



2024 ASSET MANAGEMENT PLAN

July 2024

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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 (<i>O.Reg. 239/02</i>)
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.

Definitions

- ▶ **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 useful 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

Definitions

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.
- ▶ **Levels of Service:** Levels of service that are most representative of a municipal service and can be costed over a 10-year projected period.
- ▶ **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 persistent efforts of an organization to manage its assets through comprehensive lifecycle activities, and effectively allocating necessary financial resources with the aim of consistently delivering its services at the current established service levels.
- ▶ **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:

Definitions

- **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 signal 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.
 - ▶ **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:** Shoreline assets relate to management of shoreline lands, 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.

Definitions

- ▶ **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 current levels of service provided.
- The assets owned to provide/maintain 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 services¹, categorized into seven Service Areas – Level 1 of the Asset Hierarchy:

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

For consistency and comparability, asset information is organized and analyzed by Asset Class - Level 2 of the Asset Hierarchy.

¹ 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.

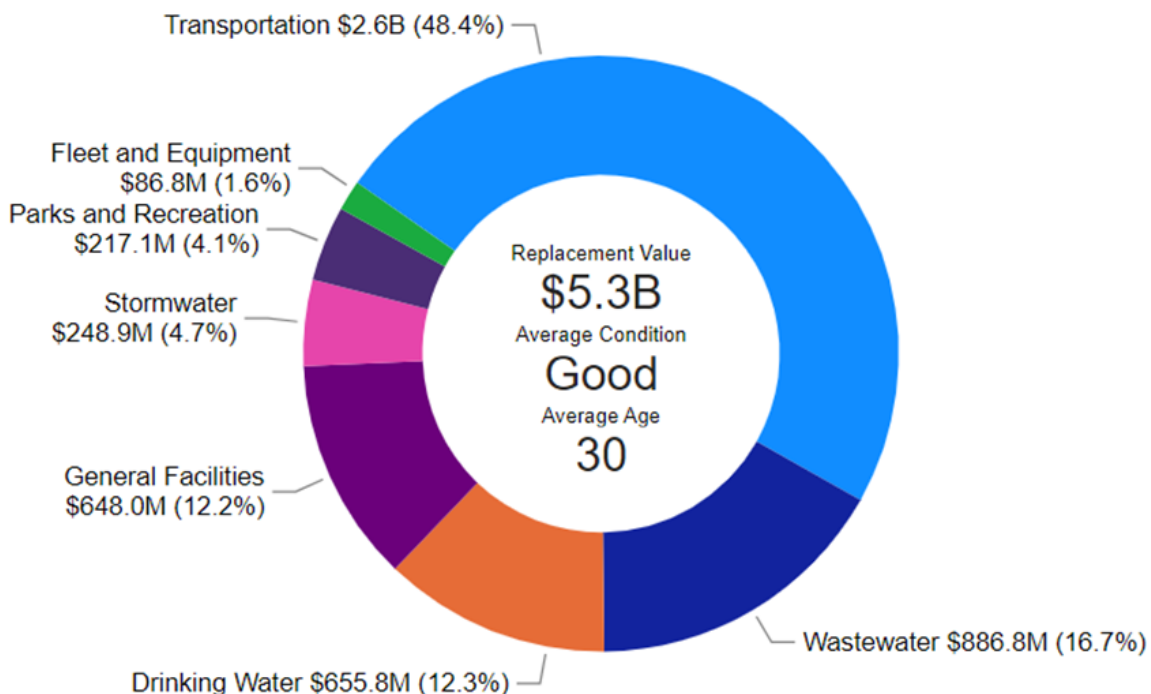
The classes of assets used across the Service Areas include:

CORE ASSETS				
Hierarchy Level 1	Transportation	Drinking Water	Wastewater	Stormwater
Hierarchy Level 2	<ul style="list-style-type: none"> • Roads • Structures 	<ul style="list-style-type: none"> • Vertical • Linear 	<ul style="list-style-type: none"> • Vertical • Linear 	<ul style="list-style-type: none"> • Linear • Treatment & Control

NON-CORE ASSETS			
Hierarchy Level 1	Fleet & Equipment	General Facilities	Parks & Recreation
Hierarchy Level 2	<ul style="list-style-type: none"> • Equipment • Equipment Fire • Equipment Paramedics • Equipment Transit • Fleet • Fleet Fire • Fleet Paramedics 	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • Amenities • Lakefront Assets • Natural Assets • Parks • Specialized Equipment

The figure below shows the overall value and condition of the Norfolk County asset portfolio, and how assets are allocated across Service Areas. 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



Executive Summary

Asset condition is an 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 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 maintaining an acceptable level of service. Current levels of service are defined for each Service Area Plan in this AMP and are focused on holding the current condition of the assets steady. 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 total capital investment needs to maintain current levels of service across all Service Areas is estimated at \$1.36 billion from 2024-2033. This equates to an average of \$136.6 million per year for the next 10 years.
- In comparison, based on the County's planned capital spending, Norfolk County is likely to spend an average of \$107.1 million per year towards capital projects for the next 10 years.
- **Therefore, an infrastructure gap between the planned capital expenditures and the capital expenditures required to maintain current levels of service exists, which is estimated at \$29.3 million annually. To 'close' the infrastructure gap found in this AMP in a single year would require a 22.7% increase in the net levy requirement.** This analysis is focused on capital renewal, growth in the *2018 DC Background Study*, disposals, non-infrastructure, and service improvement activities identified at this time. Refined data, target levels of service, revisions to the upcoming Development Background Charges Study, and/or changes in Council's appetite for new services could materially change this gap in future versions of the AMP.
- **The current 10-Year Capital Plan also has an existing funding shortfall that needs to be addressed in addition to this infrastructure gap.**
- There are additional investment requirements to operate and maintain assets over their lifecycle, estimated at approximately \$940.6 million over the next 10 years, based on the funding available through the Operating Budgets. This is assumed to be sufficient to maintain current service levels.

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 maintain 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, 2024, 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, and 2023.

4.1. Purpose

This AMP has been drafted in compliance with *Ontario Regulation 588/17*, related to requirements for July 1, 2024. It is a comprehensive, strategic document outlining how the assets are to be managed over a 10-year planning horizon (and beyond) to maintain 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.

Introduction

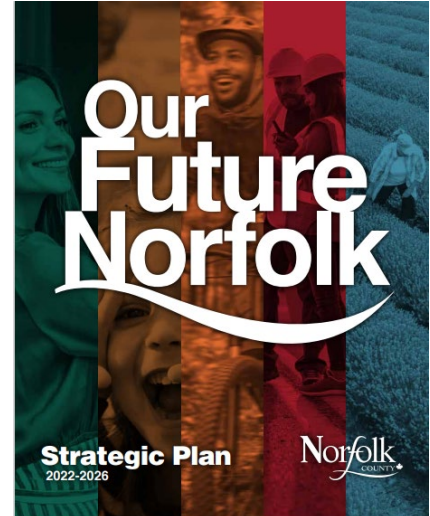
In accordance with the requirements of *O.Reg. 588/17*, all County assets² are included within the scope of this AMP, which includes both core and non-core assets. Core and non-core assets are not differentiated in the Service Area Plans as the lens of the information and discussions is about all the assets needed to provide the whole service.

The AMP is divided into the main body, Service Area Plans, and additional supporting or background information in the Appendix.

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 measures outline the quality, reliability, and safety expected from the assets.
- Specifies measurable indicators (e.g., pavement condition, bridge load capacity 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 maintain current levels of service.

Financial Summary

- Summarizes the financial investments needed to maintain current levels of service.

² 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.

Introduction

- 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 kilometres of land and boasts 142 kilometres 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, seek 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 2024 costing³ estimates for assets.
- It is assumed that the projected capital budgets and expected available reserve funds will occur as planned over the period of analysis.
- This AMP assumes that the current operating budget is sufficient to meet current operating needs and maintain current levels of service.

³ Using 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, as per *O.Reg.588/17*.

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.

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 costs including engineering, labour costs, materials, and studies (where applicable) to replace an asset in today's (2024) 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.

AMP Structure & Methodology

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 good. 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.
10-30%	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.
<10%	Very Poor	Sustained service is at risk. It is near or 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.
Not available	(Blank)	Asset data, such as inspection or age, is not available to enable the County to deduce condition. In this case, condition may be reported as <i>Blank</i> .

Assets that have exceeded their service life are 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 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).

A level of service states what assets are needed in order to provide services. As such, 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 and maintaining current levels of service - i.e. holding today's assets in their current state of repair. The time horizon for these forecasts is the next 10 years, as required by legislation.

The Levels of Service (LOS) section for each Service Area provides key performance indicators 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.

5.3. Asset Lifecycle Management Strategies and Risk

To ensure that municipal assets are performing as expected and meeting the needs of the community, it is important to establish a **lifecycle management strategy** to proactively reduce and manage asset deterioration and to maintain current levels of service.

Over time, assets condition and performance deteriorate. Asset deterioration has a negative effect on the ability of an asset to fulfill an intended function, such as conveying water, wastewater or stormwater. 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 proactively reduce and manage 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 asset 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 relining a sewer or water pipe.

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.

AMP Structure & Methodology

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 and cost benefit 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.

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 useful 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 operating, maintaining, and monitoring the assets. Including regularly scheduled inspection, maintenance, or 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 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 maintain service delivery. County staff engage in comprehensive, risk-based planning processes aligned to 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 Strategies to Maintain Current LOS

Developing and implementing a proactive lifecycle strategy will help staff to determine 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 maintaining 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 maintain current 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 maintain levels of service are described in the Service Area Plans. The cost of carrying out these activities, and therefore the cost to maintain level 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 on 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.

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's 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.

AMP Structure & Methodology

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.

5.4. Financial Forecasting

Current levels of service should 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 gap calculations for roads, structures, retaining walls, and water assets in this AMP have been adopted from the related detailed studies for these assets:

- Roads – Roads Needs Study 2023
- Bridges and Culverts – OSIM Report 2022
- Retaining Walls – Inspection Report 2023
- Inter-Urban Water Supply System - 2021
- Facilities – Building Condition Assessments 2022
- Shoreline Protection Assessment Report – 2023
- Retaining Walls Inspection Report - 2023

At present, forecasted needs for all assets other than roads, structures, and water are approximate, as these asset inventories and details, such as age and condition, are still being developed.

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 maintain 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. Development Charges (DCs) help to fund projects that are triggered by an increase in population.

Where available, demographic and employment forecasts also inform asset planning as the community's demand for services may change.

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*, the high-level population and employment forecasts from the [Norfolk County Official Plan \(Consolidated to January 1, 2023\)](#) are shown below:

Table 6-1 Population, Households and Employment Forecasts⁴, Official Plan

	2021 ⁵	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 the *Bill 23, [More Homes Built Faster Act \(2022\)](#)* may impact growth funding, potentially resulting in additional costs.

Table 6-2 Population and Employment Forecasts⁶, 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%

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.

⁴ [Norfolk County Official Plan – Consolidated to January 1, 2023](#)

⁵ Norfolk County 2021 Census, [Profile table, Census Profile, 2021 Census of Population - Norfolk County, City \(CY\) \[Census subdivision\], Ontario \(statcan.gc.ca\)](#)

⁶ *Long Term Growth Analysis Report* by Watson & Associates 2021

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 total growth-related needs quantified in this version of the AMP is \$35.7 million over the next 10 years.

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.

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 an 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 retainment of their valued employees, and supplement more with 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 measures 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 will be developed in 2025.

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.

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 of 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 maintaining service delivery. The County relies on partnerships to aid in the delivery of services and improvements to assets. The County values the 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 those assets is a shared responsibility and is covered under separate asset management planning documents⁷.

6.4. Ontario Asset Management Regulation

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.

⁷ 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 \$5.3 billion and these assets on average are in Good condition.

Figure 7-1 Total Replacement Value by Service Area

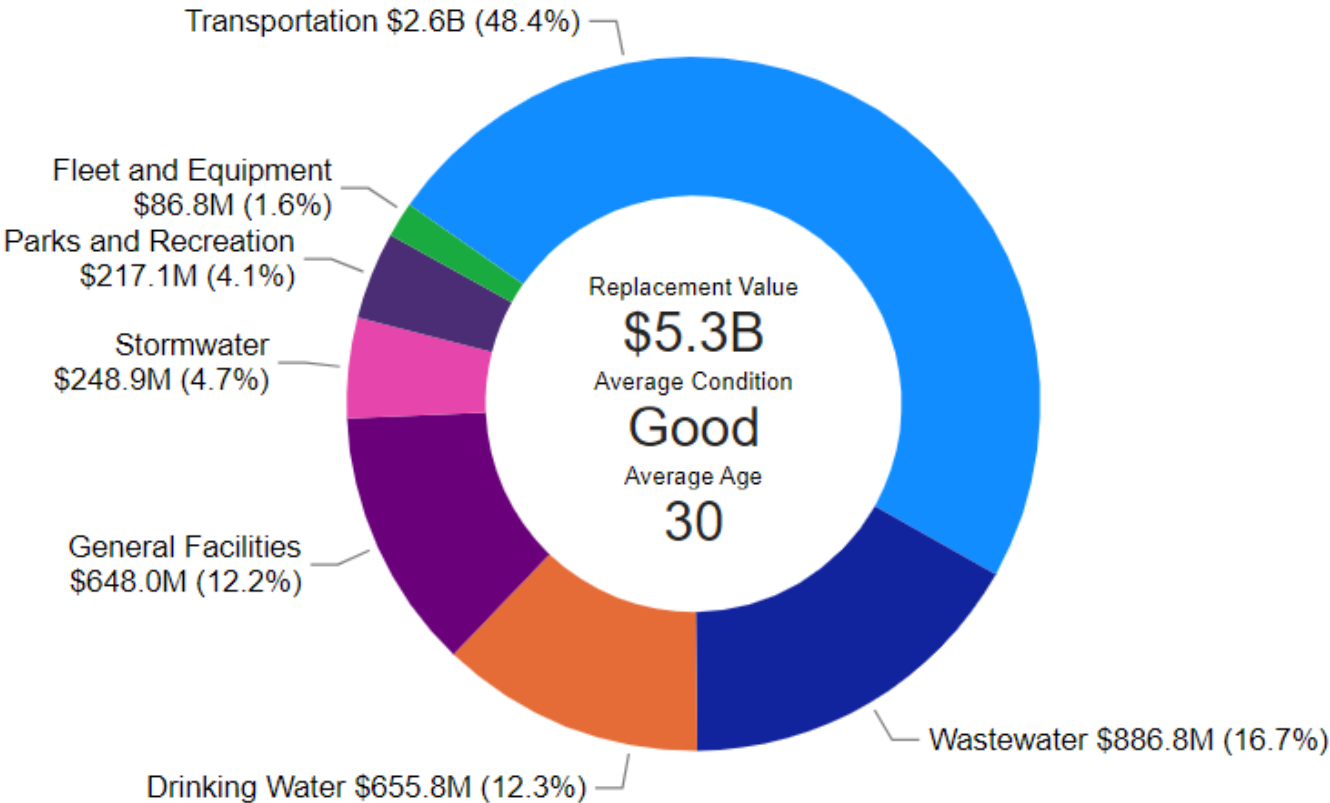


Figure 7-2 Average Age and Average ESL by Service Area⁸

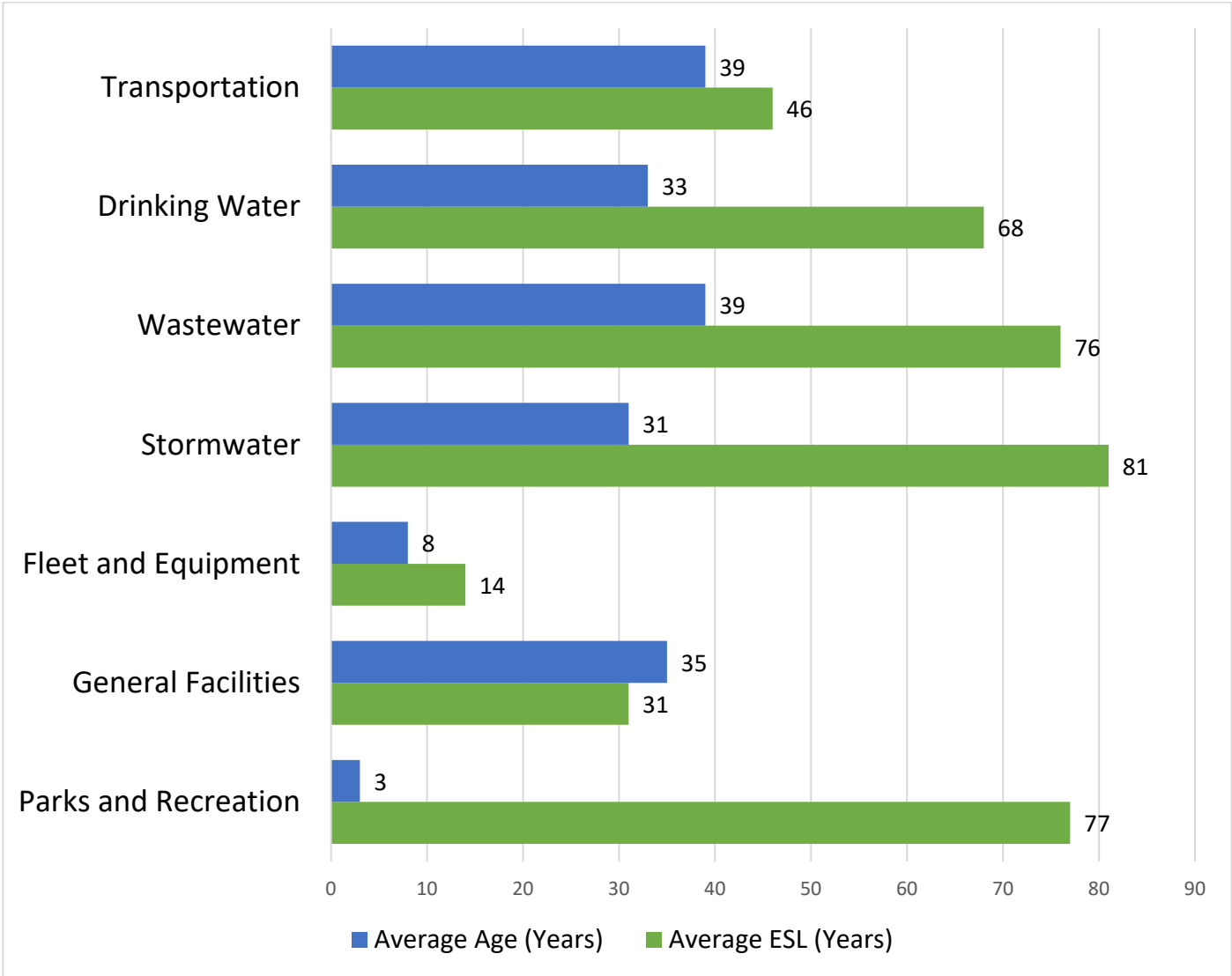
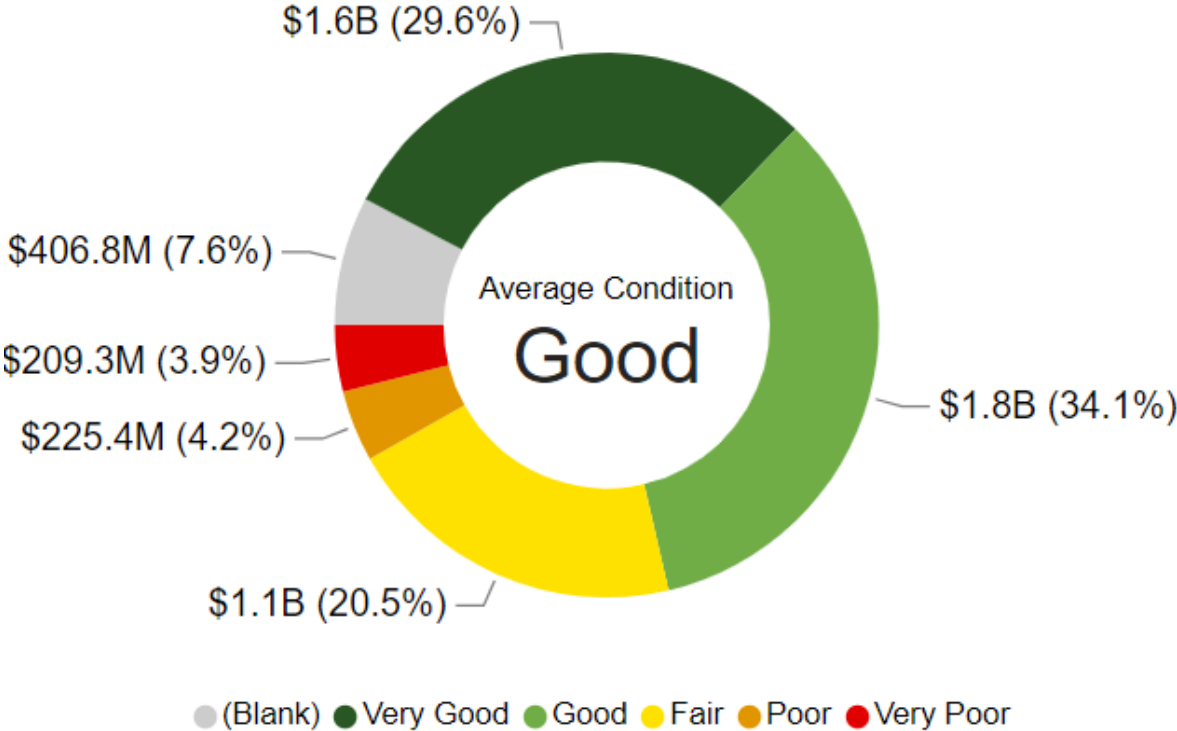


Figure 7-2 provides an indication of where the asset portfolios are within their lifecycle and when the County might reasonably expect the replacement of the assets to be required. All Service Areas show the overall age of the Service Area assets is less than the overall average ESL.

⁸ It should be noted that in the case of Parks and Recreation, some natural assets have very long ESLs, such as Trees and Woodlots. To avoid these long ESLs from skewing the reporting of average age of all assets, these were excluded from the above summary to better reflect the status of the County’s portfolio.

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

Figure 7-3 Overall Condition Distribution by Service Area



Important facts about overall assets:

91% (\$4.5B)	Are in Fair or Better condition and have sufficient data to derive a condition rating.
9% (\$435M)	Are in Poor or Very Poor condition and require significant investment to reduce the number of assets that fall within that condition rating.
8% (\$407M)	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 Summary

The Service Area Plans outline the details for lifecycle activities, and estimated investment needs for the assets to **maintain current levels of service**.

The County's 10-year Capital Plan is assumed to represent the planned investments on assets, and compared to the needs identified, including investments in:

- Lifecycle activities, such as renewal, disposal, non-infrastructure activities
- Growth
- Service Improvements

Forecasted projects that are applicable to multiple asset classes or services, such as the cost of updating the Development Charge Background Study, are allocated to each by proportion of current replacement value accordingly.

Where gaps exist between needs to maintain 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).

8.1. Investment Needs

The following sections summarize the capital investment to renew assets and maintain levels of service, while continuing to invest in growth, disposals, non-infrastructure activities, and service improvements.

Table 8-1 Total Investment Needs to Maintain Current Levels of Service, by Service Area, 2024-2033

Service Area	Total Investment Need to Maintain LOS
Transportation	\$472.2M
Drinking Water	\$318.3M
Wastewater	\$206.6M
Stormwater	\$47.6M
Fleet & Equipment	\$61.7M
General Facilities	\$244.2M
Parks & Recreation	\$13.5M
TOTAL	\$1.36B

The total capital cost to maintain current levels of service, or hold the current levels of service, is approximately \$1.36 billion, from 2024-2033. This equates to an annual average of \$136.4 million.

Based on the County's planned capital spending, the County is planning to spend approximately \$107.1 million per year, for the next 10 years.

An annual infrastructure gap of an estimated \$29.3 million exists between the planned capital expenditures and the capital expenditures required to maintain current levels of service.

To 'close' the infrastructure gap found in this AMP in a single year would require a 22.7% increase in the net levy requirement.

The current 10-Year Capital Plan also has an existing funding shortfall that needs to be addressed in addition to this infrastructure gap.

This analysis is focused on capital renewal, growth in the *2018 DC Background Study*, disposals, non-infrastructure, and service improvement activities identified at this time. Refined data, target levels of service, revisions to the upcoming Development Background Charges Study, and/or changes in Council's appetite for new services could materially change this gap in future versions of the AMP. Investment needs from the operating budget needed to maintain current levels of service are assumed to be equivalent to the current operating budget for all services, including salaries, materials, contractors, and other expenditure for lifecycle activities.

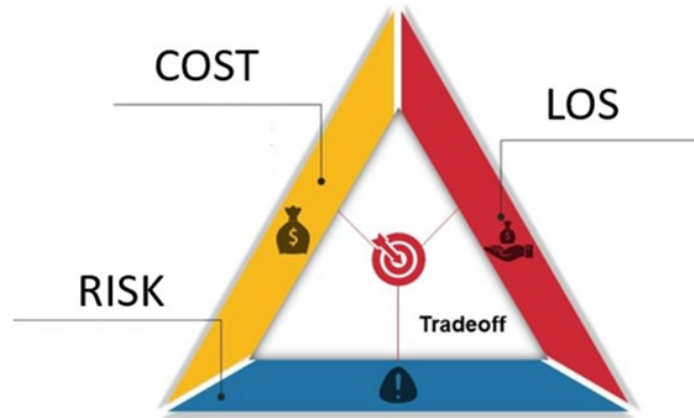
Further refinement of these assumptions will be provided as asset management analysis maturity is enhanced.

Operating costs to maintain levels of service are discussed in the Service Area Plans.

8.2. Discussion

The County strives to balance three intrinsically connected elements: levels of service, cost and risk.

Figure 8-1 Balancing Cost, Levels of Service, and Risk



The tension between these elements typically results in impacts and trade-offs. For example, by allowing one element to decline or conversely by enhancing another, an organization can be pushed off balance and away from the optimum center point.

When the tension between level of service and cost is not balanced, it exposes the County to sustainability risks. To respond, the County may adjust levels of service or costs, and the role of AM is to weigh these options and find the optimum balance based on risk.

The following options may exist to assist in funding any infrastructure investments:

- Increased Reserve Contributions – The County may increase reserve contributions
- Debt Financing - The County may finance infrastructure through debt financing
- Stormwater Management Funding – The County may establish a stormwater user rate
- Special Infrastructure Levy – The County may establish a special levy for infrastructure
- User Rates and Fees – The County may review user fees
- Sponsorship Strategy – The County may consider sponsorship strategies for facilities
- Public-Private Partnerships – The County may consider public-private strategies for eligible capital projects
- Community Benefits Charge – The County may consider community benefits charges

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. 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, and to prepare for this next regulatory deadline. 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 and align the County with industry recognized practices as defined by [International Infrastructure Management Manual](#) and [ISO 55000](#).

Table 9-1 Recommended Improvement Opportunities

<p>1. Financial Management</p> <p>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.</p>	<ul style="list-style-type: none"> • Develop Financial Strategy that aligns with the organization’s asset management objectives and strategic plans, and that supports the long-term sustainability of asset management activities, addressing aspects such as funding, investment, cost recovery, and the use of reserves. A Financial Strategy is also required by July 1, 2025 in <i>O.Reg.588/17</i>. • 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 Financial Strategy into other AM Processes. • Assess data required to support Financial Management. • Understand how current AM System can support Financial Management. • Communicate to inform all stakeholders of relevant activities and outcomes, enhancing transparency and support.
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<p>2. Levels of Service</p> <p>Defining service levels is key in understanding what services assets need to provide and at what levels. This helps in managing expectations, defining a baseline, and planning for service delivery.</p>	<ul style="list-style-type: none"> • Develop a process to define, manage, and communicate the performance of assets in terms of the services they provide, and the proposed levels of service (proposed levels of service must be defined before July 1, 2025). The process will help the County bridge the gap between the technical aspects of asset management and the expectations of stakeholders, including customers and regulators. The LOS process should include: <ul style="list-style-type: none"> – Definition of Services (mapped to service areas) – LOS Criteria and Performance Measures – Data & Data System Requirements – Stakeholder Engagement Considerations – Integration & Alignment with Other Corporate Processes, Master Planning, etc. • Integrate LOS into other processes, for example incorporate LOS into budgeting, and into decision making into asset lifecycle strategies to ensure investments are aligned with desired LOS. Incorporate LOS and associated outputs into the 2025 AM Plan. • Communicate to inform all stakeholders of relevant activities and outcomes, enhancing transparency and support. • Assess data required to support LOS. • Understand how current systems can support LOS. • Capture roles, responsibilities, competencies, and organizational resources required to support LOS.
<p>3. Life Cycle Management</p> <p>Understanding the lifecycle of assets from creation/acquisition through to disposal. This involves making decisions that optimize performance, risk, and cost over the lifecycle of assets.</p>	<ul style="list-style-type: none"> • Establishing 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 will include: <ul style="list-style-type: none"> – 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 current AM System can support Lifecycle Management. • Capture roles, responsibilities, competencies, and organizational resources required to support Risk Management.

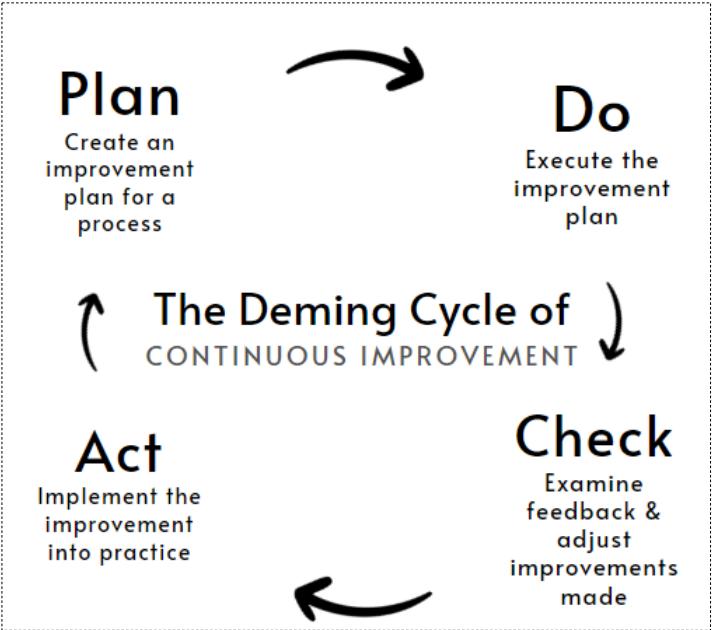
<p>4. Risk Management</p> <p>Defining service levels is key in understanding what services assets need to provide and at what levels. This helps in managing expectations, defining a baseline, and planning for service delivery.</p>	<ul style="list-style-type: none"> • Establish Risk Management practice - 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 practice includes: <ul style="list-style-type: none"> – Risk 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 – Risk Evaluation & Mitigation – Risk 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 current AM System can support Risk Management. • Capture roles, responsibilities, competencies, and organizational resources required to support Risk Management.
<p>5. Analyzing the Strategic Direction</p> <p>Developing a clear AM policy and strategy is crucial. This includes defining the principles and objectives for managing infrastructure assets, ensuring alignment with Council's Strategic Plan.</p>	<ul style="list-style-type: none"> • Expand the AM Policy to include: <ul style="list-style-type: none"> – Corporate AM objectives – Connection between corporate commitments and AM objectives • 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.

Continual Improvement

6. Continual Improvement

Establishing processes for ongoing improvement based on performance monitoring, reviews, and the evolving best practices in asset management.

- Implement process improvements 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.



7. Asset Data and Information

Collecting, managing, and updating sufficient information about assets and to manage operational 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.
 - The living asset registry to follow a formal hierarchy and include key information (dates, description, costs, ESL etc.).
 - 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.

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.

10.1. Levels of Service

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

10.1.1. Community Levels of Service

The Transportation assets enable the safe and comfortable movement of people and goods across our County.

Roads

The Norfolk County road network is carefully designed to enhance connectivity and mobility within the community. Roads⁹ are categorized by their size, use, and capacity into four categories:

- | | | |
|---|---|---|
| <ol style="list-style-type: none"> 1. Arterial Major – serve a larger geographical area 2. Arterial Minor – serve a smaller geographical area | } | Busier and faster roads; function as main thoroughfares; efficiently handle high traffic volumes. |
|---|---|---|
3. **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
 4. **Local roads** provide direct access to residences and businesses
 - Are less busy
 - Connect to collector roads

Maintaining this integrated system allows residents to smoothly travel from their home to key locations, making their daily commute efficient and reliable.

⁹ Provincial roads are not included in this AMP, as they are owned and managed by the Province (Highways 3, 6, and 24).

Norfolk offers 2.5 lane-kilometers of road for every square kilometer of land in the community. Specifically, for every square kilometer of land, Norfolk County provides:

- 0.5 lane-kms of arterial roads
- 1.7 lane-kms of collectors roads
- 0.3 lane-kms of local roads

The County seeks to maintain the average condition of the road pavement at a level that will ensure a high-level of service and safety of the community. The County adheres to the Ontario Minimum Maintenance Standards.

Structures

Structures vary in type and span - e.g. water, roadways, paths, bridges and large culverts with a diameter greater than 3 meters. 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

A large portion of Norfolk County is rural countryside, comprised of open space, agriculture and natural areas. Urban areas include commercial, industrial and residential areas that are designed with an urban road right-of-way cross section (curb and gutter). The [Online Interactive Map portal](#) shows the current road network.

10.1.3. Service Measures

The safety, reliability, availability, and sustainability of the transportation assets are indicated by the following technical measures.

Table 10-1 Technical Levels of Service - Transportation

Service Measure	2023 Performance
Roads	
Average pavement condition index value for paved roads	79
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	
Average BCI of bridges & culverts	78
Percentage of bridges that have loading or dimensional restrictions	10%
Average bridge condition index for bridges	76
Average bridge condition index for culverts	80

Paved Roads

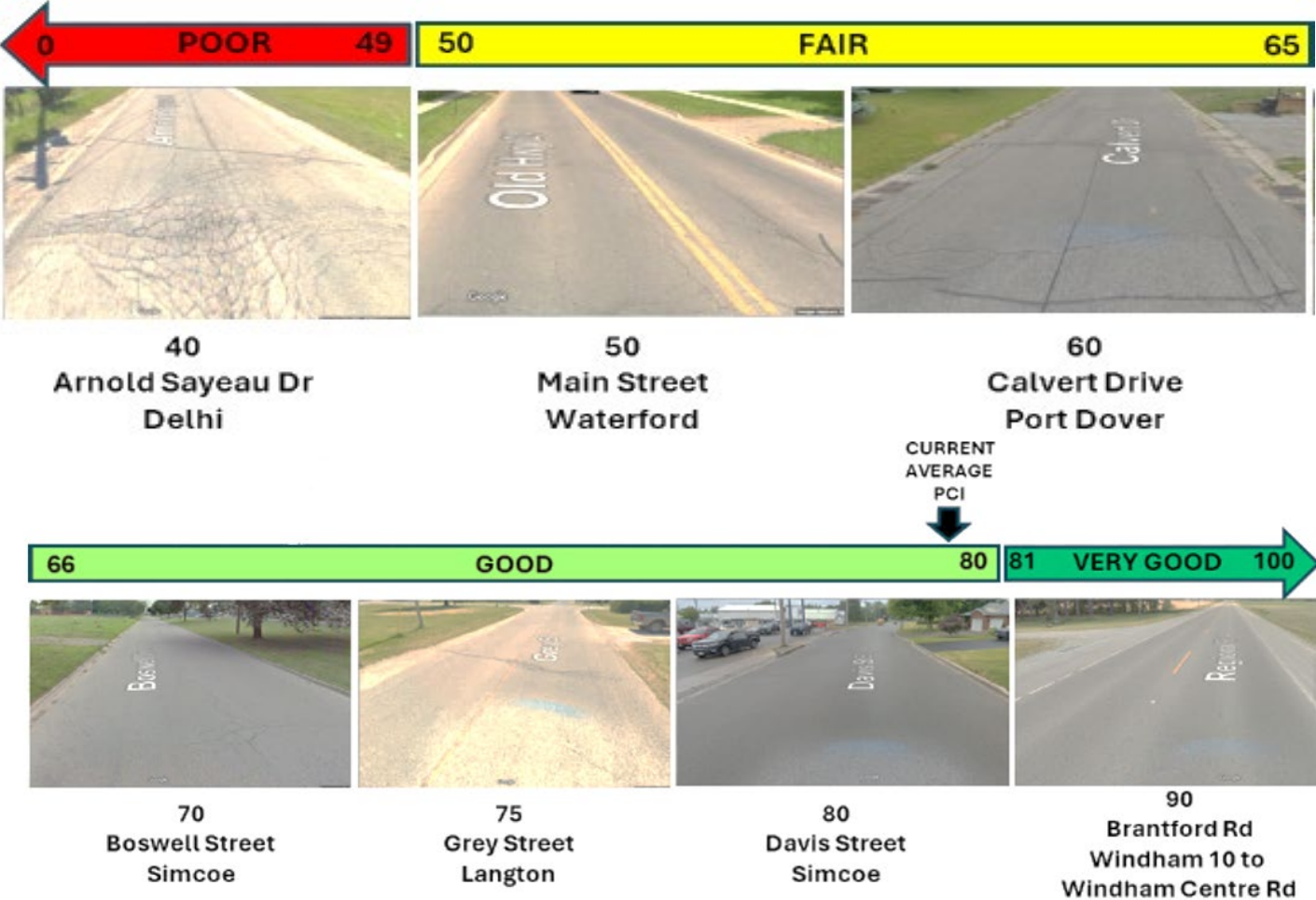
For paved roads, pavement condition is a closely monitored indicator of the state of repair. The County has roads that fall into all categories described below. More on the current condition of County roads can be found in [Section 10.2](#).

Table 10-2 Pavement Condition Descriptors

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.

Transportation

Figure 10-1 Pavement Condition Rating Visualization



Bridges & Culverts

For bridges and culverts, physical condition is a closely monitored indicator of the state of repair. The County has bridges and culverts that fall into all categories described below. More on the current condition of County bridges can be found in [Section 10.2](#).

Table 10-3 Bridge & Culvert Condition Descriptors

Bridge & Culvert Condition	Description
Very Good	Minimal or no deficiencies, no impact on travellers.
Good	Some minor issues are present, but the structural integrity remains sound. There would be minimal impact on travellers.
Fair	Structural elements show minor deterioration including cracking and spalling which doesn't impact structural integrity. There may be a slight impact on travellers 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 travellers 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 travellers including possible closure or implementation of weight restrictions on the bridge/culvert.

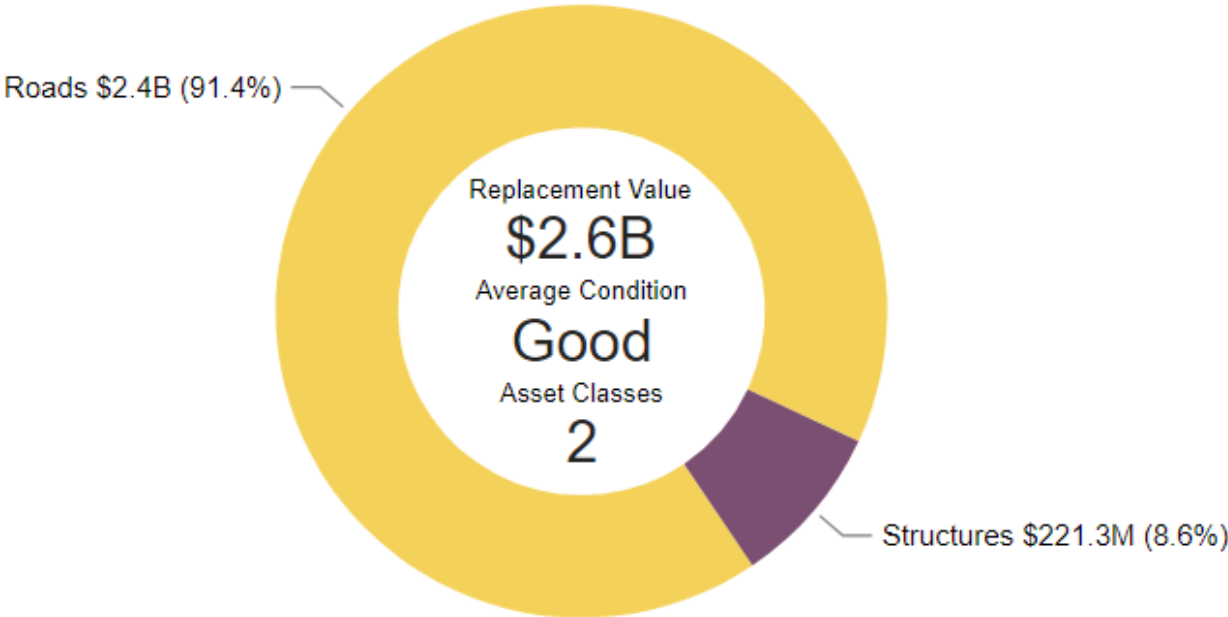
10.1.4. Other Monitoring

The County monitors the annual operating costs for transportation assets.

10.2. Current State of Transportation Assets

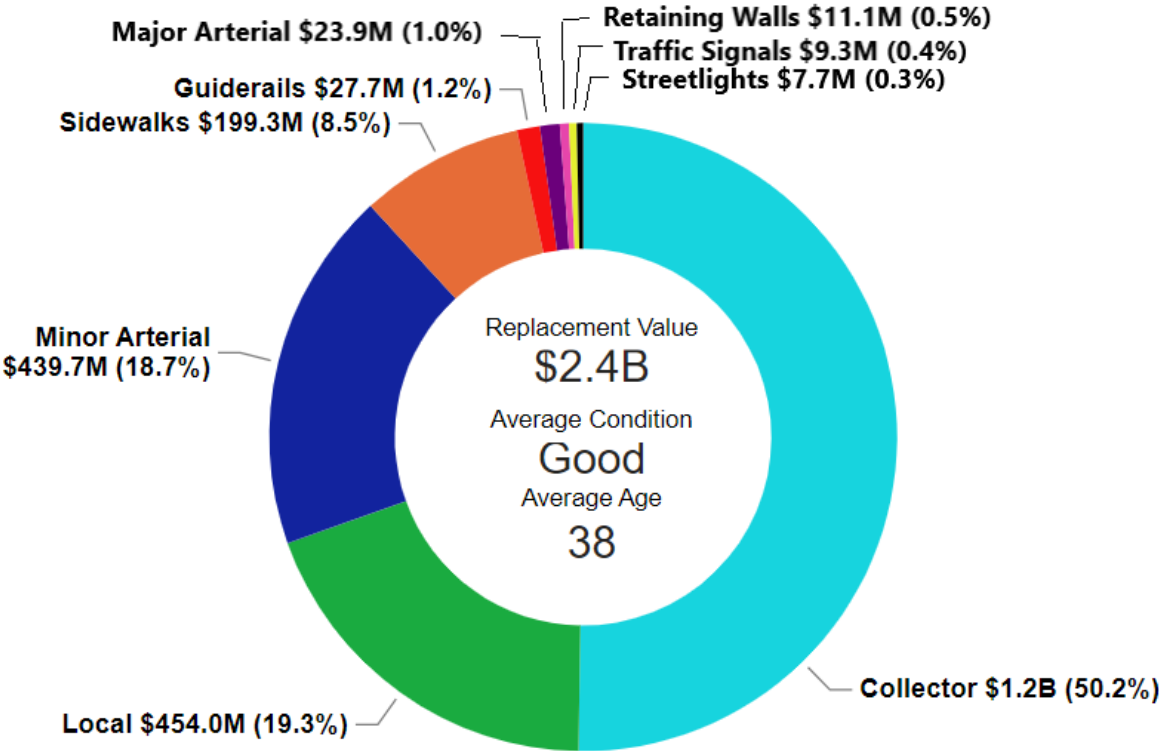
Transportation assets are those that enable our users to get to where they need to go throughout the County and play a crucial role in their daily lives and many of the other services provided. The state of assets used to provide these services is summarized below. The figures outline the replacement values of all of the Transportation assets.

Figure 10-2 Replacement Value of All Transportation Assets



Roads

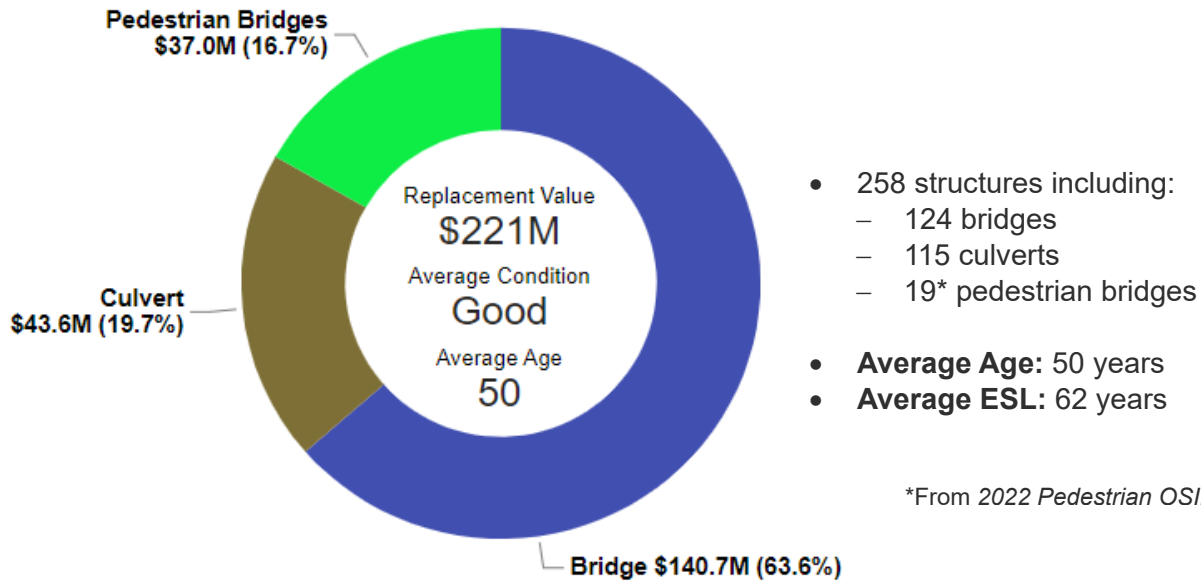
Figure 10-3 Replacement Value of Roads Assets



- 2,082 km of roads including:
 - 335 km of local roads
 - 376 km of minor arterial roads
 - 1,360 km of collector roads
 - 11 km of major arterial roads
- 35 retaining walls
- 837 km of sidewalks
- 53 km of guiderails
- 4,982 streetlights
- 31 signalized intersections
- **Average Age:** 38 years
- **Average ESL:** 46 years

Structures

Figure 10-4 Replacement Value of Bridge and Culvert Assets



The replacement values presented in the charts above have been derived from data from our asset management system and various studies including the *2023 Road Needs Study*, *2022 OSIM Bridge Inspection Report*, *2022 OSIM Pedestrian OSIM Report* and *2023 Retaining Wall Inspection Report*.

10.2.1. Asset Condition

The condition of the assets is reported based on various indicators:

- Pavement Condition Index (PCI) is used to indicate condition of roads
- Bridge Condition Index (BCI) is used to indicate condition of structures
- Age is used as a proxy to indicate condition for other Transportation assets

The table below summarizes the criteria used to define the condition¹⁰ of the various assets included in the Transportation service area.

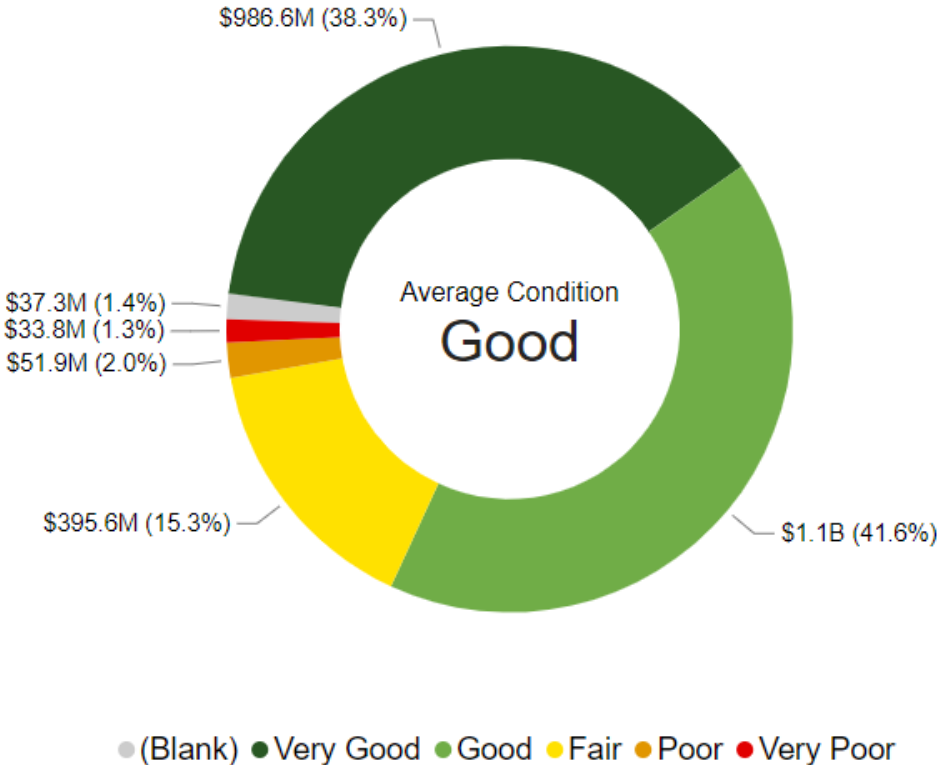
Table 10-4 Asset Condition Categories for Transportation Assets

	Roads	Structures
Condition State	Road Needs Study (PCI)	Bridge Inspections (BCI)
Very Good	>80	>80
Good	65-80	60-80
Fair	50-65	40-60
Poor	<50	20-40
Very Poor	-	<20

Condition Category Overview

Figure below shows that approximately 97% or \$2.48B of our Transportation assets, where sufficient data is available to derive a condition rating, are in Fair or better condition. Overall, Transportation Assets are in Good condition.

Figure 10-5 Condition Profile of All Transportation Assets by Replacement Value



¹⁰ Roads Needs Study does not utilize the rating of Very Poor - Values below 50 are described as Poor.

Note: A *Blank* label is applied to assets where condition data was not available.

Overall, the Transportation assets are in Good condition. Further breakdown of the Transportation asset condition by Asset Class can be found in the next section.

Condition data was not available for the following assets:

- Retaining walls¹¹
- Streetlights
- Traffic Signals

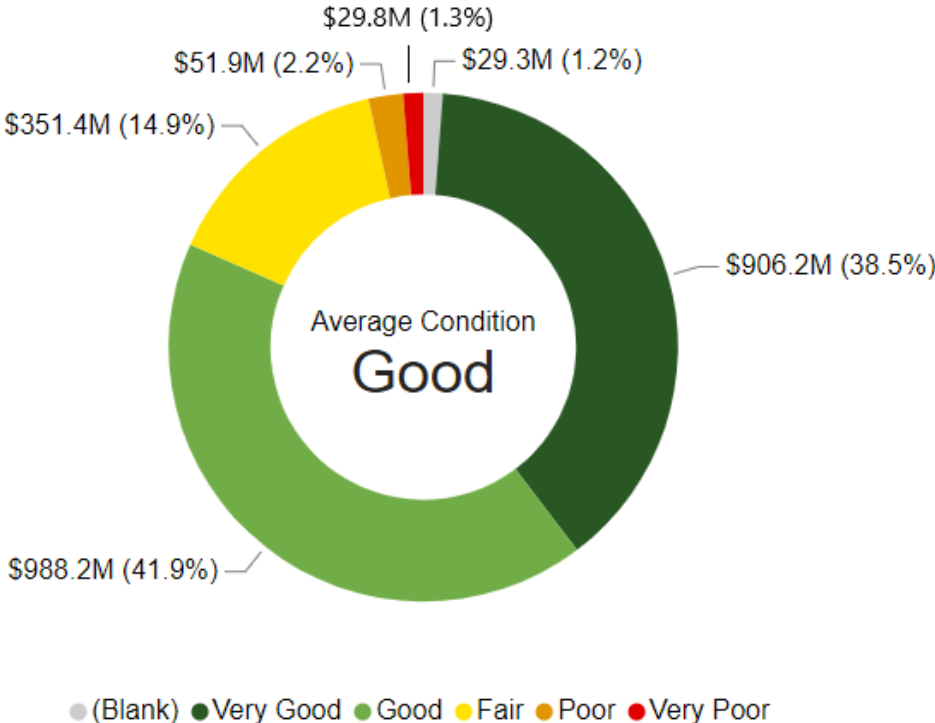
Therefore, these are shown as blank in the segment of the chart.

Asset Class Condition Overview

The condition of our assets at the asset class level is shown in the figures below.

Roads Condition

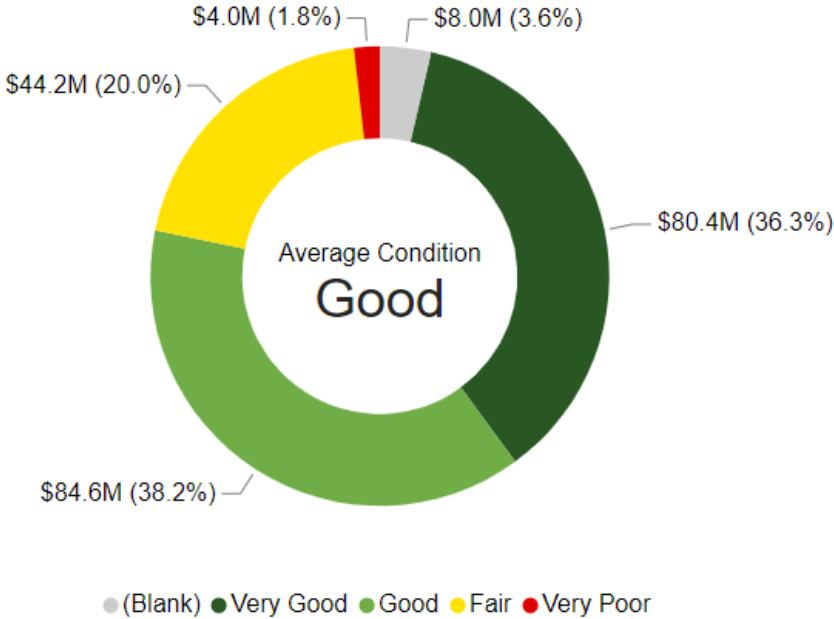
Figure 10-6 Condition of Roads Assets by Replacement Value



¹¹ 2023 Retaining Walls Report did not provide a condition rating or installation dates as such condition rating could be derived.

Structures Condition

Figure 10-7 Condition of Structures Assets by Replacement Value



O.Reg.588/17 Road Condition Reporting

With consideration of the metrics from O.Reg.588/17, road condition can be indicated by:

- Average condition of the paved network
- Condition of the network by functional class i.e. local, minor/major arterial and collector.

Condition of the Paved Network

It should be noted that condition information was not available for unpaved roads, therefore, unpaved roads are not included in the following summary.

Figure 10-8 Condition Profile of Paved Road Network by Material

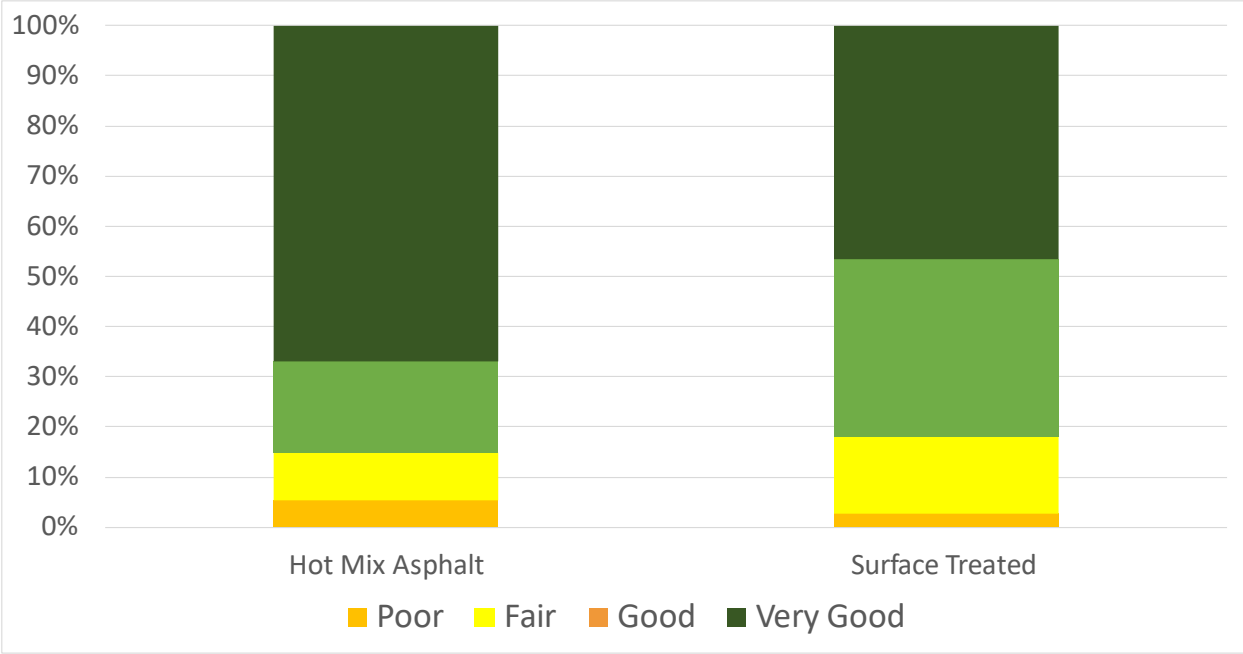
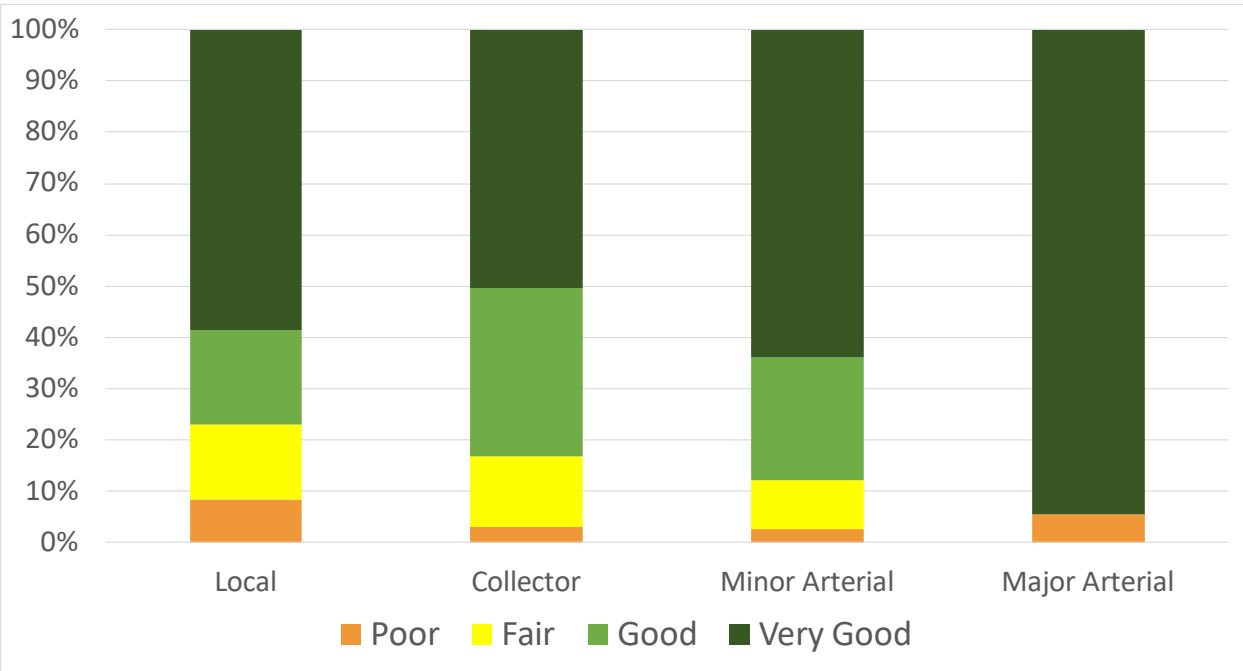


Figure 10-9 Condition Profile of Paved Road Network by Functional Class



The condition summaries above were extracted from data presented within the draft *2023 Road Needs Study*.

10.3. Lifecycle Management Strategy

This section presents the strategy of key lifecycle activities currently applied to maintain **current levels of service**.

10.3.1. Lifecycle Activities to Maintain LOS

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 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’s inspection program.

Operating / Maintenance 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:
 - Crack sealing
 - 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)

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 roads 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 of major components, such as structural reinforcement or deck replacement.

Disposal Activities

- In some cases, the County may close the transportation assets for use, by limiting the maintenance performed or restrict 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 utilised 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.

10.3.2. Risk Management

The risks being managed with this lifecycle strategy 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 operation 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 falling short of minimum maintenance standards set by the Province and legislation and mitigates lapses in due diligence. 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.

10.4. Financial Needs

10.4.1. Capital Investments

The total capital investment needed to maintain current levels of service is estimated at \$472.2M, from 2024-2033. This includes renewal investments to maintain the current percentage of the asset portfolio that is in a state of good repair, and also investments to accommodate growth, disposals, non-infrastructure activities, and service improvements.

Table 10-4 Total Capital Investment Needs to Maintain Current LOS: Transportation

Investment (2024-2033)	Needs (\$M)	Investment Plans (\$M)
Non-Infrastructure	\$0.9	\$9.7
Service Improvement	\$5.4	
Growth	\$8.5	
Renewal	\$456.6	\$259.0
Disposal	\$0.8	\$0.8
Total	\$472.2	\$269.5

As shown above, an infrastructure gap exists to maintain current levels of service. This equates to an average additional investment required of \$20.2M per year, for the next ten years.

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

10.4.2. Operating Investments

Investment needs from the operating budget required to maintain levels of service for transportation are assumed to be equivalent to the current operating budget for transportation services, including salaries, materials, contractors, and other expenditure for lifecycle activities. Over the next 10 years it is estimated that approximately \$201.6M will be required to operate transportation assets, primarily funded from the net levy requirement.

10.4.3. Focus on Renewal Needs

Norfolk has undertaken a comprehensive analysis to determine the capital needs of its transportation assets to deliver the services expected by its communities and stakeholders. The resulting analysis for transportation assets demonstrates a 10-year renewal need of \$456.1 million. Needs for roads and structures have been adopted from the corresponding recent consultant studies.

Roads

Based on the lifecycle strategies identified for both surface treated and asphalt roads, and assuming the end-of-life replacement of all other assets in this category, the annual capital requirement represents the results of Performance Modeling which is used to maintain the existing

network PCI. The resulting analysis for the road network within the 2023 Road Needs Study shows that Norfolk has a 10-year investment need of \$357.9 million to maintain current levels of service.

Structures

Bridges and Culverts

The 10-year forecasted needs of bridges and culverts are based on the recommendations of the 2022 OSIM inspections. These recommendations utilize inspection data, rehabilitation history and industry best practices to ensure that structures remain safe and sustainable while minimizing lifecycle costs. Based on the results of the needs analysis within the 2022 OSIM Report the 10-year renewal needs to maintain the current level of service of bridges and culverts is \$50.8 million. The projected cost of lifecycle activities is summarized in Table 10-5.

Table 10-5 Structures 10-Year Forecasted Needs by Treatment

Treatment Class	10-Year Forecasted Needs
Minor Rehabilitation	\$21,207,000
Major Rehabilitation	\$17,740,000
Replacements	\$11,434,000
Removals (Disposals)	\$392,000
Total	\$50,773,000

Retaining Walls

The previous AMP reported on only bridges and culverts included within the asset portfolio, however, O.Reg. 588/17 requires that all other transportation assets be included to meet the requirements of the July 1, 2024 milestone. Therefore, the County completed an inspection of the 35 retaining walls across the County in 2023. The resulting analysis presented within the 2023 Retaining Walls Inspections report identified a total 10-year investment need of \$564,000 to maintain current levels of service. The investment needs associated with each of the lifecycle activities identified during the assessment are summarized in Table 10-6.

Table 10-6 Retaining Walls 10-year Forecasted Needs

Treatment Class	10-Year Forecasted Needs
Rehabilitation	\$168,000
Replacements	\$396,000
Total	\$564,000

Right of Way Assets

The County is responsible for other assets within the right of way, the following table outlines the asset classes, their replacement value and 10-year investment needs:

Table 10-7 10-year Forecasted Needs (ROW Assets)

Asset Type	Replacement Value	10-Year Forecasted Needs¹²
Sidewalks	\$199,340,000	\$33,200,000
Guiderails	\$20,309,700	\$6,800,000
Streetlights	\$7,658,000	\$2,600,000
Traffic Signals	\$9,300,000	\$4,650,000
Total	\$236,607,000	\$47,250,000

¹² Based on replacement cost annualized over estimated service life of the assets.

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.

11.1. Levels of Service

This section includes details of service, general descriptions of service commitments, the areas serviced are provided, and measures showing current performance.

11.1.1. Community Levels of Service

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

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:

1. Delhi/Courtland
2. Port Dover
3. Port Rowan/St. Williams
4. Simcoe
5. Waterford

The County provides drinking water and fire flows through assets that are maintained in a state of good repair.

- No boil water advisories have occurred recently in the County, which indicate systems and assets maintained and operated successfully.
- 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 will 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.

Drinking Water

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 will provide drinking water 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 such, this AMP has been prepared with the same assumption, that the IUWS initiative is successfully implemented, and the levels of service that may be affected are noted within the Service Measures section below.

11.1.2. Areas That Are Serviced

44.7% of County properties are connected to the water system. This includes 89% of urban properties connected to the municipal water system. The same percentages of County properties have fire flow available (through hydrants) in the urban and entire municipal area.

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 Services have additional fleet to provide extended fire flows to the rural community.

11.1.3. Service Measures

The safety, reliability, availability, and sustainability of water assets are indicated by the following service measures. Current levels are also indicated.

Table 11-1 Level of Service Measures: Drinking Water

Service Measure	2023 Performance
Number of connection days per year where a boil water advisory notice was in place, compared to the total number of properties connected to the municipal water system	0 days to 16,537 properties
The number of connection days per year due to water main breaks, compared to the total number of properties connected to the municipal water system	0 days to 16,537 properties
Percentage of drinking water assets within estimated service life	96%
Average non-revenue water (percent of total water treated that is not billed)	10.5%
Treatment capacity (percent of rated treatment capacity that is used) ¹³	>85%

¹³ This service measure will not be applicable for County-owned assets in the proposed new drinking water regime. The treatment capacity is a key rationale for implementing the new urban supply initiative.

11.1.4. Other Monitoring

The County also monitors other information that relates to drinking water asset performance:

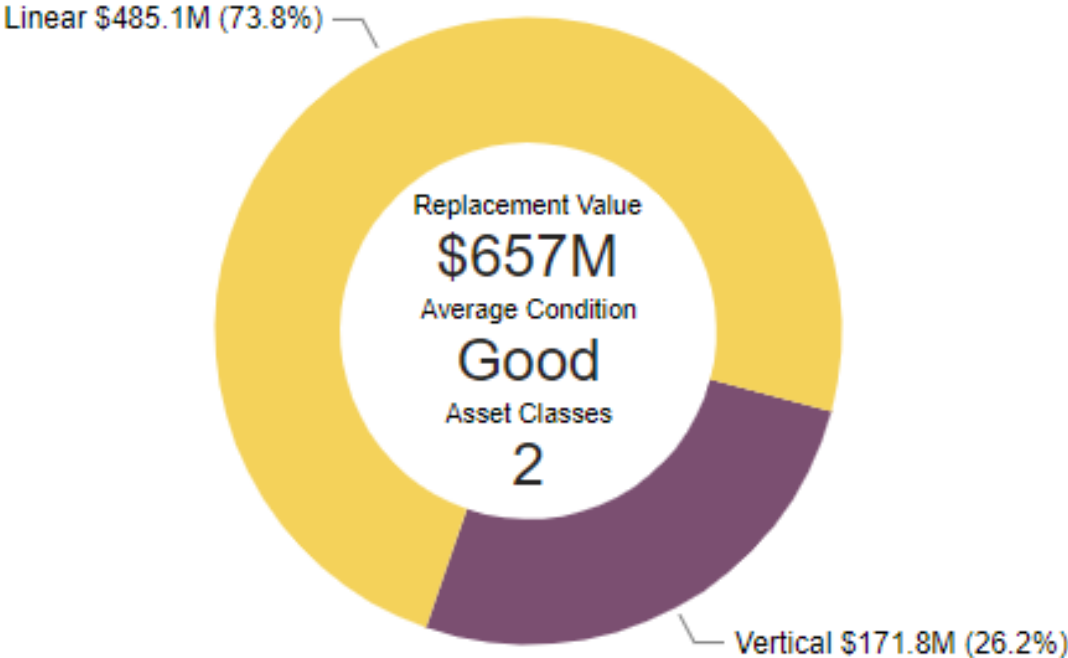
Table 11-2 Other Measures: Drinking Water

Other Measures	2023 Performance
Total megalitres of drinking water treated	3,675.092
Number of Adverse Water Quality Incidents (AWQI)	4

11.2. Current State of Drinking Water Assets

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.

Figure 11-1 Replacement Value of All Drinking Water Assets

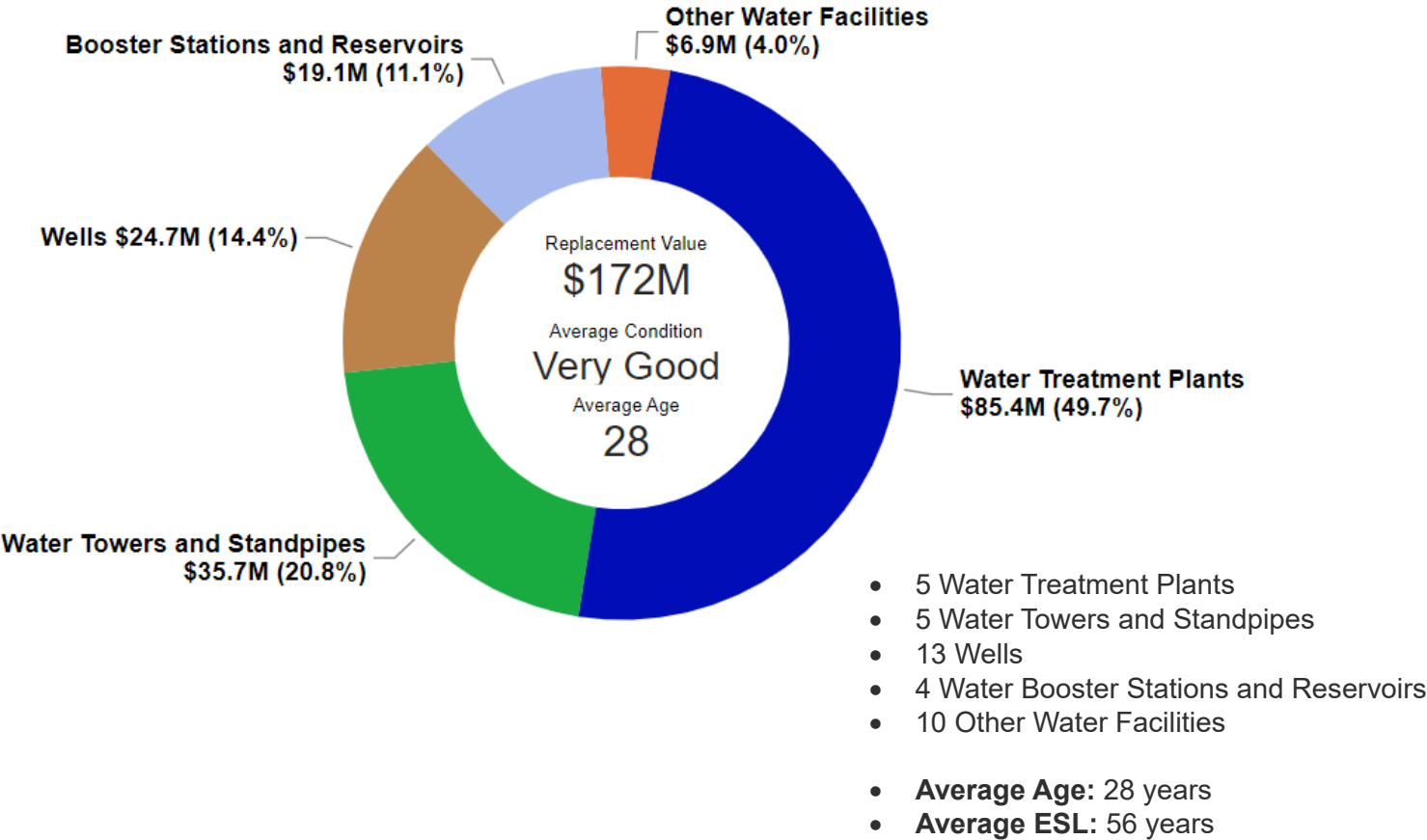


Drinking Water

The state of assets used to provide these services is summarized below. The figures below outline the replacement values of all the drinking water assets.

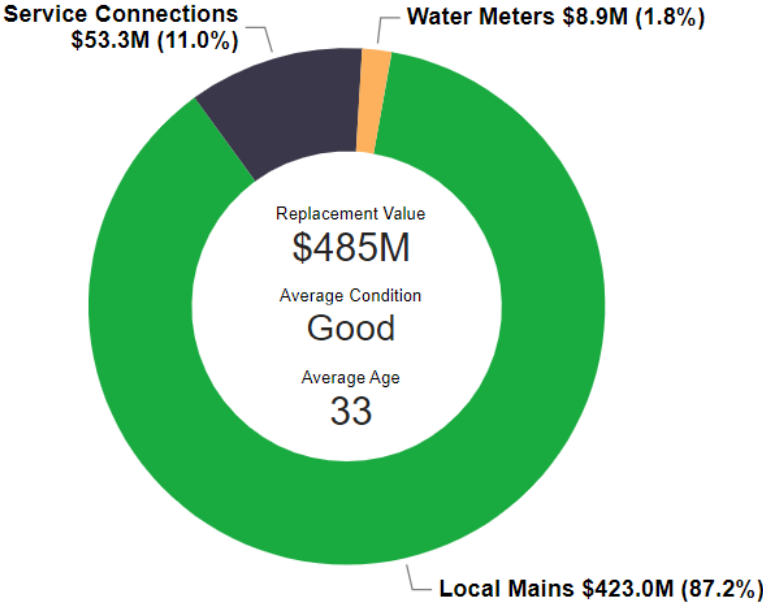
Vertical

Figure 11-2 Replacement Value of Vertical Drinking Water Assets



Linear

Figure 11-3 Replacement Value of Linear Water Assets



- 308km of Local Mains
- 16,537 Service Connections
- 16,537 Water Meters

- **Average Age:** 33 years
- **Average ESL:** 80 years

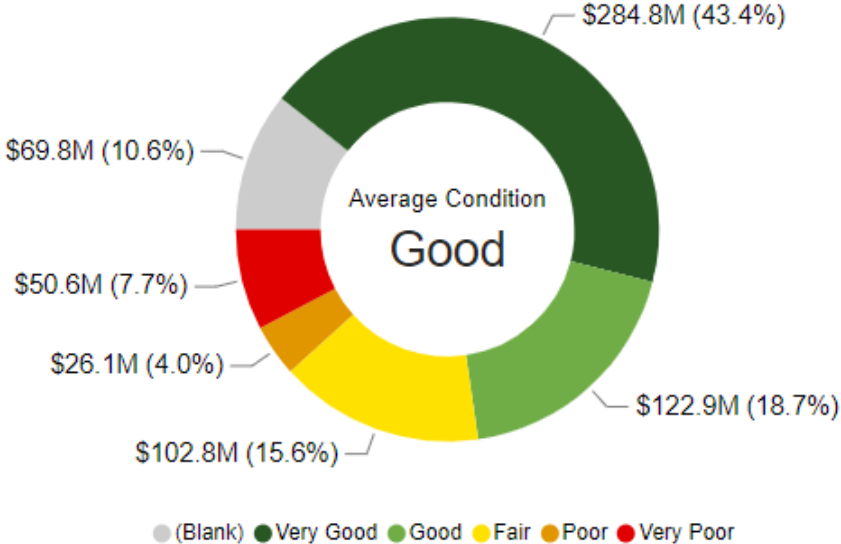
11.2.1. Asset Condition

Condition Category Overview

Drinking Water

Figure 11-4 shows that approximately 87% (\$510.5M) of the Drinking Water assets, where sufficient data is available to derive a condition rating, are in Fair or better condition. Overall, Drinking Water assets are in Good condition.

Figure 11-4 Condition Profile of All Drinking Water Assets by Replacement Value



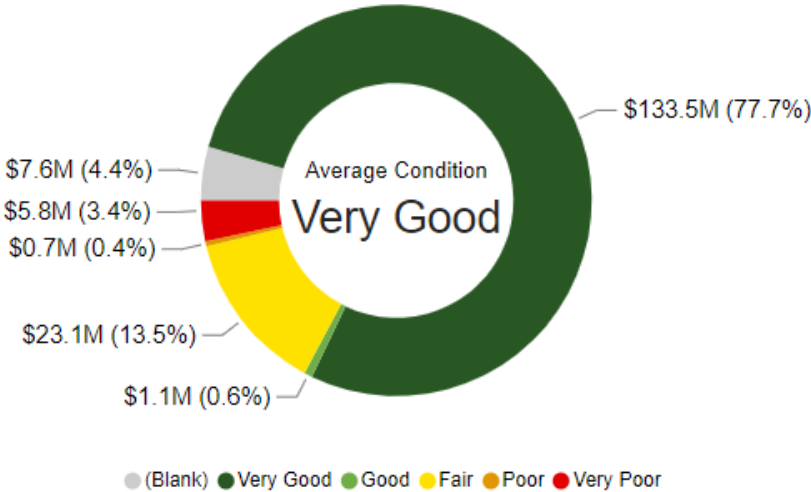
Note: A *Blank* label is applied to assets where condition data was not available.

Asset Class Condition Overview

The condition of the Drinking Water assets at the asset class level is shown in the Figures below.

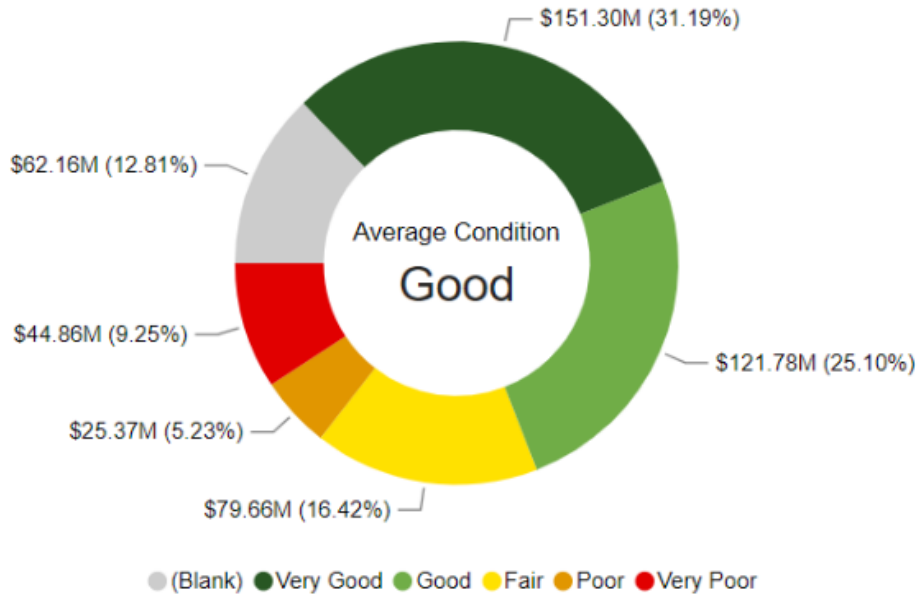
Vertical Condition

Figure 11-5 Condition Profile of Vertical Water Assets by Replacement Value



Linear Condition

Figure 11-6 Condition Profile of Linear Water Assets by Replacement Value



11.3. Lifecycle Management Strategy

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

11.3.1. Lifecycle Activities to Maintain LOS

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.

Drinking Water

- 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.

Operating / Maintenance Activities

- The County follows DWQMS, DWWP and MDWL requirements related to inspection, testing, monitoring, and maintenance, and to maintain compliance to legislation.
- Examples of planned maintenance includes 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.

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.

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.

11.3.2. Risk Management

The risks being managed with this lifecycle strategy are:

Drinking Water

- **Level Of Service 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.
- **Safety and Health 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.

11.4. Financial Needs

11.4.1. Capital Investments

The total capital investment needed to maintain current levels of service is estimated at \$318.3M, from 2024-2033. This includes renewal investments to maintain the current percentage of the asset portfolio that is in a state of good repair, and also investments to accommodate growth, disposals, non-infrastructure activities, and service improvements.

Table 11-3. Total Capital Investment Needs to Maintain Current LOS: Drinking Water

Investment (2024-2033)	Needs (\$M)	Investment Plans (\$M)
Non-Infrastructure	\$1.4	\$210.4
Service Improvement (incl. IUWS)	\$210.0	
Growth Needs	\$8.9	
Renewal	\$91.8	\$85.8
Disposal	\$6.2	\$6.3
Total	\$318.3	\$302.5

As shown above, an infrastructure gap exists to maintain current levels of service. This equates to an average additional investment required of \$1.6M per year, for the next ten years.

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 expenditure for lifecycle activities. Over the next 10 years it is estimated that approximately \$97.1M will be required to operate drinking water assets, primarily funded from the net rate requirement.

11.4.3. Focus on Growth and Changing Service Mode

The Inter-Urban Water Supply (IUWS) Program will 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 and increased levels of service to consumers.

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.

The budget is updated annually and reflects a full County-wide scope, priorities, status, as well as financial and economic impacts. A phased IUWS implementation which will extend beyond the planning horizon of this AMP is anticipated.

The project is targeted to meet growth identified in various plans such as the Integrated Sustainable Master Plan (ISMP) and Development Charge Study. These growth-related projects are primarily funded through DCs to enable the recovery of growth-related capital expenditures from new development.

The changing service delivery model will also have an impact on renewal needs over the next 10 years. In the other Service Area Plans, the renewal needs were determined by forecasting when existing assets will reach their life expectancies and how much it might cost to replace them at that time. The Drinking Water Service Area Plan's renewal model is adjusted to reflect the decreased renewal expectations on existing assets as if IUWS were implemented.

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.

12.1. Levels of Service

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

12.1.1. Community Levels of Service

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

1. Delhi
2. Port Dover
3. Port Rowan
4. Simcoe
5. 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.

1. **Vertical** assets where wastewater is pumped and treated
2. **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 produces 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

43.2% of County properties are connected to the wastewater systems. This includes 85.9% of the urban properties. The municipal wastewater systems connect to most residential, commercial and industrial spaces in the urban areas of the County.

12.1.3. Service Measures

The safety, reliability, availability, and sustainability of wastewater assets are indicated by the following service measures.

Table 12-1. Level of Service Measures: Wastewater

Service Measure	2023 Performance
The number of events per year where combined flow exceeds capacity compared to the total number of properties connected to the municipal wastewater system.	0 connection days to 14,906 properties
The number of effluent violations per year due to wastewater discharge, compared to the total number of properties connected to the municipal wastewater system.	6 effluent objective exceedances to 14,906 properties
Percentage of wastewater assets within estimated service life	96%
Remaining treatment capacity (percent of rated treatment capacity that is used)	5,194,909 m ³
Percent of properties connected to wastewater ¹⁴	93%

12.1.4. Other Monitoring

The County also monitors other information that relates to wastewater asset performance:

¹⁴ Based on total number of Wastewater Accounts vs. number of Drinking Water Accounts (source *ERTH, water and wastewater billing provider*)

Table 12-2. Other Measures: Wastewater

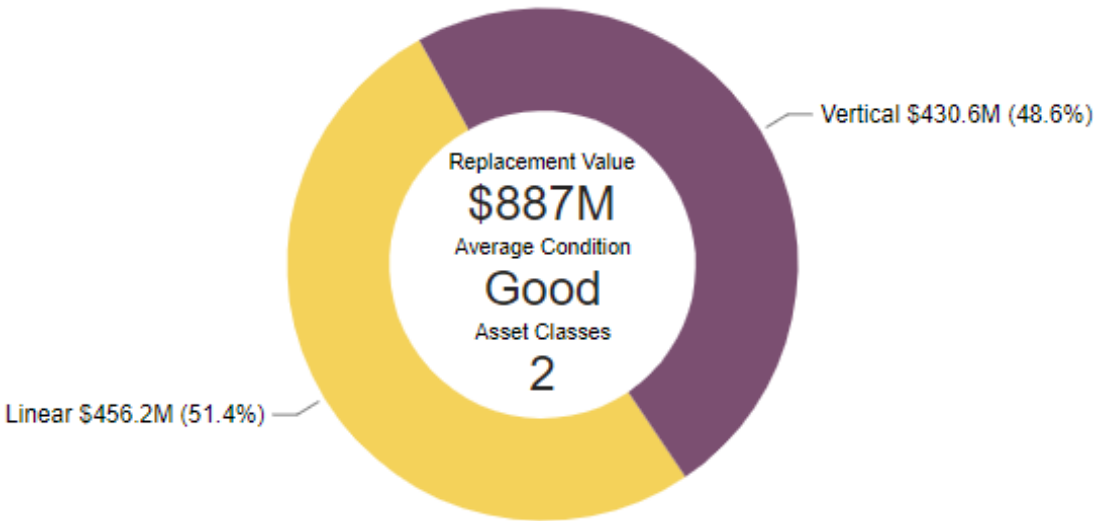
Other Measures	2023 Performance
Total megaliters of wastewater treated	5,456.560
Percentage of network that is inspected annually	65.3% PACP Inspections

12.2. Current State of Wastewater Assets

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.

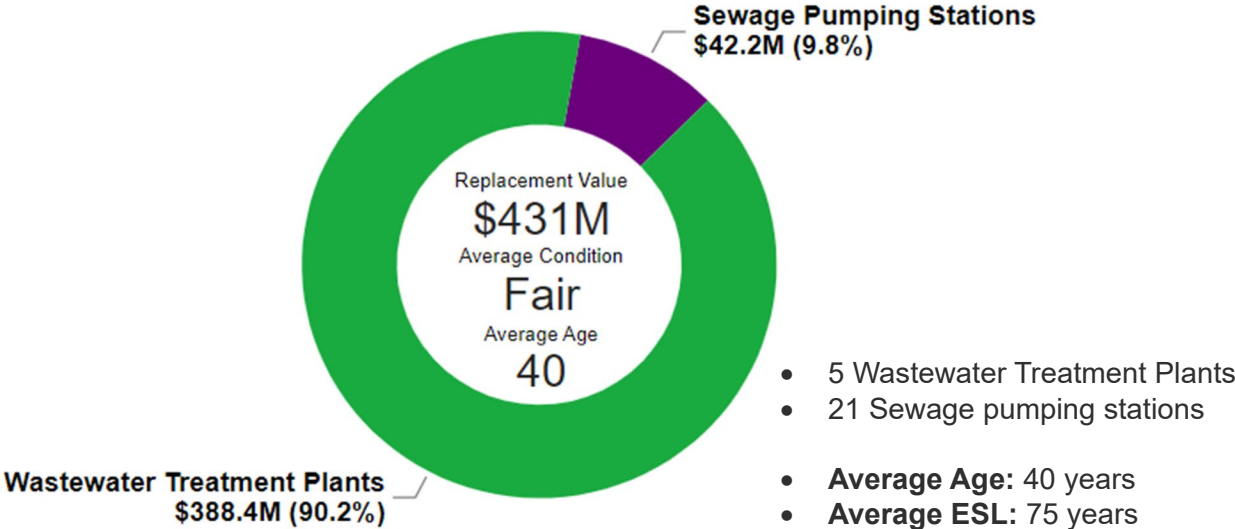
The state of the assets used to provide these services is summarized below. The figures below outline the replacement value of all of the wastewater assets.

Figure 12-1 Replacement Value of All Wastewater Assets



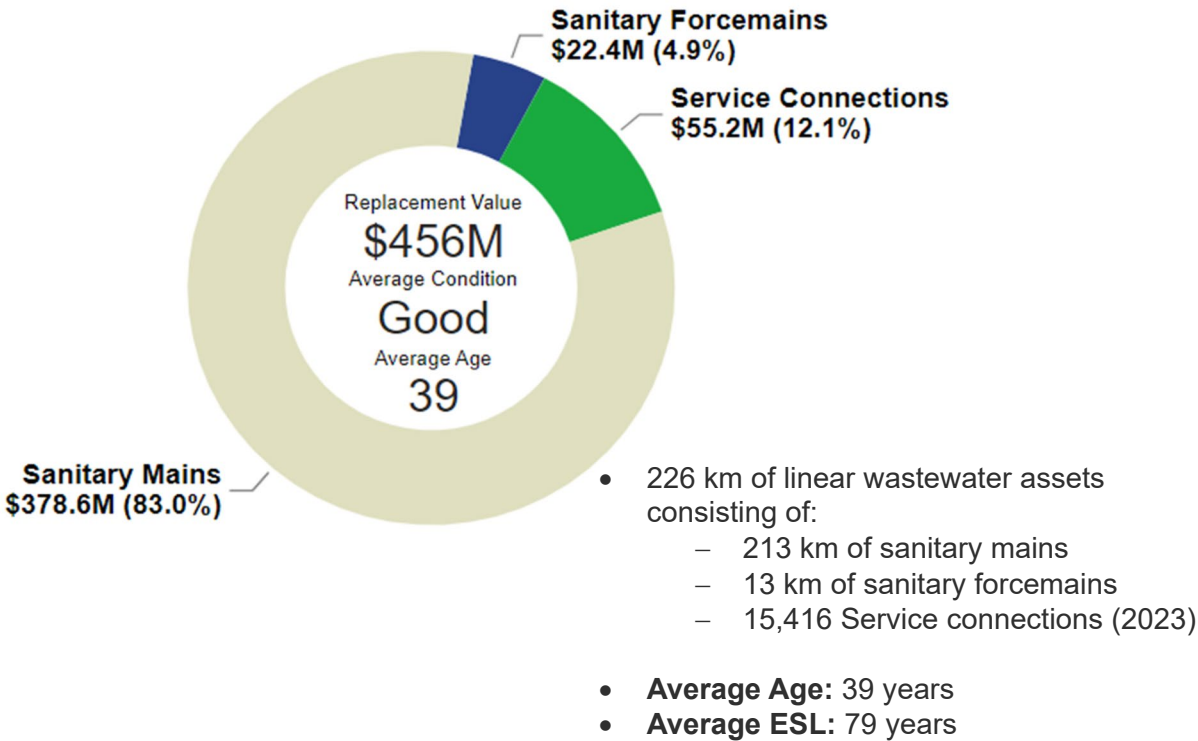
Vertical

Figure 12-2 Replacement Value of Vertical Wastewater Assets



Linear

Figure 12-3 Replacement Value of Linear Wastewater Assets

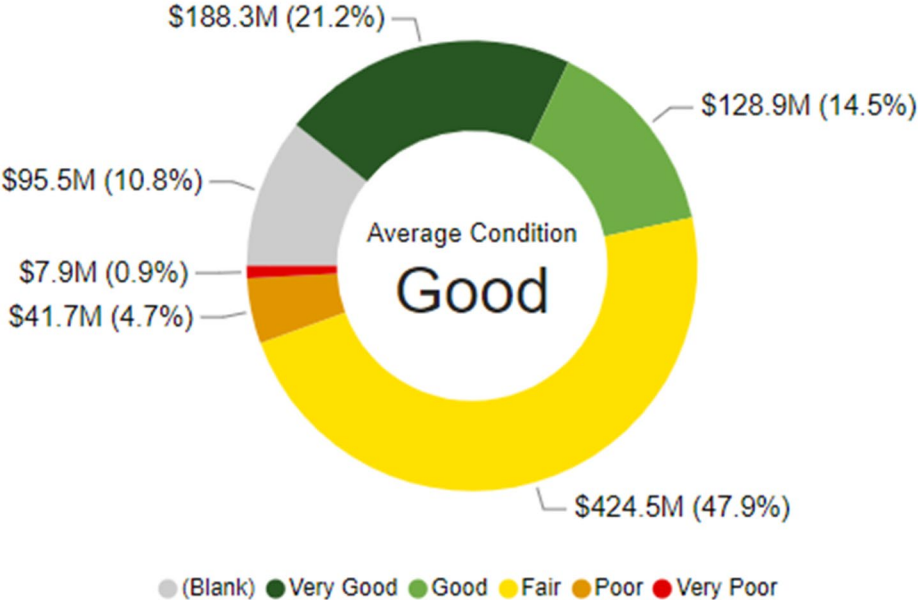


12.2.1. Asset Condition

Condition Category Overview

The following figure shows that approximately 94% (\$741.7M) of assessed wastewater assets, where sufficient data is available to derive a condition rating, are in Fair or better condition. Overall, Wastewater assets are in Good condition.

Figure 12-4 Condition Profile of All Wastewater Assets by Replacement Value



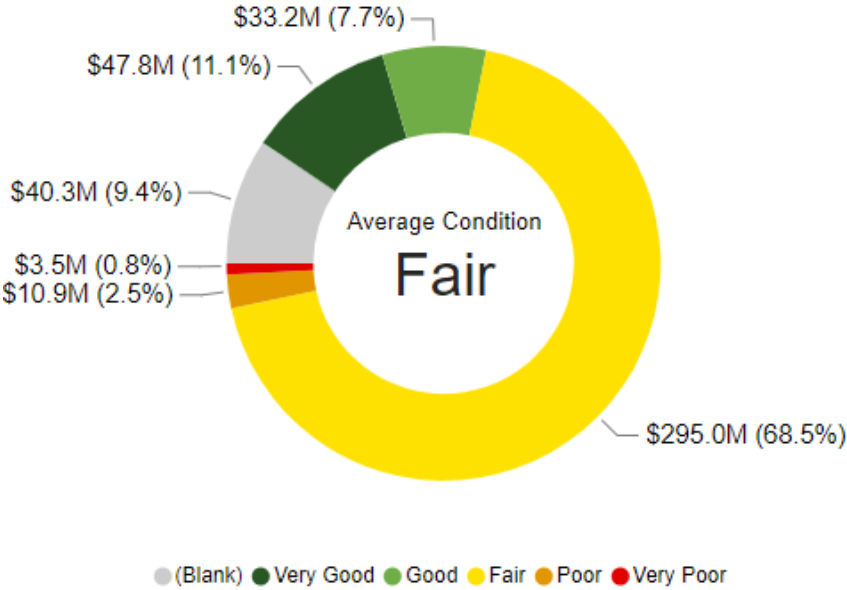
Note: A *Blank* label is applied to assets where condition data was not available.

Asset Class Condition Overview

The condition of the assets is shown in Figure 12-5 and Figure 12-6.

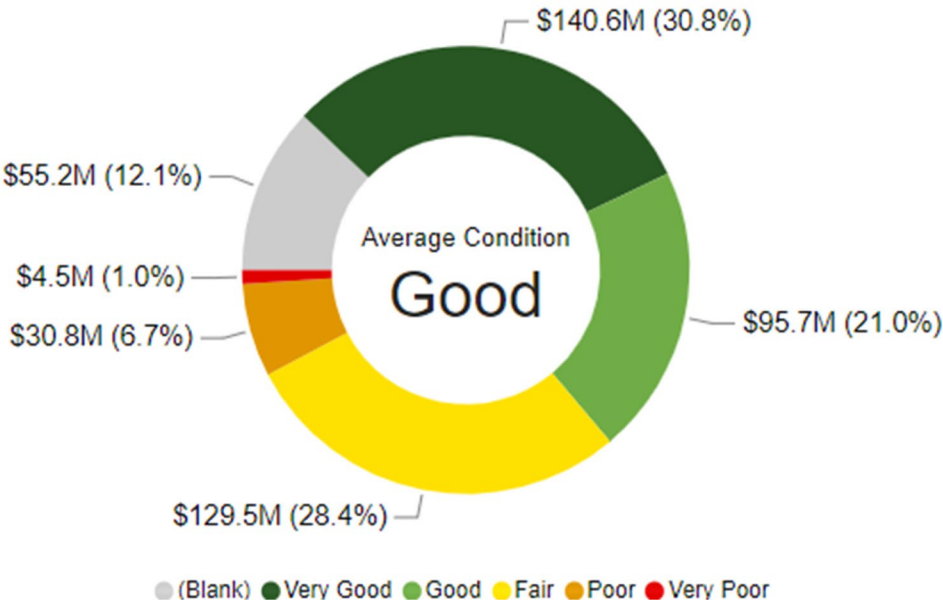
Vertical Condition

Figure 12-5 Condition Profile of Vertical Wastewater Assets by Replacement Value



Linear Condition

Figure 12-6 Condition Profile of Linear Wastewater Assets by Replacement Value



12.3. Lifecycle Management Strategy

This section presents the strategy of key lifecycle activities currently apply to maintain current levels of service.

12.3.1. Lifecycle Activities to Provide Current LOS

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.

Operating / Maintenance 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.

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.

Disposal Activities

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

12.3.2. Risk Management

The risks being managed with this lifecycle strategy are:

- **Level Of Service 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.

- **Safety and Health 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.

12.4. Financial Needs

12.4.1. Capital Investments

The total capital investment needed to maintain current levels of service is estimated at \$206.6M, from 2024-2033. This includes renewal investments to maintain the current percentage of the asset portfolio that is in a state of good repair, and also investments to accommodate growth, disposals, non-infrastructure activities, and service improvements.

Table 12-3 Total Capital Investment Needs to Maintain Current LOS: Wastewater

Investment (2024-2033)	Needs (\$M)	Investment Plans (\$M)
Non-Infrastructure	\$0.7	\$7.7
Service Improvement	\$5.3	
Growth Needs	\$2.9	
Renewal	\$197.6	\$197.5
Disposal	-	-
Total	\$206.6	\$205.2

As shown above, an infrastructure gap exists to maintain current levels of service. This equates to an average additional investment required of \$0.5M per year, for the next ten years. 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 expenditure for lifecycle activities. Over the next 10 years it is estimated that approximately \$77.7M will be required to operate wastewater assets, primarily funded from the net rate requirement.

12.4.3. Focus on Growth Needs

In addition to targeting and prioritizing the investment needed to maintain existing assets, there are also planning processes in place to determine the additional assets needed to meet growing demand for service through population increases or demand for new services. The projects targeted to meet growth come from various plans such as the *Integrated Sustainable Master Plan*

(ISMP) and *Development Charge Study*. These growth-related projects are primarily funded through DCs to enable the recovery of growth-related capital expenditures from new development.

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 help realize a vision of a clean and green county. Like many of 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.

13.1. Levels of Service

13.1.1. Community Levels of Service

Stormwater assets provide the 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. Service Measures

The safety, reliability, availability, and sustainability of the stormwater assets are indicated by the following measures.

Table 13-1. Level of Service Measures: Stormwater

Service Measure	2023 Performance
Percentage of stormwater assets within estimated service life	96%
Percentage of properties that are resilient to flooding from a 100-year storm	92.8% (Urban)
Percentage of the stormwater system that is resilient to a 5-year storm	94.6% (Urban)

13.1.4. Other Monitoring

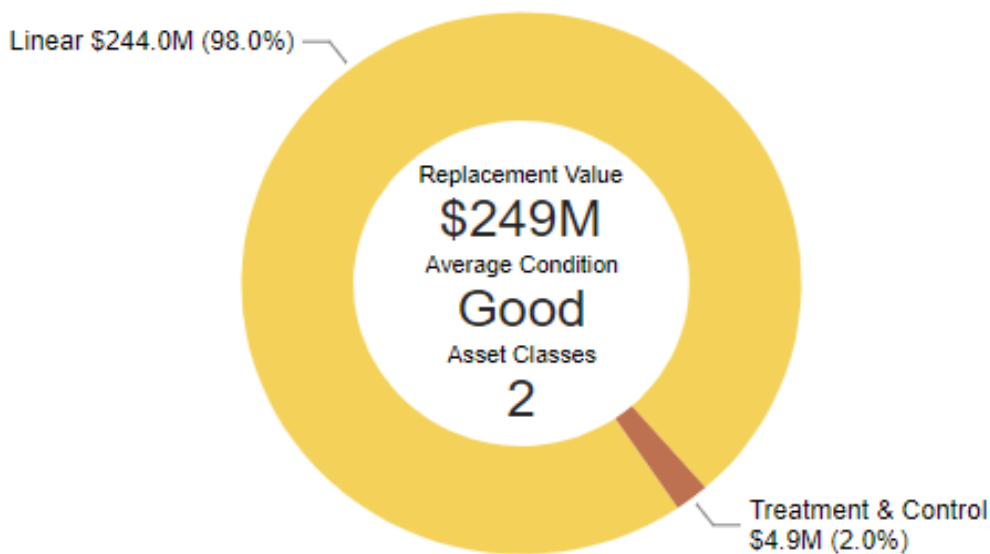
The County also monitors other information that relates to asset performance, including the percentage of the urban area catchbasins that are inspected and cleaned every year.

13.2. Current State of Stormwater Assets

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.

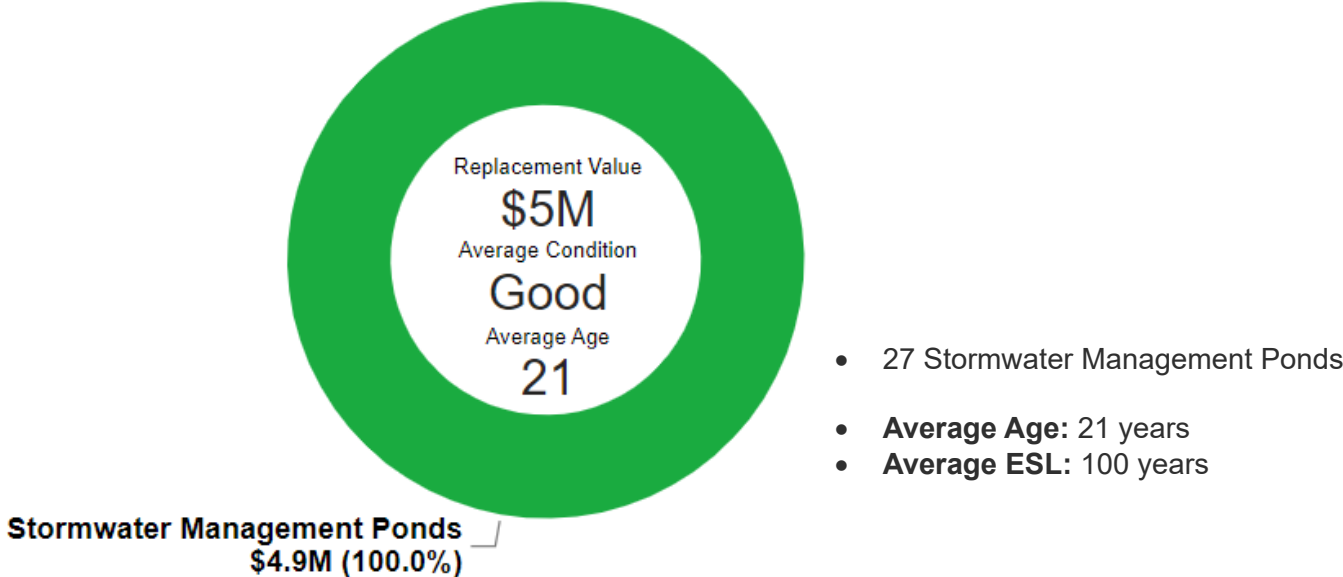
The state of assets that provide these services is summarized below. The figures outline the replacement values of all of the stormwater assets.

Figure 13-1 Replacement Value of All Stormwater Assets



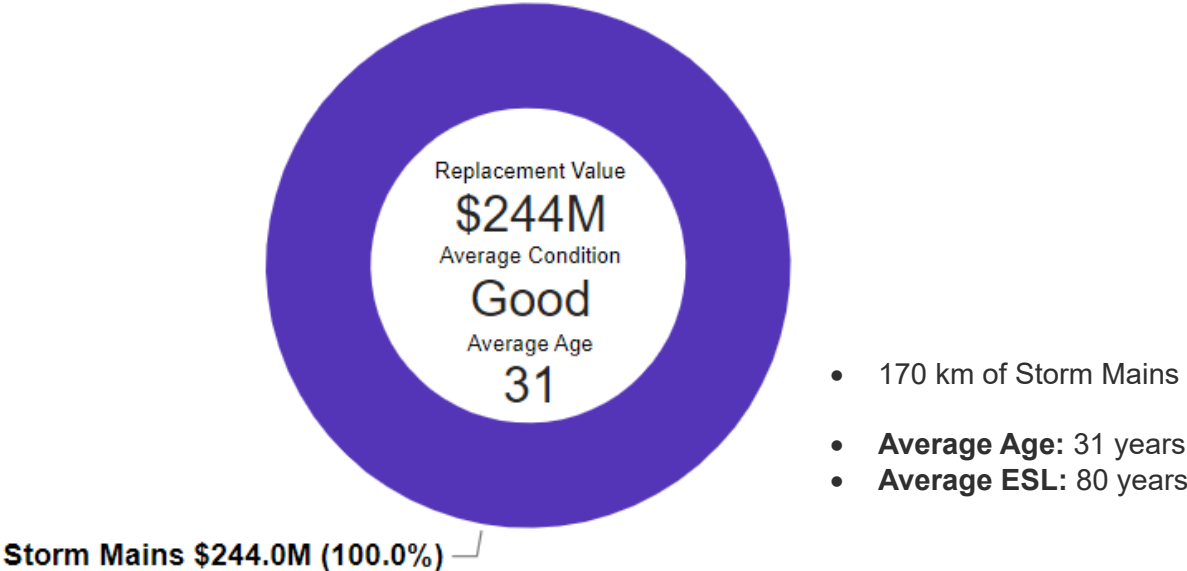
Stormwater Treatment and Control

Figure 13-2 Replacement Value of Stormwater Treatment & Control Assets



Stormwater Linear

Figure 13-3 Replacement Value of Stormwater Linear Assets

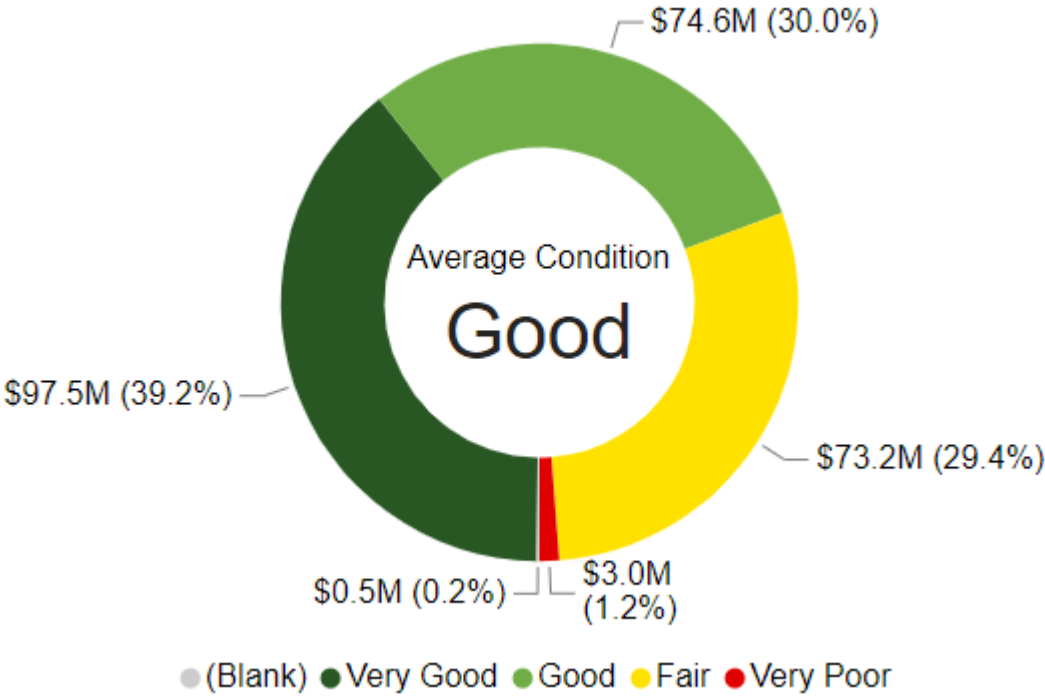


13.2.1. Asset Condition

Condition Category Overview

Error! Reference source not found. shows that approximately 99% (\$245.3M) of Stormwater assets, where sufficient data is available to derive a condition rating, are in Fair or better condition. Overall, Stormwater assets are in Good condition.

Figure 13-4 Condition Profile of All Stormwater Assets by Replacement Value

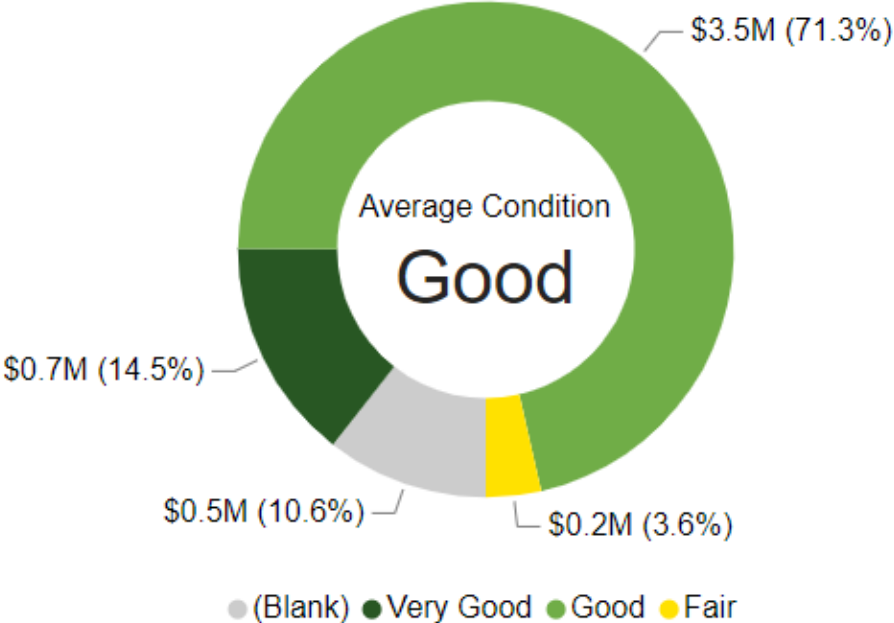


Note: A *Blank* label is applied to assets where condition data was not available.

Asset Class Condition Overview

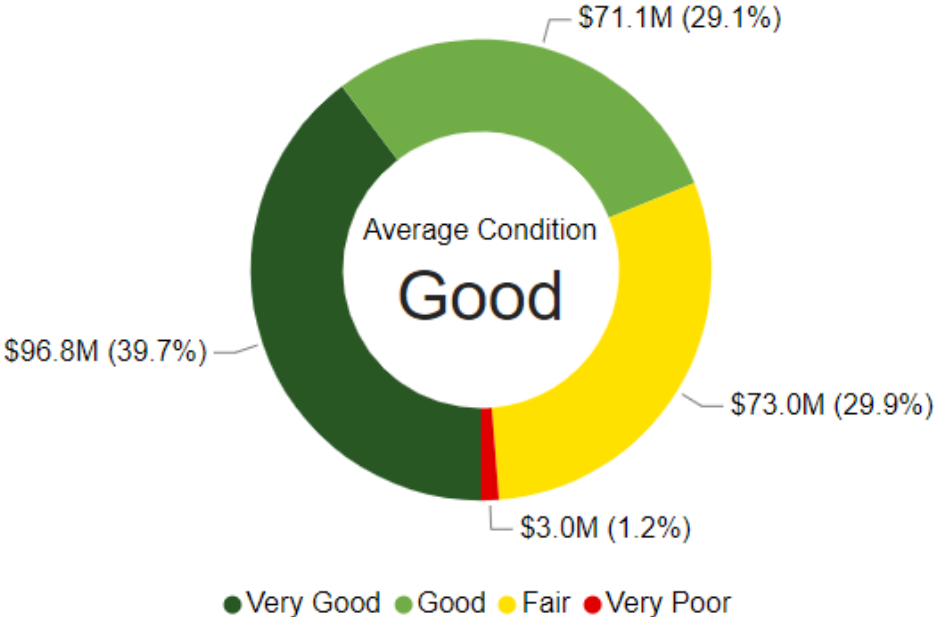
Stormwater Treatment & Control Condition

Figure 13-5 Condition Profile of Stormwater Treatment Assets by Replacement Value



Stormwater Linear Condition

Figure 13-6 Condition Profile of Stormwater Linear Assets by Replacement Value



13.3. Lifecycle Management Strategy

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

13.3.1. Lifecycle Activities to Maintain Current LOS

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 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.

Operating / Maintenance 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

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.

Disposal Activities

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

13.3.2. Risk Management

The risks being managed with this lifecycle strategy are:

- **Level Of Service 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.

13.4. Financial Needs

13.4.1. Capital Investments

The total capital investment needed to maintain current levels of service is estimated at \$47.6M, from 2024-2033. This includes renewal investments to maintain the current percentage of the asset portfolio that is in a state of good repair, and also investments to accommodate growth, disposals, non-infrastructure activities, and service improvements.

Table 13-2 Total Capital Investment Needs to Maintain Current LOS: Stormwater

Investment (2024-2033)	Needs (\$M)	Investment Plans (\$M)
Non-Infrastructure	\$0.7	\$0.6
Service Improvement	\$0.1	
Growth	\$0.1	
Renewal	\$46.7	\$46.7
Disposal	-	-
Total	\$47.6	\$47.3

As shown above, an infrastructure gap exists to maintain current levels of service. This equates to an average additional investment required of \$0.1M per year, for the next ten years.

Investment needs to cover growth while maintaining levels of service for stormwater 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 expenditure for lifecycle activities. Over the next 10 years it is estimated that approximately \$27.6M will be required to operate stormwater assets, primarily funded from the net levy requirement.

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 County’s assets, fleet and equipment assets are facing increased challenges because of climate change and regulatory changes.

This Service Area Plan provides information about the management of the fleet and equipment assets over the next 10 years, demonstrating the 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 measures showing current performance.

14.1.1. Community Levels of Service

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 includes 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. Service Measures

The safety, reliability, availability, and sustainability of the fleet and equipment assets are indicated in the following table.

Table 14-1 Levels of Service Measures: Fleet & Equipment

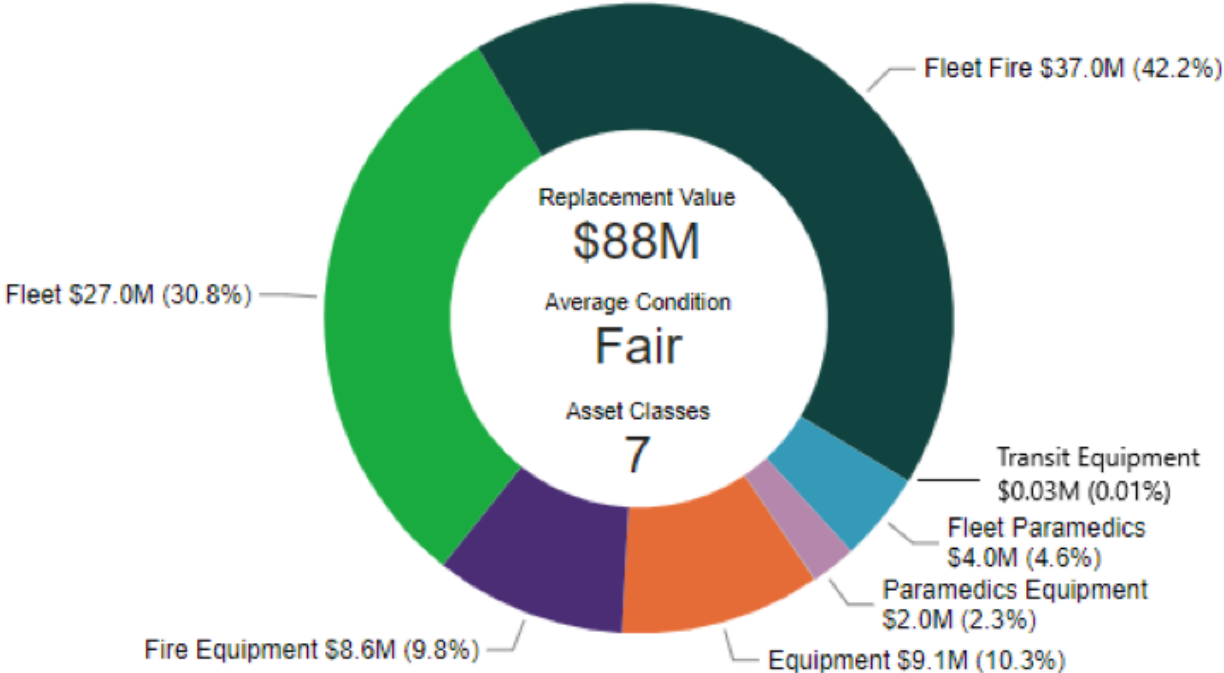
Service Measure	2023 Performance
Percentage of fleet within estimated service life	83%
Transit	
Percentage of transit stops with signage equipment	80%
Number of transit shelters / urban community	5
Fire & Paramedic Services	
Percentage of Fire fleet & equipment assets within estimated service life	80%
Percentage of Paramedic Services fleet & equipment assets within estimated service life	93%
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

Fleet and equipment assets are those that enable municipal employees to operate in the communities. 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.

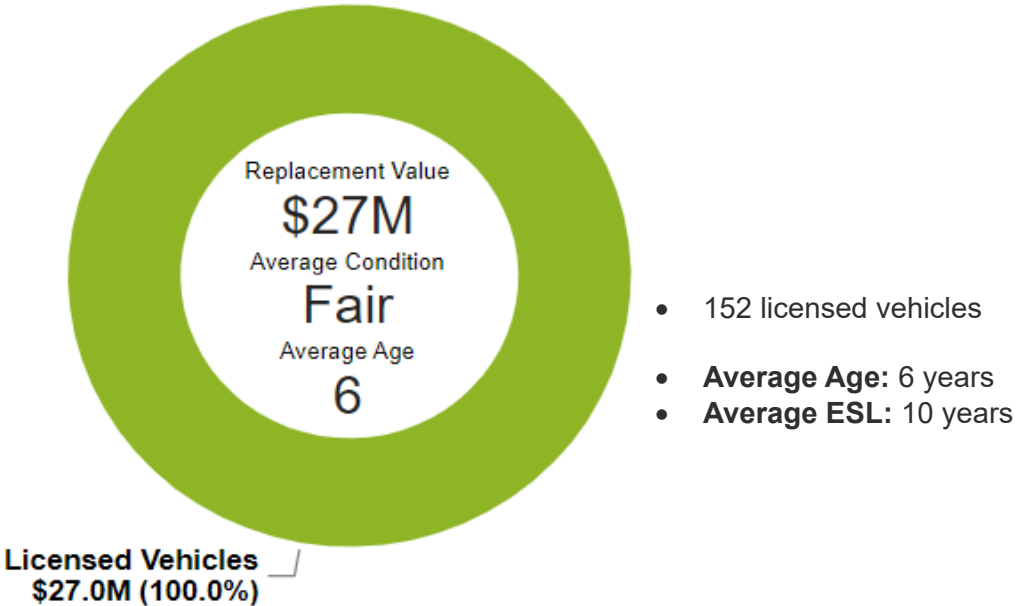
The state of assets used to provide these services are summarized below. The figures outline the replacement values of all the fleet & equipment assets.

Figure 14-1 Replacement Value of All Fleet & Equipment Assets



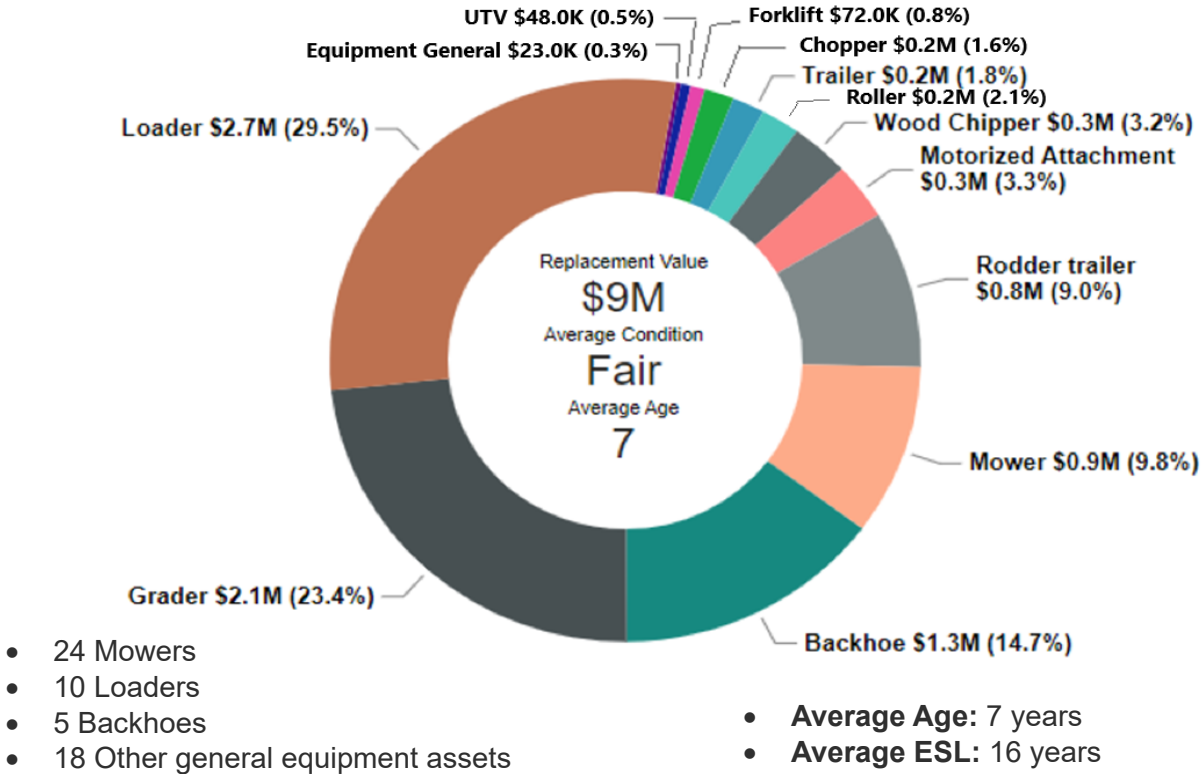
General Fleet

Figure 14-2 Replacement Value of Fleet Assets



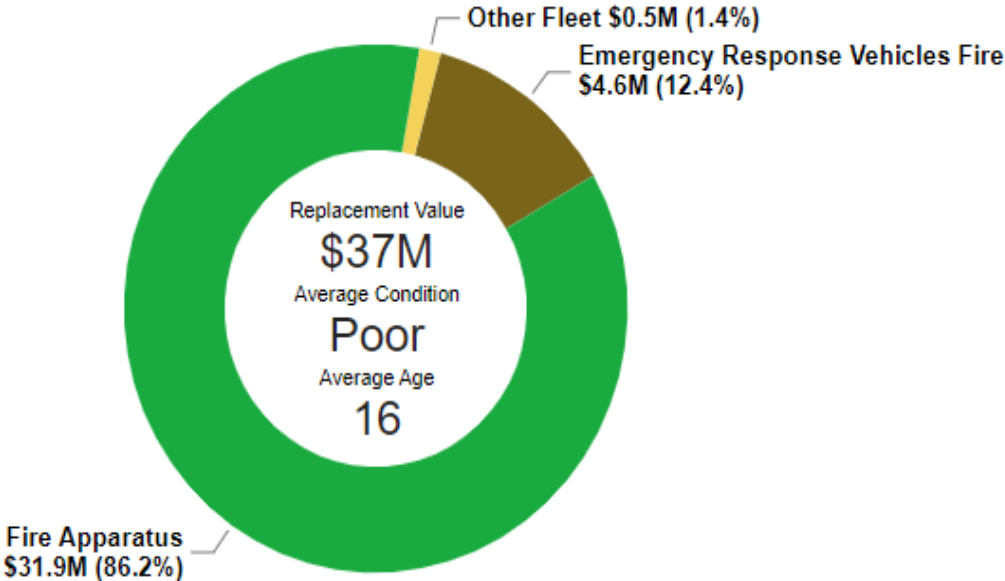
General Equipment

Figure 14-3 Replacement Value of Equipment Assets



Fire Fleet

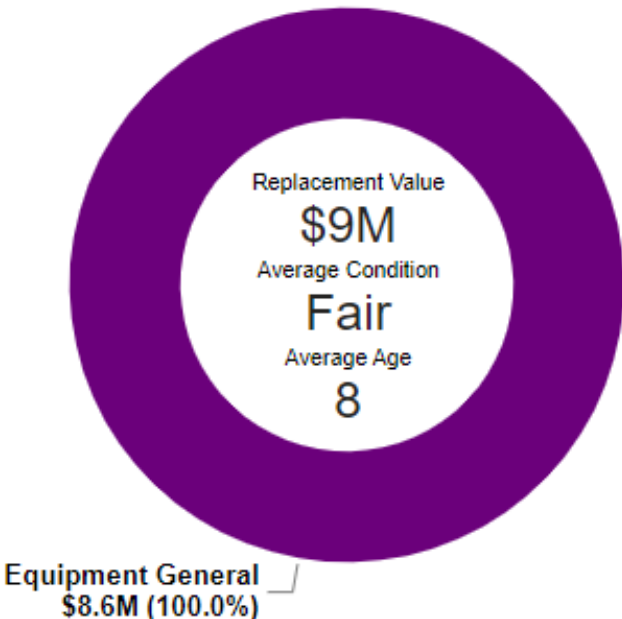
Figure 14-4 Replacement Value of Fire Fleet Assets



- 10 Emergency Response Vehicles
- 14 Pumper Trucks
- 15 Tanker Trucks
- 3 Pumper-Rescue Trucks
- 2 All Terrain Firefighting Vehicles
- 1 Aerial ladder equipment assets
- 18 Other fire fleet assets
- **Average Age:** 16 years
- **Average ESL:** 19 years

Fire Equipment

Figure 14-5 Replacement Value of Fire Equipment Assets



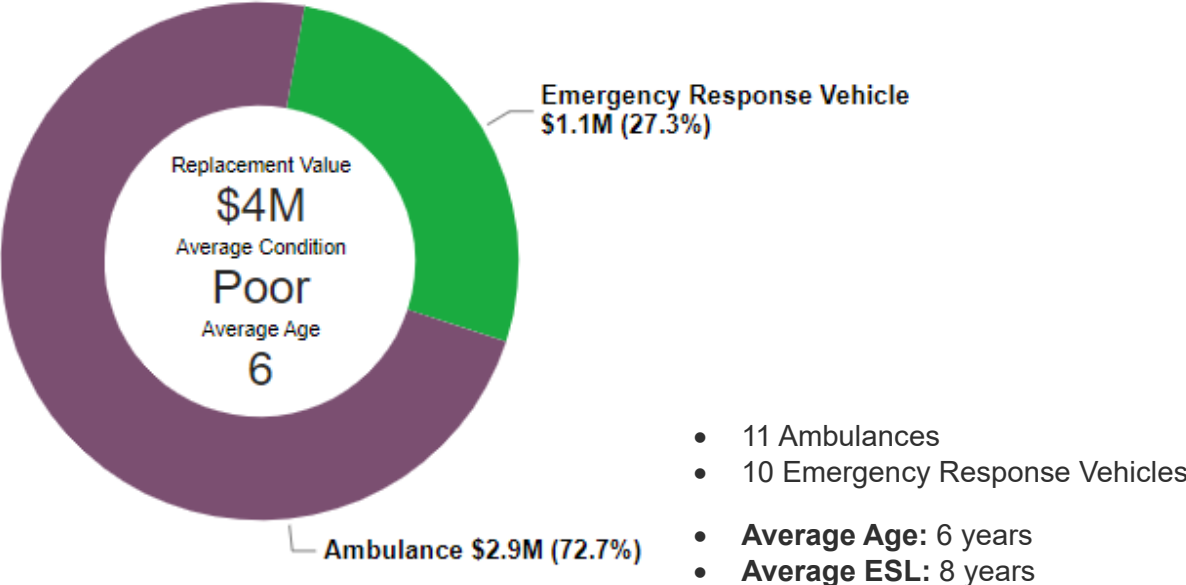
Total 1,339* Assets:

- 563 SCBA Cylinders
- 232 SCBA PAK's
- 43 Water & Ice Rescue Suits
- 15 Thermal Imaging Cameras
- 253 Pagers
- 35 Units of Extrication Equipment (Ram, Cutters, Spreaders)
- **Average Age:** 8 years
- **Average ESL:** 15 years

**Not all items are included in the list above*

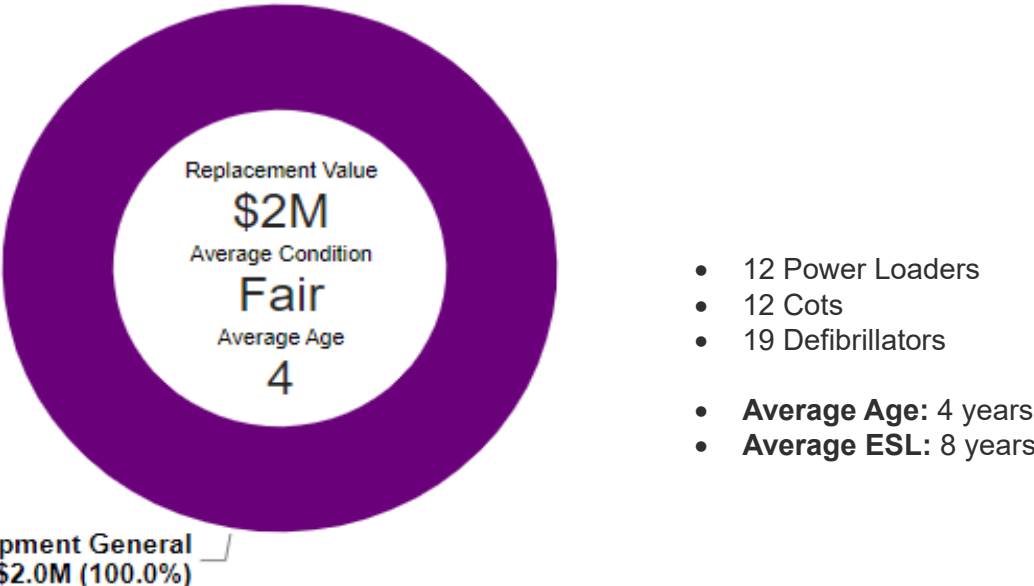
Paramedic Fleet

Figure 14-6 Replacement Value of Paramedic Fleet Assets



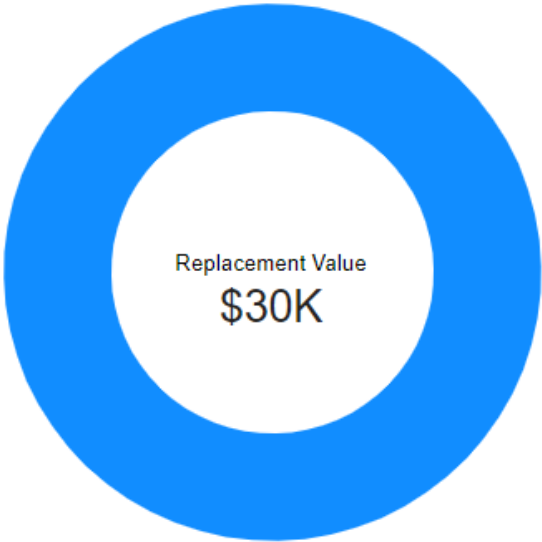
Paramedic Equipment

Figure 14-7 Replacement Value of Paramedic Equipment Assets



Transit Equipment

Figure 14-8 Replacement Value of Transit Equipment Assets



- Stop Signage
- Fareboxes & Stands
- Vehicle mounted bike racks
- Tablets and onboard mounts
- **Average Age:** No data available
- **Average ESL:** 10 years

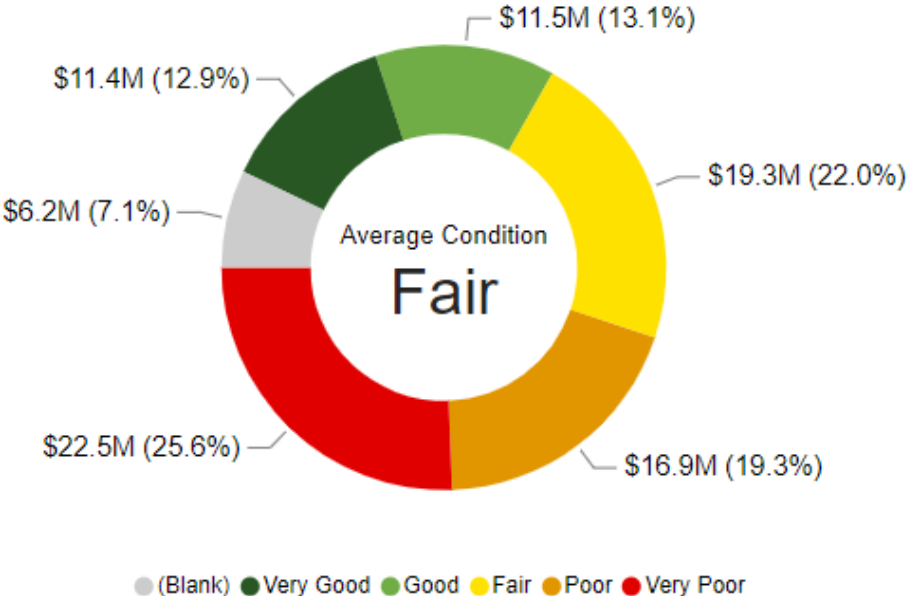
Equipment General \$30.0K (100.0%)

14.2.1. Asset Condition

Condition Category Overview

Figure 14-9 below indicates that approximately 52% (\$42M) of Fleet & Equipment assets, where sufficient data to derive a condition rating was available, are in Fair or better condition. Overall, Fleet & Equipment assets are in Fair condition.

Figure 14-9 Condition Profile of All Fleet & Equipment Assets by Replacement Value



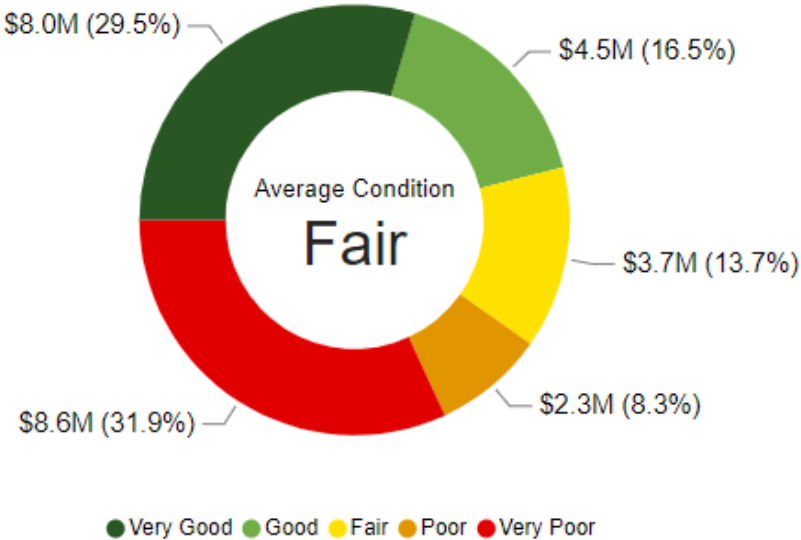
Note: A *Blank* label is applied to assets where condition data was not available.

Asset Class Condition Overview

The condition of the asset class level is shown below.

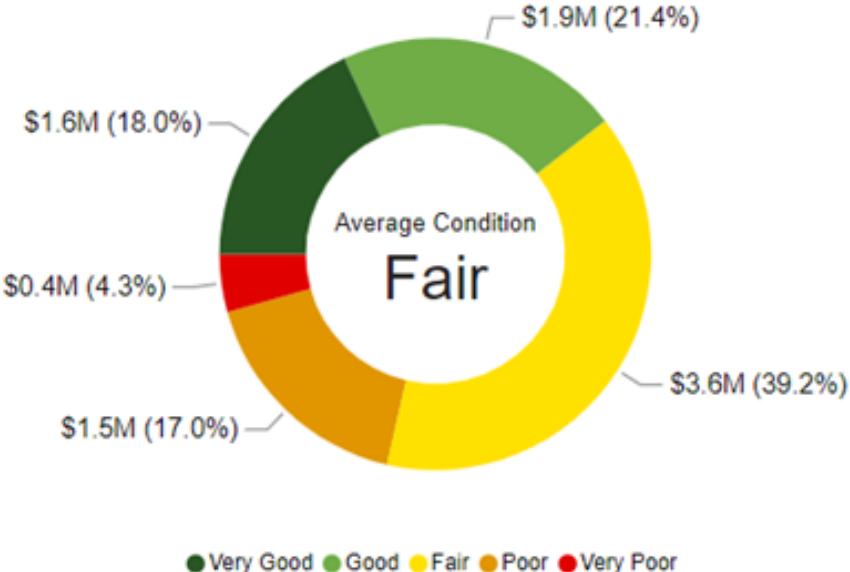
General Fleet Condition

Figure 14-10 Condition Profile of Fleet Assets by Replacement Value



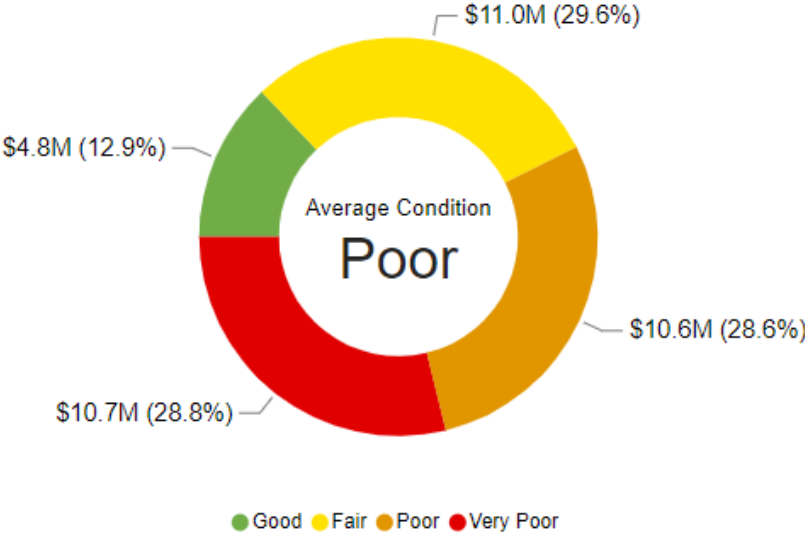
General Equipment Condition

Figure 14-11 Condition Profile of General Equipment Assets by Replacement Value



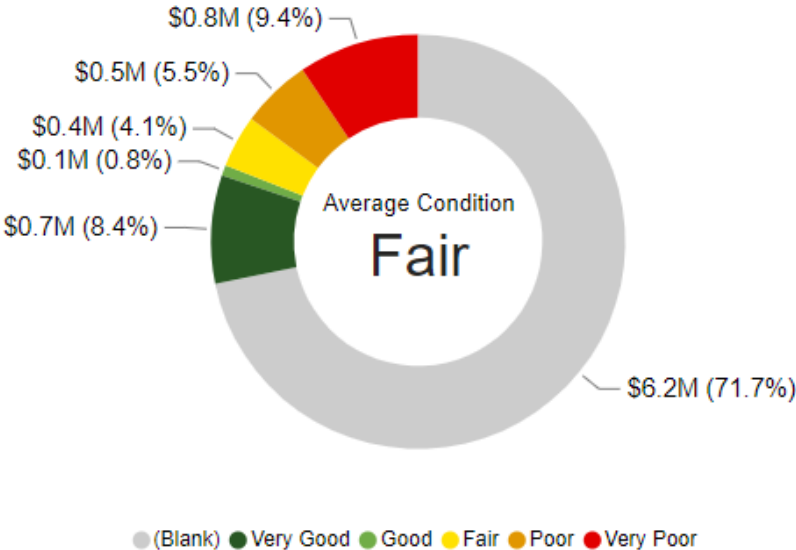
Fire Fleet Condition

Figure 14-12 Condition Profile of Fire Fleets Assets by Replacement Value



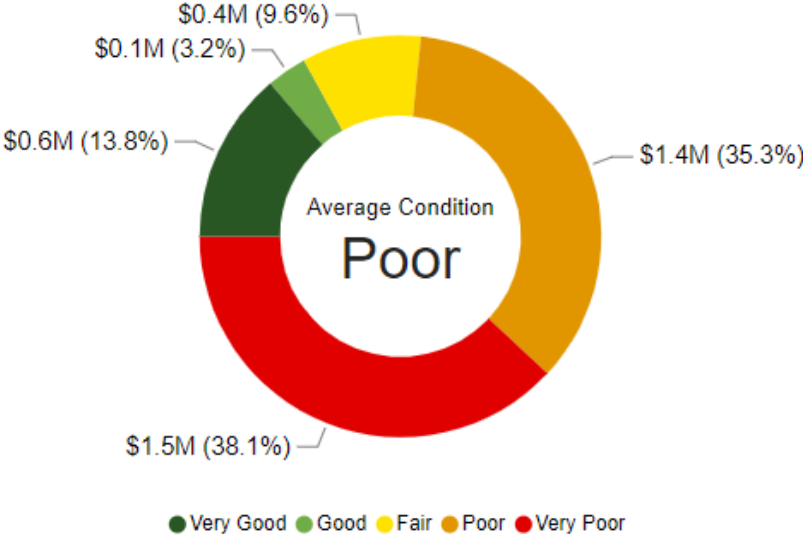
Fire Equipment Condition

Figure 14-13 Condition Profile of Fire Equipment Assets by Replacement Value



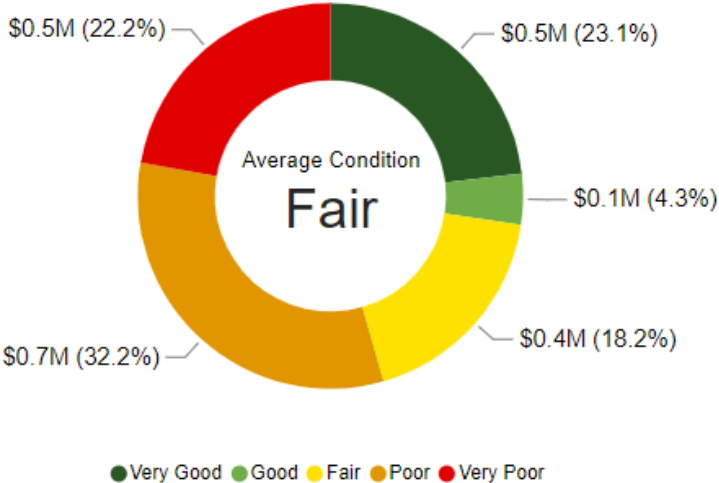
Paramedic Fleet Condition

Figure 14-14 Condition Profile of Paramedic Asset by Replacement Value



Paramedic Equipment Condition

Figure 14-15 Condition Profile of Paramedic Equipment Assets by Replacement Value



Transit Condition

There was no condition data/installation dates available, and as such it was not possible to prepare a condition summary chart at this time.

14.3. Lifecycle Management Strategy

This section presents the strategy of key lifecycle activities currently applied to maintain current levels of service.

14.3.1. Lifecycle Activities to Provide Current LOS

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.

Operating / Maintenance Activities

- Regular preventive maintenance program 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.

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.

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.

14.3.2. Risk Management

The risks being managed with this lifecycle strategy 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.
- **Level of Service 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.

14.4. Financial Needs

14.4.1. Capital Investments

The total capital investment needed to maintain current levels of service is estimated at \$61.7M, from 2024-2033. This includes renewal investments to maintain the current percentage of the asset portfolio that is in a state of good repair, and investments to accommodate growth, disposals, non-infrastructure activities, and service improvements.

Table 14-2 Total Capital Investment Needs to Maintain Current LOS: Fleet & Equipment

Investment (2024-2033)	Needs (\$M)	Investment Plans (\$M)
Non-Infrastructure	\$0.5	\$5.1
Service Improvement	\$4.5	
Growth	\$0.1	
Renewal	\$56.6	\$65.2
Disposal	-	-
Total	\$61.7	\$70.3

As shown above, the planned investment is sufficient to maintain current levels of service. It is possible average investment could be slowed by \$0.8M per year, for the next 10 years.

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

14.4.2. Operating Investments

Investment needs from the operating budget required to maintain 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 expenditure for lifecycle activities. Over the next 10 years it is estimated that approximately \$272.7M will be required to operate fleet and equipment assets, primarily funded from the net levy requirement.

15. General Facilities

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

Note: specialized equipment for arena and recreation centre, 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 describes the levels of service provided through the assets in this Service Area.

15.1.1. Community Levels of Service

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. Service Measures

The safety, reliability, availability, and sustainability of County facilities assets to provide services are indicated by the following service measures.

Table 15-1 General Facilities Level of Service Measures

Service Measure	2023 Performance
Percentage of all Facilities within estimated service life	91%
Percentage of all Libraries within estimated service life	75%
Percentage of Fire and Paramedic Services facilities within estimated service life	72%
Percentage of Long-Term Care facilities within estimated service life	100%
Percentage of Parks & Recreation facilities within estimated service life	65%
Percentage of Heritage and Culture facilities within estimated service life	69%

15.1.3. Other Monitoring

Table 15-2 General Facilities Other Measures

Other Measures	2023 Performance
Percentage of fire responses that are within NFPA 1720 standards for total response times	80%
Indoor recreation space ¹⁵ per 1,000 people (population)	33.6 m ²

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

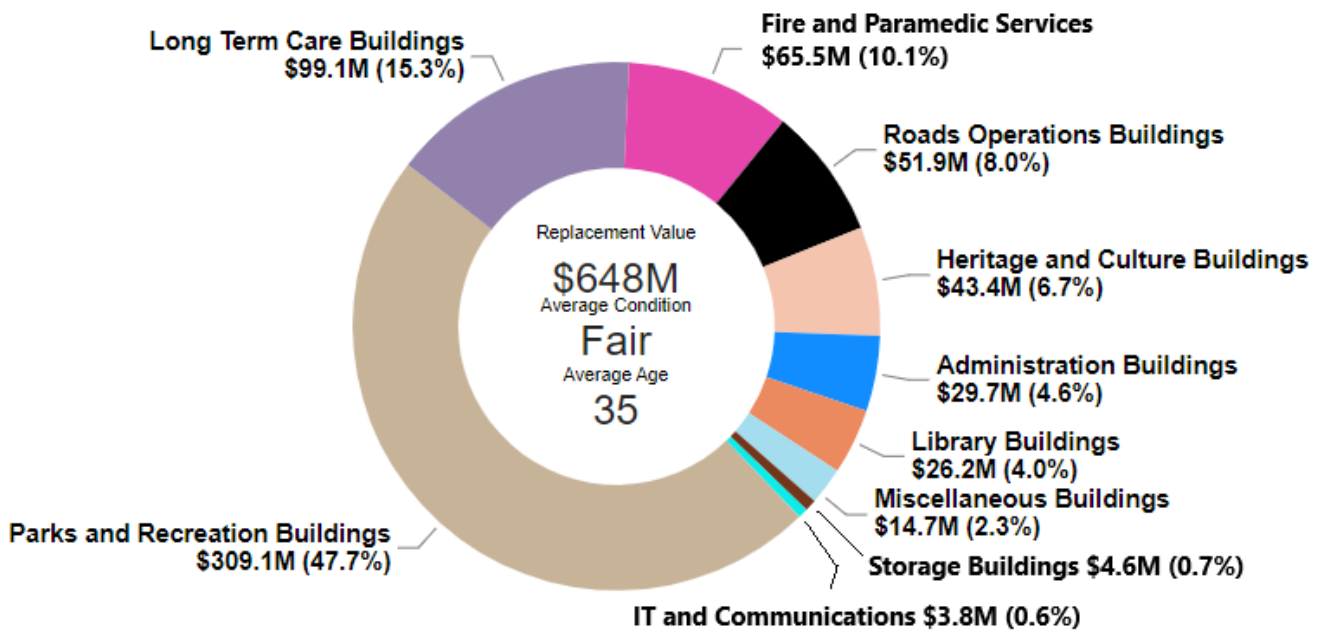
- Climate change measures
- Library security measures
- Overall storage space for County equipment and materials

15.2. Current State of General Facilities Assets

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

The County maintains the following facilities along with their associated facility components. The figures below outline the replacement value of the buildings themselves at the asset class levels, respectively.

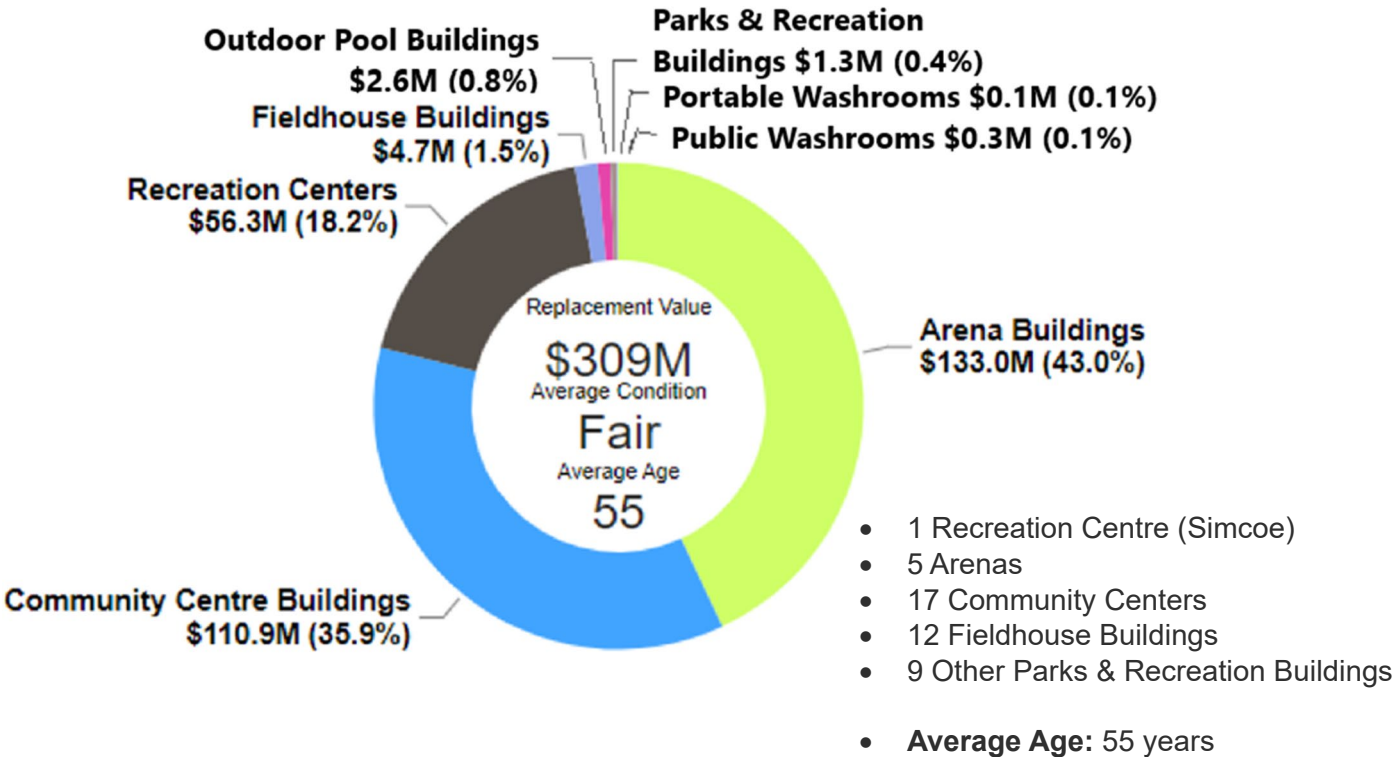
Figure 15-1 Replacement Value of All General Facilities Assets



¹⁵ Indoor Recreation Facility Space: 33,642 m²

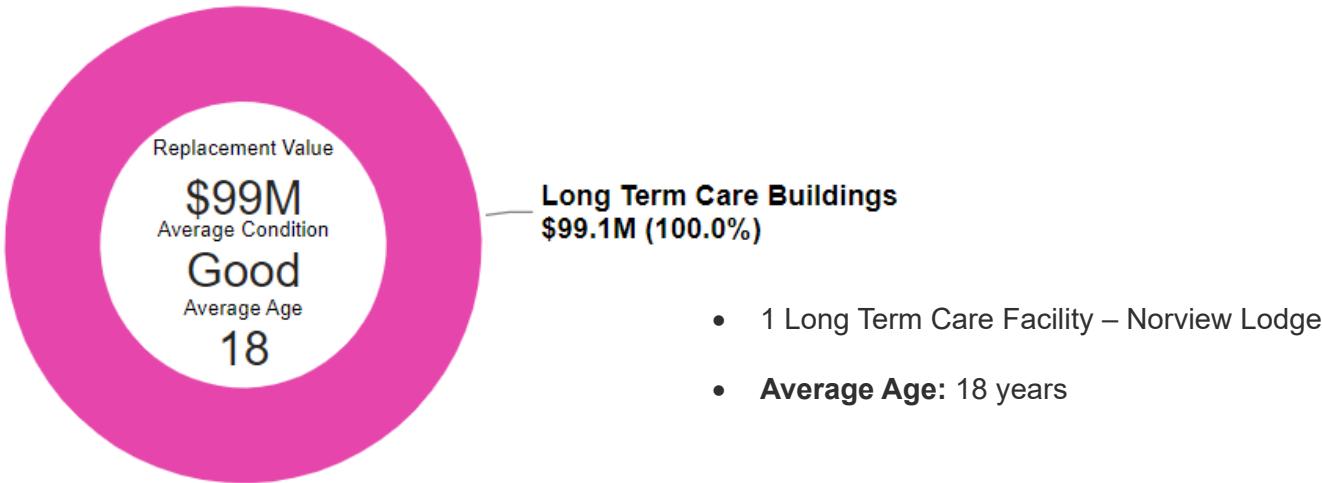
Parks & Recreation Buildings

Figure 15-2 Replacement Value of Parks & Recreation Buildings



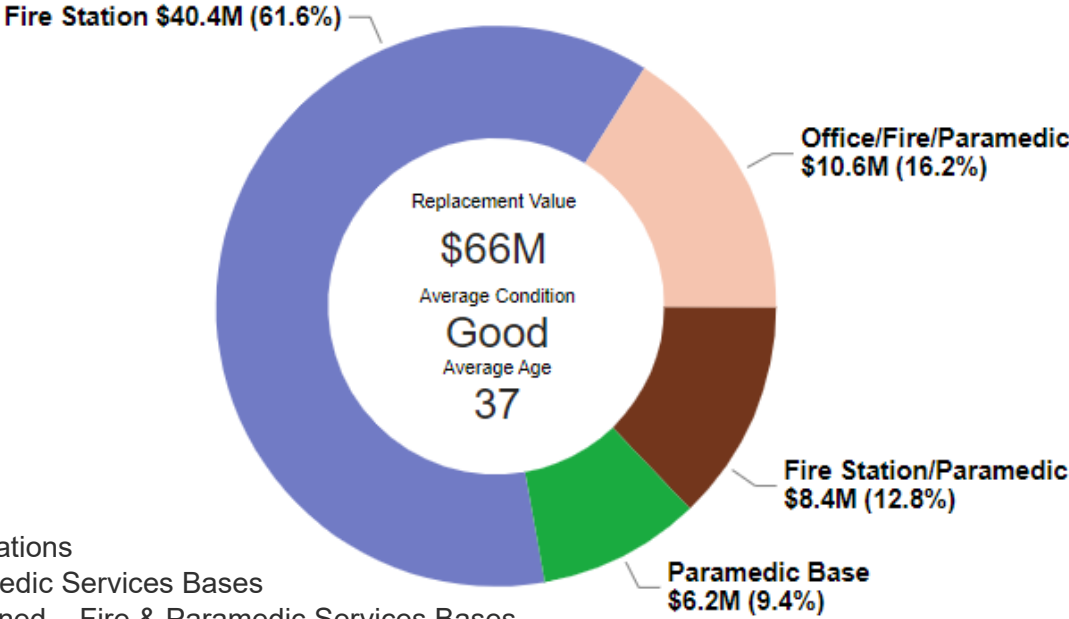
Long Term Care Buildings

Figure 15-3 Replacement Value of Long Term Care Buildings



Fire & Paramedic Services Buildings

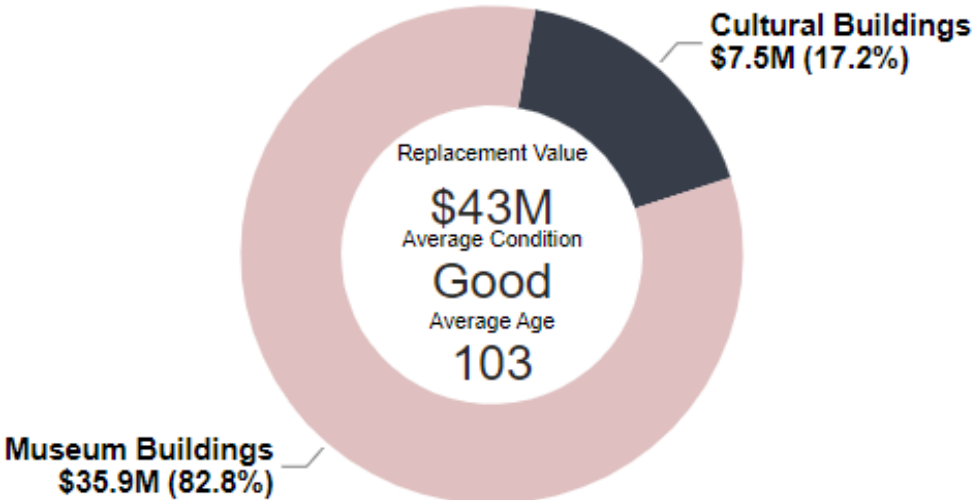
Figure 15-4 Replacement Value of Fire & Paramedic Services Buildings



- 7 Fire stations
- 3 Paramedic Services Bases
- 3 Combined – Fire & Paramedic Services Bases
- **Average Age:** 37 years

Heritage & Culture Buildings

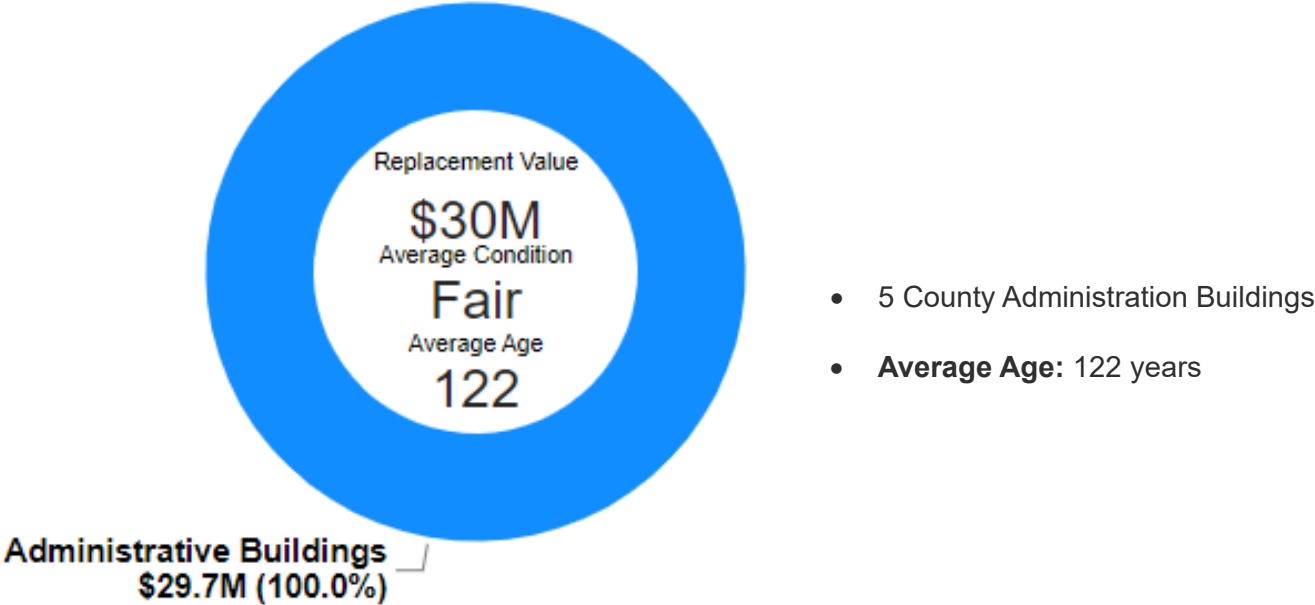
Figure 15-5 Replacement Value of Heritage & Culture Buildings



- 2 Cultural Buildings
- 5 Museums
- **Average Age:** 103 years

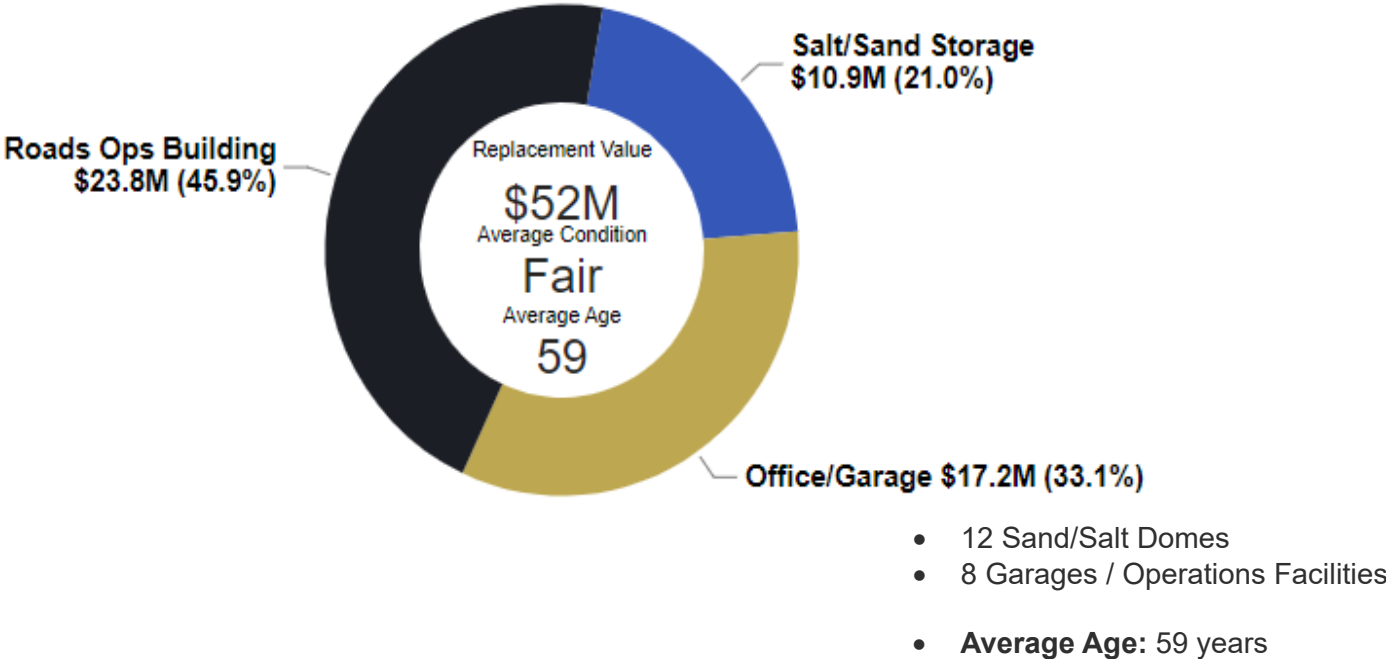
Administration Buildings

Figure 15-6 Replacement Value of Administration Buildings



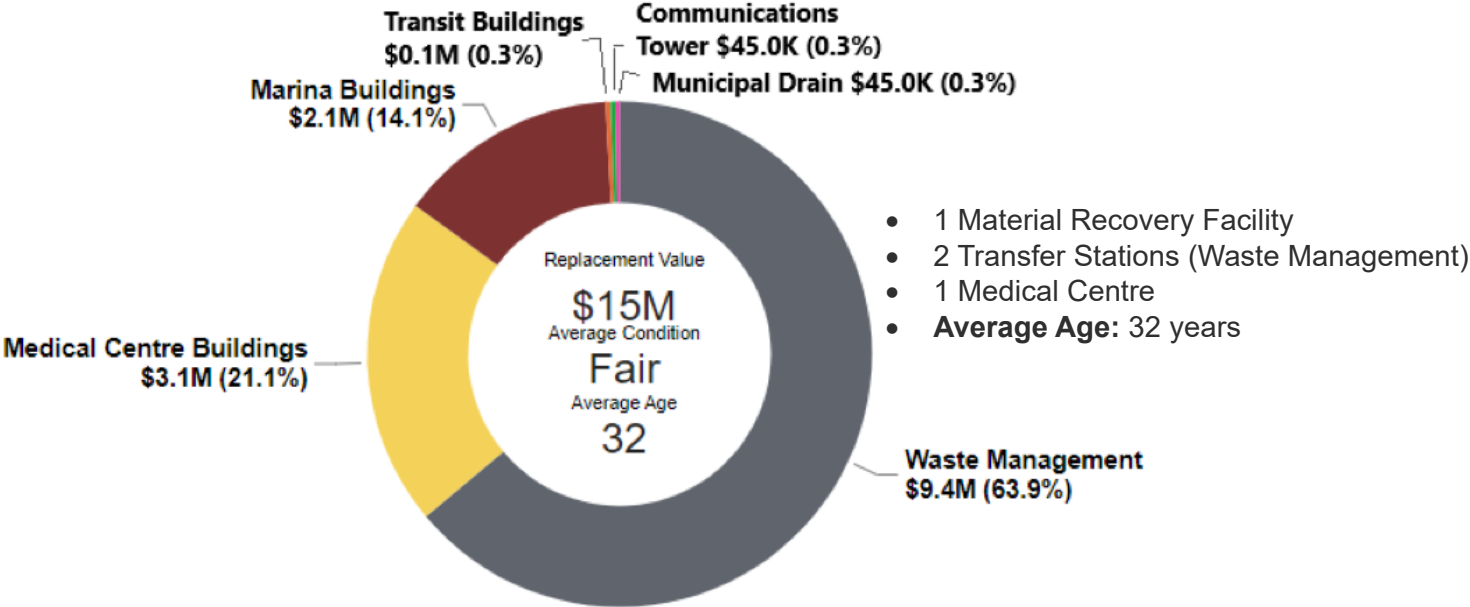
Roads and Operations Buildings

Figure 15-7 Replacement Value of Roads and Operations Buildings



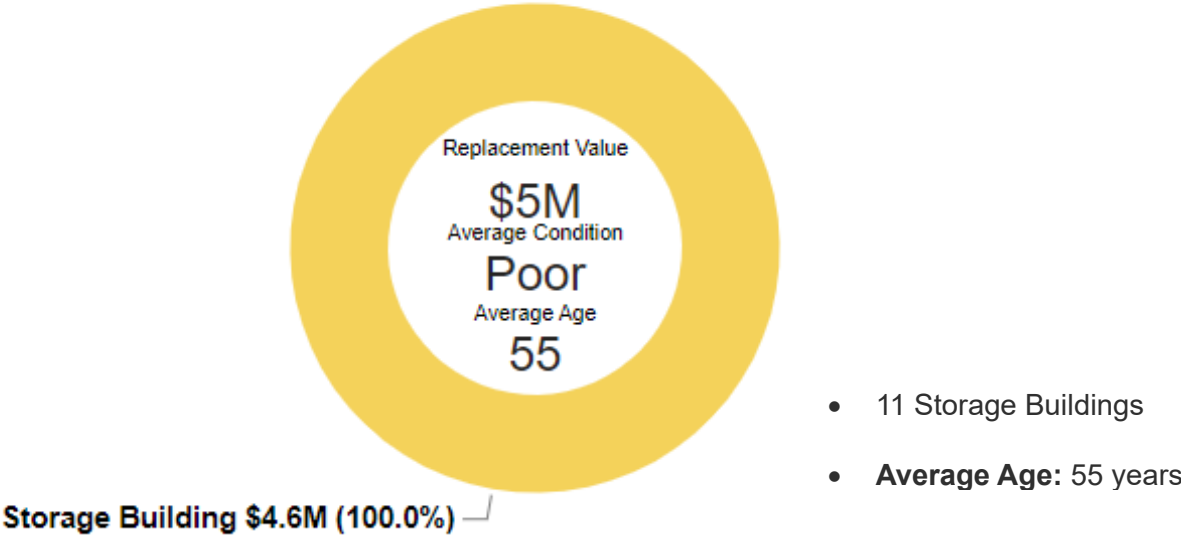
Miscellaneous Buildings

Figure 15-8 Replacement Value of Miscellaneous Buildings



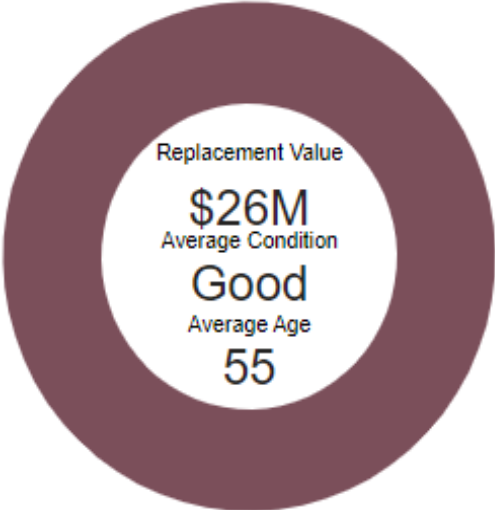
Storage Buildings

Figure 15-9 Replacement Value of Storage Buildings



Library Buildings

Figure 15-10 Replacement Value of Library Buildings



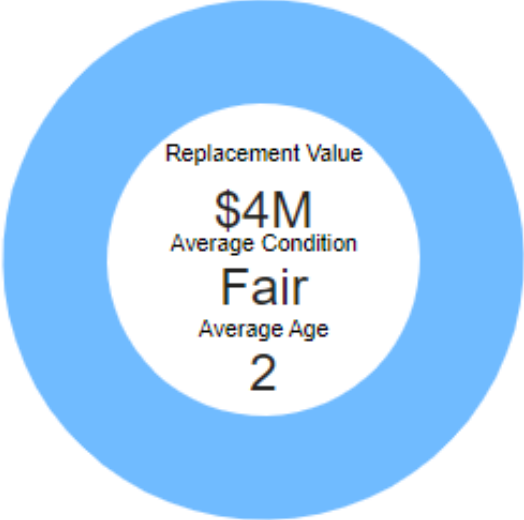
- 4 Libraries
- **Average Age:** 55 years

Note: The County has 5 libraries, 1 of which is a leased space

Library Buildings \$26.2M (100.0%)

IT & Communications

Figure 15-11 Replacement Value of IT & Communications Assets



- 1,949 IT Assets
- **Average Age:** 2 years

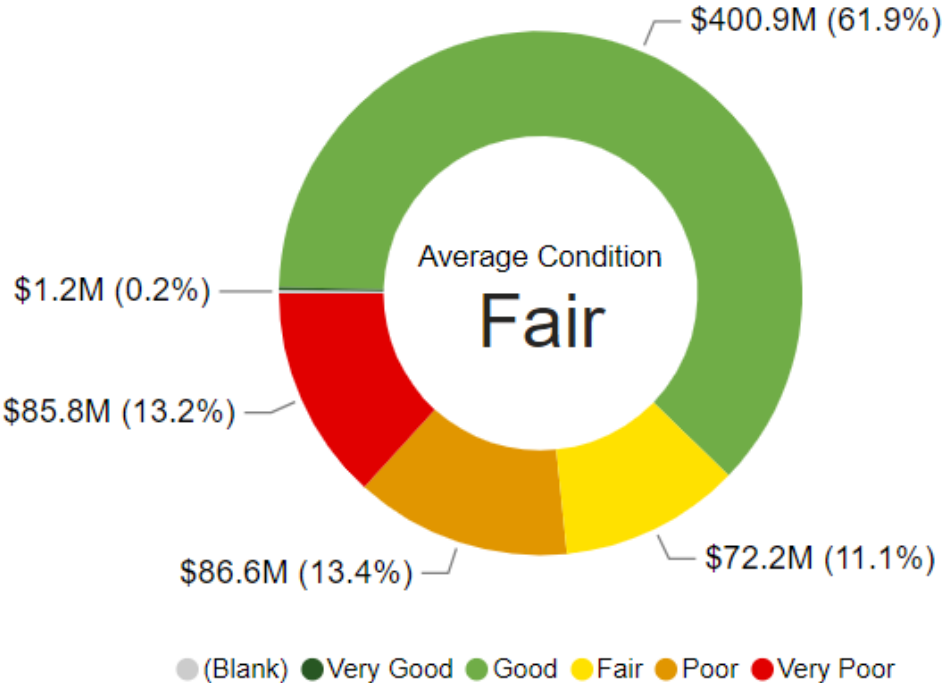
IT Equipment \$3.8M (100.0%)

15.2.1. Asset Condition

Condition Category Overview

Figure 15-12 shows that 73% (\$474.3M) of Norfolk County Facility assets, where sufficient data is available to determine a condition rating, are in Fair or better condition. Overall, General Facilities assets are in Fair condition.

Figure 15-12 Condition Profile of All Facilities by Replacement Value



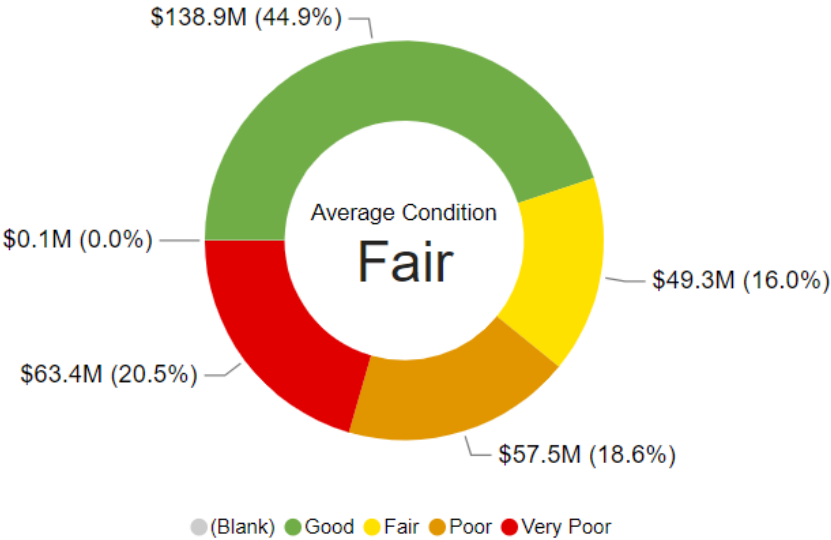
Note: A *Blank* label is applied to assets where condition data was not available.

Asset Class Condition Overview

The condition of assets at the asset class level is shown in the following figures.

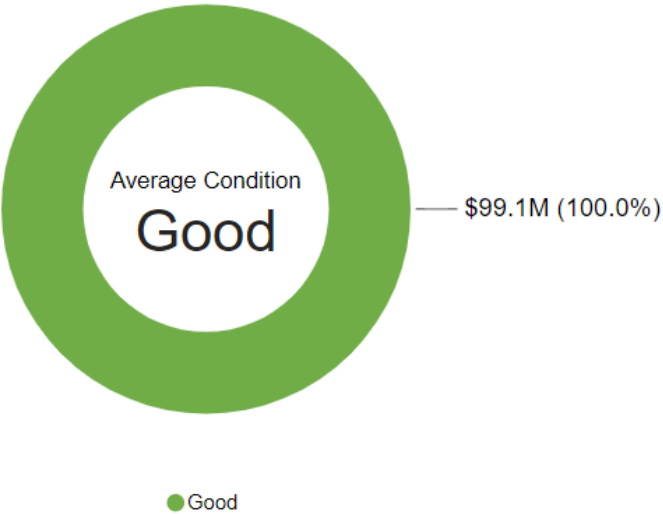
Parks & Recreation Buildings Condition

Figure 15-13 Condition Profile of Parks & Recreation Buildings by Replacement Value



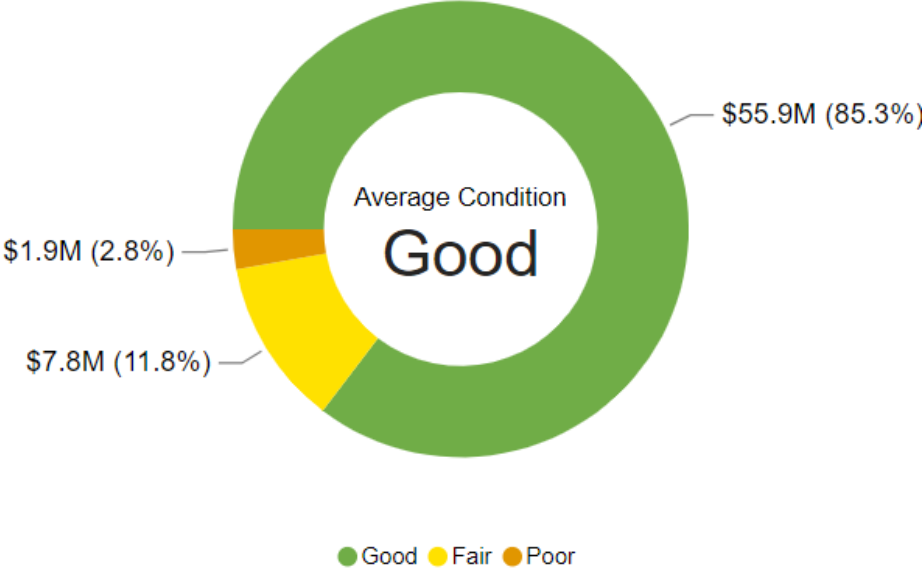
Long Term Care Buildings Condition

Figure 15-14 Condition Profile of Long Term Care Buildings by Replacement Value



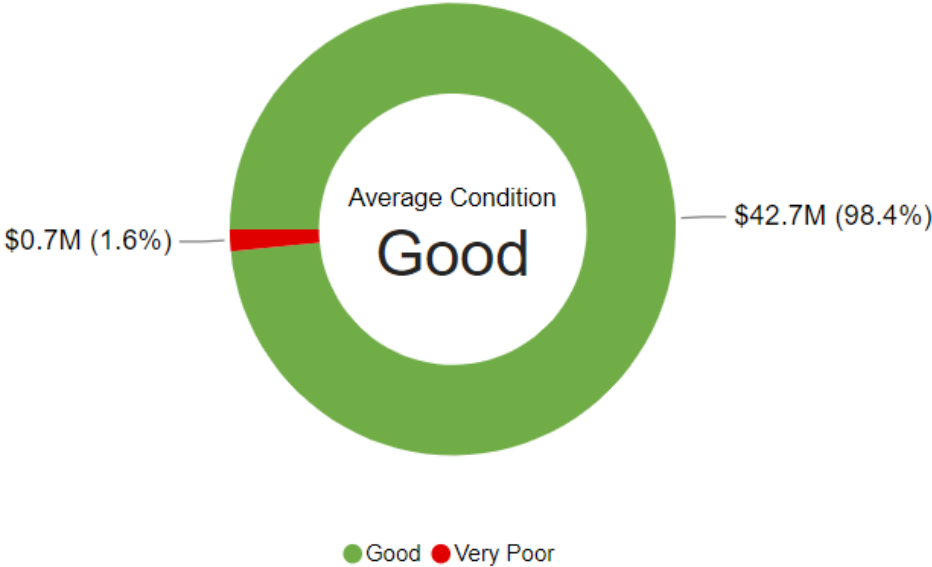
Fire & Paramedic Buildings Condition

Figure 15-15 Condition Profile of Fire & Paramedic Buildings by Replacement Value



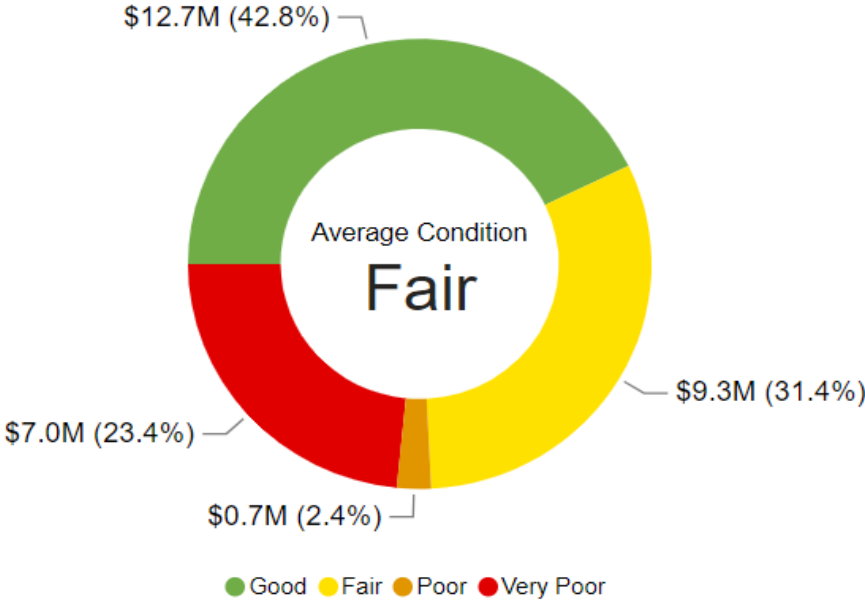
Heritage & Culture Buildings Condition

Figure 15-16 Condition Profile of Heritage & Culture Buildings by Replacement Value



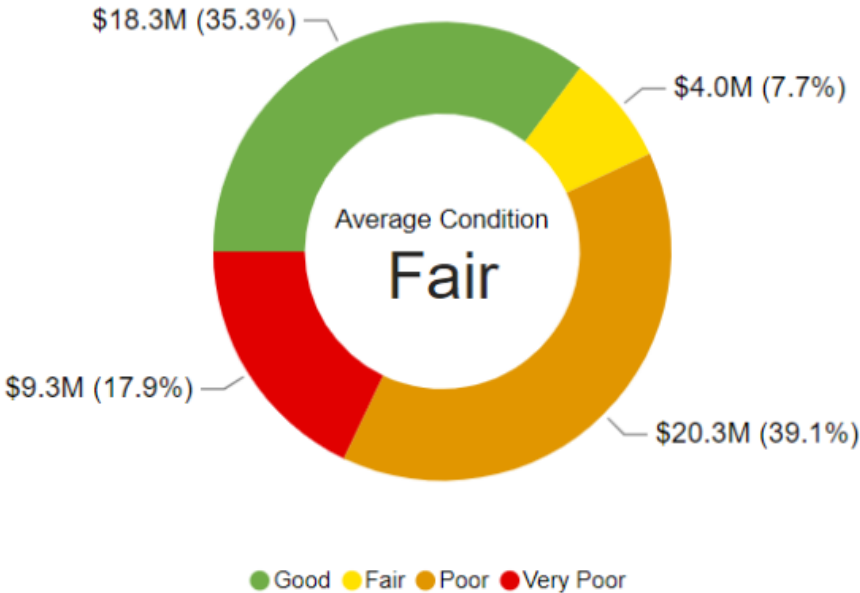
Administration Buildings Condition

Figure 15-17 Condition Profile of Administration Buildings by Replacement Value



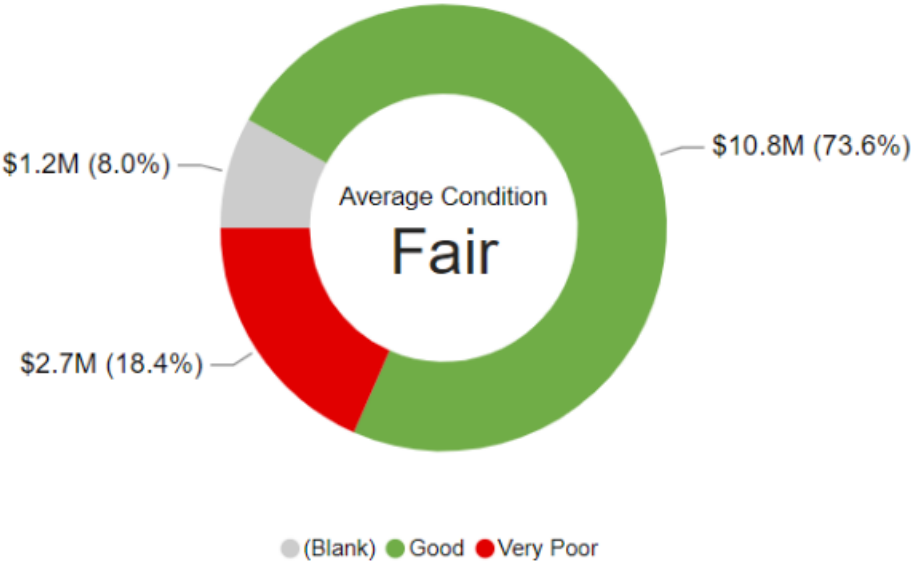
Roads and Operations Buildings Condition

Figure 15-18 Condition Profile of Roads and Operations Buildings by Replacement Value



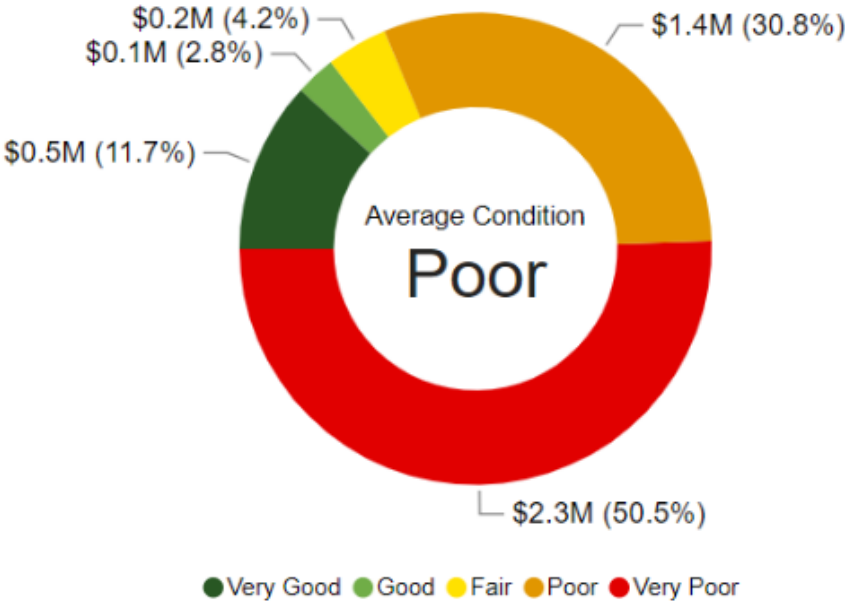
Miscellaneous Buildings Condition

Figure 15-19 Condition Profile of Miscellaneous Buildings by Replacement Value



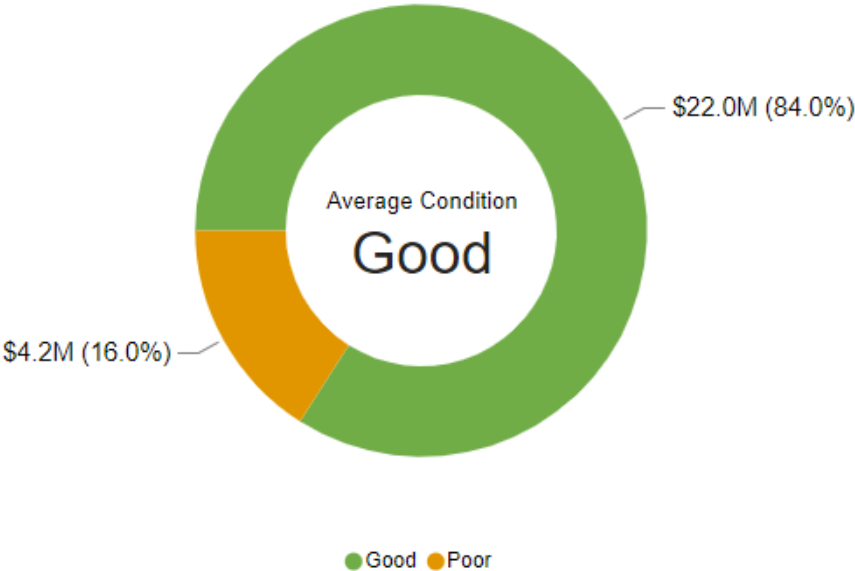
Storage Buildings - Condition

Figure 15-20 Condition Profile of Storage Buildings by Replacement Value



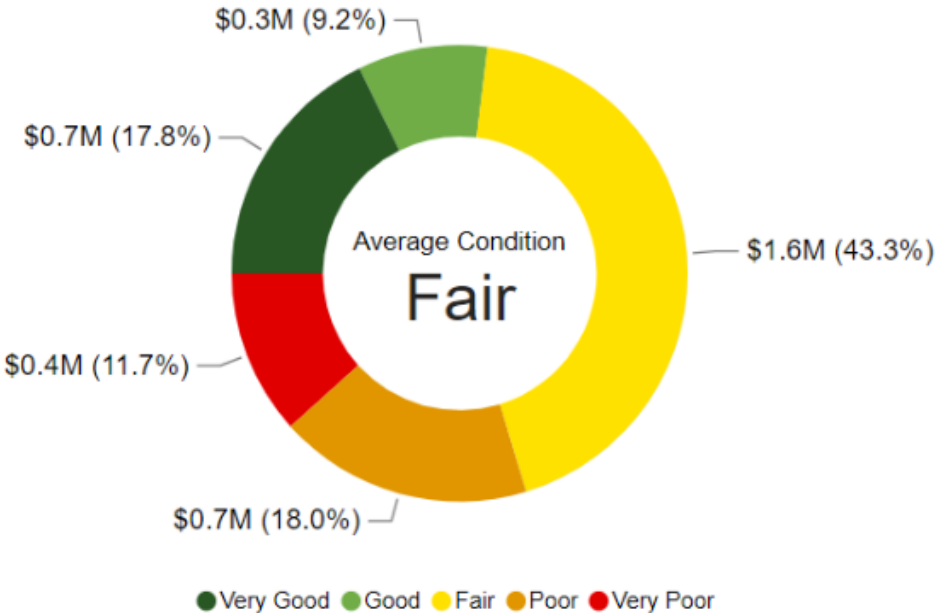
Library Buildings Condition

Figure 15-21 Condition Profile of Library Buildings by Replacement Value



IT & Communication Assets Condition

Figure 15-22 Condition Profile of IT & Communication Assets by Replacement Value



15.3. Lifecycle Management Strategy

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

15.3.1. Lifecycle Activities to Maintain Current LOS

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 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.

Operating / Maintenance 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.

Renewal Activities

- Capital projects from condition assessments may trigger rehabilitation or replacement of various components or subcomponents of buildings. Also requires input from service contractors, staff, and technology.

- Before like-for-like automatic replacement of a building or its components, County has a process to check the feasibility to decommission, repurpose based on cost-effectiveness, value to council/community, heritage, and other criteria.

Disposal Activities

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

15.3.2. Risk Management

The risks being managed with this lifecycle strategy 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.
- **Level of Service Risk** - Aims to mitigate the risk of not having facilities tailored to needs, ensuring availability and sustainability for future operations.

Other Risk Options

The following measures can be considered:

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.

Associated Risks

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

15.4. Financial Needs

15.4.1. Capital Investments

The total capital investment needed to maintain current levels of service is estimated at \$244.2M, from 2024-2033. This includes renewal investments to maintain the current percentage of the asset portfolio that is in a state of good repair, and also investments to accommodate growth, disposals, non-infrastructure activities, and service improvements.

Table 15-3 Total Capital Investment Needs to Maintain Current LOS: General Facilities

Investment (2024-2033)	Needs (\$M)	Investment Plans (\$M)
Non-Infrastructure	\$3.7	\$80.4
Service Improvement	\$46.9	
Growth	\$14.4	
Renewal	\$178.3	\$71.5
Disposal	\$0.9	0.1
Total	\$244.2	\$152.0

As shown above, an infrastructure gap exists to maintain current levels of service. This equates to an average additional investment required of \$9.2M per year, for the next ten years.

Investment needs required 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 expenditure for lifecycle activities. Over the next 10 years it is estimated that approximately \$125.9M will be required to operate General Facilities assets, primarily funded from the net levy requirement.

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:

1. Parks
2. Natural Assets
3. Amenities
4. Specialized Equipment
5. 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 [Service Area Plan – General Facilities, Section 15.](#)

16.1. Levels of Service

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

16.1.1. Community Levels of Service

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. Service Measures

The safety, reliability, availability, and sustainability of assets providing recreation services are indicated by the following service measures.

Table 16-1 Level of Service Measures: Parks & Recreation

Service Measure	2023 Performance
Percentage of parks assets within estimated service life	99%

16.1.3. Other Monitoring

The County also monitors other information that relates to assets and asset performance, including:

Table 16-2 Other Measures: Parks & Recreation

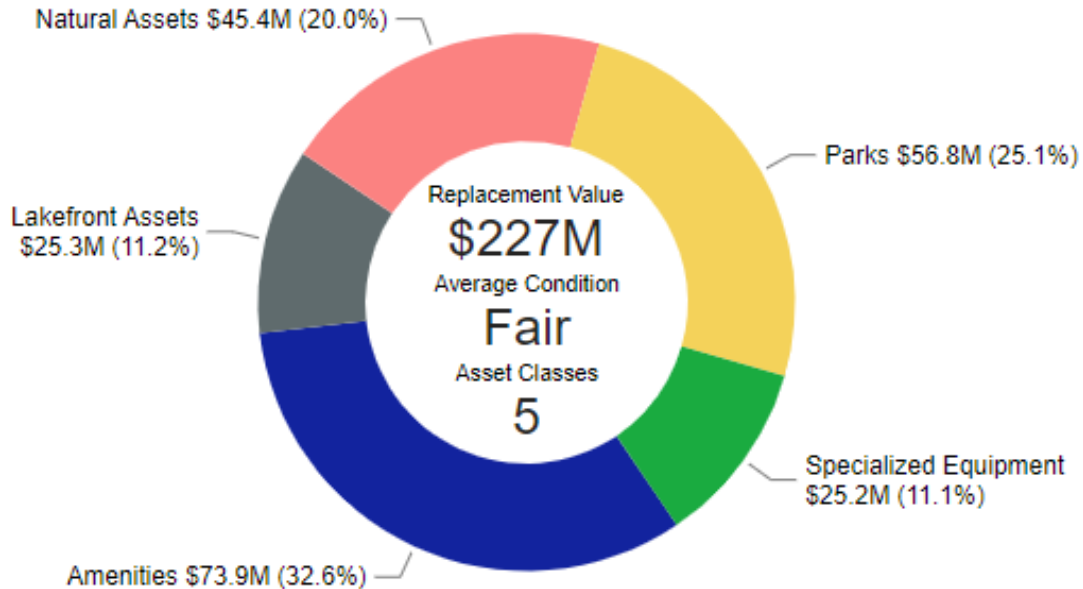
Other Measures	2023 Performance
Indoor recreation facility space ¹⁶ : Square metres of indoor recreation facilities (municipally owned)	33,642 m ²
Hectares of closed landfills	55 ha
Trees planted to trees removed	1:1
Outdoor recreation facility space ¹⁷ : Square meters of outdoor recreation facility space (municipally owned)	3,353 m ²

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

16.2. Current State of Parks & Recreation Assets

The state of assets used to provide these services is summarized below. The figures outline the replacement values of all of the Transportation assets.

Figure 16-1 Replacement Value of All Parks & Recreation Assets

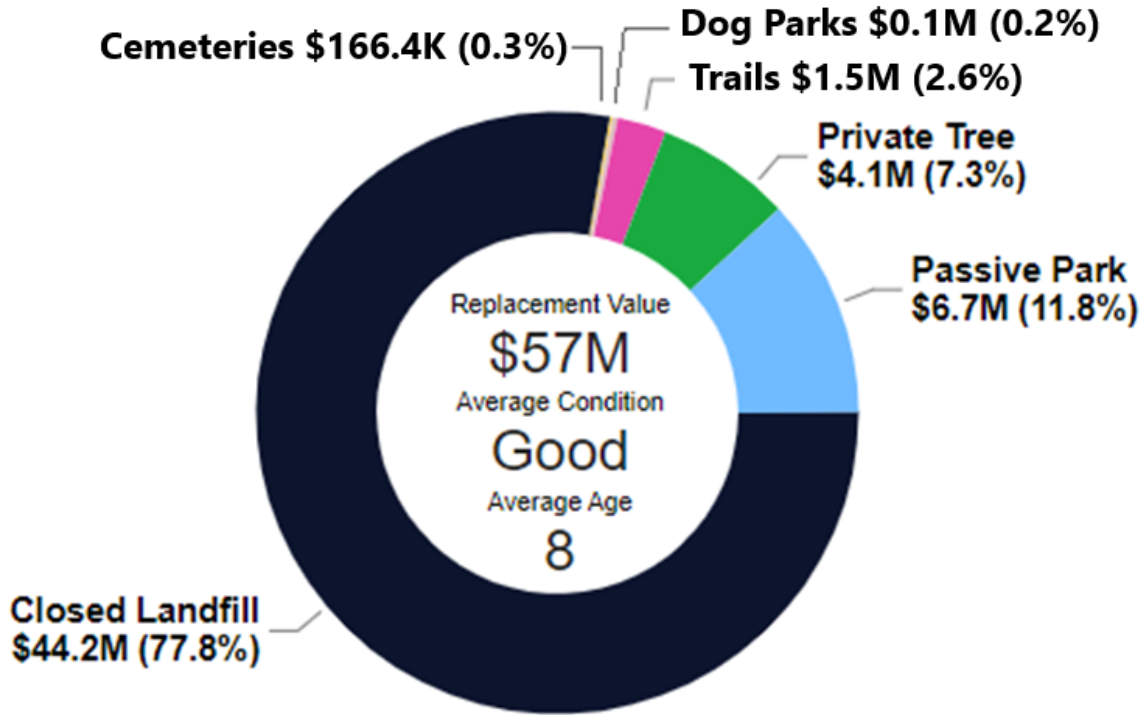


¹⁶ From Norfolk 2022 Financial Information Return

¹⁷ From Norfolk 2022 Financial Information Return

Parks

Figure 16-2 Replacement Value of Parks Assets

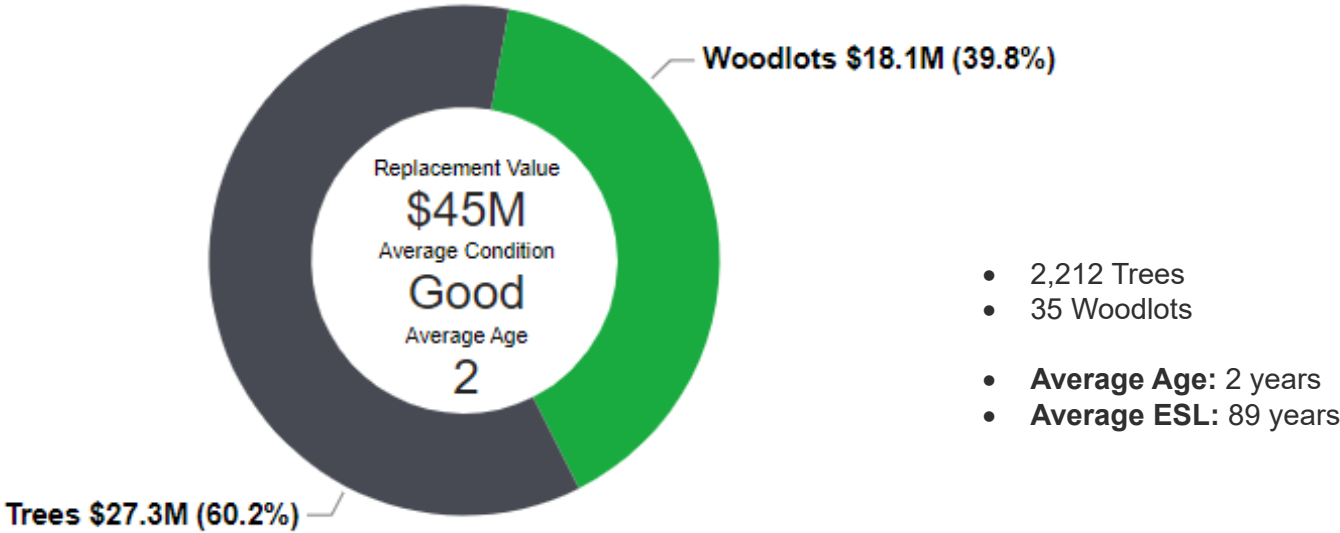


- 52 Active Parks
- 31 Passive Parks
- 3 Dog Parks
- 47 km of Trails
- 26 Inactive Cemeteries
- 13 Active Cemeteries
- 7 Total Closed Landfills consisting of:
 - 5 Norfolk Owned Landfills
 - 2 Shared ownership with Haldimand County
- **Average Age:** 8 years

¹⁸ Cemeteries and Closed Landfills were excluded from the Average Age calculations as these are long-lived assets and are not replaceable.

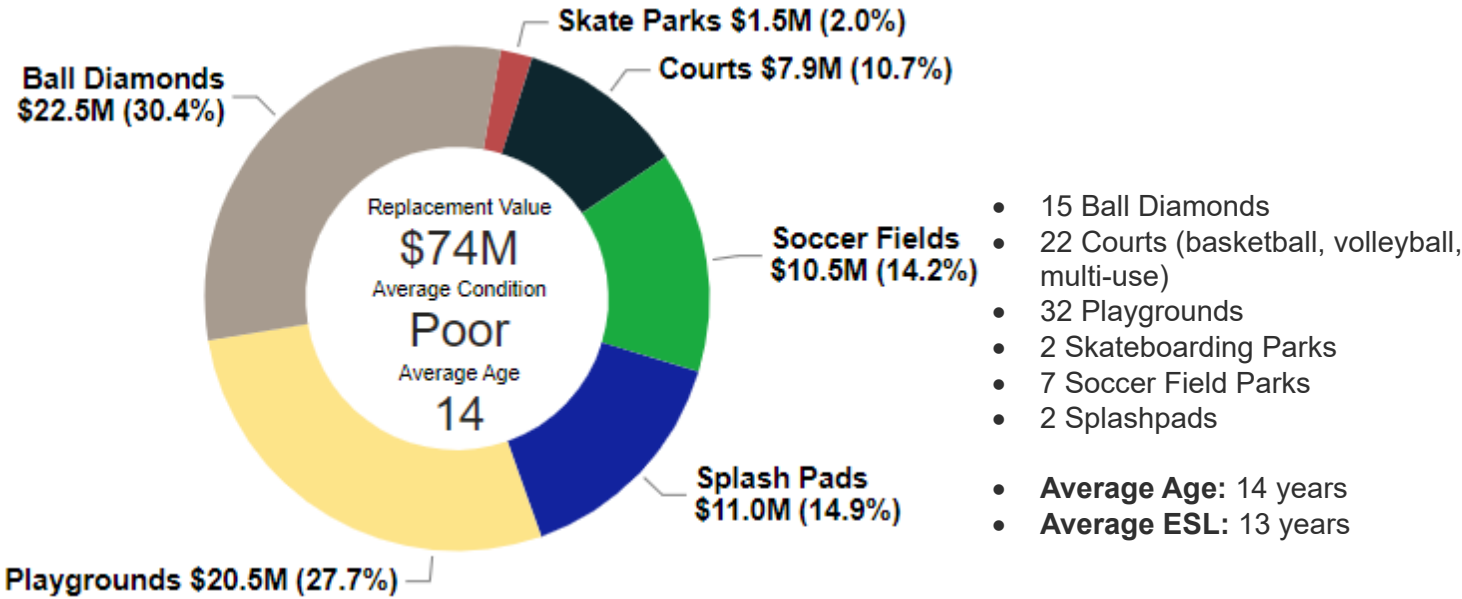
Natural Assets

Figure 16-3 Replacement Value of Natural Assets



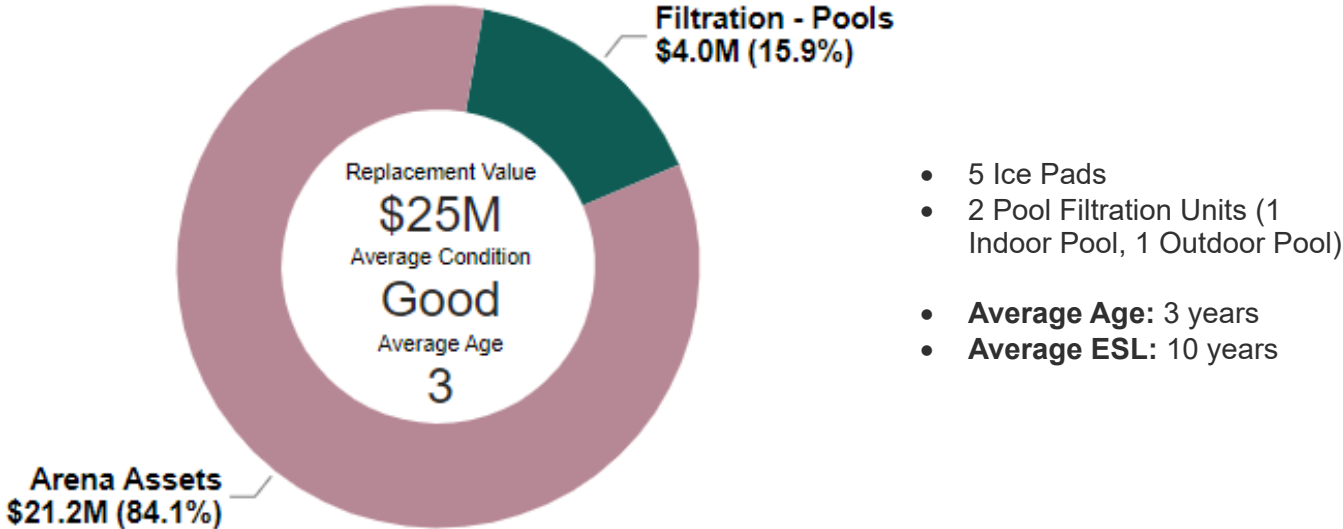
Amenities

Figure 16-4 Replacement Value of Amenities Assets



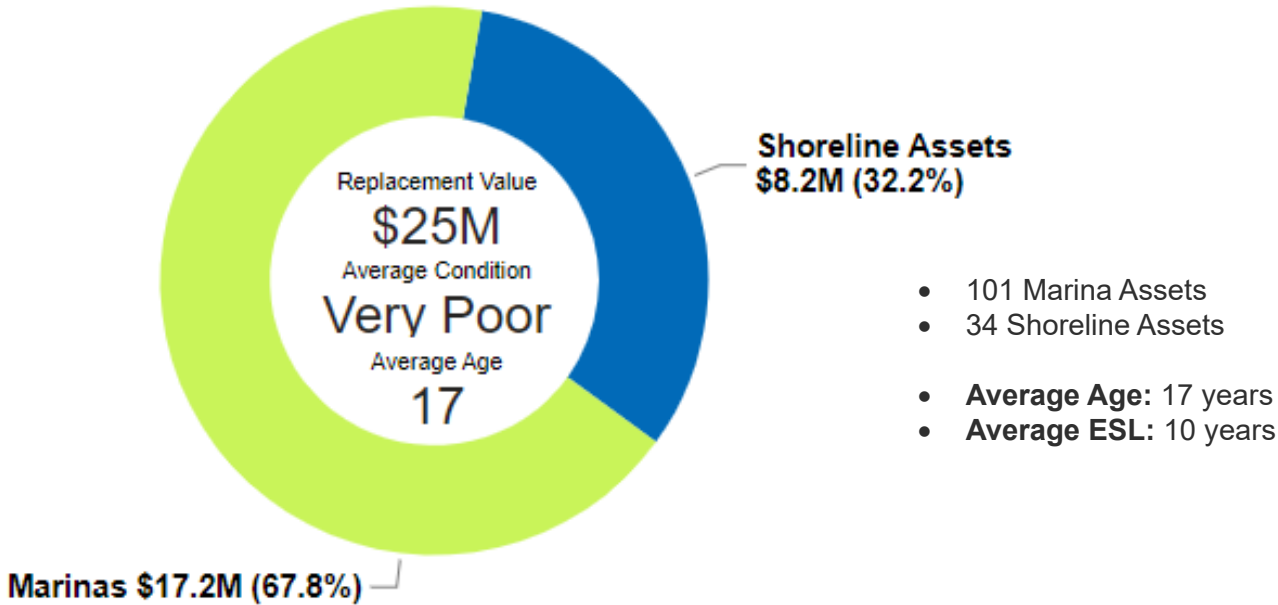
Specialized Equipment

Figure 16-5 Replacement Value of Specialized Equipment Assets



Lakefront Assets

Figure 16-6 Replacement Value of Lakefront Assets

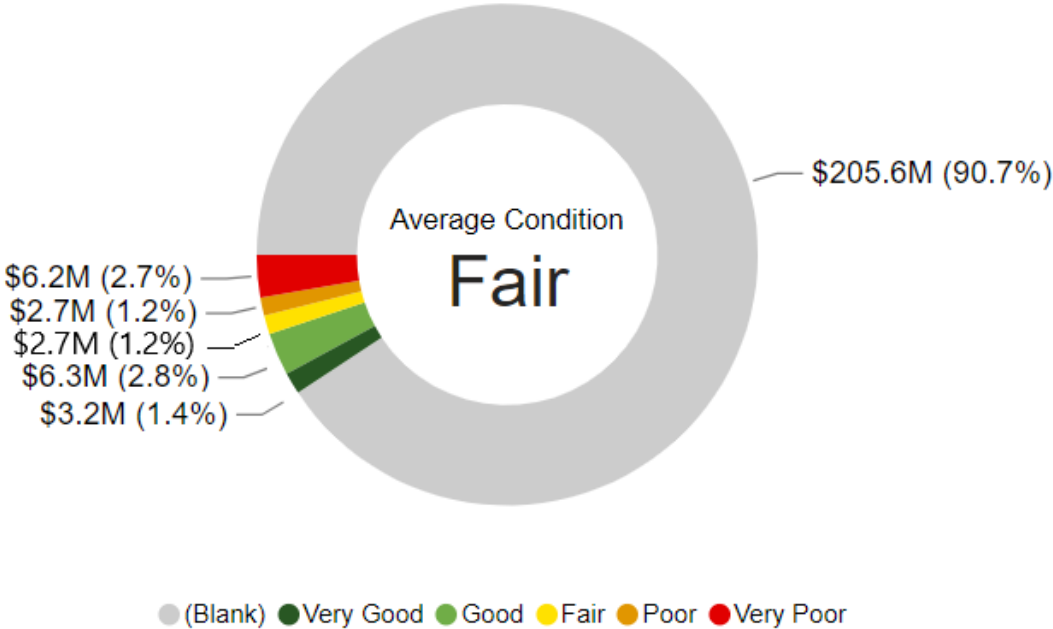


16.2.1. Asset Condition

Condition Category Overview

Figure 16-7 shows that approximately 58% (\$12.2M) of Parks & Recreation assets, where sufficient data is available to derive a condition rating, are in Fair or better condition. Overall, Parks & Recreation assets are in Fair condition.

Figure 16-7 Condition Profile of All Parks & Recreation Assets by Replacement Value



Note: A *Blank* label is applied to assets where condition data was not available.

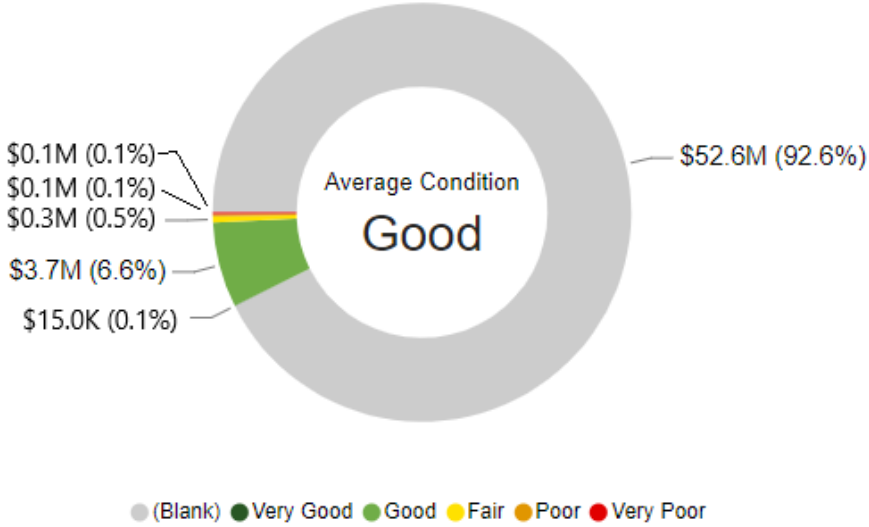
Further breakdown of the Parks & Recreation asset condition by Asset Class can be found in the following section.

Asset Class Condition Overview

It should be noted that condition data is not available for the majority of the Parks & Recreation assets, therefore, it was not possible to provide an analysis of the condition of the various asset classes within Parks & Recreation.

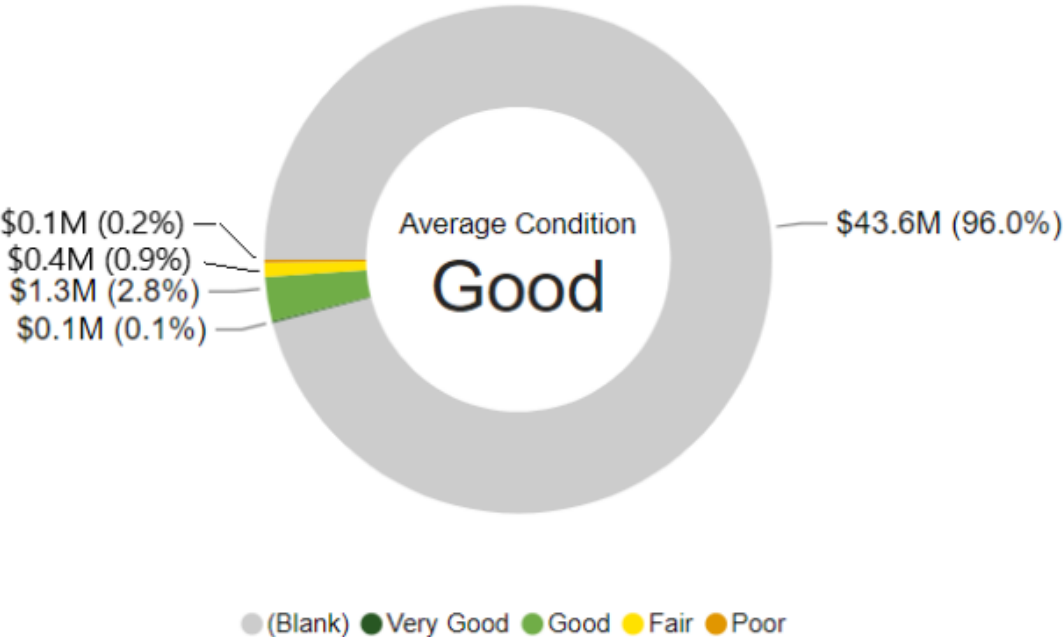
Parks Condition

Figure 16-8 Condition Profile of Parks Assets by Replacement Value



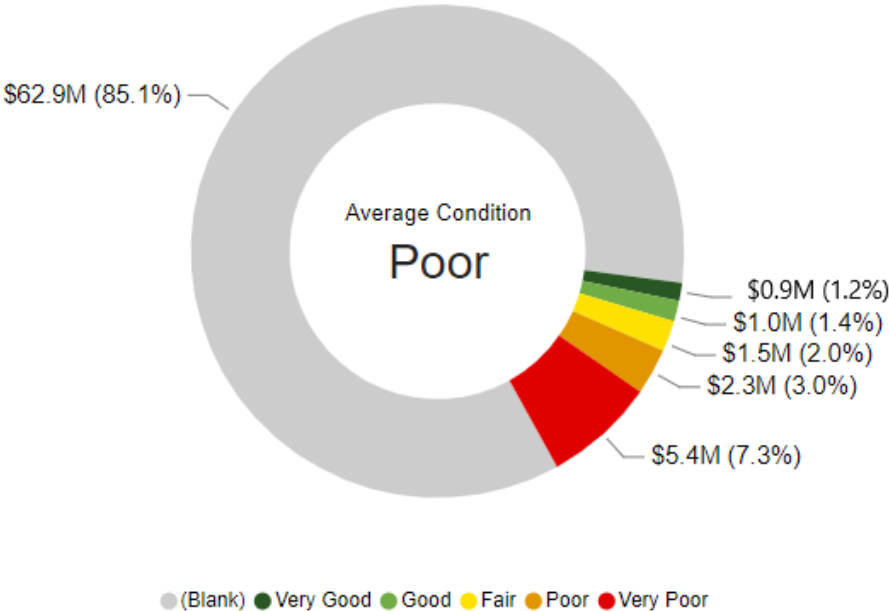
Natural Assets Condition

Figure 16-9 Condition Profile of Natural Assets by Replacement Value



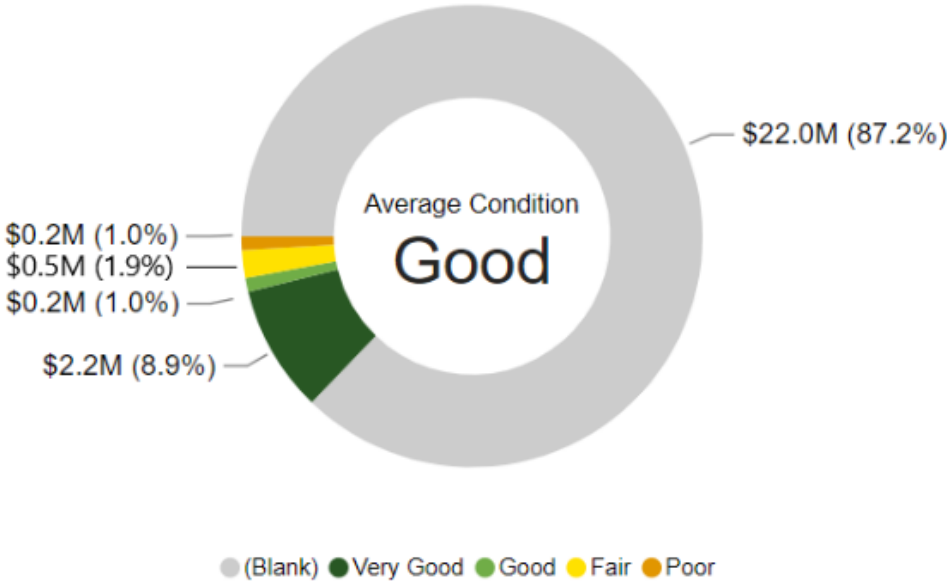
Amenities Condition

Figure 16-10 Condition Profile of Amenities Assets by Replacement Value



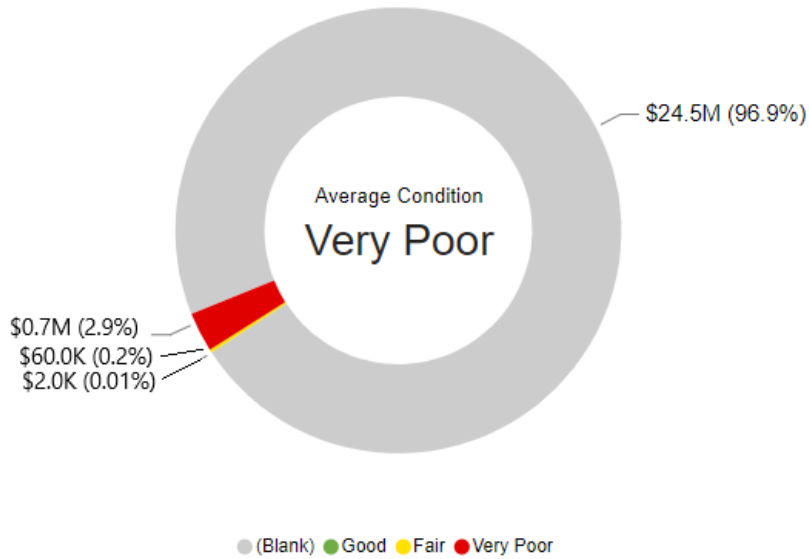
Specialized Equipment Condition

Figure 16-11 Condition Profile of Specialized Equipment Assets by Replacement Value



Lakefront Assets Condition

Figure 16-12 Condition Profile of Lakefront Assets by Replacement Value



16.3. Lifecycle Management Strategy

This section presents the strategy of key lifecycle activities applied to maintain current levels of service.

16.3.1. Lifecycle Activities to Maintain LOS

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.

Operating / Maintenance 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.

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.

Disposal Activities

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

16.3.2. Risk Management

- **Safety and Health 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.
- **Level of Service 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.

16.4. Financial Needs

16.4.1. Capital Investments

The total capital investment needed to maintain current levels of service is estimated at \$13.5M, from 2024-2033. This includes renewal investments to maintain the current percentage of the asset portfolio that is in a state of good repair, and also investments to accommodate growth, disposals, non-infrastructure activities, and service improvements.

Table 16-3. Total Capital Investment Needs to Maintain Current LOS: Parks & Recreation

Investment (2024-2033)	Needs (\$M)	Investment Plans (\$M)
Non-Infrastructure	\$0.4	\$8.5
Service Improvement	\$1.4	
Growth	\$0.8	
Renewal	\$10.9	\$15.9
Disposal	-	-
Total	\$13.5	\$24.4

As shown above, the planned investment is sufficient to maintain current levels of service. It is possible average investment could be slowed by \$1.0M per year, for the next 10 years.

Investment needs to cover growth while maintaining levels of service for Parks & Recreation 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 expenditure for lifecycle activities. Over the next 10 years it is estimated that approximately \$137.6M will be required to operate Parks & Recreation assets, primarily funded from the net levy requirement.

Appendices

A. Asset Hierarchy

Transportation, Drinking Water, Stormwater, Wastewater

A hierarchy has been established for consistency and future use. Highlighted and italicized Level 3 Asset Types signifies significant data deficiencies.

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

Fleet & Equipment

Highlighted and italicized Level 3 Asset Types signifies significant data deficiencies.

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	<i>Equipment General</i>	

General Facilities

Highlighted and italicized Level 3 Asset Types signifies significant data deficiencies.

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	<i>General Equipment</i>	
	Fire and Paramedic Services Buildings	Combined Bases	
		Fire Stations	
		Paramedic Services Bases	
	Heritage and Culture Buildings	Cultural Buildings	
		Museum Buildings	
	IT and Communications	<i>IT Equipment</i>	
	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	<i>Courts</i>
		<i>Ball Diamonds</i>
		<i>Splash Pads</i>
		Playgrounds
		<i>Skate Parks</i>
		<i>Soccer Fields</i>
	Lakefront Assets	<i>Marinas</i>
		<i>Piers</i>
		<i>Shoreline Assets</i>
	Natural Assets	<i>Trees</i>
		<i>Woodlots</i>
	Parks	<i>Active Parks</i>
		<i>Cemeteries</i>
		<i>Dog Parks</i>
		<i>Passive Parks</i>
		<i>Trails</i>
		Closed Landfills
Specialized Equipment	<i>Arena Assets (ice pad equipment)</i>	
	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 before July 1, 2025. Next to each requirement is the Norfolk AMP section reference where the legislated requirements is met.

Reg. Section	Requirements to be Met by July 1, 2024	2024 AMP Reference
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 5.5, and also some information within each Service Area Plan (Sections 10 - 16).
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 5.7, 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
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