necessary to dispose of it, rather than replace or renew it. The determination as to whether the asset can be renewed or must be replaced is informed by the inspection process and other investigations or studies. In the event disposal of the asset is required, County staff work to ensure the safe removal of the asset in accordance with regulations and environmental policies.

5.3.2 Lifecycle Options

Developing and implementing a lifecycle strategy helps staff continually check which activities to perform on an asset and when they should be performed to maximize service life at the lowest total cost of ownership, while providing proposed levels of service. Within each lifecycle category, there are a wide range of options to choose from, which may yield different results, costs, and risks.

The County employs a combination of lifecycle activities to provide proposed levels of service while striving to optimize costs based on defined risk. They are selected, reviewed, and continually modified based on an understanding of a wide variety of factors, including:

- **Constraints:** Current limitations, operating conditions, budgets, and environment
- **Climate**: The changing climate and its potential impacts on municipal assets and services
- **Industry Pulse:** Industry benchmarking, staff training, professional networking, online reviews, or other lifecycle options
- **Recommendations:** From consultants, audits, or other sources
- **Testing:** Trial and error through scenarios and pilot programs
- **Lifecycle**: The stage of the lifecycle of the assets
- **Risks**: Associated with lifecycle strategy options

The lifecycle activities regularly applied to provide proposed levels of service are described in the Service Area Plans. The cost of carrying out these activities, and therefore the cost of providing proposed levels of service, is the baseline of the calculations.

The County strives to progressively improve approaches to lifecycle management to secure outcomes for sustainable service delivery, as well as deliver value for money investments in assets.

5.3.3 Risk Considerations

In accordance with the service levels presented, the County manages a variety of risks associated with the services delivered through the assets. Asset risk pertains to the performance of assets, which can be estimated through physical condition, capacity, quality, and financial efficiency. Examples of the types of risks managed includes:

- **Corporate Risk and Liability:** Exposing the County to legal liability
- **Environmental:** Causing adverse effects to the natural environment
- **Financial:** Resulting in financial losses or inefficient expenditures
- **Legislative:** Failing to comply with relevant legislation
- **Level of service**: Not meeting the service commitments to the community
- **Operational:** Disrupting operations or introducing inefficiencies
- **Public health:** Affecting the health of the community
- **Public safety**: Jeopardizing the safety of the community or staff
- **Reputational**: Risks that can negatively impact the local community or other jurisdictions in the County

The County is committed to actively identifying, acknowledging, mitigating, and adapting to risks associated with potential asset failures, encompassing physical, capacity, quality, and financial efficiency issues. Wherever feasible, performance is continuously monitored, and lifecycle activities are implemented to pre-empt failure, mitigate risks, and prolong the asset lifespan.

Drawing from an understanding of failure modes and potential risks, while also considering costs and service levels, lifecycle activities are chosen and applied to assets, provided there is adequate budget and staff capacity for the planned work.

Each Service Area Plan delineates the selected lifecycle strategies, asset failure modes, and the associated

risks being addressed. The lifecycle strategies applied to provide proposed LOS, and the related risks being managed, are also described.

If funding proves to be insufficient to support the proposed levels of service, the County evaluates lifecycle investment priorities on a case-by-case basis. Any associated risks are actively managed, with further details provided in the individual Service Area chapters.

5.3.4 Criticality

The County factors in the size of risks when making asset decisions, considering both inherent qualities and qualitative aspects. For instance, risks stemming from asset failures range from minor inconveniences like traffic delays due to road deficiencies to severe threats such as endangering public health due to unavailable emergency vehicles or poor water quality.

While many municipalities typically adopt a 'worst-first' approach to infrastructure spending, focusing on fixing assets in the poorest condition regardless of their criticality, it is recognized that not all assets carry the same level of importance. Some assets present a higher risk to service delivery if they were to fail. Considering asset risk and criticality is pivotal in both short- and long-term planning.

A risk of the "worst-first" approach without assessing criticality is that financial resources may be limited or not available for more critical infrastructure projects if funding is used to maintain non-critical infrastructure. The County has already delved into assessing criticality and will continue to refine it in future AMPs. This involves linking the probability of asset failure to performance data, defining, and maintaining scores for the consequences of failure, and utilizing resulting risk scores to prioritize maintenance, renewal strategies, particularly for the most critical assets.

5.3.5 Financial Forecasting

Proposed levels of service define lifecycle management strategies, which in turn dictate the needed asset investments over the 10-year planning horizon required for a compliant AMP. A forecasting tool was used for the preparation of the AMP, however, County staff have already implemented more sophisticated forecasting into some asset categories.

Rather than forecasting with more generalized asset management tools, infrastructure funding shortfall calculations for roads, facilities, and shoreline assets in this AMP have been informed by the related detailed studies for these assets:

- Roads – Roads Needs Study 2023
- Facilities – Building Condition Assessments 2022
- Shoreline Protection Assessment Report – 2023

Reporting the County's financial needs is a requirement of O.Reg.588/17, but the regulation does not prescribe reinvestment rates, minimum funding, or maximum shortfalls. Rather, the regulation prescribes that each municipality must document, communicate and plan for its financial needs. The emphasis is on having a connected and transparent fiscal information, not on meeting externally defined thresholds or benchmarks.

5.4 Data Quality

Asset areas with high data maturity grades can be considered to have the best possible accuracy, as they will be based on the best available information to support the analyses. Conversely, the analysis results for areas with low maturity grades may be less accurate and subject to change as better data becomes available.

Data maturity is based on an evaluation of data completeness and data confidence, as illustrated in the following framework shown in Table 5-2. The data maturity grade is taken as the lower of the completeness and confidence grades.

Table 5-2 Data Maturity Framework

Maturity Grade	Completeness	Confidence
A - Very High	Key data fields for asset management are complete within 5%.	Data based on sound records, procedures, investigations and analysis, documented properly and recognized as the best method of assessment.
B - High	Key data fields for asset management are complete within 10%.	Data based on sound records, procedures, investigations and analysis, documented properly but has minor shortcomings, for example some data is old, some documentation is missing and/or reliance is placed on unconfirmed reports or some extrapolation.
C - Medium	Key data fields for asset management are complete within 25%.	Data based on sound records, procedures, investigations and analysis which is incomplete or unsupported or extrapolated from a limited sample for which grade A or B data are available.
D - Low	Key data fields for asset management are complete within 50%.	Data based on unconfirmed verbal reports and/or cursory inspection and analysis.
E - Very Low	Key data fields for asset management are less than 50% complete.	None or very little data held.

5.4.1 Results

Table 5-3 provides a summary of the data maturity assessment for all the Service Areas included within the AMP.

Table 5-3 Data Maturity Summary

Service Area	Data Quality		
	Completeness	Confidence	Overall Maturity
Transportation	B	B	**B**
Drinking Water	B	C	**C**
Wastewater	A	C	**C**
Stormwater	E	D	**E**
Fleet and Equipment	D	B	**D**
General Facilities	C	D	**D**
Parks and Recreation	E	D	**E**

Corresponding recommendations to improve data quality are included in the recommendations in Section 9.

6. Drivers

Like many Ontario municipalities, Norfolk is on a path of growth and improvement, while being challenged in social, economic, and environmental realms. These changing conditions drive the County to do better and strive for continuous improvement, while balancing costs, levels of service and risk.

6.1 Asset Management Challenges

The demand for services though infrastructure will change over time and will challenge the ability to provide proposed service delivery and assets, including factors related to:

- Growth
- Level of Service Changes
- Inflation and Financial Resources
- Staff Capacity
- Changing Climate
- Aging Infrastructure
- Changing Legislation
- Resilience and Risk

The County must continue to stay informed and ahead of changing services and service needs across the community. Therefore, staff stay connected to internal, local, and industry trends and pressures while Council stays tuned into constituents and County activities. These factors and drivers may pose pressures on the available budgets and must be considered and included in the asset planning process going forward.

6.1.1 Growth

Monitoring key growth drivers allows the County to plan effectively for new infrastructure and the upgrade or disposal of existing infrastructure. Changes in demand can affect the required assets and service levels.

Population and employment forecasts help to quantify changing demand on infrastructure. DCs help to fund projects that are triggered by an increase in population. The growth-related infrastructure needs in Norfolk County's Development Charges Background Study are derived through a structured process based on forecasted residential and non-residential growth over a planning horizon. The study uses a ten-year period for general services and a longer 23-year horizon for engineered services like water and wastewater. Population, housing, and employment forecasts form the basis for identifying service level requirements, which are then compared to historical service levels (a legislated ten-year average) to determine what additional infrastructure is needed to maintain or improve levels of service for a growing community.

Capital needs are identified by each service area through master plans, engineering reports, asset management plans, and staff input. Once gross capital costs are established, deductions are made for portions of projects that benefit existing development or are funded from other sources like grants or existing reserves. The remaining net costs, deemed to benefit future growth, are eligible for recovery through development charges. This ensures a fair allocation of infrastructure costs between current and future residents and businesses.

Population and Employment Forecast

Growth in Norfolk County is expected to continue and will impact the services provided as well as the assets required to deliver these services.

As required in O.Reg.588/17, current[3] and forecasted[4] population and employment forecasts, from StatsCan and the County's Official Plan respectively, are shown below

Table 6-1 Population, Households and Employment Forecasts, Official Plan

Forecast	2021	2036
Population	67,490	70,900
Households	27,595	29,450
Employment	NA	24,750

As can be seen in the table above, Norfolk's population is expected to increase, affecting demands on all services. Based on the new growth forecasts, growth study, and the Norfolk County Official Plan, the highest growth areas are forecasted to be the fully serviced, urban areas, including Delhi, Simcoe, Waterford along with to some extent Port Dover. It should be noted that Bill 23, *More Homes Built Faster Act (2022)* may impact growth funding, potentially resulting in additional costs.

Table 6-2 Population and Employment Forecasts[5], DC Background Study

Population	2016	2051	Annual Growth Rate
Low Scenario	66,400	84,900	0.7%
Reference Scenario	66,400	88,800	0.8%
High Scenario	66,400	92,700	1.0%

Employment	2016	2051	Annual Growth Rate
Low Scenario	23,400	31,200	0.8%
Reference Scenario	23,400	32,600	1.0%
High Scenario	23,400	34,100	1.1%

[3] Norfolk County 2021 Census, Profile table, Census Profile, 2021 Census of Population - Norfolk County, City (CY) [Census subdivision], Ontario (statcan.gc.ca)
[4] https://www.norfolkcounty.ca/media/35xnhjc4/norfolk-county-official-plan.pdf
[5] Long Term Growth Analysis Report by Watson & Associates 2021

Assessing Growth-Related Asset Needs

Growth triggers the need for more assets and the need for additional funds to purchase and maintain these new assets to sustain the current levels of service the community experiences. Planning for forecasted population growth may require an expansion of the existing asset portfolio and services, and addition of new assets.

The capital needs for growth-related infrastructure projects are forecasted in the most recent *Development Charges Background Study (2018)* and are referred to within this AMP. The DC Background Study is a legislated exercise where needs related to growth are quantified on an asset-by-asset basis.

The DC Background Study provides insights into the potential affordability of new assets; however, the County's growth needs have significantly evolved since the DC Background Study was last completed in 2018. As a result, certain growth estimates included in the Service Area plans differ from the recoverable portion of projects included in the Study.

The County is expecting to commence an update to the DC Background Study prior to the publishing of the next version of the AMP, which will ensure that the assumptions used in the AMP are based on the most current data available. It is expected the estimate of growth-related funding to be raised through the collection of development charges will change significantly after completing this exercise.

Planning for Growth Expenditures

Norfolk County's Capital Plan provides a high-level projection of capital costs for a 10-year time period. Capital earmarked for growth-related projects has been compiled and included within each Service Area Plan. To fund operating increases due to growth, the County considers DC projections as growth projects are built out. It is anticipated that the increased costs from operating and maintaining new assets once they are purchased will be at least partially offset from the growth in taxes from the new residents and other entities that develop in Norfolk. More about costs related to growth projections can be found in **Section 8**.

6.1.2 Changing Level of Service Expectations

Achieving new service levels established in various asset master plans often necessitates investments to acquire new assets or modify existing assets. In the future, as master planning exercises unfold, it will become essential to recognize changes in service levels, fully define fiscal impacts, and subsequently incorporate these adjustments as proposed service levels within the AMP. The cumulative costs associated with the implementation of the recommendations across all master plans should be considered in budgeting, and master plans should provide clear guidelines regarding the sequence in which plan elements are to be implemented.

Infrastructure decisions in master plans should be made with full knowledge and understanding of financial capacity and asset lifecycle awareness. The relationship is established from organizational objectives to the levels of service needed to achieve them and the work required on the assets to sustain the levels of service and the costs of doing that work.

The County aims to provide high-quality services to our residents and businesses. Asset management helps the County monitor asset performance and service levels and identifies areas for improvement through the use of metrics and KPIs to make informed, data-driven decisions to enhance service delivery and customer service.

6.1.3 Inflation and Financial Resources

The rising cost of goods and services is adding additional strain on the budget for infrastructure projects. Post-pandemic inflation is exerting significant pressure on efforts to maintain infrastructure. The surge in inflationary pressures has escalated the costs associated with materials, services, labour, and construction, making routine maintenance and upgrades more financially burdensome.

Like many municipalities, the County faces budget constraints and limited funding for infrastructure projects. Asset management helps the County optimize the allocation of limited resources by identifying the most critical assets and prioritizing investments based on their condition, performance, and expected lifecycle costs.

6.1.4 Staff Capacity

The ability of County staff to design, procure, and construct the operating programs and capital projects limits the ability to deliver the asset lifecycle work that is required. The County should stay aware of the capacity, ability, and engagement of staff to ensure the retention of their valued employees, and supplement more by increasing staff accordingly.

6.1.5 Changing Climate

In December 2020, Council unanimously approved the *Norfolk County Climate Change Adaptation Plan (2021)* to address local climate risks and vulnerabilities. The primary goals of the plan are to reduce GHG emissions and increase the resiliency to the impacts of current and future projected climate conditions (such as flooding, extreme weather events, and extreme heat) on residents, businesses, natural and built infrastructure.

This AMP creates an avenue to implement this plan successfully. Using the framework of this AMP, staff will continue to define levels of service metrics that will begin to reflect effort, effects, or resiliency related to climate change, and be able to discuss information about resulting impacts, risks, costs, and lifecycle adjustments related to climate change and sustainability.

6.1.6 Aging Infrastructure

Despite the work done to date to maintain assets in a state of good repair, not all assets have been fully addressed, and there is an ongoing need for maintenance, repair, or replacement. Asset management helps the County prioritize these investments based on the condition and performance of existing assets.

6.1.7 Changing Legislation

The County must comply with a wealth of provincial and federal legislation, including those related to infrastructure, environmental protection, and public safety. Asset management helps the County monitor, adapt, and plan for infrastructure investments to meet changing legislative requirements, and helps check that assets are properly maintained to avoid costly penalties or legal issues.

6.1.8 Resilience and Risk

The County is vulnerable to various risks, including natural disasters, climate change impacts, and infrastructure failures. Asset management assists in identifying and mitigating these risks by recognizing asset vulnerabilities, implementing resilience measures, and developing contingency plans to ensure continuity of services during emergencies.

Asset management plays a critical role in helping effectively manage their infrastructure assets, prioritize investments, comply with regulations, and deliver high-quality services to residents and businesses.

6.2 Stakeholder Engagement

Stakeholder engagement, informing and consulting the public and other interested parties, is a key component of our planning processes and supports the County in developing plans and strategies that meet the needs of the community and stakeholders.

The *Strategic AM Policy* states:

> *"The ultimate goal of the County is to efficiently provide its various stakeholders with the municipal services they need within the bounds of regulatory requirements, the built environment, and the natural environment. In order to achieve this goal, it is necessary that the County understand the needs of current stakeholders, consider the needs of future generations, and incorporate these perspectives into asset management planning. The County recognizes them as an integral part of the asset management approach. Accordingly, the County will:*
>
> *Provide opportunities for residents and other stakeholders served by the County to provide input in asset management planning; and coordinate asset management planning with other infrastructure asset owning agencies such as neighbouring municipal bodies and local utilities."*

Engagement with stakeholders directly informs our organizational goals and creates the basis of effective strategy development. These engagement activities will be delivered through a broad range of vehicles including the *EngageNorfolk* public engagement platform. Stakeholder engagement that is occurring for County initiatives often contains input that is valuable in long-term asset investment planning. Relevant input is communicated to and considered by the Asset Management Team. As the asset management practices continue to develop, more intentional and public input may be sought out. A public engagement workplan has been developed.

The AMP is publicly available on Norfolk County's website. Background and supporting information are also available upon request through the *Freedom of Information Requests* process.

6.2.1 Service Users

The County has identified user groups based on key services delivered. The service users have been categorized in two groups:

1. Service users living in the communities where services are offered such as the local residents of Norfolk County.
2. Transient stakeholders who access the services in the area on a more temporary basis, such as visitors to Norfolk County.

The County engages service users through a range of methods, both formal and informal, to inform operational improvements and strategic planning, including formal stakeholder consultation, surveys, and notifications.

6.2.2 Service Delivery Partners

Norfolk County's partnerships and relationships with external parties are important to providing proposed service delivery. The County relies on partnerships to aid in the delivery of services and improvements to assets. The County values partnerships and recognizes the benefits of collaborative work to secure safe and effective delivery, incorporate leading practices and techniques, and achieve efficiencies in delivery. Examples of our service delivery partners include contracted parties, local government authorities, and local private utilities.

6.3 Alignment with Other Plans

The County is engaged in a wide range of planning processes designed to meet legislation, strategic objectives and communicate the approach to planning for successful outcomes on multiple initiatives. As many of these planning processes have implications on assets, it is important that the commitments made with these plans are fully integrated within the AMP. The adopted AM Policy encompasses the legislated requirements, and related commitments and principles of asset management planning at the County.

Some Norfolk County assets are managed or shared through partnerships, boards, or other arrangements; those include:

1. Long Point Region Conservation Authority
2. Haldimand Norfolk Housing Corporation
3. Norfolk County Public Library

Planning for these assets is a shared responsibility and is covered under separate asset management planning documents[6].

6.4 Ontario Asset Management Legislation

Under the Infrastructure for Jobs and Prosperity Act, 2015, the province published Regulation 588/17 'Asset Management Planning for Municipal Infrastructure' (O. Reg.588/17) in December 2017. *Our Future Norfolk, the Council Strategic Plan*, has shaped the development of a fully compliant Asset Management Policy, adopted in June 2019, and this AMP.

Appendix B demonstrates where legislated requirements can be found within the AMP.

Staff also remain aware of asset management impacts from other legislative changes, such as the recent changes in how stormwater and sanitary systems are permitted and regulated by the Province through compliance approvals.

[6] With the exception of Norfolk County Public Library, whose assets are included in this AMP Document.

7. Overall State of the Infrastructure

Norfolk County owns a diverse portfolio of assets that allows service delivery to the community. These services are provided by seven service areas that are responsible for the day-to-day operation and management of specific asset portfolios. The following section provides an overview of the assets used by each service area as well as the overall condition of our asset portfolio.

Figure 7-1 shows that the current replacement value of the Norfolk County asset portfolio is approximately $5.5 billion.

Figure 7-1 Total Replacement Value by Service Area

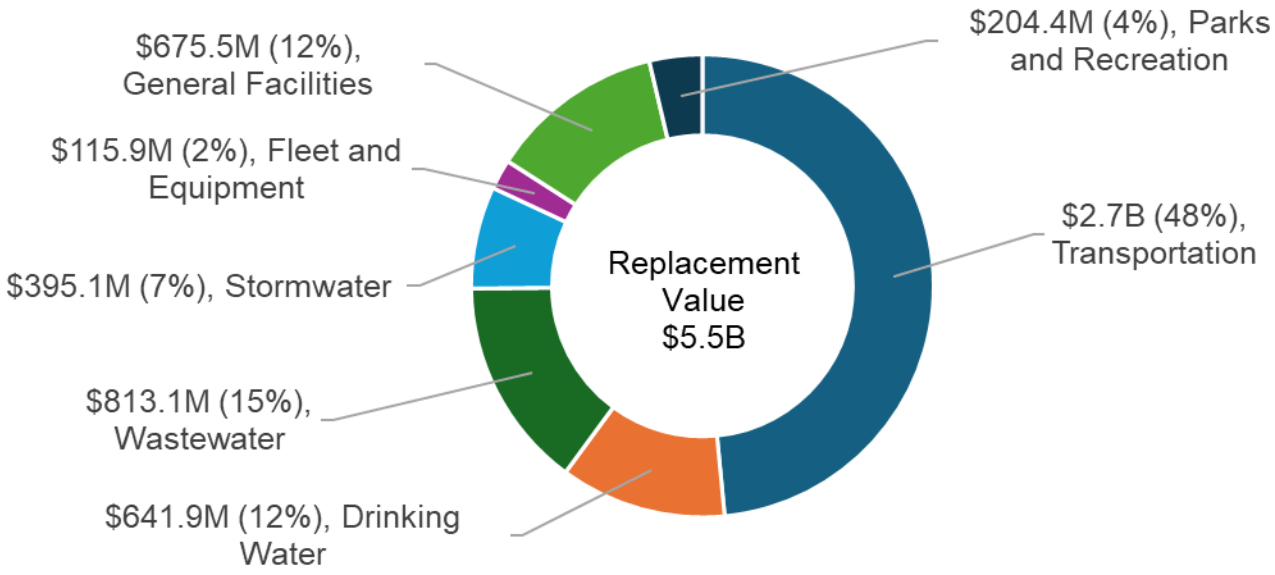
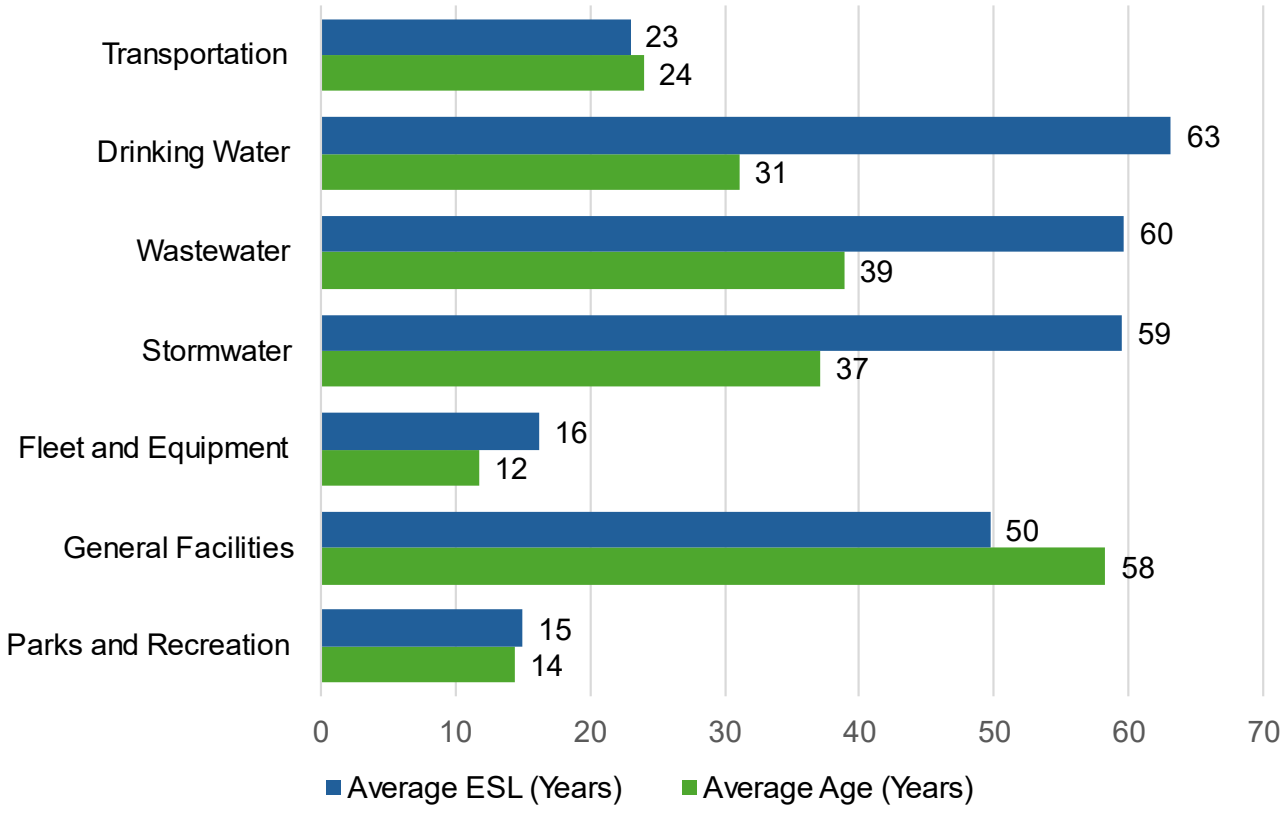
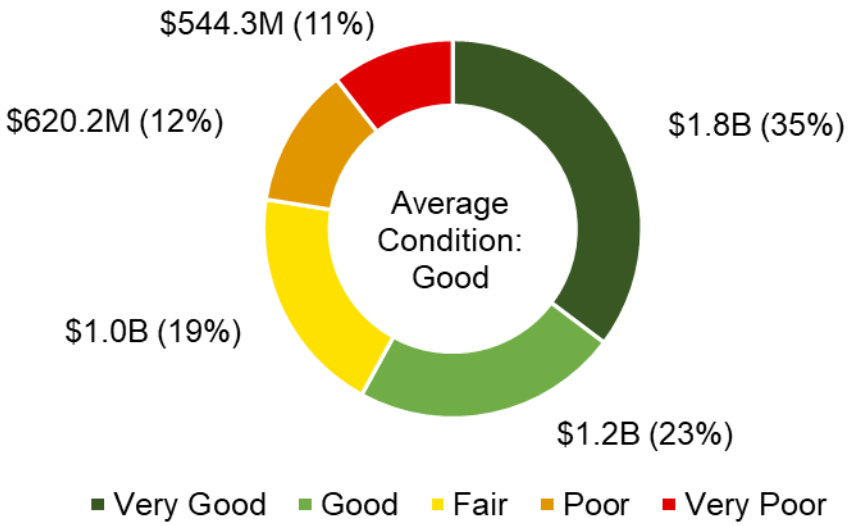


Figure 7-2 Average Age and Average ESL by Service Area



The overall condition distribution is provided in Figure 7-3.

Figure 7-3 Overall Condition Distribution of All Assets



Important facts about the assets:

77% ($4.0B)	Are in Fair or Better condition and have sufficient data to derive a condition rating.
23% ($1.2B)	Are in Poor or Very Poor condition and require significant investment to reduce the number of assets that fall within that condition rating.
($352.7M)	Have no condition data available (missing installation dates and/or estimated service life).

This illustrates that lifecycle management strategies employed to maintain assets have been effective in ensuring that the assets continue to deliver the desired level of service.

8. Financial Strategy

8.1 Key Takeaways

The County is currently contributing $32.9 million to levy capital reserves and $7.8 million to rate capital reserves annually to pay for asset renewal projects.

Given the average annual renewal investment of $56.9 million for levy assets and $17.4 million for rate assets estimated to deliver the proposed levels of service within this AMP, there is currently an annual funding shortfall of $24.0 million and $9.6 million respectively.

It is recommended that the funding shortfall for levy assets be closed over a period of 10 years, by including a dedicated 2.5% increase to the net levy requirement annually over this time for contributions to levy capital reserves.

As it relates to water and wastewater assets, the goal is to remodel rates based on any revised capital plans that will be presented at the time of the rate study, while still considering the recommendations for annual renewal needs identified in the AMP. Therefore, there are no immediate recommendations for long-term increases to water and wastewater rates, and the most recently communicated rate forecast is still the recommended path forward.

The County has opted to focus the levy, and rate increases towards addressing the renewal needs, however it should be noted spending on service improvement is still expected and will need to be funded by a mix of other sources.

8.2 Introduction

The findings of an asset management plan should be integrated into capital planning processes to be effective. The County's AMP includes financial details such as the estimated cost of lifecycle activities for all assets, the funding projected to be available to pay for those costs, and an overarching financial strategy in this section.

The financial strategy will identify the net cost of projects that will be required over the next 10 years in order to deliver the proposed levels of service in this AMP. This result can then be compared to the existing 10-Year Capital Plan to:

- Identify any infrastructure gaps.
- Update future iterations of the 10-Year Capital Plan accordingly so Council is aware of the full scope of activities required to deliver the proposed levels of service.
- Determine how much more funding will be needed to pay for those costs. This can then be compared to the projected funding available to determine the funding shortfall and establish a strategy for how that shortfall will be managed.

The guiding regulation O.Reg. 588/17 includes the following requirements about the financial strategy:

> *S.6(1)4. every asset management plan…must include…an explanation of the options examined by the municipality to maximize the funding projected to be available…and if, based on the funding projected to be available, the municipality identifies a funding shortfall for the lifecycle activities…an explanation of how the municipality will manage risks associated with not undertaking any of the lifecycle activities.*

In simpler terms, staff interpret the above legislation to mean that the financing options required to support the lifecycle needs of the municipality's infrastructure should be considered and described in this AMP. As a result, an AMP should include options to stretch or optimize the use of available funds — such as adjusting service levels, phasing capital work, leveraging grants, increasing user rates, or reallocating budget priorities.

Secondly, if the projected funding is insufficient to cover the forecasted lifecycle costs, which is the case for the County, the AMP must also identify the shortfall and provide a risk-based explanation of how the County will manage the consequences of deferred or reduced investment, such as increased maintenance, potential service disruptions, or accelerated asset deterioration. This ensures transparency in financial decision-making and accountability for managing infrastructure risks in a fiscally constrained environment. A summary of these analyses is covered in this section, as well as the risk management considerations related to the funding shortfall in each Service Area section.

The financial strategy must determine a path forward that closes the funding shortfall. This can be done through a number of actions, such as reducing service levels, but after all other actions, projected funding must be maximized to close the remaining shortfall. While staff will continue to prioritize seeking grants and other forms of alternate or external funding, the main appropriate source of funding available to municipalities to pay for infrastructure is contributing property taxes and/or user rate revenues towards capital projects (or into reserves for future capital projects).

As a result, having taken Council's feedback on the proposed levels of service throughout this AMP, to avoid the risks of not upholding them, the outcome of this financial strategy will be a recommended phased-in change to property taxes to deliver the proposed lifecycle activities.

8.3 Legislative Considerations

In order to promote financial efficiency and remain compliant with Section 6(1)(4) of the O.Reg., consideration has been given to the following:

- Alternatives investigated to ensure the lifecycle activities being undertaken are done for the lowest cost.
- Ability to maximize projected funding across sources including:
    - **User fees**: user fees could be increased.
    - **Debt**: while debt is generally not preferable for funding renewal projects, the use of debt could be utilized.
    - **Development Charges**: in conjunction with the completion of this AMP, staff are undertaking an update to the County's Development Charges Background Study to ensure DC rates are set at an appropriate level that captures the cost of the applicable growth.
    - **External recoveries**: staff are more commonly exploring community partnerships as of late, with the new Community Led Initiatives process, and accepting donations to accelerate the timeline of certain projects.
    - **Grants**: staff continuously monitor available external funding programs for municipalities and prioritize applying to infrastructure streams wherever possible to minimize the County-funded portion of planned projects.

8.4 Asset Renewal Needs

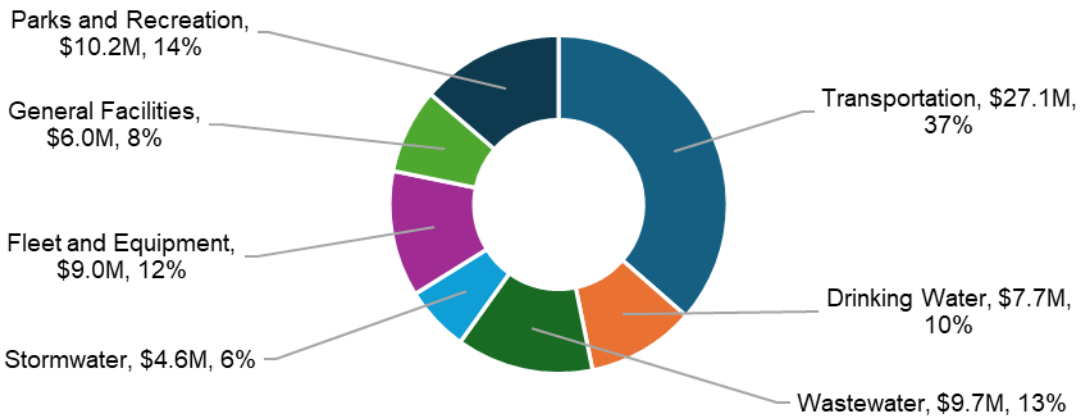
8.4.1 Spending

The average annual renewal investment represents the estimated amount the County needs to spend to meet the non-infrastructure, rehabilitation, replacement, and disposal activities that are planned to deliver the proposed level of service in each service area. This applies to the assets the County already owns, plus the

costs needed to start planning for the lifecycle replacement of any new assets following their acquisition.

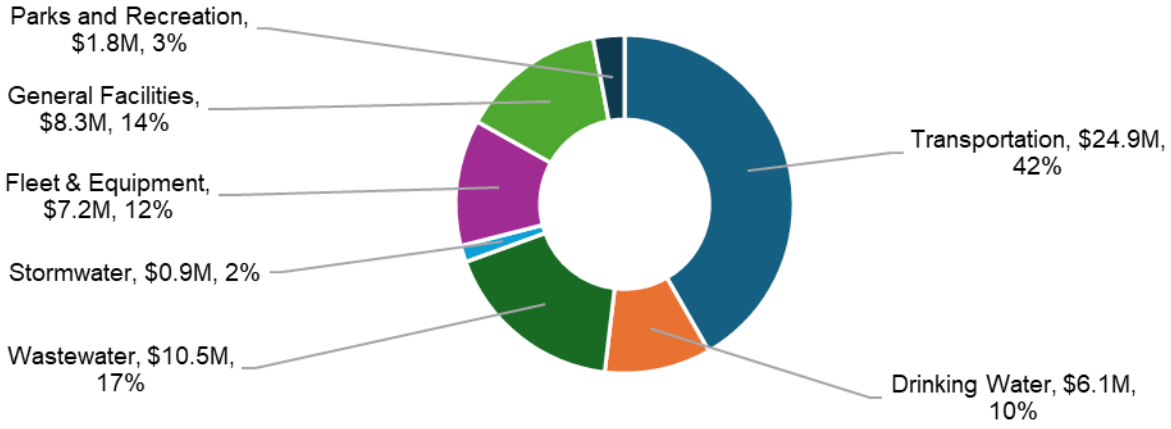
In total, the County's average annual renewal investment required is $56.9 million for levy assets and $17.4 million for rate assets. The summary of annual renewal investment need by service area is provided in Figure 8-1.

Figure 8-1 Average Annual Renewal Investment Need



By comparison, the County's most recent capital forecast is the Final 2025-2034 Capital Plan, which includes an average of $43.2 million for levy assets and $16.6 million for rate assets in spending annually for these project types. The summary by service area is provided in Figure 8-2.

Figure 8-2 Average Annual Planned Spending from the 2025-2034 Capital Plan

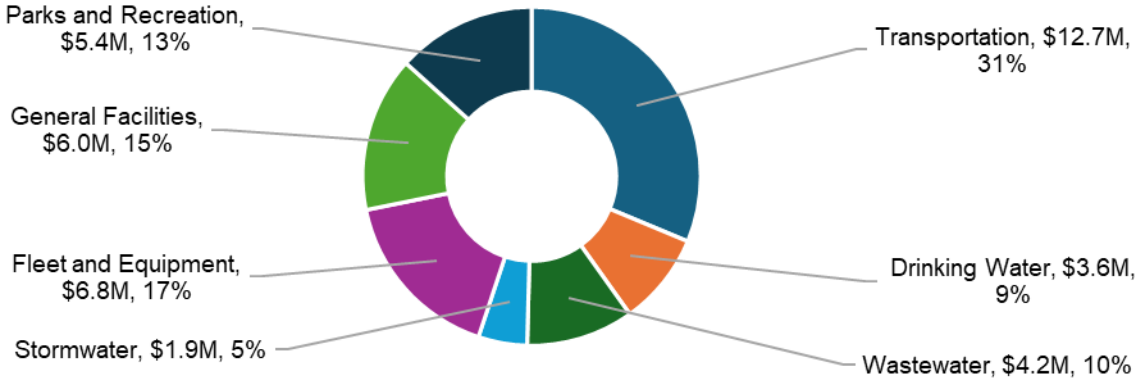


Overall, there is a difference between the most recent forecast and what the AMP finds is required to deliver the proposed levels of service, totaling approximately $13.7 million annually for levy assets and $0.8 million for rate assets. Future iterations of the 10-Year Capital Plan will use the data from the AMP to integrate the required spending on a project-by-project basis. This will significantly improve the County's capital planning processes by taking a longer-term view of lifecycle needs and ensuring that all renewal activities are identified in advance of the end of life for existing assets.

8.4.2 Funding

At the time of this report, the County contributes $32.9 million annually to levy capital reserves that fund service areas that are in-scope for the AMP, plus $7.8 million annually to rate capital reserves. Reserves are the ideal tool for funding renewal projects because they allow the County to build up a balance for major works and have that money ready to pay for those future projects, as well as maintain a balance for all planned work in-year or any emergency works that arise. Furthermore, having residents contribute to building up a balance to replace the asset over the course of its service life is generally considered to be an equitable capital financing principle, as the cost burden of restoring the asset to a good condition is borne by the users who wore down the original asset and received its benefit in the first place. As a result, best practice for municipal financial sustainability includes making annual capital reserve contributions equal to at least the planned level of spending on renewal projects. The summary of reserve contributions is provided in Figure 8-3.

Figure 8-3 Average Annual Contribution to Renewal Reserves



Given the average annual renewal investment of $56.9 million for levy assets and $17.4 million for rate assets above, there is currently a funding shortfall of $24.0 million and $9.6 million annually, respectively. The summary of funding shortfall is provided in Table 8-1.

Table 8-1 Summary of Average Annual Funding Shortfall

Service Area	Average Annual Renewal Investment	Reserve Contributions*	Annual Funding Shortfall
Transportation	$27.1M	$12.7M	$14.4M
Stormwater	$4.6M	$1.9M	$2.7M
Fleet & Equipment	$9.0M	$6.8M	$2.2M
General Facilities	$6.0M	$6.0M	$0.0M
Parks and Recreation	$10.2M	$5.5M	$4.7M
Levy Assets Subtotal	**$56.9M**	**$32.9M**	**$24.0M**
Drinking Water	$7.7M	$3.6M	$4.1M
Wastewater	$9.7M	$4.2M	$5.5M
Rate Asset Subtotal	**$17.4M**	**$7.8M**	**$9.6M**
Total	**$74.3M**	**$40.7M**	**$33.6M**

*Only includes approved 2025 levy contributions to levy capital reserves for services in-scope for the AMP and approved 2025 rate contributions to rate capital reserves. In practice, the County has other contributions that help fund renewal projects such as CCBF and OCIF funding, rate contributions to the Roadway Construction Reserve, Legacy Fund withdrawals, and contributions to out-of-scope services (e.g., Drains, Land, Library, and Social Housing).

8.4.3 Plan

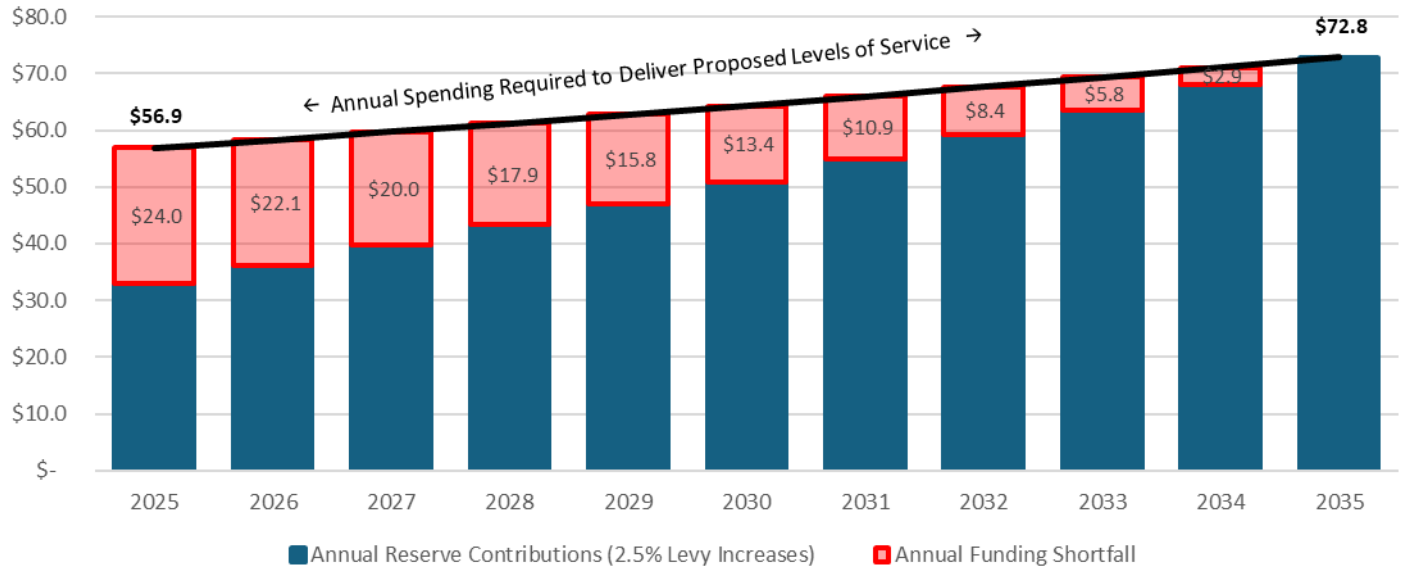
Levy-Related Services

In order to close this funding shortfall and remain compliant with O.Reg. 588/17, staff are recommending the following strategy to close the gap.

Regarding levy services, it is estimated that an annual property tax increase of 2.5% dedicated to in-scope capital reserves over the next 10 years should be sufficient to close the renewal funding shortfall, meeting the County's proposed 2035 Service Levels. In simpler terms, if this recommendation is approved, a Council Approved Initiative equivalent to a 2.5% increase to the net levy requirement will be included in each of the next 10 Proposed Levy Budgets, before any other Levy Budget items are considered.

By adopting this financial strategy, levy capital reserve contributions should grow to $72.8 million in 10 years, which is the estimated annual spend required to deliver the levels of service proposed in this AMP at that time, and the funding shortfall will be closed if all other assumptions remain consistent. A visualization of how the funding shortfall will be closed is provided in Figure 8-4.

Figure 8-4 Closing the Annual Levy Funding Shortfall ($ millions)



The figure above highlights the information described in previous sections of this financial strategy; the County's annual levy capital reserve contributions ($32.9M in 2025, shown by the blue bar) are not sufficient to fund the annual renewal spending required to deliver the levels of service proposed in this AMP ($56.9M in 2025, shown by the black line), resulting in an annual funding shortfall ($24.0M in 2025, shown by the red bar). While upcoming 10-Year Capital Plans will strive to meet these spending targets, in reality the 10-Year Capital Plan will likely not look exactly as uniform as the figure above given real-world constraints such as project manager capacity causing peaks and troughs in spending. Regardless, if the average funding shortfall is not addressed, the result of underinvesting in renewal projects leads to deterioration of assets and increased risk to the County.

The funding shortfall could be closed by a one-time increase of approximately 19% to the net levy requirement in 2026 with inflationary increases thereafter, to avoid substantially all asset risk. However, in the interest of taxpayer affordability, the shortfall is instead recommended to be closed over a period of 10 years and other funding options will be leveraged to minimize the risk of underinvestment during this period.

Some of these other funding options the County can leverage include:

- External financing sources such as the annual allocations of $4.3 million from the Canada Community Building Fund and $6.4 million from Ontario Community Infrastructure Fund are generally used on capital renewal projects.
- Seeking out application-based funding opportunities for levy capital renewal projects where available.
- An annual withdrawal of $2 million from the Legacy Fund, and an annual contribution from the rate budget are currently being made to levy capital reserves.
- Investment income and operating surpluses may arise on an annual basis which can be prioritized for levy capital renewal projects.
- Debt may be used to fund levy capital renewal projects where deferral is not recommended due to the increased risk it would impose on the County.

These sources cannot be reliably planned for in a long-term financial strategy, however these one-time injections of funding can help bridge the shortfall until levy capital reserve contributions reach a sufficient level.

Rate-Related Services

Due to the significant uncertainty of the County's water & wastewater capital plans and the general complexity of rate modelling, there are no immediate recommendations being made in this financial strategy pertaining to rate-related services. A rate study is planned in the near future which will consider the renewal needs identified in this AMP. The goal is to remodel rates based on any revised capital plans that will be presented at the time of the rate study, while still considering the recommendations for annual renewal needs identified in the AMP. The most recently communicated rate forecast is still the recommended path forward until the adoption of a new rate study.

8.4.4 Forecasting Considerations

Throughout the phase-in period, variables may change. For example, future updates to the AMP, new projects revealed through master planning exercises, other changes to the net levy requirement, or construction cost inflation rising faster than assumed could cause changes to the requirements for delivering the proposed levels of service. In order to ensure the financial strategy works as designed, the progress of closing the funding shortfall should be reviewed annually.

Specifically, this means that while a 2.5% annual increase to the net levy requirement over 10 years is forecasted to be sufficient, the forecast will have to evolve as variables from today's point-in-time snapshot in the AMP evolve too, and this could lead to the shortfall being closed faster or slower than anticipated.

8.5 Growth and Service Improvement Needs

Although staff generally try not to conflate the management of existing assets with growth and/or service improvement, O.Reg. 588/17 mandates that AMPs must include the scope of growth. Specifically, the legislation includes the following section as it relates to the financial strategy:

> *S.6(1)6. every asset management plan…must include…for municipalities with a population of 25,000 or more, as reported by Statistics Canada in the most recent official census…estimated capital expenditures and operating costs to achieve the proposed levels of service…in order to accommodate projected increases in demand caused by population and employment growth…and the funding projected to be available.*

8.5.1 Growth-Related Infrastructure

The County's *DC Background Study* (2018) and corresponding DCs represent the County's ongoing response to projected population and employment growth, ensuring that infrastructure keeps pace with new development demand. Over the next 10 years, Norfolk County anticipates significant investments in growth-related infrastructure to support new development. While the County is developing a new DC Background Study as of the time of publishing this AMP, the previous DC Background Study includes the following capital expenditures:

- $45.2 million for Roads and Related Services, of which $2.9 million is growth-related after accounting for benefits to existing development and available reserves.
- For Fire Services, $5.1 million is expected in gross capital needs, with $1.1 million considered growth-related.
- Library Services anticipate $3.9 million in gross costs, with $1.1 million recoverable through development charges.
- Parks and Recreation will require $66.4 million in gross investments, but only $2.3 million is DC-eligible.

- Smaller allocations include $145,000 for administrative studies, $189,000 for ambulance services, and $544,000 for marina expansions.

Although not included in the 10-year horizon, major investments are also expected for water and wastewater infrastructure, including $60.8 million and $59.8 million in gross capital costs respectively, with net DC-eligible amounts of $24.6 million for water and $14.3 million for wastewater after deductions.

8.5.2 Growth-Related Operating Costs

As it relates to operating costs, the AMP assumes operating costs required to deliver the proposed levels of service are sufficient. In other words, they are fully funded and there is no funding shortfall for operating costs. The need for operating costs may evolve depending on how the County follows through on delivering its service levels over time though. For example, if the County increases a SOGR service level in this AMP and has the resourcing to implement it, the costs required for minor maintenance carried in the operating budget might decrease. Conversely, if the resources are not available to implement it, the capital work may not be completed in a timely manner and more frequent maintenance may be required. Specifically, these considerations increase as the County grows, because existing resources become stretched to continue delivering that same level of service, unless the resources grow with the population.

The DC Background Study also estimates that new infrastructure needed to support growth should be supported by approximately $147,500 per year in incremental operating costs across all eligible services. This includes added expenses for staffing, utilities, maintenance, and other costs once new assets are in place. Notably, water services are expected to require an additional $76,900 annually, wastewater services $39,800, and parks and recreation services $7,600. Other services such as fire protection, library, and ambulance will contribute smaller operating cost increases. Some areas, such as parking and administrative services, are not expected to generate additional annual operating costs despite new capital assets being built.

At the time of this report, the County uses a New Budget Initiative process for Council to approve the operating costs for any new staff positions (full-time equivalents; FTEs). In the case of other operating costs, some increases to respond to growth have happened as base budget adjustments, but any materially significant changes and all FTEs must flow through New Budget Initiatives.

At this time, staff will continue managing any impacts that have accrued from growth with existing resources, however, in the future staff may explore developing guidelines for funding operating cost escalations due to growth. Moving forward from this AMP, it is important that appropriate changes to the net levy and rate requirements are allowed for in order to not dilute the staff resourcing available to deliver the proposed levels of service as the County grows and staff must uphold the same service levels across a larger community.

8.5.3 Service Improvement Infrastructure

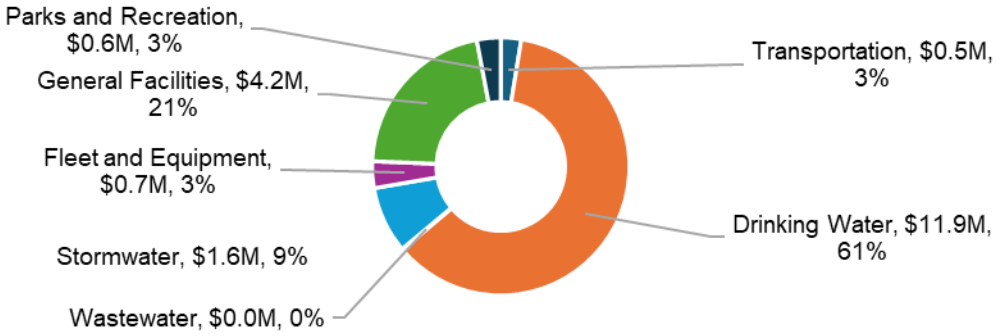
Capital projects related to service improvement are managed through a section of the 10-Year Capital Plan called New/Incremental Capital. The primary funding source the County uses to fund service improvements is the New/Incremental Capital Reserve, which has an annual contribution of $2.3 million in 2025. This annual allocation for minor new/incremental capital is provided to SLT to recommend service improvement projects in the Proposed Levy Capital Budget.

Larger (>$1,000,000) service improvement projects are generally funded by debt in accordance with the County's capital financing principles that future users should pay for the future benefit of service improvements. Council re-evaluates needs through each capital planning cycle, but the current 10-year Capital Plan has on average $7.7 million allocated to levy assets annually and $27.2 million for rate assets (including forecasted IUWS service changes). This includes items like the benefit to existing portion of DC-funded growth projects, and all other non-renewal investments.

Additionally, there are other plans and studies completed by the County that recommend improvements. The

proposed LOS for service improvements, as described in Sections 10-16, is the degree with which they are implemented. The total cost to achieve proposed service improvement annual needs is $7.5 million for levy assets and $11.9 million for rate assets, as summarized in Figure 8-5.

Figure 8-5 Average Annual Proposed Service Improvement Need



The projects recommended for service improvements are often contingent on unreliable sources, such as grant funding or community support. Therefore, the County has opted to focus this financial strategy towards addressing the renewal needs of existing assets rather than closing the service improvement gap. Once the funding shortfall for renewal projects is closed, the County will have more flexibility to invest in new service improvements for the community.

8.5.4 Service Improvement Operating Costs

As mentioned above, the operating costs related to service improvement are managed through the New Budget Initiative process. At the time of this report, there are no immediate material operating changes anticipated from the proposed levels of service in this AMP. Council will re-evaluate needs through each budget cycle.

9. Continual Improvement

This AMP presents an approach to effective management of County assets, incorporating leading practices to plan infrastructure responsibly and sustainably, and to comply with the requirements of O.Reg.588/17. The County intends to build on these efforts and the development of this AMP to further our asset management objectives and secure full regulatory compliance. The County's asset management processes are reviewed in this section to define recommendations in alignment with the AM Maturity Framework (from the International Infrastructure Management Manual, 6th edition).

9.1 AMP Approval & Governance

As described within the Asset Management Policy which was approved by Council on June 18, 2019, the AMP and associated improvement initiatives will be governed by the stakeholders actively involved in the advancement of asset management at the County.

- The AMP will be reviewed annually to evaluate performance and to allow it to be adapted to any changes that may have occurred during the year.
- Each AMP is endorsed by the Executive Lead of the County, the CAO, through the Committee/Council agenda process, and is approved by resolution of Council. Records of this endorsement and Council resolution are available with Council meeting records.
- Asset management governance is established as described in the County's Asset Management Policy.

The AMP is publicly available on Norfolk County's website. Background and supporting information are also available upon request through *Freedom of Information Requests* process.

9.2 Monitoring & Review

This AMP is a living document that is updated on a regular cycle to communicate the investment needs to the stakeholders, and to strengthen the culture of service-focused asset management.

Consistent with continual improvement framework, the County will implement monitoring controls and governance for ongoing reviews of the AMP and improvement opportunities to advance asset management capabilities. Those include:

- Asset Management Planning progress will be reviewed annually before July 1 by the Asset Management Department and Asset Management Steering Committee, working in conjunction with the service areas and Senior Leadership Team.
- The annual review must cover our progress in implementing the AMP, any factors impeding our ability to implement the AMP, and a strategy to address these factors.
- Updates to the plan will be published externally with Council approval ahead of all required regulatory timelines.
- The AMP will be subject to a comprehensive review on a 5-year cycle and will be updated to reflect changes in service levels, risks, forecast costs and proposed budgets as a result of budget decisions.

9.3 Risks Associated with Implementation of the AMP

Achieving the goals outlined in this AMP requires ongoing investment, leadership, and integration across the County's operations. While the plan provides a clear path forward, several risks may influence the pace and success of its implementation:

- **Organizational and Cultural Shifts:** Changes in staff, leadership, or elected officials, along with shifting priorities, can disrupt the continuity of asset management initiatives. Maintaining alignment and momentum requires strong internal communication and commitment to change management.
- **Data Limitations:** Although the County is making progress in enhancing data quality, challenges remain. Incomplete or unreliable asset information can hinder effective decision-making, skew investment priorities, and reduce the accuracy of long-term planning.
- **Resource Availability:** The County operates with finite financial, human, and technical resources. These constraints may limit the extent or timing of asset-related activities such as condition assessments, data updates, or lifecycle costing.
- **Alignment with Other Corporate Processes:** To be truly effective, asset management must be integrated into the County's budgeting, service planning, and capital programming. Continued cross-functional coordination will be important.
- **External Pressures:** The County must remain adaptable in the face of unpredictable factors such as changes in legislation, climate-related events, fluctuations in construction costs, and the availability of external funding sources.

The County will continue to identify and respond to these risks through regular asset management reviews and will refine its implementation strategies as needed to stay on track toward achieving its long-term infrastructure and service objectives.

9.4 Recommendations

The County's objective is to move asset management practices forward through:

- Building upon awareness and efforts already made,
- Having some of the basic elements in place,
- Creating a state where asset management practices are documented, implemented, and consistently followed.

The County must continue to develop its asset management practices to meet the upcoming requirements from O.Reg.588/17 related to proposed levels of service. The following areas of improvement include recommendations to address key areas of the County's current practices. Each improvement opportunity includes consideration of many elements and are organized in alignment with some elements of the *AM Maturity Framework*. It is expected that each recommendation will make the necessary impact to move the County forward in its asset management practices to align the County with industry recognized practices as defined by *International Infrastructure Management Manual* and *ISO 55000*.

Recommendation 1: Financial Management

It is important to ensure that there is adequate financial planning and budgeting to support the asset management activities. This includes understanding the long-term cost implications of asset management decisions.

- Implement Full Lifecycle Costing Models to capture all costs associated with the acquisition, operation, maintenance, renewal and disposal of assets. This includes direct and indirect costs, future maintenance and replacement expenses, and residual values.
- Ensure financial considerations are integrated into decision-making processes related to asset lifecycle activities, such as the design, acquisition, operation, maintenance, renewal, and disposal of assets.
- Incorporate the Financial Strategy into other asset management and planning processes.
- Assess data maturity needs to better support Financial Management.

- Communicate to inform all stakeholders of relevant activities and outcomes, enhancing transparency and support.

Recommendation 2: Levels of Service

Defining service levels is the foundation for defining what services the County assets need to provide. This helps in managing expectations, defining a baseline, and plan for asset needs.

- Integrate LOS into more business processes throughout the County. For example, incorporate LOS into budgeting discussions and business cases, master planning, and decision making into asset lifecycle strategies to ensure investments are aligned with desired LOS.
- Communicate to inform all stakeholders of relevant activities and outcomes, enhancing transparency and support.
- Assess data required to support new or emerging LOS.
- Capture roles, responsibilities, competencies, and organizational resources required to support LOS.

Recommendation 3: Lifecycle Management

Lifecycle management involves understanding the lifecycle of assets from creation/acquisition through to disposal, which includes making decisions that optimize performance, risk, and cost.

- Establish a Lifecycle Management practice - a repeatable, documented, structured approach to managing the various stages of an asset's life, from planning and acquisition to operation, maintenance, renewal, and eventual disposal. The Lifecycle Management practice should include:
    - Lifecycle Phases Definition
    - Lifecycle Strategies (that consider performance, cost & risk)
    - Maintenance & Renewal Programs
- Integrate Lifecycle Framework with other AM processes and decision making.
- Communicate to inform all stakeholders of relevant activities and outcomes, enhancing transparency and support.
- Assess data required to support Lifecycle Management.
- Understand how the current AM System can support Lifecycle Management.
- Capture roles, responsibilities, competencies, and organizational resources required to support Lifecycle Management.

Recommendation 4: Risk Management

Definition of risks and a process to maintain risk information equips the County in optimizing the balance between levels of service and costs, and helps the County make repeatable, transparent asset decisions.

- Establish a Risk Management practice, a structured approach to identifying, analyzing, evaluating, and managing risks associated with the lifecycle of assets, helping the County support its strategic and operational objectives. Risk Management includes:
    - Objectives (aligns risk management activities and the County's overall AM objectives)
    - Risk Management Plan (how risks associated with AM are identified, analyzed, evaluated, controlled, and monitored).
    - Risk Identification & Categorization
    - Risk Analysis, Prioritization, Evaluation, Mitigation, Treatment & Monitoring
- Integrate Risk Management practice with other AM processes.
- Communicate to inform all stakeholders of relevant activities and outcomes, enhancing transparency and support.

- Assess data required to support Risk Management.
- Understand how the current AM System can support Risk Management.
- Capture roles, responsibilities, competencies, and organizational resources required to support Risk Management.

Recommendation 5: Analyzing the Strategic Direction

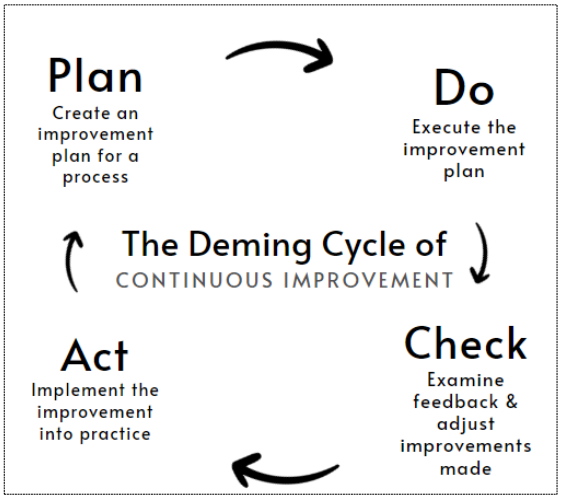
Establishing an AM Policy was fundamental, and now the County should continue acting on and implementing its policy commitments.

- Develop a Communication Plan to create and foster awareness of asset management across the organization.
- Integrate the AM Policy into other corporate processes for developing, renewing, or reviewing other visioning plans and documents.
- Communicate to inform all stakeholders of relevant activities and outcomes, enhancing transparency and support.

Recommendation 6: Continual Improvement

Asset management should not sit still, it is important to establish processes for ongoing improvement based on performance monitoring, reviews, and the evolving best practices in asset management.

- Implement process improvement activities through process optimization to enhance workflows and internal processes by:
  - Create improvement plans for existing activities
  - Carry out the improvement plans
  - Evaluate and examine results post implementation in terms of performance outcomes
  - Standardize and implement the changes into practice
- Communicate results on improvements made through annual AM updates.



Recommendation 7: Asset Data and Information

There is additional maturity required in collecting, managing, and updating sufficient information about assets and to manage requirements for assets.

While the processes and awareness are being developed, data management tools and processes will assist the County in managing its wealth of data and information. This includes:

- A single asset registry which supports integration from multiple sources, for use by all staff (not just for use for AMP preparation).
- Setting baseline requirements for asset data, such as mandatory attributes and standard terminology. This is especially important for assets with blanks identified in this AMP.
- Exploring areas where asset condition information may be enhanced.
- A Levels of Service registry in a formal hierarchy for use by all.
- Require that drawing sets from new developments must be provided at a suitable inspection/assumption stage and are provided in suitable format to update the asset registry (inventory GIS).
- Governance over data, information, and applications should be considered by the County.
- Improving asset completeness and quality. Some assumptions have been made and applied to the data to complete this AMP.
    - Where reinvestment rate has been relied upon to estimate forecasted needs, because of missing age information, the County should explore options to gather missing installation dates or assess age.
    - Where age has been used as a proxy for condition, and where other condition assessment means are available, the County should also consider collecting condition data, especially for high value and high criticality assets.
    - The County should continue its efforts to assess and quantify the inventory of linear storm infrastructure.
    - BCI data is available for bridges and culverts but is not currently embedded into the asset register. Age was therefore used as a proxy for condition for the purposes of forecasting needs in the AMP. In the future, the County should include the BCI data in the asset register so that this valuable condition information may be used in future forecasting exercises.
    - PCI data is available for roads, but is not currently embedded into the asset register. Although the Roads Needs Study provides all forecasted needs, in the future, the County should include the PCI data in the asset register so that this valuable condition information may be used in reporting inventory information.

Service Area Plans

10. Transportation

The County maintains a diverse portfolio of transportation assets to provide safe and effective means to keep the community moving. The transportation system consists of an interconnected network of roadways, structures and associated assets. The County has two asset classes within transportation designed to facilitate safe and efficient movement across our community, these are:

- **Roads** – including roads, sidewalks, streetlights, traffic signals and other right of way assets.
- **Structures** – including bridges, large culverts, retaining walls.

Transportation assets are those that enable users to get to where they need to go throughout the County and play a crucial role in their daily lives and many of the other services provided.

10.1 Levels of Service

This section collectively describes the proposed levels of service to be provided through Transportation assets. General descriptions of service commitments and the areas serviced are provided, along with metrics showing the proposed and current performance.

10.1.1 Background

The Transportation assets enable the safe and comfortable movement of people and goods across our County. Norfolk County maintains a diverse and interconnected transportation system that enables the safe and efficient movement of people and goods across both rural and urban areas of the municipality. The safety, reliability, availability, and sustainability of the assets are fundamental to providing these consistent services across the County.

Roads

The Norfolk County road network is carefully designed to enhance connectivity and mobility within the community. Roads[7] are categorized by their size, use, and capacity into four categories:

Arterial Major – serve a larger geographical area

Arterial Minor – serve a smaller geographical area

} Busier and faster roads; function as main thoroughfares; efficiently handle high traffic volumes.

Collector roads gather traffic from local streets and distribute it to arterial roads.

- Carry moderate traffic volumes
- Generally formed in smaller block grids between the busier/faster system

Local roads provide direct access to residences and businesses

- Are less busy
- Connect to collector roads

[7] Provincial roads are not included in this AMP, as they are owned and managed by the Province (Highways 3, 6, and 24).

Structures

Structures vary in type (such as bridges with a span between supports of greater than 3m or culverts with a diameter larger than 3m). Users include heavy transport vehicles, motor vehicles, emergency vehicles, pedestrians, and cyclists. Bridges and culverts vary in structure class, and what they are crossing over (e.g. water, roadway, paths). Users include heavy transport vehicles, motor vehicles, emergency vehicles, pedestrians, and cyclists.

10.1.2 Areas That Are Serviced

To support connectivity, Norfolk provides approximately 2.5 lane-kilometers of road per square kilometer of land. This includes:

- 0.5 lane-km of arterial roads, which serve as the major thoroughfares for long-distance travel across the County,
- 1.7 lane-km of collector roads, which channel traffic from local roads to arterials, and serve moderate traffic volumes, and
- 0.3 lane-km of local roads, which provide direct access to homes, businesses, and community facilities.

A large portion of Norfolk County is rural, and in these areas the road system extends through open space, agricultural lands, and natural areas, supporting lower-density travel. Urban areas include commercial, industrial and residential areas that are designed with an urban road right-of-way cross section (curb and gutter). This integrated road hierarchy ensures that mobility and connectivity are maintained across all parts of the County, allowing for seamless travel whether residents are commuting short distances or crossing the County end to end. The network's connectivity is further supported by real-time visualization tools available through the County's *Online Interactive Map portal* which show the current road network.

10.1.3 Proposed Levels of Service

The County proposes to continue providing safe, compliant, reliable, available, and sustainable transportation assets, indicated through the following metrics:

Table 10-1 Proposed Levels of Service

Metric	Current Performance	Proposed Performance by 2034
Average PCI of road network	79	**65**
Percentage of structures in a SOGR	80%	**78%**
Percentage of other Transportation assets in a SOGR	77%	**77%**
Implementation of the recommendations in the Energy Conservation and Demand Management Plan	0%	**50%**
Implementation of growth-driven new/increased service levels[8]	0%	**100%**
Implementation of other capital forecast items[9]	0%	**50%**

[8] Reference year is 2025, considering all of the committed or planned expenditures until 2034.
[9] Examples: Roads Needs Study, new pedestrian crossings, streetlighting infills.

Roads

Other important service metrics for Roads assets are monitored and included in asset management planning decisions. These include:

Table 10-2 Other Important Roads Metrics

Metric	Current Performance
Average surface condition of unpaved roads	N/A
Arterial Roads: Number of lane - km as a portion of sq. km of land area of the municipality	0.5
Collector Roads: Number of lane - km as a portion of sq. km of land area of the municipality	1.7
Local Roads: Number of lane - km as a portion of sq. km of land area of the municipality	0.3
Percentage of roads assets with a PCI in Fair or better condition	96.4%

Structures

Other important Structures service metrics are monitored and included in asset management planning decisions. These include:

Table 10-3 Other Important Structures Metrics

Metric	2024 Performance
Average BCI of bridges & culverts	78.7
Percentage of bridges that have loading or dimensional restrictions	5%
Average BCI for bridges	77.6
Average BCI for culverts	80

10.2 Current State of Transportation Assets

The current state of assets is summarized in this section.

10.2.1 Inventory

For each class of Transportation assets, the table below outlines quantity, replacement value, average condition, age, and estimated service life.

Table 10-4 Inventory of Transportation Assets

Asset Class	Asset Type	Quantity	Replacement Value ($)	Average Performance	Average Age	Average ESL
Roads	Collector	1,360km	$1.2B	Good	22	13
	Guiderails	53km	$28.5M	NA	NA	50
	Local	335km	$466.5M	Good	22	18
	Major Arterial	11km	$24.5M	Very Good	13	15
	Minor Arterial	376km	$451.8M	Good	25	15
	Parking Lots	62	$18.7M	NA	NA	NA
	Retaining Walls	38	$12.8M	NA	NA	50
	Sidewalks	170km	$43.4M	Good	25	60
	Streetlights	4,982	$7.9M	NA	NA	NA
	Traffic Signals	38	$17.1M	Poor	27	30
Structures	Bridge*	124	$144.5M	Good	53	75
	Culvert*	115	$44.8M	Good	53	50
	Pedestrian Bridges	19	$38.0M	Good	26	50
Total			**$2.7B**			

The replacement values have been derived from data from the asset management system and various studies including the 2023 Road Needs Study, 2022 OSIM Bridge Inspection Report, 2022 OSIM Pedestrian Bridge Report.

*The average performance shown for the bridge and culvert assets above is not used for investment planning, as BCIs for bridges and culverts, derived from inspection every two years as legislated, are preferred. Age is reported in the table above to satisfy legislated requirements. Although it appears that culverts are beyond their expected service life by age in the table above, the BCI inspection data is used for assessing SOGR and making investment decisions.

10.2.2 Asset Condition

The average condition of the paved network is estimated using pavement condition index to be 79, also reported in the levels of service. Condition information was not available for unpaved roads.

Figure 10-1 Condition Profile of Paved Road Network by Material

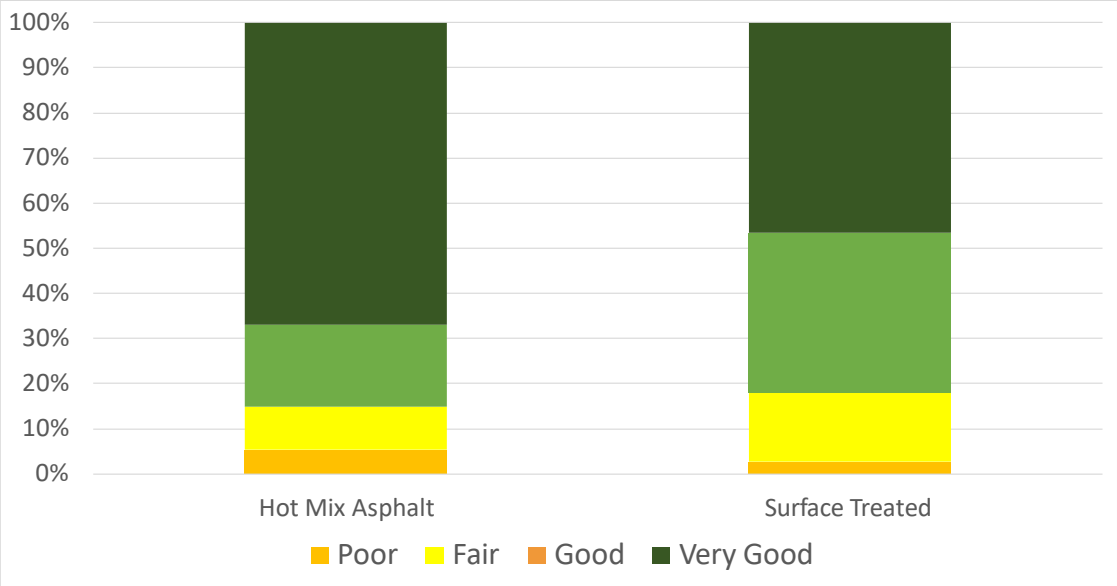
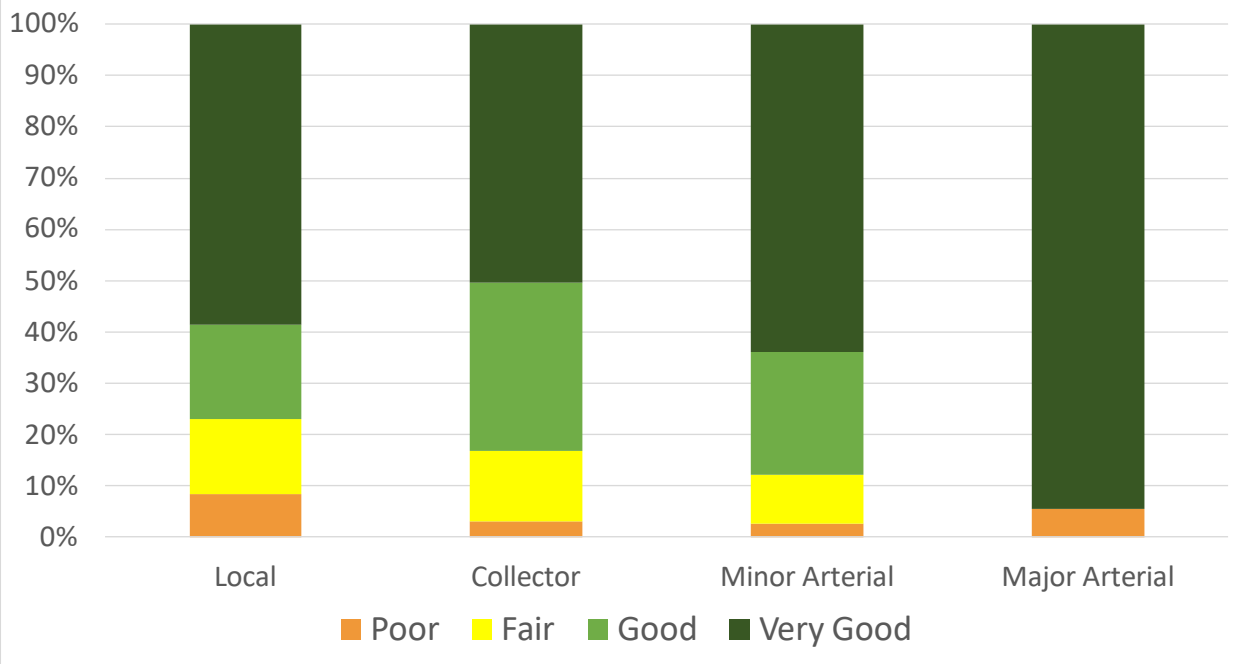


Figure 10-2 Condition Profile of Paved Road Network by Functional Class



These graphs show that the majority of arterial roads are in Good or Very Good condition, reflecting their high-priority maintenance schedules. Local roads show a broader distribution across condition categories, with a

greater share in Fair or Poor condition.

It should be noted that the discrete asset condition data for structures was not available to derive similar graphical representations.

10.2.3 Calculating Condition of Transportation Assets

The condition of the assets in this service area is reported based on various indicators:

- Pavement Condition Index (PCI) is used to indicate the condition of roads
- Bridge Condition Index (BCI) is used to report level of service. However, age is used as a proxy of condition of individual assets and is used to forecast need.
- Age is used as a proxy to indicate condition for other Transportation assets.

The table below summarizes the criteria used to define the condition[10] of the various assets included in the Transportation service area.

Table 10-5 Transportation Asset Condition Criteria

Condition State	Road Needs Study (PCI)	Bridge Inspections (BCI)	% Remaining Life
Very Good	>80	>80	>85
Good	65-80	60-80	60-85
Fair	50-65	40-60	30-60
Poor	<50	20-40	0-30
Very Poor	-	<20	Past Estimated Service Life

Specifically for paved roads, pavement condition is a closely monitored indicator of the state of repair. Condition information for roads assets was extracted from data presented within the 2023 Road Needs Study. Condition information was not available for unpaved roads; therefore, unpaved roads are not included. The County has roads that fall into all categories described below.

Table 10-6 Paved Road Condition Categories

Paved Road Condition	Description
Very Good	Little to no cracking, smooth ride.
Good	Slight to moderate cracking, little distortion, comfortable ride with intermittent bumps or depressions.
Fair	Frequent moderate cracking, intermittent distortion and/or alligator cracking, considerably rougher & uneven surface.
Poor	Extensive moderate to severe cracking, frequent to extensive alligator cracking. Uncomfortable ride with frequent bumps or depressions. Unable to maintain speed.
Very Poor	Not utilized in the Roads Needs Study.

[10] Roads Needs Study does not utilize the rating of Very Poor. PCI values below 50 are described as Poor.

For Structures, physical condition is a closely monitored indicator of the state of repair. The County has structures that fall into all categories described below.

Table 10-7 Bridge & Culvert Condition Descriptions

Bridge & Culvert Condition	Description
Very Good	Minimal or no deficiencies, no impact on travelers.
Good	Some minor issues are present, but the structural integrity remains sound. There would be minimal impact on travelers.
Fair	Structural elements show minor deterioration including cracking and spalling which doesn't impact structural integrity. May be slight impact on travelers as they would observe signs of deterioration. The bridge/culvert remains safe for use.
Poor	Significant deterioration such as spalling or scour affecting structural capacity. Moderate impact on travelers including possible closure or implementation of weight restrictions on the bridge/culvert.
Very Poor	Severe deterioration of bridge elements and/or structural capacity is reduced. Significant impact on travelers including possible closure or implementation of weight restrictions on the bridge/culvert.

10.3 Lifecycle Management Strategy

This section presents the strategy of key lifecycle activities currently applied to provide proposed levels of service.

10.3.1 Non-Infrastructure Activities

- *Our Future Norfolk*, the Council Strategic Plan states that a strategic area of focus is "Building Norfolk", by: "Ensuring that Norfolk has all of the hard infrastructure (water, sewer, roads, parks) for future needs."
- Master planning supports the County in identifying the service objectives necessary to meet the needs and growth within the County. The County has developed various master plans and strategic plans over the years, including the Integrated Sustainable Master Plan (ISMP), which includes transportation as a core element. The ISMP is a framework that guides investment in various services, including transportation, to support growth and help shape the County for the future. Creation and acquisition activities within our municipal boundaries are made in alignment with the objectives, stakeholder input, and long-term strategic plans set forth in the ISMP. The County's Roads Needs Study has also been completed.
- Assets are acquired through development – where subdivisions are constructed by Developers, then the right-of-way assets are assumed by the County.
- Norfolk's Climate Action Plan guides recommendations for climate change impacts on transportation assets.
- County Development Standards include requirements for road design to strive for an optimized lifespan (e.g. materials, design for use & maintenance).
- MMS sets minimums for maintaining road assets, including rigorous condition monitoring of many right-of-way assets.
- Insurance policies are in place.

- Norfolk County's road network undergoes a detailed condition assessment every 5 years which includes the calculation of a PCI. Routine road patrols are also performed on an ongoing basis.
- An annual safety inspection program is performed on the sidewalks and walkways between May and September.
- Inspection of bike lanes are performed as part of the road inspection program.

10.3.2 Operating Activities

The County follows the requirements outlined in the Ontario Structure Inspection Manual (OSIM) when performing condition assessments and inspections for bridges, large culverts and pedestrian structures, as well as the Ontario Minimum Maintenance Standards for Highways (O.Reg. 239/02) for the road assets.

Planned roads and structures maintenance includes:

- Grading of gravel and earth road surfaces
- Tree trimming/brush control
- Shouldering, ditch maintenance
- Catch basin cleaning
- Pothole maintenance
- Sign maintenance & replacement
- Grass cutting
- Street sweeping
- Winter maintenance
- Refreshed pavement markings
- Crack sealing
- Unplanned roads and structures maintenance includes:
    - General repairs
    - Pothole patching
    - Utility cut restorations
    - Emergency response (accident cleanups, spills)

10.3.3 Renewal Activities

The reconstruction process for roads is fully integrated with the renewal needs of all underground infrastructure such as drinking water, wastewater and stormwater. This integrated approach ensures our renewal projects for these service areas are delivered with optimal timing to increase value and minimize disruption to the community. As a result of this, urban road reconstructions are primarily driven by the needs of the underground infrastructure, not the road condition.

The County applies urban and rural road resurfacing programs. The urban program is for those roads that only need surface condition improvements and do not require renewal of underground infrastructure within the life of the treatment.

Surface treated roads are managed proactively and are subject to regular re-surfacing activities (single and double lift) to maintain a suitable driving surface. Selection of the optimal road treatment is based on current condition, rehab options, projected deterioration, roadside safety issues, and budget.

Structure lifecycle management is driven through the recommendations of OSIM inspections that occur every two years. Rehabilitation may include refurbishing major components, such as structural reinforcement or deck replacement.

10.3.4 Disposal Activities

In some cases, the County may close the transportation assets for use, by limiting the maintenance performed or restricting access using gates.

Decommissioning obsolete road assets is carried out as needed while striving to reduce costs through resale where possible, this may include unopened road allowances. Roadway disposals are infrequent and generally related to rerouting. Should a section of a road be permanently closed, the section may be deconstructed, and the land sold or repurposed.

Bridges and culverts are rarely decommissioned and not replaced. There are a few exceptions including under-utilized pedestrian bridges and culverts in an unopened road allowance may be decommissioned, and would be disposed of accordingly, and no salvage value is assumed. Bridges and culverts are decommissioned on a case-by-case basis, based on a variety of factors.

10.3.5 Risk Management

The risks being managed are:

- **Safety Risk** - Reduces risks associated with asset deficiencies or poorly maintained components, as well as the risk of flooding due to inadequate design, or insufficient consideration of climate change factors like asphalt heat sinks and congestion.
- **Environmental Risk** - Reduces the risk of flooding due to poor design or inadequate consideration of climate change factors such as higher water levels and overland flows.
- **Reputational Risk** - Mitigates negative perceptions stemming from poorly maintained, poor condition, or unavailable transportation assets, as well as from inadequate planning with County funds.
- **Operational Risk** - Reduces the risk of operational impacts from potholes, erosion, or closures, streamlining rerouting processes during closures, and mitigating operational losses or inefficiencies resulting from challenging designs, such as cul-de-sacs.
- **Financial Risk** - Mitigates losses incurred by overplanning or overbuilding assets in terms of width or design, addressing insufficient capacity issues, inefficient use of County funds, unplanned major repairs or replacements, and excessive energy consumption by streetlights.
- **Corporate Risk & Liability** - Reduces the risk stemming from deficiencies contributing to safety hazards, damages, or collisions, thereby averting potential lawsuits arising from insufficient capacity or connectivity as the County grows.
- **Compliance Risk** - Reduces the risk of non-compliance to legislation, falling short of minimum maintenance standards set by the Province. Reduces risks of road asset insufficiency as the County expands, ensuring sustainability into the future, minimizing road closures, congestion, poor illumination, failed structures, and drainage issues, while also lowering the likelihood of deficiencies on bridge or culvert decks affecting structural performance.

Other Risk Options

Increased maintenance and rehabilitation would extend time to replacement but would increase capital and operating costs.

Funding Shortfall Risk Management

If the projected funding is insufficient to provide proposed LOS, the County will prioritize the following actions:

- Implement planned policy and planning activities,
- Carry out the most essential SOGR operation and maintenance activities to ensure asset functionality,

determined on an ongoing basis by staff,

- Conduct the most critical SOGR rehabilitation and replacement work, prioritizing assets based on failures and criticality as identified by staff, and
- Disposing of assets when necessary to maximize value.

If funding constraints require prioritization decisions, the County will mitigate risks by employing the following strategies. While not all are fully documented at this time, advancing these areas is included in the recommendations for improved asset management maturity.

Risk-Based Prioritization

The County will enhance or formalize a framework for assessing and prioritizing investments based on asset criticality, failure risk, and service impacts. This may include a structured risk matrix or scoring system to guide decision-making consistently.

Contingency Preparation

Various funding scenarios and their risks (e.g., deferring replacement of a roof versus implementing interim spot repairs) will be evaluated when feasible. Contingency plans will be developed for high-risk assets to ensure continued service delivery.

Adaptive Strategies

Lifecycle strategies will be adjusted to extend asset life where feasible, such as through increased inspections, temporary reinforcements, or preventive maintenance strategies. Maintenance priorities may also be dynamically adjusted based on real-time data and field observations.

Temporary Service-Level Adjustments and Interim Measures

Where necessary, the County will define minimum acceptable service levels and explore short-term solutions to maintain critical services (e.g.re-routing traffic in the event of a bridge closure). Service delivery expectations may also be adjusted to align with available funding while minimizing disruption.

Asset Rationalization

Underutilized or redundant assets will be assessed for potential decommissioning to alleviate financial strain. Alternative service delivery models, including shared services with neighboring municipalities, may also be explored. An example of this is the Facilities Rationalization Project.

External Opportunities

The County will continue to actively seek external funding opportunities, including grants, partnerships, and government funding programs, to help bridge financial gaps.

Communication

The County will provide annual reports to Council summarizing funding gaps, trade-offs made, and the projected impact on service levels. Communication efforts will highlight the consequences of deferred activities and may include visual tools to illustrate risks.

Lifecycle Activities to Maintain Current LOS

This section provides details on the combination of lifecycle activities applied to provide the proposed Levels of Service, while striving to optimize costs based on defined risk. For reference, if the County opted only to maintain current performance, rather than strive for the proposed levels of service defined in this AMP, lifecycle strategies would not be significantly different. Instead, the investment in the new proposed levels of service would not occur.

10.4 Financial Needs for Transportation

10.4.1 Capital Investments

The average annual capital investment needed to provide proposed levels of service is estimated at $29.3 million, from 2025-2034. This includes renewal investments to maintain an average PCI of roads at 65, achieve 80% of structure assets in a state of good repair, maintain the current performance of 77% of remaining right of way assets in a state of good repair, fully implement growth and the benefit to existing levy portion, implement 50% of the Energy Conservation and Demand Management Plan and other capital forecast items.

Table 10-4 Total Capital Investment Needs to Provide Proposed LOS

Investment Type	Average Annual Needs ($M)
Renewal	$27.1
Service Improvement and Other Investments	$0.5
Growth	$1.7
Total	**$29.3**

- Proposed and current Levels of Service are described earlier in this section.
- Not all assets are currently in a SOGR.

For comparison, if the County should opt to move to a scenario where all assets are continually maintained in a SOGR (ensuring that no assets fall into very poor condition), plus fully implement all growth plans and all other service improvement and planned initiatives, this total cost would be $60.8 million annually.

To satisfy the legislation, it is important to note costs to maintain current levels of service. Current Levels of Service are primarily based on continuing lifecycle activities so that the current total value of assets in a SOGR (including current average PCI) does not decrease. The renewal cost to maintain this current level of service is $36.0 million annually.

Investment needs to cover growth for all transportation assets are described in the *DC Background Study*.

10.4.2 Operating Investments

Investment needs from the operating budget required to maintain current levels of service for transportation are assumed to be equivalent to the current operating budget for transportation services, including salaries, materials, contractors, and other expenditures for lifecycle activities.

Currently, the Approved Levy/Rate Operating Budget includes an annual estimate of $22.2 million to operate Transportation assets, excluding infrastructure funding, primarily funded from the net levy/rate requirement. Over the next 10 years it is estimated this will remain relatively similar, with inflationary increases annually.

Operating costs to provide proposed LOS are challenging to forecast at this time, but are estimated to include, at a minimum, the growth-related operating costs described in Section 8.5.2.

11. Drinking Water

The County maintains a diverse portfolio of assets that are required to provide the communities with safe drinking water. The County has two different asset classes within the Drinking Water portfolio to effectively deliver clean drinking water to residents of Norfolk County, these are:

1. **Vertical Assets**: where water is treated and pumped out to the communities, consisting of water treatment plants, water towers and standpipes, wells, bulk water depots, and booster stations and reservoirs.
2. **Linear Distribution Assets**: distribute the water to customers through underground infrastructure, consisting of local mains, transmissions mains, and water meters.

Water assets are those that enable users to live in a clean and safe environment. The water assets are one of the most utilized and important assets, as the community would not thrive without them. It includes everything from water pipes that service homes and businesses throughout the County to the treatment plants which ensure that the water is safe to use or consume. The County maintains both linear assets and vertical facilities to deliver drinking water to the communities.

11.1 Levels of Service

The Drinking Water assets supply and distribute safe, clean, reliable drinking water and sufficient fire flows to the Norfolk County community.

11.1.1 Background

The municipal drinking water system is made up of five independent systems that provide drinking water that is safe for drinking, and water pressures suitable for fire suppression. The following urban communities are generally serviced with drinking water and with fire flows:

- Delhi/Courtland
- Port Dover
- Port Rowan/St. Williams
- Simcoe
- Waterford

The County provides drinking water and fire flows through assets that are maintained in a state of good repair. Periodic service interruptions may occur due to watermain breaks or other unplanned events. These are generally rare in occurrence and are monitored as one indicator of asset performance.

The **Inter-Urban Water Supply** (IUWS) Program is a proposed future strategy to provide a centralized system to connect the existing individual water supply systems in the County. The IUWS will deliver higher-quality drinking water services for long-term growth.

System benefits and service levels are anticipated to include:

- Reliable and safe drinking water quality from a better raw water intake source,
- Addressing regulatory compliance issues, and
- Increasing the level of service of reliability to the consumers.

The system will also allow for growth beyond the year 2051, a centralized system that is more resilient and affordable to maintain, fire flows for all urban centres, increased operational efficiency and flexibility during high seasonal peak demands, meeting the regulatory requirements for emergency backup water supply capacity, and lower lifecycle costs.

Under the proposed initiative, the way in which drinking water is provided to County residents is potentially changing, and the asset portfolio that would be required would be very different than the assets that are currently owned. Although provincial and federal funding is pivotal to the implementation of this initiative, the 10-year Capital Plan has been prepared assuming that the anticipated plans move forward.

As it is funding dependent, the IUWS is not included in this AMP at this time.

11.1.2 Areas That Are Serviced

In the County overall, 49.2% of properties are connected to the water system. In the urban areas overall, 98% of urban properties are connected to the municipal water system.

The municipal drinking water systems connect to most residential, commercial and industrial spaces in the urban areas of the County. The network provides safe drinking water and fire protection to most residential, commercial and industrial spaces within urban areas of the County.

Fire protection services are available to all properties in Norfolk County, with water supplied for firefighting purposes either through the municipal hydrant network in urban areas, or through alternative means such as tanker-based (pumper) operations in areas without hydrants. Fire Services have additional fleet to provide extended fire flows to the rural community.

11.1.3 Proposed Levels of Service

The County proposes to continue providing safe, compliant, reliable, available, and sustainable drinking water assets, indicated through the following metrics:

Table 11-1 Proposed Levels of Service

Metric	Current Performance	Proposed Performance by 2034
Percentage of linear assets in a SOGR	83%	**83%**
Percentage of vertical assets in a SOGR	98%	**90%**
Implementation of growth-driven new/increased service levels[11]	0%	**100%**
Implementation of other capital forecast items[12]	0%	**100%**

Other important service metrics monitored and considered in asset management planning decisions include:

Table 11-2 Other Important Drinking Water Metrics

Metric	Current Performance
Number of connection days per year where a boil water advisory[13] notice was in place, compared to the total number of properties connected to the municipal water system	60 connection days to 16,613 properties
The number of connection days per year due to water main breaks[14], compared to the total number of properties connected to the municipal water system	16 days to 16,613 properties
Average non-revenue water (percentage of total water treated that is not billed)	6.45%
Treatment capacity (percentage of rated treatment capacity which is used)	>85%
Total megaliters of drinking water treated	3,625.4
Number of adverse water quality incidents (AWQI)	16

[11] Reference year is 2025, considering all of the committed or planned expenditures until 2034.
[12] Examples: Rate study, new feeder mains and vertical storage that are planned with or without the implementation of the IUWS.
[13] It should be noted that the 2024 water boil advisory was related to a construction watermain break.
[14] 16 total watermain breaks, approximately 6 hours per repair, an average of 6 properties affected.

Metric	Current Performance
Percent of County properties where fire flow is available through a nearby hydrant[15]	99.3% of urban properties

11.2 Current State of Drinking Water Assets

The current state of assets is summarized in this section.

11.2.1 Inventory

For each class of Drinking Water assets, the table below outlines quantity, replacement value, average condition, age, and estimated service life.

Table 11-3 Inventory of Drinking Water Assets

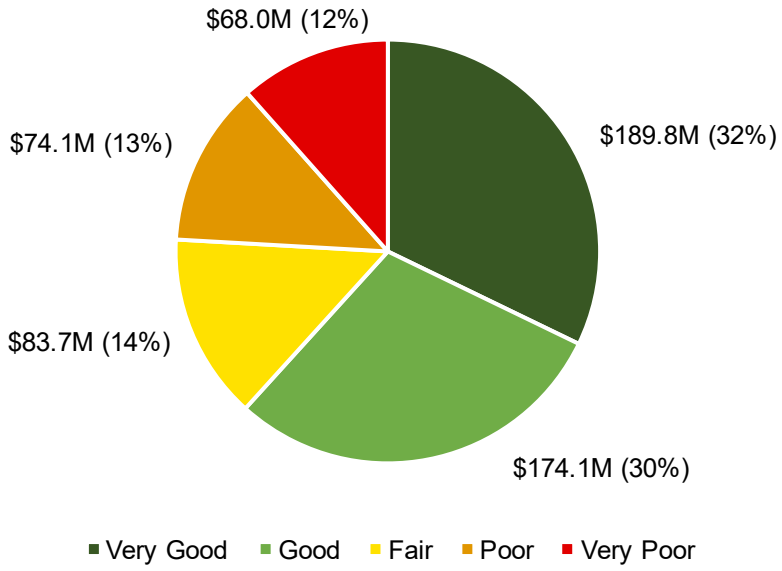
Asset Class	Asset Type	Quantity	Replacement Value ($M)	Average Performance	Average Age	Average ESL
Linear	Local Mains	308 km	$434.6M	Good	32	70
Linear	Water Meters	16,537	$9.1M	NA	NA	20
Vertical	Booster Stations and Reservoirs	4	$23.7M	Very Good	31	50
Vertical	Other Water Facilities	22	$8.7M	Good	32	50
Vertical	Water Towers and Standpipes	6	$43.2M	Very Good	16	50
Vertical	Water Treatment Plants	6	$98.7M	Very Good	39	50
Vertical	Wells	13	$23.8M	Very Good	10	50
Total			**$642.0M**			

11.2.2 Asset Condition

The figures below show the percentages (and values) of Drinking Water assets within each condition category, from very good to very poo

[15] It should be noted that St. Williams has no opportunity to connect to hydrant-based fire flows at this time.

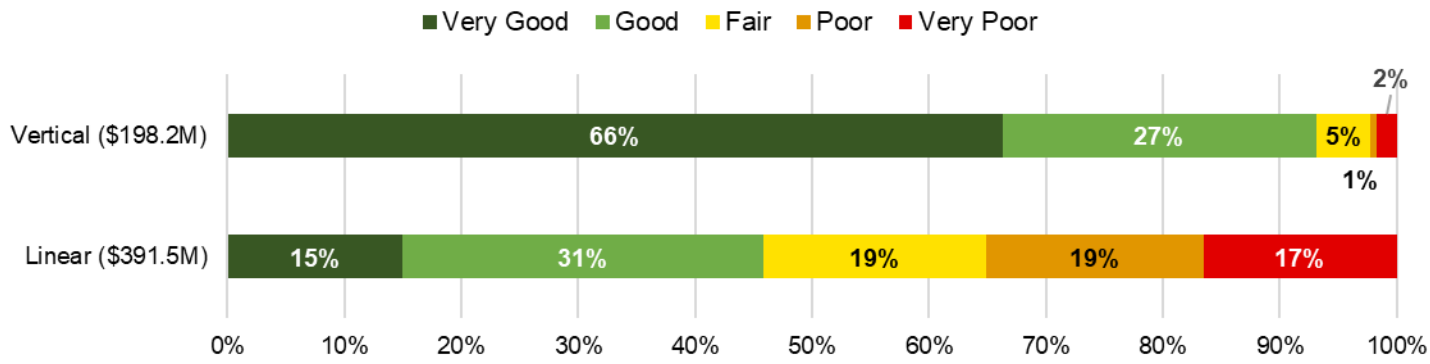
Figure 11-1 Overall Condition of Drinking Water Assets



Note: Totals may not add up to 100% due to rounding.

To show more information at the asset class level, the figure below shows the total value and condition distribution for vertical and linear assets separately.

Figure 11-2 Condition by Asset Class



Note: Totals may not add up to 100% due to rounding.

11.2.3 Calculating Condition of Drinking Water Assets

The condition of the assets in this service area is reported based on various indicators:

- Facility Condition Index (FCI) is used to indicate the condition of vertical assets
- Age is used as a proxy to indicate condition for linear assets

The table below summarizes the criteria used to define the condition of the various assets included in the Drinking Water service area.

Table 11-4 Condition Categories for Drinking Water Assets

Condition State	Facility Condition Index (FCI)	% Remaining Life
Very Good	<1	>85
Good	1-2	60-85
Fair	2-5	30-60
Poor	5-10	0-30
Very Poor	>10	Past Estimated Service Life

11.3 Lifecycle Management Strategy

This section presents the strategy of key lifecycle activities currently in place to provide proposed levels of service.

11.3.1 Non-Infrastructure Activities

- *Our Future Norfolk*, the Council Strategic Plan states that a strategic area of focus is “Building Norfolk”, by: “Ensuring that Norfolk has all of the hard infrastructure (water, sewer, roads, parks) for future needs.”
- Master planning supports the County in identifying the service objectives necessary to meet the needs and growth of the County. The County has developed various master plans and strategic plans over the years, including the Integrated Sustainable Master Plan (ISMP), which includes drinking water as a core element. The ISMP is a framework that guides investment in various services to support growth and help shape the County for the future. Creation and acquisition activities within their municipal boundaries are made in alignment with the objectives, stakeholder input, and long-term strategic plans set forth in the ISMP.
- Assets are acquired through development – where subdivisions are constructed by the Developer, then the right-of-way assets are assumed by the County.
- A Drinking Water Quality Management System (DWQMS) is in place as legislated.
- Encouragement of conservation of water and energy through policy, procedures, public outreach, etc.
- Management of water chemistry to reduce corrosion.
- A Water Restriction By-law is in place that requires residents to restrict their water usage between May 15 – September 15.
- Insurance policies are in place.
- Development Standards set out the requirements for future water assets to be constructed, including materials, construction, sustainability, maintenance, and other factors.

11.3.2 Operating Activities

- The County follows DWQMS, DWWP and MDWL requirements related to inspection, testing, monitoring, and maintenance, and maintain compliance with legislation.
- Examples of planned maintenance include hydrant flushing, hydrant inspections, curb stop assessments/locates, water meter chamber inspections, proactive water meter replacement, watermain leak detection, valve turning, watermain dead end flushing, proactive swabbing and flushing.

- Examples of unplanned maintenance include watermain and service break repairs, investigations/repairs of leaks, repairs/adjustments to service boxes, investigations of quality issues.

11.3.3 Renewal Activities

- The rehabilitation and replacement process for linear drinking water assets is fully integrated with the renewal needs of roads and other underground infrastructure such as stormwater and wastewater. Priorities include:
    - Replacement of pipes which need increased capacity as identified in the ISMP
    - Replacement of thin wall cast iron water mains which have a record of multiple water main breaks
    - Looping of dead-end watermains which require frequent flushing
- Renewal activities are determined based on the risk level of the watermains and accompanying infrastructure which determines whether the need is isolated or requires a complete reconstruction of the roadway.
- Water treatment facilities such as wells, booster stations and water towers undergo regular inspection and rehabilitations to determine renewal needs.

11.3.4 Disposal Activities

There are very few instances where projects are specifically related to the decommissioning of drinking water assets, an example of one would include the planned decommissioning of the Delhi Surface Water Filtration Plant.

11.3.5 Risk Management

The risks being managed are:

- **Quality Risk** - Mitigates the risk of providing drinking water that is unsafe, inadequate pressure, not aesthetically pleasing, or insufficient fire flows, now and into the future.
- **Corporate Risk & Liability** - Reduces legal liability stemming from insufficient capacity, availability, and poor quality of drinking water services, or from compliance issues related to the drinking water permitting and licensing, or from the Drinking Water Policy or Operational Plan, now and as the County grows.
- **Financial Risk** - Reduces losses resulting from water loss/non-revenue water, inadequate planning or expansion or decommissioning of drinking water assets, whether in excess or insufficient capacity, and aims to optimize the use of County funds while also mitigating the need for unplanned repairs.
- **Operational Risk** - Reduces inefficiencies stemming from unnecessary failures, quality complaints, losses, leaks or other responses.
- **Reputational Risk** - Mitigates negative perceptions arising from poor planning of water- related initiatives funded by the County, as well as from boil water or adverse events, poorly maintained assets such as hydrants, main breaks, fire events, and other failures.
- **Environmental Risk** - Reduces environmental risks associated with unplanned flushing or system draining, water loss, main breaks, leaks, lack of fire flow, or other deficiencies.
- **Health and Safety Risk** - Reduces risks to safety and health posed by poor quality drinking water, or lack of fire flow.

Other Risk Options

More preventive maintenance and rehabilitation may reduce risk of unplanned failures and fire flow issues, and may extend service life of assets, but would require increased budget.

Funding Shortfall Risk Management

If the projected funding is insufficient to provide proposed LOS, the County will prioritize the following actions:

- Implement planned policy and planning activities,
- Carry out the most essential SOGR operation and maintenance activities to ensure asset functionality, determined on an ongoing basis by staff,
- Conduct the most critical SOGR rehabilitation and replacement work, prioritizing assets based on failures and criticality as identified by staff, and
- Disposing of assets when necessary to maximize value.

If funding constraints require prioritization decisions, the County will mitigate risks by employing the following strategies. While not all are fully documented at this time, advancing these areas is included in the recommendations for improved asset management maturity.

Risk-Based Prioritization

The County will enhance or formalize a framework for assessing and prioritizing investments based on asset criticality, failure risk, and service impacts. This may include a structured risk matrix or scoring system to guide decision-making consistently.

Contingency Preparation

Various funding scenarios and their risks (e.g., deferring replacement of a roof versus implementing interim spot repairs) will be evaluated when feasible. Contingency plans will be developed for high-risk assets to ensure continued service delivery.

Adaptive Strategies

Lifecycle strategies will be adjusted to extend asset life where feasible, such as through increased inspections, temporary reinforcements, or preventive maintenance strategies. Maintenance priorities may also be dynamically adjusted based on real-time data and field observations.

Temporary Service-Level Adjustments and Interim Measures

Where necessary, the County will define minimum acceptable service levels and explore short-term solutions to maintain critical services (e.g.re-routing traffic in the event of a bridge closure). Service delivery expectations may also be adjusted to align with available funding while minimizing disruption.

Asset Rationalization

Underutilized or redundant assets will be assessed for potential decommissioning to alleviate financial strain. Alternative service delivery models, including shared services with neighboring municipalities, may also be explored. An example of this is the Facilities Rationalization Project.

External Opportunities

The County will continue to actively seek external funding opportunities, including grants, partnerships, and government funding programs, to help bridge financial gaps.

Communication

The County will provide annual reports to Council summarizing funding gaps, trade-offs made, and the projected impact on service levels. Communication efforts will highlight the consequences of deferred activities and may include visual tools to illustrate risks.

Lifecycle Activities to Maintain Current LOS

This section provides details on the combination of lifecycle activities applied to provide the proposed Levels of Service, while striving to optimize costs based on defined risk. For reference, if the County opted only to

maintain current performance, rather than strive for the proposed levels of service defined in this AMP, lifecycle strategies would not be significantly different. Instead, the investment in the new proposed levels of service would not occur.

11.4 Financial Needs for Drinking Water

11.4.1 Capital Investments

The average annual capital investment needed to provide proposed levels of service is estimated at $19.7 million, from 2025-2034. This includes renewal investments to maintain the current percentage of the linear assets and achieve 90% of vertical assets in a state of good repair, fully implement growth and the benefit to existing levy portion, and implement 50% of the other capital forecast items.

Table 11-3. Capital Investment Needs to Provide Proposed LOS

Investment Type	Average Annual Needs ($M)
Renewal	$7.7
Service Improvement and Other Investments	$11.9
Growth Needs	$0.1
Total	**$19.7**

- Proposed and current Levels of Service are described earlier in this section.
- Not all assets are currently in a SOGR.

For comparison, if the County should opt to move to a scenario where all assets are continually maintained in a SOGR (ensuring that no assets fall into very poor condition), plus fully implement all growth plans and all other service improvement and planned initiatives, this total cost would be $28.1 million annually.

To satisfy the legislation, it is important to note costs to maintain current levels of service. Current Levels of Service are primarily based on continuing lifecycle activities so that the current total value of assets in a SOGR does not decrease. The renewal cost to maintain this current level of service is $9.3 million annually.

Investment needs to cover growth while maintaining levels of service for drinking water are described in the *DC Background Study.*

11.4.2 Operating Investments

Investment needs from the operating budget required to maintain levels of service for drinking water are assumed to be equivalent to the current operating budget for drinking water services, including salaries, materials, contractors, and other expenditures for lifecycle activities.

Currently, the Approved Levy/Rate Operating Budget includes an annual estimate of $4.6 million to operate Drinking Water assets, excluding infrastructure funding, primarily funded from the net levy/rate requirement. Over the next 10 years it is estimated this will remain relatively similar, with inflationary increases annually.

Operating costs to provide the proposed LOS are challenging to forecast at this time, but are estimated to include, at a minimum, the growth-related operating costs described in Section 8.5.2.

12. Wastewater

The County maintains a diverse portfolio of assets that are required to provide communities with the safe collection and treatment of wastewater. Like many assets, wastewater assets are facing increased challenges because of aging infrastructure, climate change, increasing demand due to growth in the communities and regulatory changes. Norfolk's investment in these assets must therefore be balanced to optimize investment for renewal with the growing needs of the community.

This Service Area Plan provides information regarding an approach to the management of wastewater assets over the next 10 years, demonstrating the commitment to assessing and meeting the LOS valued by the residents.

Wastewater assets are those that enable users to live in a clean and safe environment. The wastewater assets are one of the most utilized and important assets, as the community would not thrive without them. It includes everything from sanitary mains that service homes and businesses throughout the County to the treatment plants which ensure that wastewater is properly cleaned before being discharged into the environment.

12.1 Levels of Service

This section collectively describes levels of service provided through the assets in this Service Area.

12.1.1 Background

Wastewater assets provide safe collection and treatment of wastewater for the urban communities of:

- Delhi
- Port Dover
- Port Rowan
- Simcoe
- Waterford

The County has two different asset classes in the Wastewater portfolio to effectively collect and convey wastewater away from properties and treat wastewater in accordance with provincial legislation.

- Vertical assets where wastewater is pumped and treated, and
- Linear assets, where wastewater is collected.
- Sanitary sewers in the municipal wastewater system are resilient to major weather events.
- Norfolk County strives to maintain assets in a state of good repair.
- The number of overflow or wastewater home backup events due to the absence of overflow structures in the municipal wastewater system is low.
- The County does not have any combined sewers, therefore no overflows occur related to combined sewers and there are no events where combined sewer flow in the municipal wastewater system exceed the system capacity either.
- Stormwater and groundwater can enter the wastewater sewers through deficiencies or cross-connections, especially as the assets age. The County is working on reducing stormwater infiltration into sanitary sewers, both through rehabilitation projects and through design requirements for new sewers being constructed. Inflow is minimized through rigorous inspection of sewer construction to reduce the chances of stormwater entering the sanitary system through cross connections. Minimizing overloading of the municipal wastewater system is an objective of the County, as overloading can lead to flooding and basement backups
- Final Effluent is the treated water that is discharged to the environment through the approved effluent disposal facilities, including all bypasses that are required to meet the compliance limits stipulated by environmental compliance approvals, at the final effluent sampling points. The effluent criteria includes

effluent flow rates, and parameters such as total suspended solids, Biochemical Oxygen Demand (BOD), phosphorous, ammonia, and E coli. The county produced annual reports summarizing each WWTPs operation and treated effluent discharge quality and these can be found on the County's website.

12.1.2 Areas That Are Serviced

Overall, across the County, 15,747 properties (or 93.1% of urban properties) are connected to the wastewater systems. The municipal wastewater systems connect to most residential, commercial and industrial spaces in the urban areas of the County.

12.1.3 Proposed Levels of Service

The County proposes to continue providing safe, compliant, reliable, available, and sustainable wastewater assets, indicated through the following metrics:

Table 12-1 Proposed Levels of Service

Metric	Current Performance	Proposed Performance by 2034
Percentage of linear assets in a SOGR	83%	**75%**
Percentage of vertical assets in a SOGR	100%	**90%**
Implementation of growth-driven new/increased service levels[16]	0%	**100%**
Implementation of other capital forecast items[16,17]	0%	**100%**

Other important service metrics monitored and considered in asset management planning decisions include:

Table 12-2 Other Important Wastewater Metrics

Metric	2024 Performance
Number of events per year where combined flow exceeds capacity compared to the total number of properties connected to the municipal wastewater system.[18]	38 events to 15,747 properties
Number of effluent violations per year due to wastewater discharge, compared to the total number of properties connected to the municipal wastewater system.[19]	5 exceedances to 15,747 properties
Percentage of overall rated treatment capacity that is used[20]	53.3%
Total megaliters of wastewater treated	5,359.4
Percentage of network that is inspected annually (PACP inspections)	65.3%

[16]Reference year is 2025, considering all of the committed or planned expenditures until 2034.

[17] Example: Rate study, pump station upgrades, optimization initiatives.

[18] Port Dover exceedances. These flow exceedances do not indicate a bypass or overflow.

[19] Effluent overflows: 4 in Port Dover, 1 in Port Rowan. Zero effluent parameter limit exceedances occurred.

[20] Delhi 33.09%, Port Dover 78.74%, Port Rowan 52.98%, Simcoe 47.94%, Waterford 57.45%.

12.2 Current State of Wastewater Assets

The state of the assets used to provide these services is summarized below.

12.2.1 Inventory

For each class of Wastewater assets, the table below outlines quantity, replacement value, average condition, age, and estimated service life.

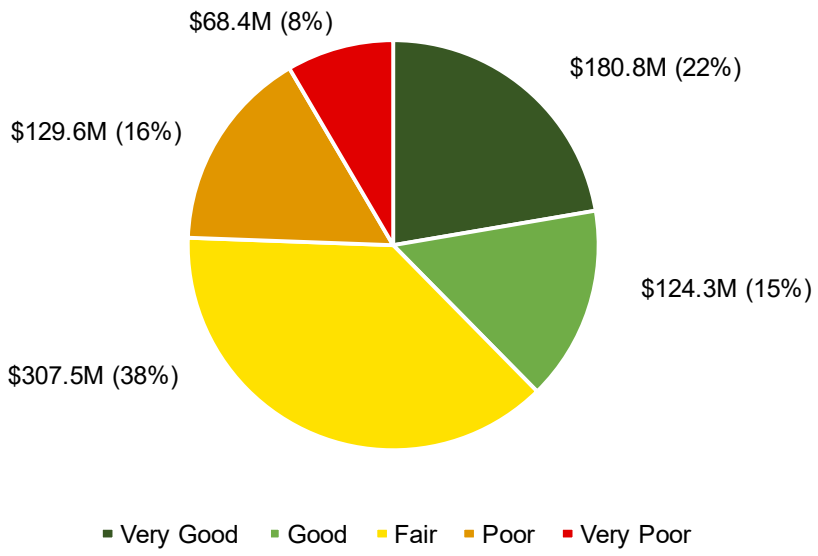
Table 12-3 Inventory of Wastewater Assets

Asset Class	Asset Types	Quantity	Replacement Value ($M)	Average Performance	Average Age	Average ESL
Linear	Sanitary Forcemains	13km	$23.0M	Fair	33	52
Linear	Sanitary Mains	213km	$389.0M	Fair	40	70
Vertical	Sewage Pumping Stations	21	$39.1M	Very Good	46	50
Vertical	Wastewater Treatment Plants	5	$361.9M	Good	37	50
Total			**$813.1M**			

12.2.2 Asset Condition

The figures below show the percentages (and values) of Wastewater assets within each condition category, from very good to very poor.

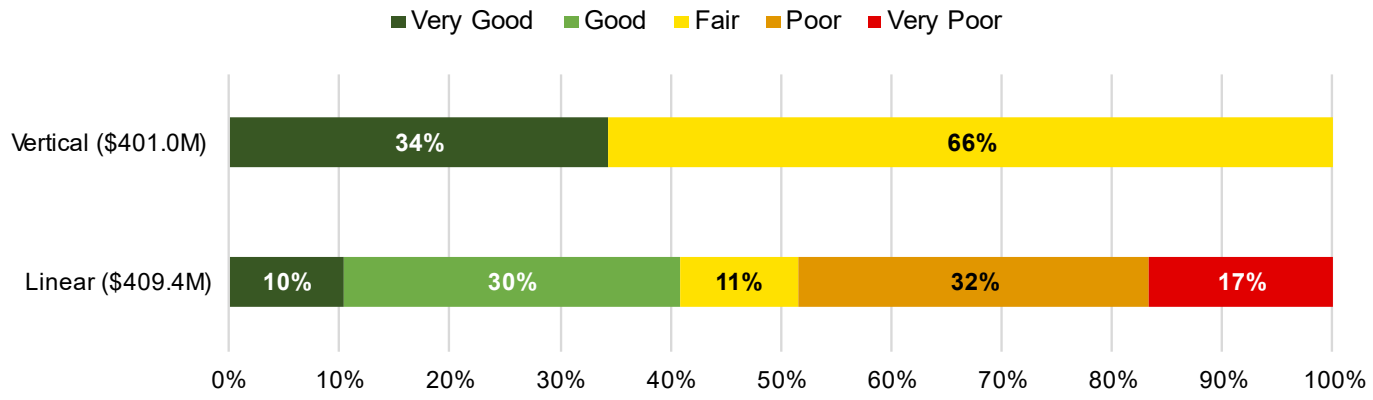
Figure 12-1 Overall Condition of Wastewater Assets



Note: Totals may not add up to 100% due to rounding.

To show more information at the asset class level, the figure below shows the total value and condition distribution for the various Vertical and Linear asset classes separately.

Figure 12-2 Condition by Asset Class



12.2.3 Calculating Condition of Wastewater Assets

The condition of the assets in this service area is reported based on various indicators:

- Facility Condition Index (FCI) is used to indicate the condition of vertical assets
- Age is used as a proxy to indicate condition for linear assets

The table below summarizes the criteria used to define the condition of the various assets included in the Wastewater service area.

Table 12-4 Condition Categories for Wastewater Assets

Condition State	Facility Condition Index (FCI)	% Remaining Life
Very Good	<1	>85
Good	1-2	60-85
Fair	2-5	30-60
Poor	5-10	0-30
Very Poor	>10	Past Estimated Service Life

12.3 Lifecycle Management Strategy

This section presents the strategy of key lifecycle activities the County currently applies to provide proposed levels of service through wastewater assets.

12.3.1 Non-Infrastructure Activities

- *Our Future Norfolk*, the Council Strategic Plan states that a strategic area of focus is “Building Norfolk”, by: “Ensuring that Norfolk has all of the hard infrastructure (water, sewer, roads, parks) for future needs.”
- Master planning supports the County in identifying the service objectives necessary to meet the needs and growth of the County. The County has developed various master plans and strategic plans over the

years, including the Integrated Sustainable Master Plan (ISMP), which includes wastewater as a core element. The ISMP is a framework that guides investment in various services to support growth and help shape the County for the future. Creation and acquisition activities within the municipal boundaries are made in alignment with the objectives, stakeholder input, and long-term strategic plans set forth in the ISMP.

- Assets are acquired through development – where subdivisions are constructed by the Developer, then the right-of-way assets are assumed by the County.
- Operating Authority staff perform regular program inspections and an annual safety inspection.
- Encouragement of conservation of water and energy through policy, procedures, public outreach, etc.
- Sewer By-law is in place to regulate the use of sanitary sewers.
- Insurance policies are in place.
- The County complies with the system specific Environmental Compliance Approvals along with the most current applicable provincial and federal regulations. The condition of the wastewater collection network is assessed based on Closed Circuit Television (CCTV) inspections, material, and age. Deterioration is based on observed failure rates, industry lifecycle probabilities and Pipeline Assessment and Certification Program (PACP) sewer ratings.

12.3.2 Operating Activities

Examples of planned maintenance include:

- Siphon inspection
- Siphon valve turning, flushing
- Maintenance hole investigations
- Infiltration & inflow repairs
- Flow monitoring
- Cleaning and swabbing of mains
- Pump repairs
- Wet well cleaning
- General minor repairs

Examples of unplanned maintenance include main repairs, removal of blockages, and repair/replace of failed components.

12.3.3 Renewal Activities

The reconstruction of wastewater collection assets is fully integrated with the renewal needs of the roads and other underground infrastructure such as drinking water and stormwater. Priorities include:

- Replacement of old clay pipes
- Replacement of pipes which need increased capacity as identified in the ISMP
- Replacement of pipes which have high levels of infiltration and inflow

Renewal activities are determined based on the risk level of the sanitary mains and accompanying infrastructure which determines whether the need is isolated or requires a complete reconstruction of the roadway.

Treatment asset renewals and rehabilitations are planned based on estimated service life and condition.

12.3.4 Disposal Activities

It is rare for Norfolk County to have dedicated projects specific to the decommissioning of wastewater assets.

12.3.5 Risk Management

The risks being managed are:

- **Quality Risk** - Mitigates the risk of unavailable / blocked collection, services, or from collecting, storing, or treating wastewater at insufficient capacity.
- **Corporate Risk & Liability** - Reduces legal liability stemming from insufficient capacity to treat wastewater, bypass events, blockages, back-ups, basement flooding, environmental contamination, or other failures, or from compliance issues related to the system approvals and permits.
- **Financial Risk** - Reduces losses resulting from treating excess wastewater, or from unnecessary repairs and renewals.
- **Operational Risk** - Reduces inefficiencies stemming from unnecessary failures, complaints, leaks or other responses.
- **Reputational Risk** - Mitigates negative perceptions arising from poor planning of wastewater-related initiatives funded by the County, as well as from poorly maintained assets, main breaks, blockages, surcharges, and other failures.
- **Environmental Risk** - Reduces environmental risks associated with infrastructure failure, surcharges and bypasses.
- **Health and Safety Risk** - Reduces risks to safety and health posed by surcharges, flooded basements, backed up sewers, bypasses, or other events.

Other Risk Options

More preventive maintenance and rehabilitation may reduce risk of unplanned failures, and may extend service life of assets, but would require increased budget.

Funding Shortfall Risk Management

If the projected funding is insufficient to provide proposed LOS, the County will prioritize the following actions:

- Implement planned policy and planning activities,
- Carry out the most essential SOGR operation and maintenance activities to ensure asset functionality, determined on an ongoing basis by staff,
- Conduct the most critical SOGR rehabilitation and replacement work, prioritizing assets based on failures and criticality as identified by staff, and
- Disposing of assets when necessary to maximize value.

If funding constraints require prioritization decisions, the County will mitigate risks by employing the following strategies. While not all are fully documented at this time, advancing these areas is included in the recommendations for improved asset management maturity.

Risk-Based Prioritization

The County will enhance or formalize a framework for assessing and prioritizing investments based on asset criticality, failure risk, and service impacts. This may include a structured risk matrix or scoring system to guide decision-making consistently.

Contingency Preparation

Various funding scenarios and their risks (e.g., deferring replacement of a roof versus implementing interim spot repairs) will be evaluated when feasible. Contingency plans will be developed for high-risk assets to ensure continued service delivery.

Adaptive Strategies

Lifecycle strategies will be adjusted to extend asset life where feasible, such as through increased inspections, temporary reinforcements, or preventive maintenance strategies. Maintenance priorities may also be dynamically adjusted based on real-time data and field observations.

Temporary Service-Level Adjustments and Interim Measures

Where necessary, the County will define minimum acceptable service levels and explore short-term solutions to maintain critical services (e.g.re-routing traffic in the event of a bridge closure). Service delivery expectations may also be adjusted to align with available funding while minimizing disruption.

Asset Rationalization

Underutilized or redundant assets will be assessed for potential decommissioning to alleviate financial strain. Alternative service delivery models, including shared services with neighboring municipalities, may also be explored. An example of this is the Facilities Rationalization Project.

External Opportunities

The County will continue to actively seek external funding opportunities, including grants, partnerships, and government funding programs, to help bridge financial gaps.

Communication

The County will provide annual reports to Council summarizing funding gaps, trade-offs made, and the projected impact on service levels. Communication efforts will highlight the consequences of deferred activities and may include visual tools to illustrate risks.

Lifecycle Activities to Maintain Current LOS

This section provides details on the combination of lifecycle activities applied to provide the proposed Levels of Service, while striving to optimize costs based on defined risk. For reference, if the County opted only to maintain current performance, rather than strive for the proposed levels of service defined in this AMP, lifecycle strategies would not be significantly different. Instead, the investment in the new proposed levels of service would not occur.

12.4 Financial Needs for Wastewater

12.4.1 Capital Investments

The average annual capital investment needed to provide proposed levels of service is estimated at $14.4 million, from 2025-2034. This includes renewal investments to achieve 75% of linear assets and 90% of vertical assets in a state of good repair, fully implement growth and the benefit to existing levy portion, and fully implement the other capital forecast items.

Table 12-3 Capital Investment Needs to Provide Proposed LOS

Investment Type	Average Annual Needs ($M)
Renewal	$9.7
Service Improvement and Other Investments	$0.0
Growth	$4.6
Total	**$14.4**

- Proposed and current Levels of Service are described earlier in this section.
- Not all assets are currently in a SOGR.

For comparison, if the County should opt to move to a scenario where all assets are continually maintained in a SOGR (ensuring that no assets fall into very poor condition), plus fully implement all growth plans and all other service improvement and planned initiatives, this total cost would be $28.5 million annually.

To satisfy the legislation, it is important to note costs to maintain current levels of service. Current Levels of Service are primarily based on continuing lifecycle activities so that the current total value of assets in a SOGR does not decrease. The renewal cost to maintain this current level of service is $17.0 million annually.

Investment needs to cover growth while maintaining levels of service for wastewater are described in the *DC Background Study*.

12.4.2 Operating Investments

Investment needs from the operating budget required to maintain levels of service for wastewater are assumed to be equivalent to the current operating budget for wastewater services, including salaries, materials, contractors, and other expenditures for lifecycle activities.

Currently, the Approved Levy/Rate Operating Budget includes an annual estimate of $5.2 million to operate Wastewater assets, excluding infrastructure funding, primarily funded from the net levy/rate requirement. Over the next 10 years it is estimated this will remain relatively similar, with inflationary increases annually.

Operating costs to provide proposed LOS are challenging to forecast at this time, but are estimated to include, at a minimum, the growth-related operating costs described in Section 8.5.2.

13. Stormwater

The County maintains a diverse portfolio of assets that are required to provide the community with flood protection and the safe collection and treatment of stormwater. Rural drainage and municipal drains are not included in this plan and will be added in future versions.

Sound management of the stormwater systems helps realize a vision of a clean and green county. Like many other asset groups, stormwater assets are facing increased challenges because of climate change and regulatory changes.

This Service Area Plan provides information regarding an approach to the management of stormwater assets over the next 10 years, demonstrating a commitment to assessing and meeting the LOS valued by County residents.

Stormwater assets are those that enable the County to live in a clean and safe environment. The stormwater assets are one of the most utilized and important asset types. It includes everything from the stormwater mains that service homes and businesses throughout the County to the stormwater management ponds which ensure that water is properly stored and cleaned before being discharged into the environment.

The County is actively working to assess and understand the full extent of its stormwater infrastructure, including the inventory and condition of stormwater assets. Due to gaps in historical records and limited documentation, the County has been identifying previously unrecorded stormwater assets, such as storm sewers on certain streets, during field work, construction projects, and infrastructure reviews.

For the purposes of the AMP, the County has estimated the amount of uncharted storm main based on available data and engineering judgment.

Over the next five years, the County's primary focus will be on improving the completeness and accuracy of the stormwater asset inventory, with plans to update forecasted needs as new information becomes available. This situation is not uncommon among Ontario municipalities, many of which are also in the process of enhancing their understanding of legacy stormwater infrastructure through ongoing data collection and system mapping.

13.1 Levels of Service

This section collectively describes levels of service provided through the assets in this Service Area.

13.1.1 Background

Stormwater assets provide safe collection, conveyance, retention, and some treatment of stormwater. Stormwater assets consist of linear assets, and treatment and control assets. The *Consolidated Linear Infrastructure Environmental Compliance Approvals (CLI-ECA)* sets out environmental plans, practices, and procedures related to storm infrastructure, which establish a level of service standard.

The County provides stormwater services through assets that are reliable and maintained in a state of good repair. As the County grows, the dedication to addressing the evolving precipitation patterns remains steadfast. The County strives to apply treatment strategies that handle rainfall where it falls, as it moves through ditches and pipes, and at retention ponds. This approach to stormwater management serves as an important framework for constructing a sustainable and robust network for stormwater infrastructure.

13.1.2 Areas That Are Serviced

The municipal stormwater system provides stormwater collection and conveyance throughout the urban areas of the County. Specifically, rights-of-way are designed to manage stormwater, and residences and businesses located near or on defined flood plains benefit from having an effective stormwater management system. Newer subdivisions may have stormwater management facilities, such as ponds, to control quantity and quality of stormwater flows. In rural areas, roadside ditches are installed and maintained where feasible, to drain the road and its road base, and to manage flooding within the right-of-way.

The County strives to protect the environment and implement quality measures before releasing stormwater to the environment.

13.1.3 Proposed Levels of Service

The County proposes to continue providing safe, compliant, reliable, available, and sustainable stormwater assets, indicated through the following metrics:

Table 13-1 Proposed and Current Levels of Service

Metric	Current Performance	Proposed Performance by 2034
Percentage of linear assets in a SOGR	60%	**60%**
Percentage of treatment & control assets in a SOGR	27%	**50%**
Implementation of growth-driven new/increased service levels[21]	0%	**100%**
Implementation of other capital forecast items[21,22]	0%	**100%**

Other important service metrics monitored and considered in asset management planning decisions include:

Table 13-2 Other Important Stormwater Metrics

Metric	Current Performance
Percentage of urban properties that are resilient to flooding from a 100-yr storm	92.8%
Percentage of stormwater system that is resilient to a 5-yr storm	94.6%

The County also monitors the percentage of the urban area catch basins that are inspected and cleaned every year.

[21] Reference year is 2025, considering all of the committed or planned expenditures until 2034
[22] Examples include shoreline protection projects, drainage engineering projects.

13.2 Current State of Stormwater Assets

The state of assets that provide these services is summarized below.

13.2.1 Inventory

For each class of Stormwater assets, the table below outlines quantity, replacement value, average condition, age, and estimated service life.

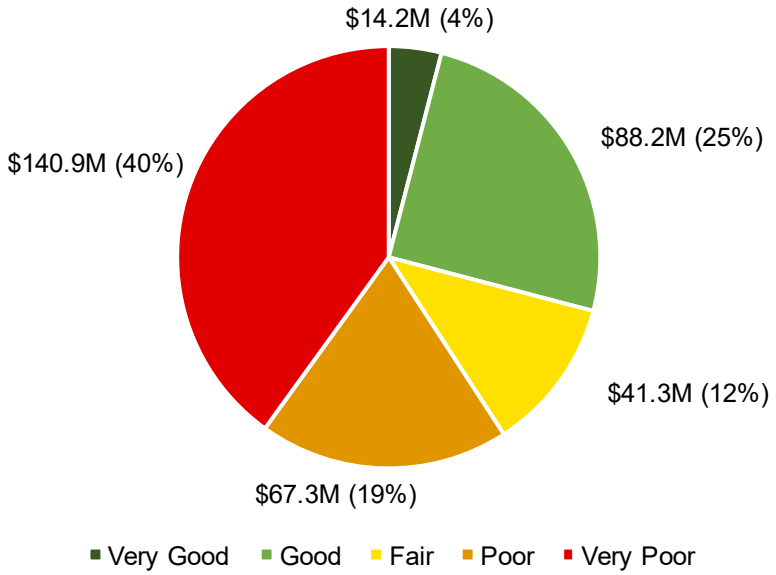
Table 13-3 Inventory of Stormwater Assets

Asset Class	Asset Type	Quantity	Replacement Value ($M)	Average Performance	Average Age	Average ESL
Linear	Ditches	3343km	$31.4M	NA	NA	50
Linear	Storm Mains	230km	$349.8M	Poor	42	60
Natural Assets	Shoreline Assets	34	$8.4M	NA	NA	100
Treatment & Control	Stormwater Management Ponds	28	$5.6M	Very Poor	23	20
Total			**$395.1M**			

13.2.2 Asset Condition

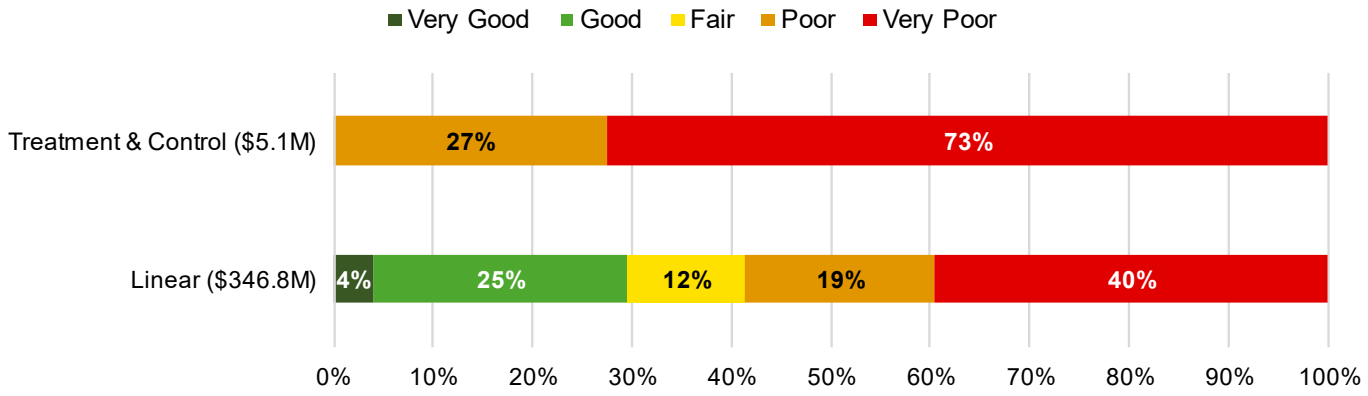
The figures below show the percentages (and values) of Stormwater assets within each condition category, from very good to very poor.

Figure 13-1 Overall Condition of Stormwater Assets



To show more information at the asset class level, the figure below shows the total value and condition distribution for treatment & control assets and linear assets separately.

Figure 13-2 Condition by Asset Class



13.2.3 Calculating Condition of Stormwater Assets

At this time, age (in comparison to estimated service life) is used as a proxy to indicate condition for Stormwater assets. The table below summarizes the criteria used to define the condition of the various assets included.

Table 13-4 Condition Categories for Stormwater Assets

Condition State	% Remaining Life
Very Good	>85
Good	60-85
Fair	30-60
Poor	0-30
Very Poor	Past Estimated Service Life

13.3 Lifecycle Management Strategy

This section presents the strategy of key lifecycle activities the County currently applies to provide proposed levels of service through storm assets.

13.3.1 Non-Infrastructure Activities

- Master planning supports the County in identifying the service objectives necessary to meet the needs and growth of the County. The County have developed various master plans and strategic plans over the years, including the Integrated Sustainable Master Plan (ISMP), which includes storm assets. The ISMP is a framework that guides investment in various services to support growth and help shape the County for the future. Creation and acquisition activities within municipal boundaries are made in alignment with the objectives, stakeholder input, and long-term strategic plans set forth in the ISMP.
- The condition of the stormwater assets are based on a function of modelled pipe system capacity, development intensification, climate change, grading and major overland flow paths.

- Stormwater operations team have a regular program of maintaining manholes and catchbasins in addition to an annual program of flood wall testing.
- In 2021, the County initiated a program for the inspection and condition assessments of the stormwater management facilities, including inspections of the smaller dry ponds, and full condition assessments of the larger facilities.
- Assets are acquired through development – where subdivisions are constructed by the Developer, then the right-of-way assets are assumed by the County. To ensure the County is assuming assets which were installed properly and functioning as intended, the County has detailed design requirements which Developers are required to follow. Before acquiring the assets, County staff inspect the assets against the requirements and any deficiencies are rectified prior to assumption to ensure the County get the expected life out of the assets.
- Our Future Norfolk, the Council Strategic Plan states that a strategic area of focus is “Building Norfolk”, by: “Ensuring that Norfolk has all of the hard infrastructure (water, sewer, roads, parks) for future needs.”
- Insurance policies are in place.
- Development Standards set out the requirements for future storm assets to be constructed, including materials, construction, sustainability, maintenance, and other factors.

13.3.2 Operating Activities

Norfolk County complies with the system specific Environmental Compliance Approvals along with the most current applicable provincial and federal regulations.

Examples of planned maintenance include minor repairs, vegetation replanting and management, and oil/grit separator cleanouts.

Examples of unplanned maintenance includes:

- Storm main repairs
- Manhole repairs and adjustments
- Stormwater facility maintenance/repairs
- Removal of blockages

13.3.3 Renewal Activities

The reconstruction process for the stormwater collection assets is fully integrated with the renewal needs of roads and other underground infrastructure such as drinking water and wastewater. Priorities include:

- Replacement of pipes which need increased capacity as identified in the ISMP
- Upgrades to urban drainage systems that are subject to frequent but isolated flooding issues
- Rehabilitation of stormwater management facilities to remove sedimentation

Renewal activities are determined based on the risk level of the storm mains and accompanying infrastructure which determines whether the need is isolated or requires a complete reconstruction of the roadway. The rehabilitation and renewal process for stormwater treatment/storage assets are based on estimated cleanout frequencies, measured sedimentation levels through internal/external inspections and facility design criteria.

13.3.4 Disposal Activities

Given the growth of the population and the steadily increasing movement of people and goods, disposal is not a common activity for stormwater assets. In some cases, the County may close or decommission the stormwater assets for use, by limiting the maintenance performed.

13.3.5 Risk Management

The risks being managed are:

- **Quality Risk** – Mitigates the risk of inadequate storm assets available to provide sufficient collection and conveyance services, ensuring sustainability into the future.
- **Corporate Risk & Liability** - Reduces liabilities stemming from insufficient capacity and availability of storm services as the County grows, addressing issues like flooding to third- party property, sinkholes, and poorly maintained storm assets.
- **Financial Risk** – Reduces losses resulting from inadequate planning or construction of storm assets, whether in excess or insufficient capacity, and aims to optimize the use of County funds while also mitigating the need for unplanned repairs.
- **Operational Risk** – Reduces inefficiencies stemming from unnecessary flooding responses. Such as, staff time to respond to flooding events, and conduct repairs.
- **Reputational Risk** – Mitigates negative perceptions arising from poor planning of storm- related initiatives funded by the County, as well as from flooding events, poorly maintained ponds, and sinkholes.
- **Environmental Risk** – Reduces environmental risks associated with flooding due to poor capacity planning, blockages, failures, and erosion.
- **Health and Safety Risk** – Reduces risks to safety and health posed by flooding or stagnant storage resulting from poor capacity planning.

Other Risk Options

More preventive maintenance and rehabilitation may reduce risk of unplanned failures and flooding, and may extend service life, but would require increased budget.

Funding Shortfall Risk Management

If the projected funding is insufficient to provide proposed LOS, the County will prioritize the following actions:

- Implement planned policy and planning activities,
- Carry out the most essential SOGR operation and maintenance activities to ensure asset functionality, determined on an ongoing basis by staff,
- Conduct the most critical SOGR rehabilitation and replacement work, prioritizing assets based on failures and criticality as identified by staff, and
- Disposing of assets when necessary to maximize value.

If funding constraints require prioritization decisions, the County will mitigate risks by employing the following strategies. While not all are fully documented at this time, advancing these areas is included in the recommendations for improved asset management maturity.

Risk-Based Prioritization

The County will enhance or formalize a framework for assessing and prioritizing investments based on asset criticality, failure risk, and service impacts. This may include a structured risk matrix or scoring system to guide decision-making consistently.

Contingency Preparation

Various funding scenarios and their risks (e.g., deferring replacement of a roof versus implementing interim spot repairs) will be evaluated when feasible. Contingency plans will be developed for high-risk assets to ensure continued service delivery.

Adaptive Strategies

Lifecycle strategies will be adjusted to extend asset life where feasible, such as through increased inspections, temporary reinforcements, or preventive maintenance strategies. Maintenance priorities may also be dynamically adjusted based on real-time data and field observations.

Temporary Service-Level Adjustments and Interim Metrics

Where necessary, the County will define minimum acceptable service levels and explore short-term solutions to maintain critical services (e.g.re-routing traffic in the event of a bridge closure). Service delivery expectations may also be adjusted to align with available funding while minimizing disruption.

Asset Rationalization

Underutilized or redundant assets will be assessed for potential decommissioning to alleviate financial strain. Alternative service delivery models, including shared services with neighboring municipalities, may also be explored. An example of this is the Facilities Rationalization Project.

External Opportunities

The County will continue to actively seek external funding opportunities, including grants, partnerships, and government funding programs, to help bridge financial gaps.

Communication

The County will provide annual reports to Council summarizing funding gaps, trade-offs made, and the projected impact on service levels. Communication efforts will highlight the consequences of deferred activities and may include visual tools to illustrate risks.

Lifecycle Activities to Maintain Current LOS

This section provides details on the combination of lifecycle activities applied to provide the proposed Levels of Service, while striving to optimize costs based on defined risk. For reference, if the County opted only to maintain current performance, rather than strive for the proposed levels of service defined in this AMP, lifecycle strategies would not be significantly different. Instead, the investment in the new proposed levels of service would not occur.

13.4 Financial Needs for Stormwater

13.4.1 Capital Investments

The average annual capital investment needed to provide proposed levels of service is estimated at $6.3 million, from 2025-2034. This includes renewal investments to maintain the current percentage of the linear assets and achieve 50% of vertical assets in a state of good repair and fully implement the other capital forecast items.

Table 13-5 Annual Capital Investment Needs to Provide Proposed LOS

Investment Type	Average Annual Needs ($M)
Renewal	$4.6
Service Improvement and Other Investments	$1.6
Growth Needs	$0.0
Total	**$6.3**

- Proposed and current Levels of Service are described earlier in this section.
- Not all assets are currently in a SOGR.

For comparison, if the County should opt to move to a scenario where all assets are continually maintained in a SOGR (ensuring that no assets fall into very poor condition), plus fully implement all growth plans and all other service improvement and planned initiatives, this total cost would be $20.1 million annually.

To satisfy the legislation, it is important to note costs to maintain current levels of service. Current Levels of Service are primarily based on continuing lifecycle activities so that the current total value of assets in a SOGR does not decrease. The renewal cost to maintain this current level of service is $4.5 million annually.

Investment needs to cover growth while maintaining levels of service for drinking water are described in the *DC Background Study.*

13.4.2 Operating Investments

Investment needs from the operating budget needed to maintain levels of service for stormwater are assumed to be equivalent to the current operating budget for stormwater services, including salaries, materials, contractors, and other expenditures for lifecycle activities.

Currently, the Approved Levy/Rate Operating Budget includes an annual estimate of $1.4 million to operate Stormwater assets, excluding infrastructure funding, primarily funded from the net levy/rate requirement. Over the next 10 years it is estimated this will remain relatively similar, with inflationary increases annually.

Operating costs to provide proposed LOS are challenging to forecast at this time, but are estimated to include, at a minimum, the growth-related operating costs described in Section 8.5.2.

14. Fleet & Equipment

Norfolk County maintains a diverse portfolio of fleet and equipment assets to provide services to the residents with efficiency and reliability. Sound management of the fleet and equipment helps realize the vision of an efficient and safe County. Like many of the County's assets, fleet and equipment assets are facing increased challenges because of climate change and regulatory changes.

Fleet and equipment assets are those that enable municipal employees to operate in the communities, carry materials and supplies, and do tasks across the County. The fleet and equipment assets include everything from the grader equipment and maintenance fleet to emergency response vehicles and equipment that ensure Norfolk County staff and volunteers can operate efficiently to provide the services to the public.

This Service Area Plan provides information about the management of the fleet and equipment assets over the next 10 years, demonstrating commitment to assessing and meeting the LOS valued by residents.

14.1 Levels of Service

This section collectively describes levels of service provided through the assets in this Service Area. General descriptions of service commitments and the areas serviced are provided, along with metrics showing current performance.

14.1.1 Background

Fleet and Equipment assets allow County staff and volunteers to perform work and deliver services and materials across all service divisions of the County. Fleet and Equipment assets also include Fire and Paramedic Services equipment to provide reliable and effective emergency response, fire prevention, public education, administration, communication, training, maintenance, and support services to the community.

14.1.2 Proposed Levels of Service

The County proposes to continue providing safe, compliant, reliable, available, and sustainable fleet assets, indicated through the following metrics:

Table 14-1 Proposed Levels of Service

Metric	Current Performance	Proposed Performance by 2034
Percentage of equipment in a SOGR	80%	**80%**
Percentage of fire equipment in a SOGR	73%	**100%**
Percentage of paramedic equipment in a SOGR	69%	**100%**
Percentage of fleet assets in a SOGR	59%	**70%**
Percentage of fire fleet assets in a SOGR	77%	**100%**
Percentage of paramedic fleet assets in a SOGR	50%	**100%**
Implementation of the recommendations in the Energy Conservation and Demand Management Plan	0%	**100%**
Implementation of growth-driven new/increased service levels[23]	0%	**100%**

[23] Reference year is 2025, considering all of the committed or planned expenditures until 2034.

Metric	Current Performance	Proposed Performance by 2034
Implementation of other capital forecast items[23,24]	0%	**100%**

Other important service metrics monitored and considered in asset management planning decisions include:

Table 14-2 Other Important Fleet Metrics

Metric	Current Performance
Percentage of transit stops with signage equipment	77%
Number of transit shelters / urban community	5
Number of transit stops	99
Number of Fire fleet equipped to respond to high rise fire	1
Percentage of Paramedic Services fleet equipped with controlled substance storage	0

14.2 Current State of Fleet & Equipment Assets

The state of assets used to provide these services are summarized below.

14.2.1 Inventory

For each class of Fleet & Equipment assets, the table below outlines quantity, replacement value, average condition, age, and estimated service life.

Table 14-3 Inventory of Fleet & Equipment Assets

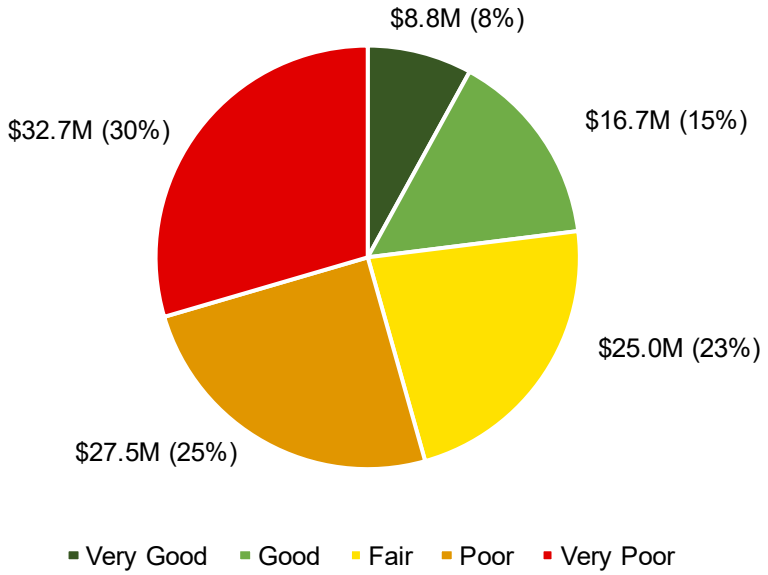
Asset Class	Quantity	Replacement Value ($M)	Average Performance	Average Age	Average ESL
Fleet	196	$35.0M	Fair	8	11
Fleet Fire	63	$55.7M	Poor	16	21
Fleet_Paramedics	22	$4.2M	Poor	7	7
Equipment	68	$11.4M	Fair	12	17
Equipment_Fire	1622	$7.6M	Very Good	3	13
Equipment_Paramedics	43	$2.1M	Poor	6	8
Equipment_Transit	4	$30.8K	NA	NA	11
Total		**$115.9M**			

[24] Examples: EV charging stations, ambulance security safes, sidewalk plows.

14.2.2 Asset Condition

The figures below show the percentages (and values) of Fleet & Equipment assets within each condition category, from very good to very poor.

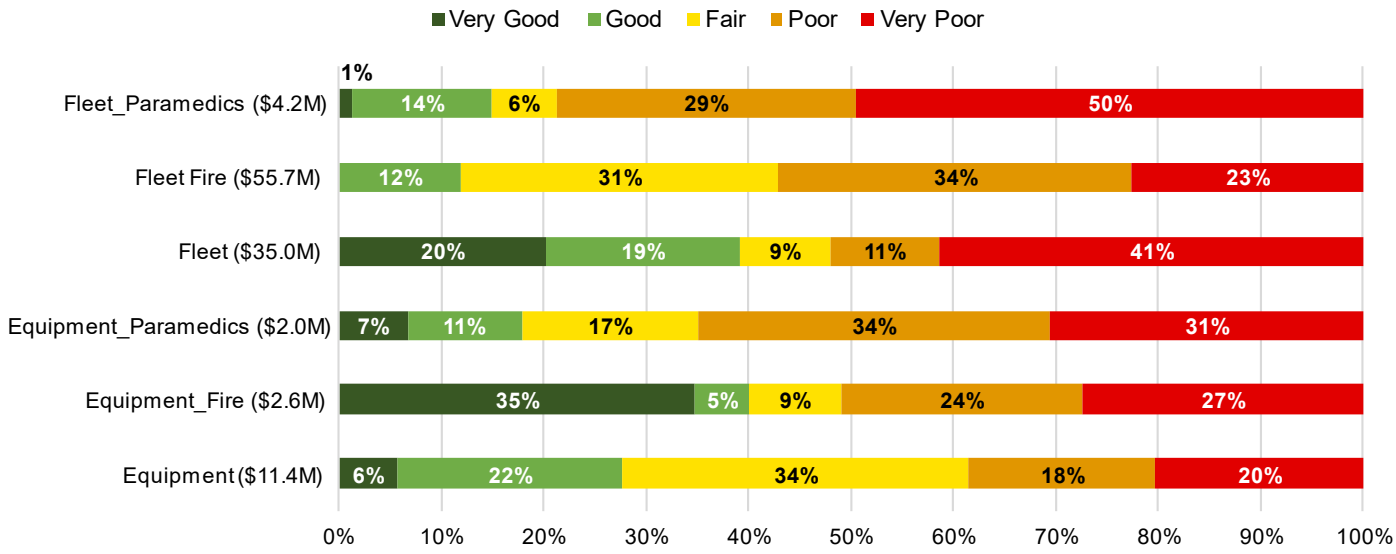
Figure 14-1 Overall Condition of Fleet & Equipment



Note: Totals may not add up to 100% due to rounding.

To show more information at the asset class level, the figure below shows the total value and condition distribution for the various fleet and equipment asset classes separately.

Figure 14-2 Condition by Asset Class



Note: Totals may not add up to 100% due to rounding.

14.2.3 Calculating Condition of Fleet & Equipment

At this time, age (in comparison to estimated service life) is used as a proxy to indicate condition for Fleet & Equipment assets. The table below summarizes the criteria used to define the condition of the various assets included.

Table 14-4 Condition Categories for Fleet & Equipment Assets

Condition State	% Remaining Life
Very Good	>85
Good	60-85
Fair	30-60
Poor	0-30
Very Poor	Past Estimated Service Life

14.3 Lifecycle Management Strategy

This section presents the strategy of key lifecycle activities currently applied to provide proposed levels of service.

14.3.1 Non-Infrastructure Activities

- Process to manage warranties and service agreements with suppliers.
- Process to consult stakeholders before fleet procurement to specify the most suited/effective vehicle.
- Options for extended warranties are reviewed when applicable.
- Insurance policies carried for fleet and equipment assets.
- Sharing of some emergency services from Fire Fleet is established between local neighbouring municipalities.
- Sharing of some assets in Emergency Services allows for some economies of scale with shared lifecycle activities, procurement, inventory, staffing, and building costs.
- Operating strategies to maximize fleet and equipment usage across all seasons, and minimize dormant vehicles, such as sharing of administrative vehicles when possible.
- Where practical, activities and fleet are planned to include crews sharing vehicles when suitable, and to reduce excessive idling.

14.3.2 Operating Activities

- Regular preventive maintenance programs in place, such as oil changes, tire rotation, etc., generally based on manufacturer recommendations.
- Reactive maintenance program in place.
- Striving to track failures as incidents in order to continually improve.
- Inventory controls for fleet and equipment parts and materials.
- Engaging staff/management in key decisions about elective repairs, to ensure continuity of service and fewer breakdowns while in service.

14.3.3 Renewal Activities

- Major overhauls or reconditioning fleet and equipment assets is typically poor value for money, often not extending life, so full replacement of the asset is often chosen.
- Regular preventative maintenance programs assist in determining rehabilitation or replacements required.
- Need and priority for replacements are typically triggered by age of an asset, and an internal review of other factors such as past performance and maintenance costs, hours, other similar equipment, spending strategy, and options through deferrals.
- Salvage/sell replaced fleet and equipment, to avoid consuming valuable yard space for storage.
- Fire fleet and equipment replacement standards are established by National Fire Protection Association (NFPA) standards.

14.3.4 Disposal Activities

Obsolete fleet and equipment that is no longer of service to the County may be identified through master planning activities and studies. Obsolete fleet that is not replaced is salvaged, sold, or auctioned, to avoid consuming valuable yard space for storage.

14.3.5 Risk Management

The risks being managed are:

- **Safety Risk** - Mitigates risks to public and staff safety arising from poorly maintained fleet.
- **Environmental Risk** - Addresses risks associated with poorly maintained fleet, including spills, excessive emissions, fuel consumption, and prolonged storage of dormant vehicles.
- **Operational Risk** - Lessens inefficiencies resulting from breakdowns or unavailability of fleet for necessary tasks.
- **Reputational Risk** - Reduces negative perceptions due to dormant, redundant, or unused fleet, poorly maintained vehicles, breakdowns, or overcrowded storage yards.
- **Financial Risk** - Mitigates losses stemming from excessive or inappropriate fleet purchases, underutilized or dormant vehicles, inefficient use of County funds, major breakdowns, excess parts inventory, and missed salvage/auction opportunities.
- **Corporate Risk & Liabilities**: Minimizes legal liability associated with unplanned fleet or equipment breakdowns that can disrupt winter road maintenance or emergency response. Keeping fleet assets and equipment current can also help reduce collisions and third-party liability.
- **Quality Risk** - Mitigates the risk of not having an adequately tailored fleet to meet needs, ensuring availability when required and sustainability into the future.

Other Risk Options

More preventive maintenance may reduce unplanned failures or extend fleet service life but would require a budget increase.

Extended warranties could reduce repair costs, rehabilitation costs or extend time to replacement, but increase acquisition costs, and sometimes impact operations due to mandatory service and managing warranty information.

Funding Shortfall Risk Management

If the projected funding is insufficient to provide proposed LOS, the County will prioritize the following actions:

- Implement planned policy and planning activities,
- Carry out the most essential SOGR operation and maintenance activities to ensure asset functionality,

determined on an ongoing basis by staff,

- Conduct the most critical SOGR rehabilitation and replacement work, prioritizing assets based on failures and criticality as identified by staff, and
- Disposing of assets when necessary to maximize value.

If funding constraints require prioritization decisions, the County will mitigate risks by employing the following strategies. While not all are fully documented at this time, advancing these areas is included in the recommendations for improved asset management maturity.

Risk-Based Prioritization

The County will enhance or formalize a framework for assessing and prioritizing investments based on asset criticality, failure risk, and service impacts. This may include a structured risk matrix or scoring system to guide decision-making consistently.

Contingency Preparation

Various funding scenarios and their risks (e.g., deferring replacement of a roof versus implementing interim spot repairs) will be evaluated when feasible. Contingency plans will be developed for high-risk assets to ensure continued service delivery.

Adaptive Strategies

Lifecycle strategies will be adjusted to extend asset life where feasible, such as through increased inspections, temporary reinforcements, or preventive maintenance strategies. Maintenance priorities may also be dynamically adjusted based on real-time data and field observations.

Temporary Service-Level Adjustments and Interim Measures

Where necessary, the County will define minimum acceptable service levels and explore short-term solutions to maintain critical services (e.g.re-routing traffic in the event of a bridge closure). Service delivery expectations may also be adjusted to align with available funding while minimizing disruption.

Asset Rationalization

Underutilized or redundant assets will be assessed for potential decommissioning to alleviate financial strain. Alternative service delivery models, including shared services with neighboring municipalities, may also be explored. An example of this is the Facilities Rationalization Project.

External Opportunities

The County will continue to actively seek external funding opportunities, including grants, partnerships, and government funding programs, to help bridge financial gaps.

Communication

The County will provide annual reports to Council summarizing funding gaps, trade-offs made, and the projected impact on service levels. Communication efforts will highlight the consequences of deferred activities and may include visual tools to illustrate risks.

Lifecycle Activities to Maintain Current LOS

This section provides details on the combination of lifecycle activities applied to provide the proposed Levels of Service, while striving to optimize costs based on defined risk. For reference, if the County opted only to maintain current performance, rather than strive for the proposed levels of service defined in this AMP, lifecycle strategies would not be significantly different. Instead, the investment in the new proposed levels of service would not occur.

14.4 Financial Needs for Fleet & Equipment

14.4.1 Capital Investments

The average annual capital investment needed to provide proposed levels of service is estimated at $10.1 million, from 2025-2034. This includes renewal investments to achieve 100% of fire and paramedic fleet and equipment in a state of good repair, 80% of general equipment and 70% of general fleet in a state of good repair, fully implement growth and the benefit to existing levy portion, and fully implement the Energy Conservation and Demand Management Plan and other capital forecast items.

Table 14-2 Capital Investment Needs to Provide Proposed LOS

Investment Type	Average Annual Needs ($M)
Renewal	$9.0
Service Improvement and Other Investments	$0.7
Growth	$0.4
Total	**$10.1**

- Proposed and current Levels of Service are described earlier in this section.
- Not all assets are currently in a SOGR.

For comparison, if the County should opt to move to a scenario where all assets are continually maintained in a SOGR (ensuring that no assets fall into very poor condition), plus fully implement all growth plans and all other service improvement and planned initiatives, this total cost would be $11.5 million annually.

To satisfy the legislation, it is important to note costs to maintain current levels of service. Current Levels of Service are primarily based on continuing lifecycle activities so that the current total value of assets in a SOGR does not decrease. The renewal cost to maintain this current level of service is $6.6 million annually.

Investment needs to cover growth while maintaining levels of service for wastewater are described in the *DC Background Study*.

14.4.2 Operating Investments

Investment needs from the operating budget required to maintain current levels of service for fleet and equipment are assumed to be equivalent to the current operating budget for fleet and equipment services, including salaries, materials, contractors, and other expenditures for lifecycle activities.

Currently, the Approved Levy/Rate Operating Budget includes an annual estimate of $13.0 million to operate Fleet & Equipment assets, excluding infrastructure funding, primarily funded from the net levy/rate requirement. Over the next 10 years it is estimated this will remain relatively similar, with inflationary increases annually.

Operating costs to provide proposed LOS are challenging to forecast at this time, but are estimated to include, at a minimum, the growth-related operating costs described in Section 8.5.2.

15. General Facilities

This Service Area Plan provides information about the management of Norfolk County's General Facilities assets over the next 10 years.

Specialized equipment for arena and recreation centres, such as the ice pads and pool filtration system, are included in the next Service Area Plan – Parks & Recreation, **Section 16.**

15.1 Levels of Service

This section collectively describes levels of service provided through the assets in this Service Area. General descriptions of service commitments and the areas serviced are provided, along with measures showing current performance.

15.1.1 Background

The General Facilities assets house County staff and volunteers, and provide operational, storage, Council, and public access space. As stated in *Our Future Norfolk, the Council Strategic Plan 2022-2026*, Serving Norfolk is a strategic area of focus, and the County is committed to fiscal responsibility, including incremental investment in people, process, and technology to ensure that assets are in a state of good repair.

15.1.2 Proposed Levels of Service

The County proposes to continue providing safe, compliant, reliable, available, and sustainable facilities assets, indicated through the following metrics:

Table 15-1 Proposed Levels of Service

Metric	Current Performance	Proposed Performance by 2034
Percentage of all assets in a SOGR	89%	**80%**
Implementation of the recommendations in the Energy Conservation and Demand Management Plan (Costs After Savings)	0%	**50%**
Implementation of growth-driven new/increased service levels[25]	0%	**100%**
Implementation of other capital forecast items[25,26]	0%	**100%**

Other important service metrics monitored and considered in asset management planning decisions include:

Table 15-2 Other Important Facilities Metrics

Metric	Current Performance
Percentage of fire responses that are within NFPA 1720 standards for total response times	80%
Indoor recreation space per population person	498 m^2 per 1000 people
Indoor recreation space	33,642 m^2

[25] Reference year is 2025, considering all of the committed or planned expenditures until 2034.

[26] Examples: Building security projects, paramedic services attachments, barrier-free access programs.

The County is also working on improving baseline monitoring data in:

- Climate change measures,
- Library security measures, and
- Overall storage space for County equipment and materials.

15.2 Current State of General Facilities Assets

The state of assets used to provide these services is summarized below.

15.2.1 Inventory

The County maintains the following facilities along with their associated facility components.

For each class of General Facilities assets, the table below outlines quantity, replacement value, average condition, age, and estimated service life.

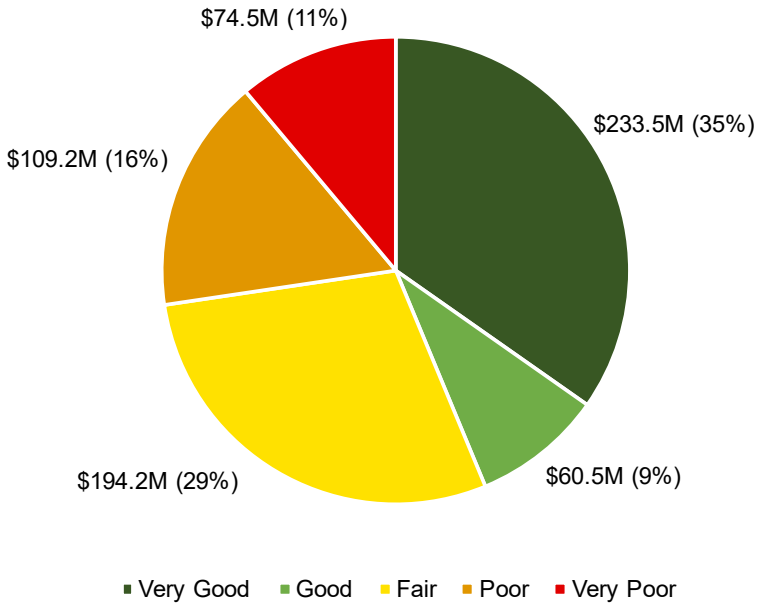
Table 15-3 Inventory of General Facilities

Asset Class	Quantity	Replacement Value ($M)	Average Performance	Average Age	Average ESL
Administration Buildings	7	$61.1M	Good	88	50
Emergency Services Buildings	16	$58.5M	Very Good	38	50
Heritage and Culture Buildings	14	$48.6M	Good	113	50
IT and Communications	1949	$3.8M	NA	NA	6
Library Buildings	4	$38.7M	Fair	125	50
Long Term Care Buildings	1	$101.8M	Fair	20	50
Miscellaneous Buildings	35	$13.3M	Good	16	49
Operations Buildings	47	$65.4M	Fair	46	50
Parks and Recreation Buildings	111	$281.7M	Fair	57	50
Storage Buildings	12	$2.7M	Good	57	50
TOTAL		**$675.5M**			

15.2.2 Asset Condition

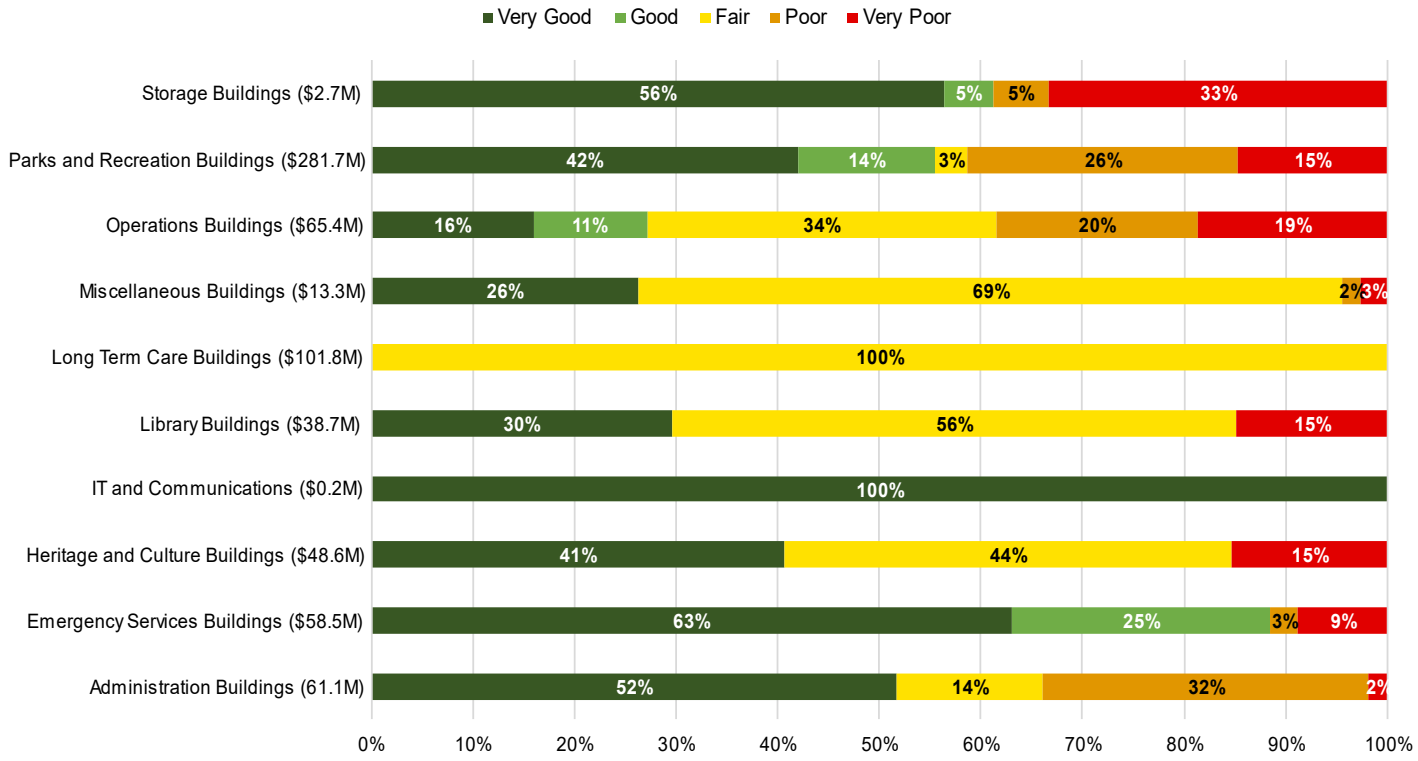
The figures below show the percentages (and values) of General Facilities assets within each condition category, from very good to very poor.

Figure 15-1 Overall Condition of General Facilities



To show more information at the asset class level, the figure below shows the total value and condition distribution for the various facility assets classes separately.

Figure 15-2 Condition by Asset Class



Note: Totals may not add up to 100% due to rounding.

15.2.3 Calculating Condition of General Facilities

The condition of the assets in this service area is reported based on Facility Condition Index (FCI). The table below summarizes the criteria used to define the condition of the various assets included in the General Facilities service area.

Table 15-4 Condition Categories for General Facilities

Condition State	Facility Condition Index (FCI)
Very Good	<1
Good	1-2
Fair	2-5
Poor	5-10
Very Poor	>10

15.3 Lifecycle Management Strategy

This section presents the strategy of key lifecycle activities applied to provide proposed levels of service through facility assets.

15.3.1 Non-Infrastructure Activities

- The Facilities Master Plan supports identifying the service and asset objectives necessary to meet the needs and growth of County.
- Studies may be periodically carried out to evaluate usage or space allocation, including the current Facilities Review project (2025 completion).
- Building condition audits guide the County in future capital requirements for state of good repair.
- Development Standards for planning include energy performance standards to be considered in designs.
- Process for planning new building designs or major renovations that involves consultation with staff including operations.
- Insurance policies in place.

15.3.2 Operating Activities

- Planned preventive maintenance programs for building components, such as HVAC maintenance.
- Reactive maintenance programs for building components as required.
- Building condition audits identify deficiencies. Regularly scheduled inspections and comprehensive building condition assessments. In accordance with manufacturer manuals where it can be afforded.
- Process for civic buildings and fire stations involve work orders triggered by staff observation. Parks buildings maintained based on schedule, use, and user group comments/recommendations.
- Regular health and safety inspections also trigger repairs and maintenance.
- Commissioning requirements through contracts in new builds trigger the transfer of operation/maintenance documents and training from the contractor to staff, handover of documents by contractor.

15.3.3 Renewal Activities

- Capital projects from condition assessments may involve rehabilitation or replacement of various components or subcomponents of buildings, that may be based on input from service contractors, staff, and technology.
- Before defaulting to like-for-like replacement of a building component, the County has a process to check the feasibility to replace with alternate or improved infrastructure that may also address climate change or accessibility goals, for example.
- Before defaulting to replacement of a building, the County has a process to check the feasibility to decommission, repurpose based on cost-effectiveness, and evaluate the value to council/community, heritage, and other criteria.

15.3.4 Disposal Activities

Process to check the feasibility to decommission, repurpose based on cost-effectiveness, value to council/community, heritage, other criteria.

15.3.5 Risk Management

The risks being managed are:

- **Safety Risk** - Addresses potential hazards to public and staff safety arising from inadequately maintained facilities.
- **Environmental Risk** - Potential environmental impacts related to poorly maintained facilities, such as spills, energy consumption, and emissions.
- **Operational Risk** - Addresses inefficiencies resulting from facility component breakdowns (e.g. air conditioning failure) or unavailability for access or use.
- **Reputational Risk** - Works to mitigate negative perceptions stemming from dormant, neglected, redundant, overcrowded, or underutilized facilities.
- **Financial Risk** - Addresses potential losses due to underutilization, unplanned failures, inefficient use of County funds, or major breakdowns.
- **Corporate Risk & Liability** - Focuses on reducing the risk of unplanned facility closures or breakdowns causing disruptions in public services or facility operation.
- **Quality Risk** - Aims to mitigate the risk of not having facilities tailored to needs, ensuring availability and sustainability for future operations.

Other Risk Options

To Reduce Life Cycle Costs or Prolong Replacement - Enhanced preventive maintenance programs, rehabilitation when feasible, or extended warranties for building components may reduce overall lifecycle costs and/or extend replacement timeline.

This could also increase acquisition and/or maintenance costs and impact operations and maintenance costs due to mandatory service and managing of warranty information.

Funding Shortfall Risk Management

If the projected funding is insufficient to provide proposed LOS, the County will prioritize the following actions:

- Implement planned policy and planning activities,
- Carry out the most essential SOGR operation and maintenance activities to ensure asset functionality, determined on an ongoing basis by staff,
- Conduct the most critical SOGR rehabilitation and replacement work, prioritizing assets based on failures and criticality as identified by staff, and
- Disposing of assets when necessary to maximize value.

If funding constraints require prioritization decisions, the County will mitigate risks by employing the following strategies. While not all are fully documented at this time, advancing these areas is included in the recommendations for improved asset management maturity.

Risk-Based Prioritization

The County will enhance or formalize a framework for assessing and prioritizing investments based on asset criticality, failure risk, and service impacts. This may include a structured risk matrix or scoring system to guide decision-making consistently.

Contingency Preparation

Various funding scenarios and their risks (e.g., deferring replacement of a roof versus implementing interim spot repairs) will be evaluated when feasible. Contingency plans will be developed for high-risk assets to ensure continued service delivery.

Adaptive Strategies

Lifecycle strategies will be adjusted to extend asset life where feasible, such as through increased inspections, temporary reinforcements, or preventive maintenance strategies. Maintenance priorities may also be dynamically adjusted based on real-time data and field observations.

Temporary Service-Level Adjustments and Interim Measures

Where necessary, the County will define minimum acceptable service levels and explore short-term solutions to maintain critical services (e.g.re-routing traffic in the event of a bridge closure). Service delivery expectations may also be adjusted to align with available funding while minimizing disruption.

Asset Rationalization

Underutilized or redundant assets will be assessed for potential decommissioning to alleviate financial strain. Alternative service delivery models, including shared services with neighboring municipalities, may also be explored. An example of this is the Facilities Rationalization Project.

External Opportunities

The County will continue to actively seek external funding opportunities, including grants, partnerships, and government funding programs, to help bridge financial gaps.

Communication

The County will provide annual reports to Council summarizing funding gaps, trade-offs made, and the projected impact on service levels. Communication efforts will highlight the consequences of deferred activities and may include visual tools to illustrate risks.

Lifecycle Activities to Maintain Current LOS

This section provides details on the combination of lifecycle activities applied to provide the proposed Levels of Service, while striving to optimize costs based on defined risk. For reference, if the County opted only to maintain current performance, rather than strive for the proposed levels of service defined in this AMP, lifecycle strategies would not be significantly different. Instead, the investment in the new proposed levels of service would not occur.

15.4 Financial Needs for General Facilities

15.4.1 Capital Investments

The average annual capital investment needed to provide proposed levels of service is estimated at $14.9 million, from 2025-2034. This includes renewal investments to achieve 80% of assets in a state of good repair, fully implement growth and the benefit to existing levy portion, Implement 50% of the Energy Conservation and Demand Management Plan, and fully implement the other capital forecast items.

Table 15-5 Capital Investment Needs to Provide Proposed LOS

Investment Type	Average Annual Needs ($M)
Renewal	$6.0
Service Improvement and Other Investments	$4.2
Growth	$4.7
Total	**$14.9**

- Proposed and current Levels of Service are described earlier in this section.
- Not all assets are currently in a SOGR.

For comparison, if the County should opt to move to a scenario where all assets are continually maintained in a SOGR (ensuring that no assets fall into very poor condition), plus fully implement all growth plans and all other service improvement and planned initiatives, this total cost would be $28.1 million annually.

To satisfy the legislation, it is important to note costs to maintain current levels of service. Current Levels of Service are primarily based on continuing lifecycle activities so that the current total value of assets in a SOGR does not decrease. The renewal cost to maintain this current level of service is $11.9 million annually.

Investment needs to cover growth while maintaining levels of service for General Facilities are described in the *DC Background Study*.

15.4.2 Operating Investments

Investment needs from the operating budget needed to maintain levels of service for General Facilities are assumed to be equivalent to the current operating budget for General Facilities services, including salaries, materials, contractors, and other expenditures for lifecycle activities.

Currently, the Approved Levy/Rate Operating Budget includes an annual estimate of $8.8 million to operate General Facilities assets, excluding infrastructure funding, primarily funded from the net levy/rate requirement. Over the next 10 years it is estimated this will remain relatively similar, with inflationary increases annually.

Operating costs to provide proposed LOS are challenging to forecast at this time, but are estimated to include, at a minimum, the growth-related operating costs described in Section 8.5.2.

16. Parks & Recreation

The County maintains a diverse portfolio of assets that are required to provide the communities with parks and recreation services and areas. The parks and recreation services span across all communities of Norfolk including Delhi, Port Dover, Port Rowan, Simcoe and Waterford. There are five different asset classes within the parks and recreation portfolio:

- Parks
- Natural Assets
- Amenities
- Specialized Equipment
- Lakefront Assets

This Service Area Plan provides information about the management of Norfolk County's parks and recreation assets over the next 10 years.

Note: Arenas and community centres are included in **Section 15.**

16.1 Levels of Service

This section collectively describes levels of service provided through the assets in this Service Area. General descriptions of service commitments and the areas serviced are provided, along with measures showing current performance.

16.1.1 Background

The Parks and Recreation assets provide services and spaces to enable healthy, happy lifestyles in the Norfolk County community. The recreation and parks assets are safe, accessible, and reliable. The County uses these assets to provide affordable, accessible, quality recreation opportunities that promote a safe, healthy and fun lifestyle in Norfolk. All the community, rural and urban, is offered recreation opportunities. The County provides recreation services through assets that are reliable and maintained in a state of good repair.

16.1.2 Proposed Levels of Service

The County proposes to continue providing safe, compliant, reliable, available, and sustainable facilities assets, indicated through the following metrics:

Table 16-1 Proposed Levels of Service

Metric	Current Performance	Proposed Performance by 2034
Percentage of amenities in a SOGR	20%	**75%**
Percentage of lakefront assets in a SOGR	11%	**75%**
Percentage of natural assets in a SOGR	100%	**100%**
Percentage of parks in a SOGR	87%	**87%**
Percentage of specialized equipment in a SOGR	44%	**75%**
Implementation of growth-driven new/increased service levels[27]	0%	**100%**

[27] Reference year is 2025, considering all of the committed or planned expenditures until 2034.

Metric	Current Performance	Proposed Performance by 2034
Implementation of other capital forecast items[27,28]	0%	**100%**

New levels of service that may be introduced through the updated Recreation Master Plan are not reflected in this AMP but will be reviewed and considered for the next update.

Other important service metrics monitored and considered in asset management planning decisions include:

Table 16-2 Other Important Parks and Recreation Metrics

Metric	Current Performance
Hectares of closed landfills	55 ha
Trees planted to trees removed	1:1
Square metres of outdoor County-owned recreation facility space	3,353 m^2

The percentage of canopy coverage by trees provided to the County is also being explored as a future performance measure.

16.2 Current State of Parks & Recreation Assets

The state of assets used to provide these services is summarized below.

16.2.1 Inventory

Cemeteries and Closed Landfills were excluded from the Average Age calculations as these are long-lived assets and are not replaceable.

For each class of Parks & Recreation assets, the table below outlines quantity, replacement value, average condition, age, and estimated service life.

Table 16-3 Inventory of Parks & Recreation Assets

Asset Class	Asset Type	Quantity	Replacement Value ($M)	Average Performance	Average Age	Average ESL
Amenities	Ball Diamonds	15	$23.1M	Very Poor	44	40
	Courts	20	$7.3M	Very Poor	39	40
	Playgrounds	35	$11.0M	Poor	17	21
	Skate Parks	2	$1.5M	Fair	13	25
	Soccer Fields	7	$10.8M	Very Poor	39	30
	Splash Pads	2	$11.3M	Very Poor	23	10
Lakefront Assets	Marinas	991	$14.2M	Very Poor	30	12
Natural Assets	Trees	46,836	$28.1M	Very Good	NA	14
	Woodlots	107	$18.6M	NA	NA	NA
Parks	Active Parks	55	NA	NA	NA	NA
	Cemeteries	54	$60.1K	Poor	7	10
	Closed Landfill	7	$45.4M	NA	NA	NA

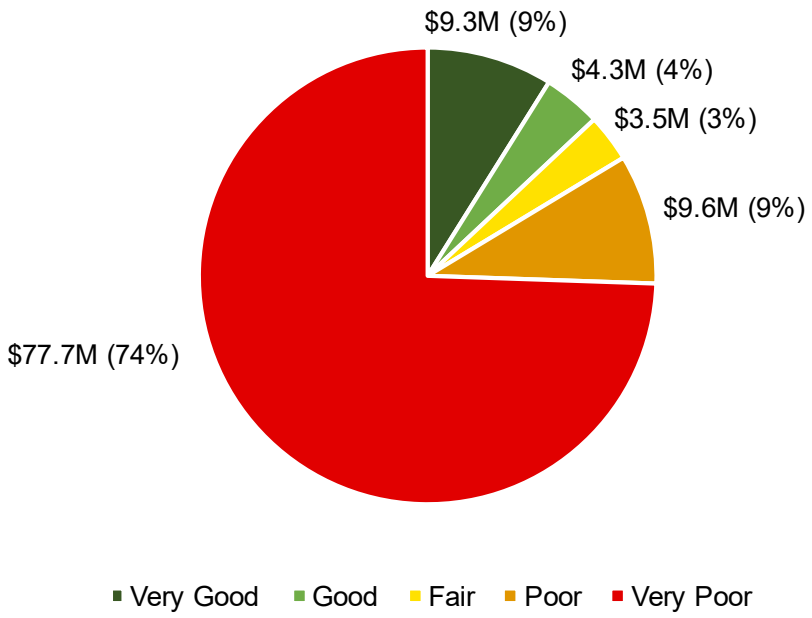
[28] Examples: Park upgrades, new splashpads, new washrooms.

Asset Class	Asset Type	Quantity	Replacement Value ($M)	Average Performance	Average Age	Average ESL
	Dog Parks	5	$92.5K	Fair	23	25
	Passive Parks	49	$6.9M	NA	NA	40
	Trails	15	$117.4K	Fair	14	25
Specialized Equipment	Arena Assets	15	$21.9M	Fair	10	10
	Filtration - Pools	2	$4.11M	Poor	28	10
Total			**$204.4M**			

16.2.2 Asset Condition

The figures below show the percentages (and values) of Parks & Recreation assets within each condition category, from very good to very poor.

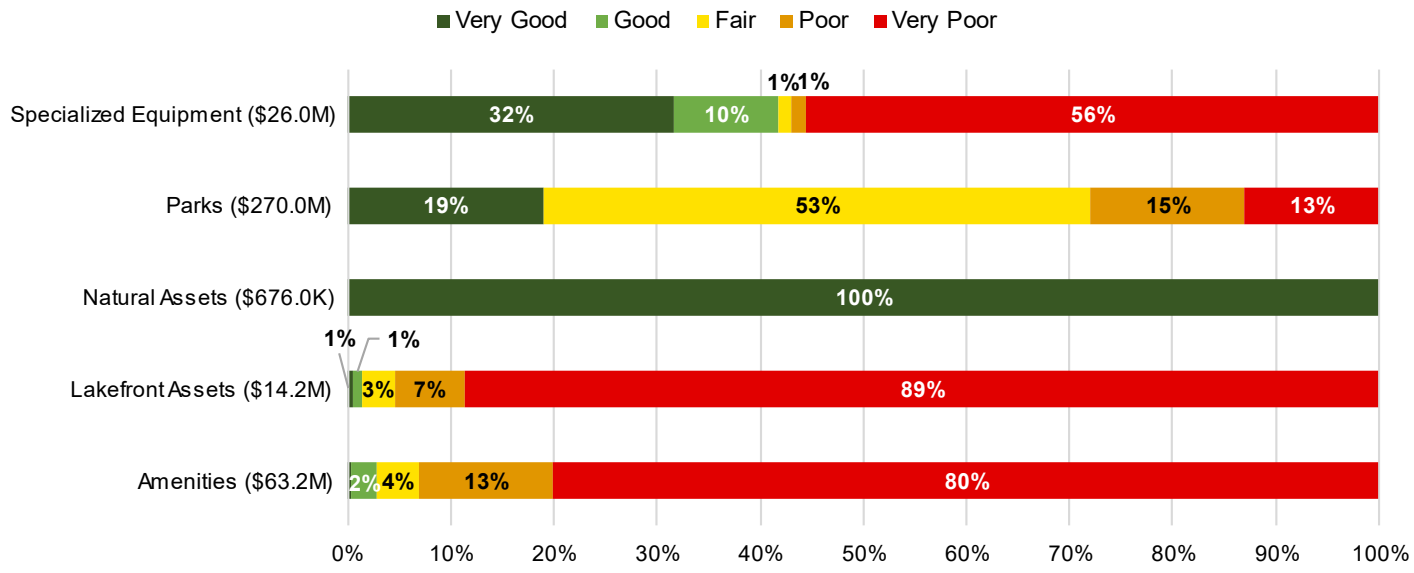
Figure 16-1 Overall Condition of Parks & Recreation Assets



Note: Totals may not add up to 100% due to rounding.

To show more information at the asset class level, the figure below shows the total value and condition distribution for the various parks and recreation asset classes separately.

Figure 16-2 Condition by Asset Class



Note: Totals may not add up to 100% due to rounding.

16.2.3 Calculating Condition of Parks and Recreation Assets

At this time, age (in comparison to estimated service life) is used as a proxy to indicate condition for Parks & Recreation assets. The table below summarizes the criteria used to define the condition of the various assets included.

Table 16-4 Condition Categories for Parks & Recreation Assets

Condition State	% Remaining Life
Very Good	>85
Good	60-85
Fair	30-60
Poor	0-30
Very Poor	Past Estimated Service Life

16.3 Lifecycle Management Strategy

This section presents the strategy of key lifecycle activities applied to provide proposed levels of service.

16.3.1 Non-Infrastructure Activities

- Parks and Recreation Master Plan supports the County in identifying the service objectives necessary to meet the needs and growth of the County.
- Assets are also acquired through development – where subdivisions are constructed by the Developer, then the right-of-way assets are assumed by the County. To ensure the County is assuming assets which were installed properly and functioning as intended, the County has detailed design requirements

which Developers are required to follow. Before assuming assets, County staff inspect the assets against the requirements and any deficiencies are to be rectified prior to assumption to ensure the County get the expected life out of the assets.
- Our Future Norfolk, the Council Strategic Plan states that a strategic area of focus is “Building Norfolk”, by: “Ensuring that Norfolk has all of the hard infrastructure (water, sewer, roads, parks) for future needs.”
- Conservation education programs/outreach in place.
- County Development Standards in place to ensure amenities are maintainable, sustainable, effective.
- Insurance policies in place.

16.3.2 Operating Activities

- Maintenance is undertaken based on available resources, routine schedules like grass cutting, and field observations.
- Ecological monitoring, such as invasive species management.
- Public access and by-law enforcement ensure park infrastructure is being utilized as planned and that it is sustainable with respect to surrounding natural heritage systems.
- Reactive maintenance for trees, initiated through service requests.
- Preventive maintenance in place, such as gravel top-up and grading on parking lots and winter maintenance, and grass cutting at sports fields, passive parks, cemeteries, and open green spaces.
- Trails have reactive maintenance in place, and trails associated with essential services also have winter maintenance, which will begin including more stormwater pond lookouts/access lanes.
- Regular inspection, and maintenance triggered by staff observation, inspection, or public input.

16.3.3 Renewal Activities

- Rehabilitation or replacement decisions based on combination of inspections, risk, budget, lifecycle, triggers, obsolescence, public input, options, efficiencies (climate change).
- Bundling of tenders, capital, and projects for cost savings.
- Mulch top up, major repairs, or overall replacement and updating.
- Typically land assets are not replaced, except for some siteworks.

16.3.4 Disposal Activities

When obsolete or taken offline, parks and recreation assets are suitably disposed of or salvaged. Surplus Park land may be sold, but generally only when in alignment with long term planning.

16.3.5 Risk Management

The risks being managed are:

- **Health and Safety Risk** - Reduces the risk of safety or health-related deficiencies, such as trip hazards, injury, or pests, within County parks and recreational areas.
- **Environmental Risk** - Addresses risks related to biodiversity loss, urban sprawl, invasive species, and the impacts of climate change such as flooding on County parks and land.
- **Reputational Risk** - Averts negative perceptions arising from inadequate planning of County parks and land projects, as well as from insufficient provision of natural or recreational areas to the community and poorly maintained parks and lands.
- **Financial Risk** - Reduces losses associated with excessive planning or management of County parks or land, inefficient allocation of funds, unforeseen maintenance needs, undetected damage, and exposure to natural hazards. Reduces losses from unplanned maintenance, undetected damage, natural hazards.

- **Corporate Risk & Liability** - Mitigates liabilities stemming from property damage or injury to third parties, including issues related to siteworks or parking lots within County-owned properties. Reduces liabilities from safety deficiencies related to street trees.
- **Quality Risk** - Enables the County to provide suitable parks and land to fulfill community needs, promoting sustainability and maintaining them in a state of good repair for recreation, health, and wellness purposes. Keeps areas beautiful for the community's enjoyment, health & wellness, with sustainable natural assets and canopy suited to desired healthy lifestyle.

Other Risk Options

Further preventative maintenance rehabilitation and replacements for trees and woodlots would further reduce risks, especially liabilities, and ensure level of service maintenance, but would require increased budget.

Funding Shortfall Risk Management

If the projected funding is insufficient to provide proposed LOS, the County will prioritize the following actions:

- Implement planned policy and planning activities,
- Carry out the most essential SOGR operation and maintenance activities to ensure asset functionality, determined on an ongoing basis by staff,
- Conduct the most critical SOGR rehabilitation and replacement work, prioritizing assets based on failures and criticality as identified by staff, and
- Disposing of assets when necessary to maximize value.

If funding constraints require prioritization decisions, the County will mitigate risks by employing the following strategies. While not all are fully documented at this time, advancing these areas is included in the recommendations for improved asset management maturity.

Risk-Based Prioritization

The County will enhance or formalize a framework for assessing and prioritizing investments based on asset criticality, failure risk, and service impacts. This may include a structured risk matrix or scoring system to guide decision-making consistently.

Contingency Preparation

Various funding scenarios and their risks (e.g., deferring replacement of a roof versus implementing interim spot repairs) will be evaluated when feasible. Contingency plans will be developed for high-risk assets to ensure continued service delivery.

Adaptive Strategies

Lifecycle strategies will be adjusted to extend asset life where feasible, such as through increased inspections, temporary reinforcements, or preventive maintenance strategies. Maintenance priorities may also be dynamically adjusted based on real-time data and field observations.

Temporary Service-Level Adjustments and Interim Measures

Where necessary, the County will define minimum acceptable service levels and explore short-term solutions to maintain critical services (e.g.re-routing traffic in the event of a bridge closure). Service delivery expectations may also be adjusted to align with available funding while minimizing disruption.

Asset Rationalization

Underutilized or redundant assets will be assessed for potential decommissioning to alleviate financial strain. Alternative service delivery models, including shared services with neighboring municipalities, may also be explored. An example of this is the Facilities Rationalization Project.

External Opportunities

The County will continue to actively seek external funding opportunities, including grants, partnerships, and government funding programs, to help bridge financial gaps.

Communication

The County will provide annual reports to Council summarizing funding gaps, trade-offs made, and the projected impact on service levels. Communication efforts will highlight the consequences of deferred activities and may include visual tools to illustrate risks.

Lifecycle Activities to Maintain Current LOS

This section provides details on the combination of lifecycle activities applied to provide the proposed Levels of Service, while striving to optimize costs based on defined risk. For reference, if the County opted only to maintain current performance, rather than strive for the proposed levels of service defined in this AMP, lifecycle strategies would not be significantly different. Instead, the investment in the new proposed levels of service would not occur.

16.4 Financial Needs for Parks & Recreation

16.4.1 Capital Investments

The average annual capital investment needed to provide proposed levels of service is estimated at $10.9 million, from 2025-2034. This includes renewal investments to achieve 75% of assets in a state of good repair, fully implement growth and the benefit to existing levy portion, and fully implement the other capital forecast items.

Table 16-5 Annual Capital Investment Needs to Provide Proposed LOS

Investment Type	Average Annual Needs ($M)
Renewal	$10.2
Service Improvement and Other Investments	$0.6
Growth	$0.1
Total	**$10.9**

- Proposed and current Levels of Service are described earlier in this section.
- Not all assets are currently in a SOGR.

For comparison, if the County should opt to move to a scenario where all assets are continually maintained in a SOGR (ensuring that no assets fall into very poor condition), plus fully implement all growth plans and all other service improvement and planned initiatives, this total cost would be $13.4 million annually.

To satisfy the legislation, it is important to note costs to maintain current levels of service. Current Levels of Service are primarily based on continuing lifecycle activities so that the current total value of assets in a SOGR does not decrease. The renewal cost to maintain this current level of service is $5.3 million annually.

Investment needs to cover growth while maintaining levels of service for wastewater are described in the *DC Background Study*.

16.4.2 Operating Investments

Investment needs from the operating budget needed to maintain levels of service for Parks & Recreation are assumed to be equivalent to the current operating budget for Parks & Recreation services, including salaries, materials, contractors, and other expenditures for lifecycle activities.

Currently, the Approved Levy/Rate Operating Budget includes an annual estimate of $11.2 million to operate Parks and Recreation assets, excluding infrastructure funding, primarily funded from the net levy/rate requirement. Over the next 10 years it is estimated this will remain relatively similar, with inflationary increases annually.

Operating costs to provide proposed LOS are challenging to forecast at this time, but are estimated to include, at a minimum, the growth-related operating costs described in Section 8.5.2.

Appendix

A. Asset Hierarchy

Transportation, Drinking Water, Stormwater, Wastewater

A hierarchy has been established for consistency and future use.

Level 1 Service (AMP section)	Level 2 Asset Class	Level 3 Asset Type
Transportation	Roads	Major Arterial
		Minor Arterial
		Collector
		Guiderails
		Local
		Parking Lots
		Retaining Walls
		Sidewalks
		Signage
		Streetlights
		Traffic Signals
		Walkways
	Structures	Bridges
		Major Culverts
		Pedestrian Bridges
Drinking Water	Linear	Local Mains
		Transmission Mains
		Water Meters
	Vertical	Booster Stations and Reservoirs
		Bulk Water Depots
		Other Water Facilities
		Water Towers and Standpipes
		Water Treatment Plants
		Wells
Stormwater	Linear	Ditches
		Municipal & Mutual Agreement Drains
		Small Diameter Culverts
		Storm Mains
	Natural Assets	Shoreline Assets
	Treatment & Control	Stormwater Management Ponds
Wastewater	Linear	Sanitary Forcemains
		Sanitary Mains
		Sanitary Services
	Vertical	Sewage Pumping Stations
		Wastewater Treatment Plants

Fleet & Equipment

Level 1 Service (AMP section)	Level 2 Asset Class	Level 3 Asset Type
Fleet & Equipment	Fire Equipment	Equipment General
	Fire Fleet	Emergency Response Vehicles Fire
		Fire Apparatus
		Other Fleet
	General Equipment	Chopper
		Loader
		Backhoe
		Forklift
		Roller
		Mower
		UTV (Utility Task Vehicle)
		Wood Chipper
		Rodder
		Trailer
		Compressor
		Motorized Attachments
		Equipment General
	General Fleet	Licensed Vehicles
	Paramedic Equipment	Equipment General
	Paramedic Fleet	Ambulances
		Emergency Response Vehicles
	Transit Equipment	Equipment General

General Facilities

Combined Base - A “Combined Base” under Fire & Paramedic Services Buildings is a base that houses both Fire and Paramedic Services response teams.

Cultural Buildings - A “Cultural Building” is a building of historical and/or cultural significance. An example of cultural buildings in Norfolk County includes Norfolk Arts Centre and Carillon Tower.

Level 1 Service (AMP section)	Level 2 Asset Class	Level 3 Asset Type
General Facilities	Administration Buildings	Administration Buildings
	Building Equipment and Interiors	General Equipment
	Fire and Paramedic Services Buildings	Combined Bases
		Fire Stations
		Paramedic Services Bases
	Heritage and Culture Buildings	Cultural Buildings
		Museum Buildings
	IT and Communications	IT Equipment
	Library Buildings	Library Buildings
	Long Term Care Buildings	Building Equipment and Interiors
		Long Term Care Buildings
	Miscellaneous Buildings	Marina Buildings
		Material Recovery Facility
		Medical Center Buildings
		Social Housing
		Storage Buildings
		Transfer Stations
		Transit Buildings
	Parks and Recreation Buildings	Arena Buildings
		Community Centre Buildings
		Fieldhouse Buildings
		Office/Garage
		Outdoor Pool Buildings
		Parks and Recreation Buildings
		Parks Buildings
		Portable Washrooms
		Public Washrooms
		Recreation Centers
	Roads Operations Buildings	Operations Buildings
		Salt/Sand Domes
	Storage Buildings	Storage Buildings

Parks & Recreation

Active Parks - An “Active Park” is any park that requires infrastructure for the purposes of recreational activities. An example of an active park would include infrastructures such as ball diamonds, playgrounds, soccer fields, courts etc.

Amenities - Amenities are physical features within parks that provide recreation and enjoyment such as ball diamonds, playgrounds, soccer fields, splashpads, skateparks etc.

Passive Parks - A "Passive Park" is a public area designated as a park but does not contain facilities or equipment for exercise or play. An example of a passive park would include nature parks or greenspaces.

Shoreline Assets - Norfolk County is an owner of shoreline lands along the northern shore of Lake Erie that are subject to erosion and flood risks. Shoreline assets relate to management of these lands and rehabilitation and/or creation of protective structures if/where they exist, that prevent land loss and damages to adjacent infrastructure (public and/or private).

Level 1 Service (AMP section)	Level 2 Asset Class	Level 3 Asset Type
Parks and Recreation	Amenities	Courts
		Ball Diamonds
		Splash Pads
		Playgrounds
		Skate Parks
		Soccer Fields
	Lakefront Assets	Marinas
		Piers
	Natural Assets	Trees
		Woodlots
	Parks	Active Parks
		Cemeteries
		Dog Parks
		Passive Parks
		Trails
		Closed Landfills
	Specialized Equipment	Arena Assets (ice pad equipment)
		Filtration - Pools

B. Reconciliation to O.Reg.588/17

The following table paraphrases the AMP requirements outlined in Ontario Regulation 588/17 for municipalities to meet. Next to each requirement is the Norfolk AMP section reference where the legislated requirements is met.

Section	Requirement (Paraphrased)	Reference in this AMP
5.(2) 1.	Current levels of service, with core asset LOS determined in accordance with tables	Within each Service Area Plan (Sections 10 – 16, subsection 1).
5.(2) 2.	Current performance measures of assets in each category	Within each Service Area Plan (Sections 10 – 16, subsection 1.3).
5.(2) 3.	Summary of assets in each category	Within each Service Area Plan (Sections 10 – 16, subsection 2). Also summarized in Section 7.
5.(2) 3.	Replacement value of assets in each category	Within each Service Area Plan (Sections 10 – 16, subsection 2). Also summarized in Section 7.
5.(2) 3.	Average age of assets in each category	Within each Service Area Plan (Sections 10 – 16, subsection 2).
5.(2) 3.	Condition of assets in each category	Within each Service Area Plan (Sections 10 – 16, subsection 3). Also summarized in Section 7.
5.(2) 3.	Description of municipality's approach to assessing condition of assets in each category	Section 5, and also some information within each Service Area Plan (Sections 10 – 16, subsection 2.3).
5.(2) 4.	Lifecycle activities needed to maintain current levels of service for 10 years	Within each Service Area Plan (Sections 10 – 16, subsection 3).
5.(2) 4.	Costs of providing lifecycle activities needed to maintain current LOS, based on assessment of lifecycle, options, risks, lower cost	Within each Service Area Plan (Sections 10 – 16, subsection 4), and summarized for all assets in Section 8.1.
5.(2) 4.	Link or description of assessment of current LOS lifecycle, options, risks, lower cost	Section 5, and also within each Service Area Plan (Sections 10 – 16, subsection 3).
5.(2) 5.	For population <25K, description of population or economic forecast assumptions, and how these connect to lifecycle cost projections for current LOS	Not applicable to Norfolk
5.(2) 6.i.	For population 25K or more, population & employment forecasts	Not applicable to Norfolk
5.(2) 6.ii.	For population 25K or more, lower tier in GGH, Sched 7 or portion of upper tier growth plan forecast, or assumptions	Not applicable to Norfolk
5.(2) 6.iii.	For population 25K or more, upper/single tier outside GGH, population & employment forecasts in OP, or assumptions	Section 6.1.1
5.(2) 6.iv.	For population 25K or more, lower tier outside GGH, portion of upper tier growth plan forecast	Not applicable to Norfolk
5.(2) 6.vi.	For population 25K or more, capital & significant operating costs for each of 10 years, to maintain LOS to accommodate increase in demand cause by growth	Sections 6.1.1, 8.1
5.(3).	Description of how all background information and reports will be made available to the public (reports and info from which AMP content is developed)	Sections 6.2, 9.1
6.(1) 1.	Proposed Levels of Service, with core asset LOS determined in accordance with tables, for each of 10 years	Subsection 1 within each Service Area Plan, and supporting information in Section 5.2
6.(1) 2.	Explanation of why proposed LOS are appropriate, based on options, delta, achievability, affordability	Section 5.2.1

Section	Requirement (Paraphrased)	Reference in this AMP
6.(1) 2.	Link or description of assessment of proposed LOS options, delta, achievability, affordability	Section 5.2.1
6.(1) 3.	Proposed performance measures of assets based on metrics established by the municipality (e.g. measures for energy usage, operating efficiency, etc.)	Subsection 1 within each Service Area Plan, with supporting information in Section 3.3
6.(1) 4.	Lifecycle management strategy: Identification of lifecycle activities needed to provide proposed Levels of Service for a 10-year period, based on assessment of full lifecycle, options, risks, lowest cost	Subsection 3 within each Service Area Plan, with supporting information in Section 5.3
6.(1) 4. i.	Link or description of assessment of proposed LOS lifecycle, options, risks, lower cost	Subsection 3 within each Service Area Plan, with supporting information in Section 5.3
6.(1) 4. ii.	An estimate of annual costs for undertaking identified lifecycle activities over a 10-year period.	Subsection 4 within each Service Area Plan, and also the summary in Section 8
6.(1) 4. iii.	Projections for annual funding to be available to undertake identified lifecycle activities over a 10-year period	Section 8
6.(1) 4. iii.	Explanation of the options examined to maximize the funding projected to be available	Section 8
6.(1) 4. iv.	Identification of funding shortfalls for lifecycle activities over a 10-year period	Section 8
6.(1) 4. iv.	Identification of lifecycle activities that will be undertaken if there is a proposed LOS shortfall	Subsection 3.5 within each Service Area Plan, and supporting information in Section 5.3
6.(1) 4. iv.	Explanation of how risks associated with not undertaking any of the lifecycle activities will be managed.	Subsection 3.5 within each Service Area Plan, and supporting information in Section 5.3
6.(1) 5.	For population <25K, description of population or economic forecast assumptions, and how these connect to lifecycle cost projections for proposed LOS	Not applicable to Norfolk
6.(1) 6.	For population 25K or more, capital & significant operating costs for each of 10 years, to achieve proposed LOS to accommodate increase in demand caused by growth	Section 8 with supporting information from Section 6
6.(1) 6. ii.	For population 25K or more, funding projected to be available, by source, due to growth	Section 8
6.(1) 6. iii.	For population 25K or more, overview of the risks associated with implementation of the AMP	Section 9.3
6.(1) 7.	Explanation of other key assumptions	Section 4.4
7.(1)	Date of review and update of AMP - within 5 years	Cover page, Section 9.1 & 9.2, and Council meeting records.
8.	Endorsement of AMP by executive lead	Section 9.1, and corresponding staff report in Council agenda, and Council meeting records.
8.	Approval of AMP by Council resolution	Section 9.1, corresponding staff report in Council agenda, and Council meeting records.
9.(1)	Date of Council review of AM progress - before July 1 every year	Section 9.2, and corresponding staff report in Council agenda, and Council meeting records.
9.(2)	Annual Council review includes progress, factors impeding implementation, strategy to address factors	Section 9.2, and corresponding staff report in Council agenda, and Council meeting records.
10	Website availability of policy and AMP, copy provided if requested	Sections 6.2, 9.1

C. Revision History

Revision Date	Description
July 2024	Initial release of 2024 Asset Management Plan, updated from Asset Management Plan published in October 2023
June 2025	Next release, updated from 2024 AMP to comply with the 2025 requirements of the regulation, based on proposed levels of service. Changes made throughout entire document.