Asset Management Plan 2025

PERTH COUNTY

2025

This Asset Management Plan was prepared by:

psdcitywide

Empowering your organization through advanced asset management, budgeting & GIS solutions

Key Statistics

$328.4m	Replacement Cost of Asset Portfolio
$9.6k	Replacement Cost of Infrastructure Per Household
76%	Percentage of Assets in Fair or Better Condition
91%	Percentage of Assets with Assessed Condition Data
$2.8m	Annual Capital Infrastructure Deficit
10 Years	Recommended Timeframe for Eliminating Annual Infrastructure Deficit
2.97%	Target Reinvestment Rate
2.12%	Actual Reinvestment Rate

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1. Executive Summary

Municipal infrastructure delivers critical services that are foundational to the economic, social, and environmental health and growth of a community. The goal of asset management is to enable infrastructure to deliver an adequate level of service in the most cost-effective manner. This involves the ongoing review and update of infrastructure information and data alongside the development and implementation of asset management strategies and long-term financial planning.

1.1 Scope

This Asset Management Plan (AMP) identifies the strategies that are in place to manage public infrastructure and makes recommendations where they can be further refined. Through the implementation of sound asset management strategies, the County can ensure that public infrastructure is managed to support the sustainable delivery of municipal services.

This AMP include the following asset categories:

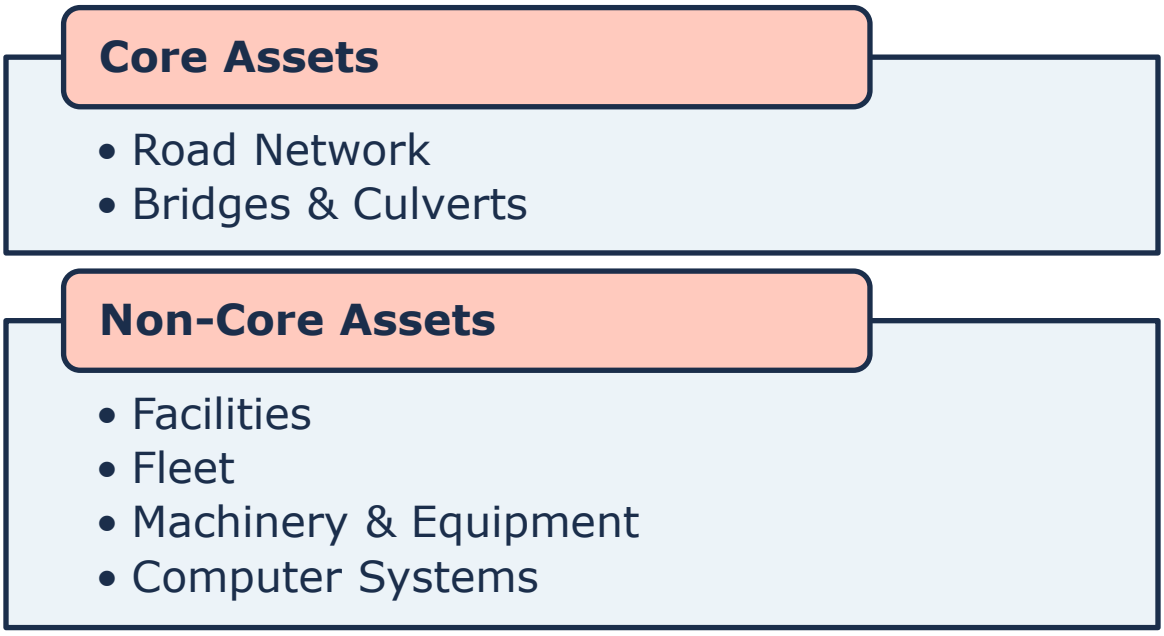

Figure 1 Core and Non-Core Asset Categories

1.2 O. Reg. 588/17 Compliance

With the development of this AMP the County has achieved compliance with July 1, 2025, requirements under O. Reg. 588/17. This includes requirements for levels of service and inventory reporting for all asset categories. More detail on compliance can be found in section 2.5.1 O. Reg. 588/17 Compliance Review.

1.3 Findings

The overall replacement cost of the asset categories included in this AMP totals $328.4 million. 76% of all assets analyzed in this AMP are in fair or better condition and assessed condition data was available for 91% of assets.

The development of a long-term, sustainable financial plan requires an analysis of whole lifecycle costs. This AMP uses a combination of proactive lifecycle strategies and replacement only strategies to determine the lowest cost option to maintain the proposed (10-year) level of service.

To meet capital replacement and rehabilitation needs for existing infrastructure, prevent infrastructure backlogs, and achieve long-term sustainability, the County's average annual capital requirement totals $9.8 million. Based on a historical analysis of sustainable capital funding sources, the County is committing approximately $7.0 million towards capital projects or reserves per year. As a result, there is currently an annual funding gap of $2.8 million.

It is important to note that this AMP represents a snapshot in time and is based on the best available processes, data, and information at the County. Strategic asset management planning is an ongoing and dynamic process that requires continuous improvement and dedicated resources.

1.4 Recommendations

A financial strategy was developed to address the annual capital funding gap. The following graphics shows annual tax change required to eliminate the County's infrastructure deficit, while achieving the target level of service.[1]

[1] This is the recommended baseline increase over the next 5 years (annual increase). It assumes that all additional revenue from this increase will be allocated exclusively to capital expenditure, while simultaneously reallocating funds which have been historically used for debt obligations. See section 11. for a comprehensive breakdown.

Figure 2 Proposed Tax/Rate Changes

2. Introduction & Context

2.1 Community Profile

Census Characteristic	Perth County	Ontario
Population 2021	82,565	14,223,942
Population Change 2016-2021	6.2%	5.8%
Total Private Dwellings	34,062	5,929,250
Population Density	36.8/km2	15.9/km^2
Land Area	2,218.24 km2	892,411.76 km^2

Table 1 Perth County Community Profile

The County of Perth is an upper-tier county in Southwestern Ontario, renowned for its picturesque landscapes and rich history. Comprising four lower-tier municipalities—North Perth, Perth East, West Perth, and Perth South—Perth County was originally settled in the 1820s. Over the decades, it became a hub for farming and livestock production, particularly in dairy and hog farming, a tradition that thrives to this day.

Perth County offers a unique blend of rural tranquility, agricultural prosperity, and cultural vibrancy, making it a highly appealing destination in southwestern Ontario. The County is famous for its vibrant cultural scene, headlined by the internationally acclaimed Stratford Festival, which attracts theatre enthusiasts from around the globe. The county also takes pride in preserving its rich heritage through various historic sites and museums that offer a glimpse into its storied past.

Residents and visitors alike can enjoy a plethora of recreational activities, from hiking and fishing to exploring the scenic parks and trails that dot the region. Perth County's strong sense of community is complemented by excellent educational institutions and comprehensive healthcare services, ensuring a high quality of life for its inhabitants. This harmonious blend of rich history, natural beauty, and modern amenities makes Perth County an ideal place to live and visit.

The County has experienced consistent population growth, reflecting its desirability. Over the past two census periods (2016 to 2021), Perth County saw a 6.2% increase in population. However, the demographic trend shows a skew towards an aging population, with 21.1% of residents being 65 years or older, higher than the provincial average of approximately 19%. This

demographic shift underscores the county's appeal to retirees and highlights the importance of services catering to an older population.

2.2 Climate Change

Climate change can cause severe impacts on human and natural systems around the world. The effects of climate change include increasing temperatures, higher levels of precipitation, droughts, and extreme weather events. In 2019, Canada's Changing Climate Report (CCCR 2019) was released by Environment and Climate Change Canada (ECCC).

The report revealed that between 1948 and 2016, the average temperature increase across Canada was 1.7°C; moreover, during this period, Northern Canada experienced a 2.3°C increase. The temperature increase in Canada has doubled that of the global average. If emissions are not significantly reduced, the temperature could increase by 6.3°C in Canada by the year 2100 compared to 2005 levels. Observed precipitation changes in Canada include an increase of approximately 20% between 1948 and 2012. By the late 21st century, the projected increase could reach an additional 24%. During the summer months, some regions in Southern Canada are expected to experience periods of drought at a higher rate. Extreme weather events and climate conditions are more common across Canada. Recorded events include droughts, flooding, cold extremes, warm extremes, wildfires, and record minimum arctic sea ice extent.

The changing climate poses a significant risk to the Canadian economy, society, environment, and infrastructure. The impacts on infrastructure are often a result of climate-related extremes such as droughts, floods, higher frequency of freeze-thaw cycles, extended periods of high temperatures, high winds, and wildfires. Physical infrastructure is vulnerable to damage and increased wear when exposed to these extreme events and climate variabilities. Canadian Municipalities are faced with the responsibility to protect their local economy, citizens, environment, and physical assets.

2.2.1 Perth County Climate Profile

Perth County is situated in Southwestern Ontario, nestled between Lake Huron and Lake Ontario. The county is expected to experience notable effects of climate change, which include higher average annual temperatures, an increase in total annual precipitation, and a rise in the frequency and severity of extreme weather events. According to ClimateData.ca – a collaboration supported by Environment and Climate Change Canada (ECCC) – Perth County may experience the following trends:

Higher Average Annual Temperature:

- Between the years 1971 and 2000 the annual average temperature was 6.8 ºC
- Under a high emissions scenario, the annual average temperatures are projected to increase to 9.3 ºC by the year 2050 and over 13.2 ºC by the end of the century.

Increase in Total Annual Precipitation:

- Under a high emissions scenario, Perth County is projected to experience a 12% increase in precipitation by the year 2050 and a 16% increase by the end of the century.

Increase in Frequency of Extreme Weather Events:

- It is expected that the frequency and severity of extreme weather events will change.

2.2.2 Integration of Climate Change and Asset Management

Asset management practices aim to deliver sustainable service delivery - the delivery of services to residents today without compromising the services and well-being of future residents. Climate change threatens sustainable service delivery by reducing the useful life of an asset and increasing the risk of asset failure. Desired levels of service can be more difficult to achieve due to climate change impacts such as flooding, high heat, drought, and more frequent and intense storms.

To achieve the sustainable delivery of services, climate change considerations should be incorporated into asset management practices. The integration of asset management and climate change adaptation observes industry best practices and enables the development of a holistic approach to risk management.

2.3 Asset Management Overview

Municipalities are responsible for managing and maintaining a broad portfolio of infrastructure assets to deliver services to the community. The goal of asset management is to minimize the lifecycle costs of delivering infrastructure services, manage the associated risks, while maximizing the value ratepayers receive from the asset portfolio.

The acquisition of capital assets accounts for only 10-20% of their total cost of ownership. The remaining 80-90% comes from operations and maintenance. This AMP focuses its analysis on the capital costs to maintain, rehabilitate and replace existing municipal infrastructure assets.

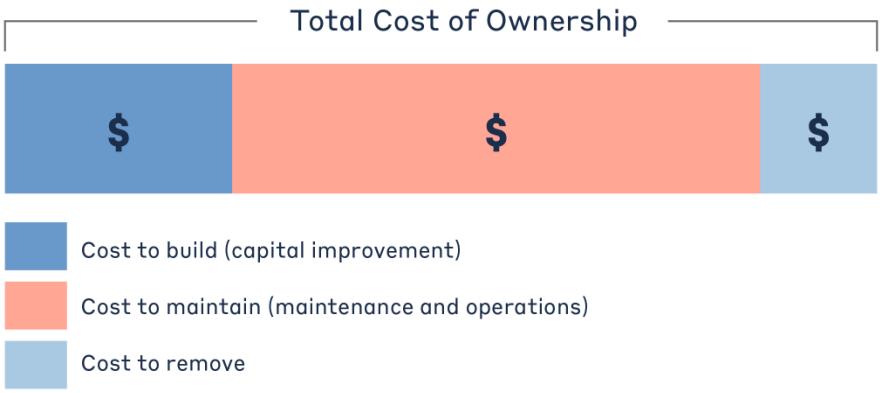

Figure 3 Total Cost of Asset Ownership

These costs can span decades, requiring planning and foresight to ensure financial responsibility is spread equitably across generations. An asset management plan is critical to this planning, and an essential element of broader asset management program. The industry-standard approach and sequence to developing a practical asset management program begins with a Strategic Plan, followed by an Asset Management Policy and an Asset Management Strategy, concluding with an Asset Management Plan.

This industry standard, defined by the Institute of Asset Management (IAM), emphasizes the alignment between the corporate strategic plan and various asset management documents. The strategic plan has a direct, and cascading impact on asset management planning and reporting.

2.3.1 Foundational Asset Management Documentation

The industry-standard approach and sequence to developing a practical asset management program begins with a Strategic Plan/Priorities, followed by an Asset Management Policy and an Asset Management Strategy, concluding with an Asset Management Plan.

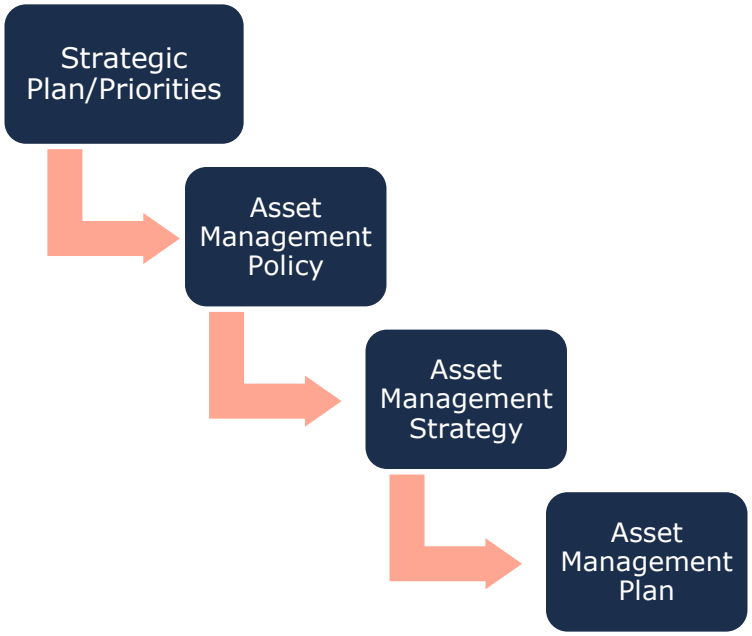

Figure 4 Foundational Asset Management Documents

This industry standard, defined by the Institute of Asset Management (IAM), emphasizes the alignment between the corporate strategic plan/priorities and various asset management documents. The strategic plan has a direct, and cascading impact on asset management planning and reporting.

Asset Management Policy

The County's Asset Management Policy (2019) establishes a framework to guide the sustainable management of municipal infrastructure assets, ensuring they meet service needs while aligning with Ontario Regulation 588/17. The policy emphasizes minimizing lifecycle costs, maintaining desired service levels, and incorporating climate resilience and sustainability into infrastructure planning. By adopting best practices in asset management, it supports effective service delivery and long-term infrastructure stewardship.

A cornerstone of the policy is the Asset Management Plan (AMP), which consolidates data on all infrastructure assets and integrates financial strategies to ensure efficient operations, maintenance, and capital investments. The AMP includes performance metrics and reporting tools to promote transparency and accountability, providing a clear basis for data-driven decisions. Collaboration is prioritized, with engagement opportunities for residents and partnerships with neighbouring municipalities and other stakeholders to improve service delivery and resource efficiency

The policy aligns infrastructure management with broader land-use and economic planning goals, fostering innovation and exploring alternative funding options, such as grants and public-private partnerships. With a structured governance model and regular reviews, the policy ensures adaptability to emerging challenges, enabling the County to sustainably manage its assets, enhance public services, and support long-term community well-being.

Asset Management Strategy

An asset management strategy outlines the translation of organizational objectives into asset management objectives and provides a strategic overview of the activities required to meet these objectives. It provides greater detail than the policy on how the municipality plans to achieve asset management objectives through planned activities and decision-making criteria.

The County's Asset Management Policy contains many of the key components of an asset management strategy and may be expanded on in future revisions or as part of a separate strategic document.

Asset Management Plan

The asset management plan (AMP) presents the outcomes of the County's asset management program and identifies the resource requirements needed to achieve a defined level of service. The AMP typically includes the following content:

- State of Infrastructure
- Asset Management Strategies
- Levels of Service
- Financial Strategies

The AMP is a living document that should be updated regularly as additional asset and financial data becomes available. This will allow the County to re-evaluate the state of infrastructure and identify how the organization's asset management and financial strategies are progressing.

2.3.2 Key Concepts in Asset Management

Effective asset management integrates several key components, including lifecycle management, risk & criticality, and levels of service. These concepts are applied throughout this asset management plan and are described below in greater detail.

Lifecycle Management Strategies

The condition or performance of most assets will deteriorate over time. This process is affected by a range of factors including an asset's characteristics, location, utilization, maintenance history and environment. Asset deterioration has a negative effect on the ability of an asset to fulfill its intended function, and may be characterized by increased cost, risk and even service disruption.

To ensure that municipal assets are performing as expected and meeting the needs of customers, it is important to establish a lifecycle management strategy to proactively manage asset deterioration.

There are several field intervention activities that are available to extend the life of an asset. These activities can be generally placed into one of three categories: maintenance, rehabilitation, and replacement. The following table provides a description of each type of activity and the general difference in cost.

Depending on initial lifecycle management strategies, asset performance can be sustained through a combination of maintenance and rehabilitation, but at some point, replacement is required. Understanding what effect these activities will have on the lifecycle of an asset, and their cost, will enable staff to make better recommendations.

Lifecycle Activity	Cost	Typical Associated Risks
Maintenance Activities that prevent defects or deteriorations from occurring	**$**	• Balancing limited resources between planned maintenance and reactive, emergency repairs and interventions • Diminishing returns associated with excessive maintenance activities, despite added costs • Intervention selected may not be optimal and may not extend the useful life as expected, leading to lower payoff and potential premature asset failure;

Lifecycle Activity	Cost	Typical Associated Risks
Rehabilitation/ Renewal Activities that rectify defects or deficiencies that are already present and may be affecting asset performance	**$$$**	• Useful life may not be extended as expected • May be costlier in the long run when assessed against full reconstruction or replacement • Loss or disruption of service, particularly for underground assets;
Replacement/ Reconstruction Asset end-of-life activities that often involve the complete replacement of assets	**$$$$$**	• Incorrect or unsafe disposal of existing asset • Costs associated with asset retirement obligations • Substantial exposure to high inflation and cost overruns • Replacements may not meet capacity needs for a larger population • Loss or disruption of service, particularly for underground assets

Table 2 Lifecycle Management: Typical Lifecycle Interventions

The County's approach to lifecycle management is described within each asset category outlined in this AMP. Staff will continue to evolve and innovate current practices for developing and implementing proactive lifecycle strategies to determine which activities to perform on an asset and when they should be performed to maximize useful life at the lowest total cost of ownership.

Risk & Criticality

Asset risk and criticality are essential building blocks of asset management, integral in prioritizing projects and distributing funds where they are needed most based on a variety of factors. Assets in disrepair may fail to perform their intended function, pose substantial risk to the community, lead to unplanned expenditures, and create liability for the municipality. In addition, some assets are simply more important to the community than others, based on their financial significance, their role in delivering essential services, the impact of their failure on public health and safety, and the

extent to which they support a high quality of life for community stakeholders.

Risk is a product of two variables: the probability that an asset will fail, and the resulting consequences of that failure event. It can be a qualitative measurement, (i.e. low, medium, high) or quantitative measurement (i.e. 1-5), that can be used to rank assets and projects, identify appropriate lifecycle strategies, optimize short- and long-term budgets, minimize service disruptions, and maintain public health and safety.

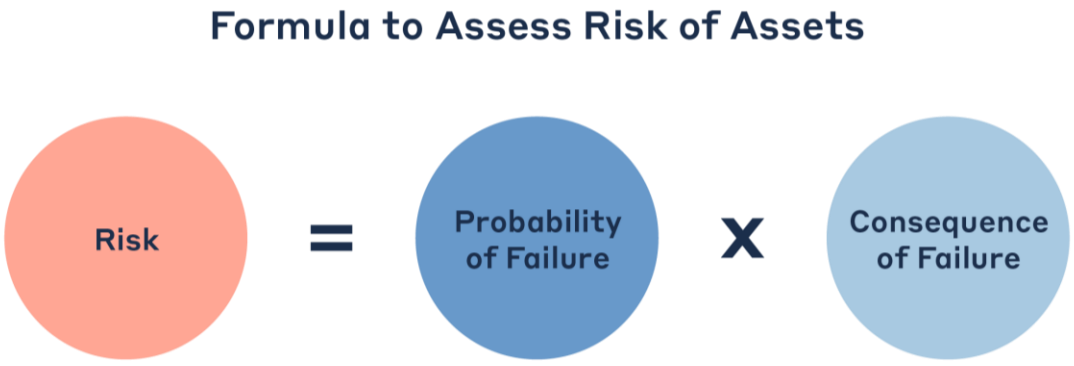

Figure 5 Risk Equations

The approach used in this AMP relies on a quantitative measurement of risk associated with each asset. The probability and consequence of failure are each scored from 1 to 5, producing a minimum risk index of 1 for the lowest risk assets, and a maximum risk index of 25 for the highest risk assets.

Probability of Failure

Several factors can help decision-makers estimate the probability or likelihood of an asset's failure, including its condition, age, previous performance history, and exposure to extreme weather events, such as flooding and ice jams—both a growing concern for municipalities in Canada.

Consequence of Failure

Estimating criticality also requires identifying the types of consequences that the organization and community may face from an asset's failure, and the magnitude of those consequences. Consequences of asset failure will vary across the infrastructure portfolio; the failure of some assets may result primarily in high direct financial cost but may pose limited risk to the community. Other assets may have a relatively minor financial value, but any downtime may pose significant health and safety hazards to residents.

Table 3 illustrates the various types of consequences that can be integrated in developing risk and criticality models for each asset category and segments within. We note that these consequences are common, but not exhaustive.

Type of Consequence	Description
Direct Financial	Direct financial consequences are typically measured as the replacement costs of the asset(s) affected by the failure event, including interdependent infrastructure.
Economic	Economic impacts of asset failure may include disruption to local economic activity and commerce, business closures, service disruptions, etc. Whereas direct financial impacts can be seen immediately or estimated within hours or days, economic impacts can take weeks, months and years to emerge, and may persist for even longer.
Socio-political	Socio-political impacts are more difficult to quantify and may include inconvenience to the public and key community stakeholders, adverse media coverage, and reputational damage to the community and the County.
Environmental	Environmental consequences can include pollution, erosion, sedimentation, habitat damage, etc.
Public Health and Safety	Adverse health and safety impacts may include injury or death, or impeded access to critical services.
Strategic	These include the effects of an asset's failure on the community's long-term strategic objectives, including economic development, business attraction, etc.

Table 3 Risk Analysis: Types of Consequences of Failure

This AMP includes a preliminary evaluation of asset risk and criticality. Each asset has been assigned a probability of failure score and consequence of failure score based on available asset data. These risk scores can be used to

prioritize maintenance, rehabilitation, and replacement strategies for critical assets.

These models have been built in Citywide for continued review, updates, and refinements.

Levels of Service

A level of service (LOS) is a measure of the services that the County is providing to the community and the nature and quality of those services. Within each asset category in this AMP, technical metrics and qualitative descriptions that measure both technical and community levels of service have been established and measured as data is available.

The County measures the level of service provided at two levels: Community Levels of Service, and Technical Levels of Service. This AMP includes those LOS that are required under O. Reg. 588/17 as well as any additional metrics the County wishes to track.

Community Levels of Service

Community levels of service are a simple, plain language description or measure of the service that the community receives. For core asset categories as applicable (Roads and Bridges & Culverts) the province, through O. Reg. 588/17, has provided qualitative descriptions that are required to be included in this AMP.

Technical Levels of Service

Technical levels of service are a measure of key technical attributes of the service being provided to the community. These include mostly quantitative measures and tend to reflect the impact of the County's asset management strategies on the physical condition of assets or the quality/capacity of the services they provide.

For core asset categories as applicable (Roads and Bridges & Culverts) the province, through O. Reg. 588/17, has also provided technical metrics that are required to be included in this AMP.

Current and Proposed Levels of Service

Proposed levels of service should be realistic and achievable within the timeframe outlined by the County. They should also be determined with consideration of a variety of community expectations, fiscal capacity, regulatory requirements, corporate goals and long-term sustainability. Once proposed levels of service have been established, the County must identify a

lifecycle management and financial strategy which allows these targets to be achieved.

Core Values

The core values behind levels of service reflect the County's commitment to delivering services that meet community needs in a fair, responsible, and sustainable way. These values help guide how infrastructure is managed and how service expectations are set. By aligning asset management decisions with these values, the County can provide services that people trust.

Value	Description
Accessible	Services are available and accessible for customers who require them
Reliable	Services are provided with minimal service disruption and are available to customers in line with needs and expectations
Safe	Services are delivered such that they minimize health, safety, and security risks
Affordable	Services are delivered at an affordable cost for both the organization and customer
Sustainable	Services are designed to be used efficiently. Long-term plans are in place to ensure that they are available to all customers into the future

Table 4 Levels of Service: Core Values

2.4 Scope & Methodology

2.4.1 Asset Categories for this AMP

This asset management plan for the County of Perth is produced in compliance with O. Reg. 588/17. The July 2025 deadline under the regulation—the last of three AMPs—requires analysis of core and non-core asset categories, along with the proposed levels of service for the following ten years.

The AMP summarizes the state of the infrastructure for the County's asset portfolio, establishes levels of service and the associated technical and customer-oriented key metrics, outlines lifecycle strategies for optimal asset

management and performance, and provides financial strategies to reach sustainability for the asset categories listed below.

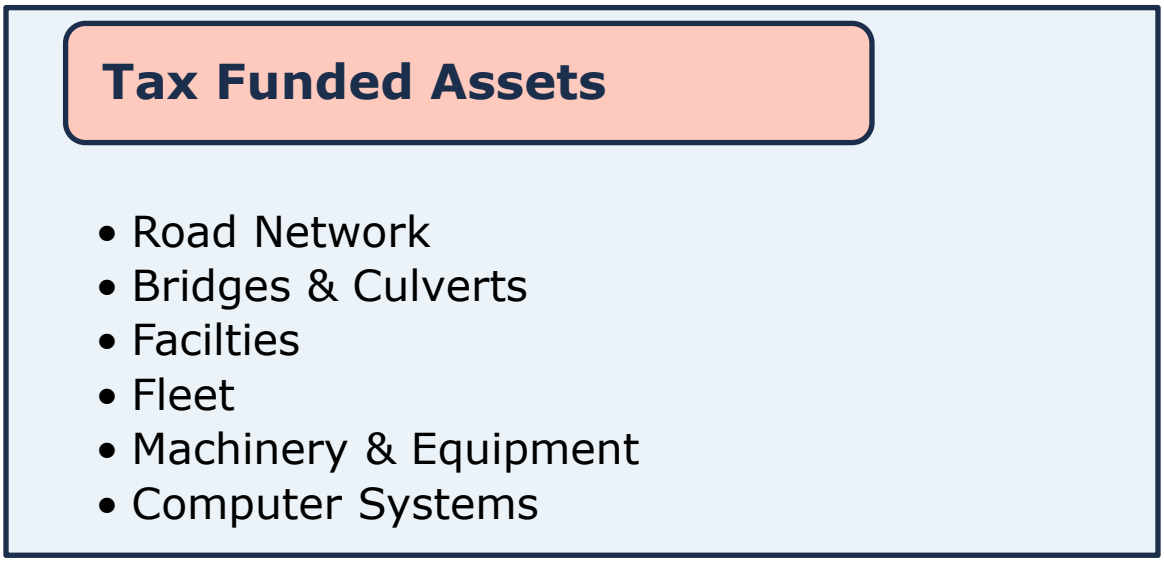

Figure 6 Tax Funded Asset Categories

2.4.2 Data Effective Date

It is important to note that this plan is based on data as of **December 2024** therefore, it represents a snapshot in time using the best available processes, data, and information at the County. Strategic asset management planning is an ongoing and dynamic process that requires continuous data updates and dedicated data management resources.

2.4.3 Deriving Replacement Costs

There are a range of methods to determine the replacement cost of an asset, and some are more accurate and reliable than others. This AMP relies on two methodologies:

User-Defined Cost and Cost Per Unit

Based on costs provided by municipal staff which could include average costs from recent contracts; data from engineering reports and assessments; staff estimates based on knowledge and experience.

Cost Inflation / CPI Tables

Historical costs of the assets are inflated based on Consumer Price Index or Non-Residential Building Construction Price Index.

User-defined costs based on reliable sources are a reasonably accurate and reliable way to determine asset replacement costs. Cost inflation is typically

used in the absence of reliable replacement cost data. It is a reliable method for recently purchased and/or constructed assets where the total cost is reflective of the actual costs that the County incurred. As assets age, and new products and technologies become available, cost inflation becomes a less reliable method.

2.4.4 Estimated Service Life & Service Life Remaining

The estimated useful life (EUL) of an asset is the period over which the County expects the asset to be available for use and remain in service before requiring replacement or disposal. The EUL for each asset in this AMP was assigned according to the knowledge and expertise of municipal staff and supplemented by existing industry standards when necessary.

By using an asset's in-service data and its EUL, the County can determine the service life remaining (SLR) for each asset. Using condition data and the asset's SLR, the County can more accurately forecast when it will require replacement. The SLR is calculated as follows:

Figure 7 Service Life Remaining Calculation

2.4.5 Reinvestment Rate

As assets age and deteriorate, they require additional investment to maintain a state of good repair. The reinvestment of capital funds, through asset renewal or replacement, is necessary to sustain an adequate level of service. The reinvestment rate is a measurement of available or required funding relative to the total replacement cost.

By comparing the actual vs. target reinvestment rate the County can determine the extent of any existing funding gap. The reinvestment rate is calculated as follows:

Figure 8 Target Reinvestment Rate Calculation

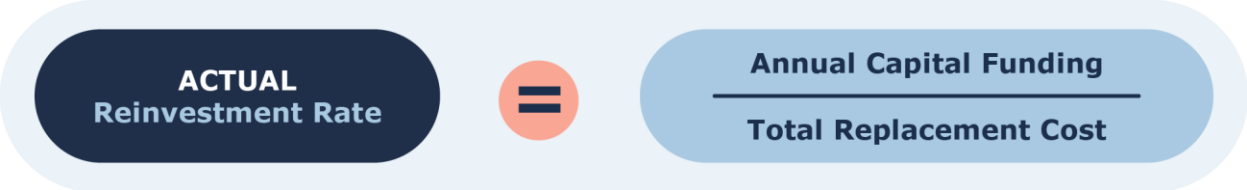

Figure 9 Actual Reinvestment Rate Calculation

2.4.6 Deriving Asset Condition

An incomplete or limited understanding of asset condition can mislead long-term planning and decision-making. Accurate and reliable condition data helps to prevent premature and costly rehabilitation or replacement and ensures that lifecycle activities occur at the right time to maximize asset value and useful life.

A condition assessment rating system provides a standardized descriptive framework that allows comparative benchmarking across the County's asset portfolio. The table below outlines the condition rating system used in this AMP to determine asset condition. This rating system is aligned with the Canadian Core Public Infrastructure Survey which is used to develop the Canadian Infrastructure Report Card. When assessed condition data is not available, service life remaining is used to approximate asset condition.

Condition	Description	Criteria	Service Life Remaining (%)
Very Good	Fit for the future	Well maintained, good condition, new or recently rehabilitated	80-100
Good	Adequate for now	Acceptable, generally approaching mid-stage of expected service life	60-80
Fair	Requires attention	Signs of deterioration, some elements exhibit significant deficiencies	40-60
Poor	Increasing potential of affecting service	Approaching end of service life, condition below standard, large portion of system exhibits significant deterioration	20-40
Very Poor	Unfit for sustained service	Near or beyond expected service life, widespread signs of advanced deterioration, some assets may be unusable	0-20

Table 5 Standard Condition Rating Scale

The analysis in this AMP is based on assessed condition data only as available. In the absence of assessed condition data, asset age is used as a proxy to determine asset condition.

The table above summarizes the standard methodology for determining asset condition within this AMP. For those categories in which there is a different rating scale for condition assessment, they will be outlined within that category's "Approach to Condition Assessment" subsection. For instances where the scale is the same, only the approach for condition assessment will be outlined.

2.5 Ontario Regulation 588/17

As part of the Infrastructure for Jobs and Prosperity Act, 2015, the Ontario government introduced Regulation 588/17 - Asset Management Planning for

Municipal Infrastructure (O. Reg 588/17)[2]. Along with creating better performing organizations, more liveable and sustainable communities, the regulation is a key, mandated driver of asset management planning and reporting. It places substantial emphasis on current and proposed levels of service and the lifecycle costs incurred in delivering them.

Figure 10 below outlines key reporting requirements under O. Reg 588/17 and the associated timelines.

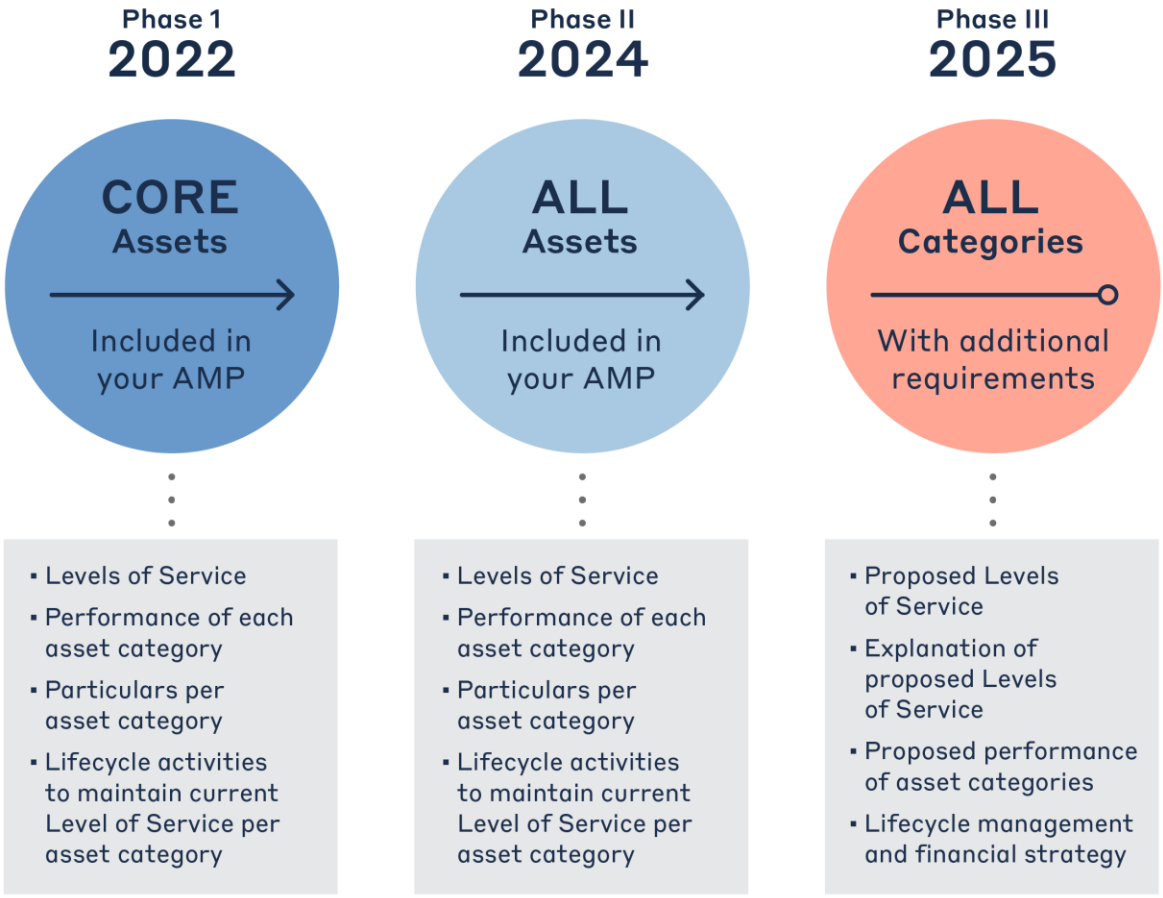

Figure 10 O. Reg. 588/17 Requirements and Reporting Deadlines

[2] O. Reg. 588/17: Asset Management Planning for Municipal Infrastructure https://www.ontario.ca/laws/regulation/170588

2.5.1 O. Reg. 588/17 Compliance Review

Requirement	O. Reg. 588/17 Section	AMP Section Reference	Status
Summary of assets in each category	S.5(2), 3(i)	4.1 – 9.1	Complete
Replacement cost of assets in each category	S.5(2), 3(ii)	4.1 – 9.1	Complete
Average age of assets in each category	S.5(2), 3(iii)	4.3 – 9.3	Complete
Condition of core assets in each category	S.5(2), 3(iv)	4.2 – 9.2	Complete
Description of municipality's approach to assessing the condition of assets in each category	S.5(2), 3(v)	4.4 – 9.4	Complete
Current/proposed levels of service in each category	S.5(2), 1(i-ii) S.6 (1)	4.6 – 9.6	Complete
Performance measures in each category	S.5(2), 2 S. 6 (1), 2	4.6 – 9.6	Complete
Lifecycle activities needed for proposed levels of service for 10 years	S.5(2), 4 S. 6 (1), 4	4.6 – 9.6	Complete
Costs of providing lifecycle activities for 10 years	S.5(2), 4 S. 6 (1), 4	4.6 – 9.6	Complete
Growth assumptions	S.5(2), 5(i-ii) S.5(2), 6(i-vi)	10	Complete

Table 6 O. Reg. 588/17 Compliance Review

3. Portfolio Overview – State of the Infrastructure

The state of the infrastructure (SOTI) summarizes the inventory, condition, age profiles, and other key performance indicators for the County's infrastructure portfolio. These details are presented for all core and non-core asset categories.

3.1 Asset Hierarchy & Data Classification

Asset hierarchy explains the relationship between individual assets and their components, and a wider, more expansive network and system. How assets are grouped in a hierarchy structure can impact how data is interpreted. Assets were structured to support meaningful, efficient reporting and analysis. Key category details are summarized at asset segment level.

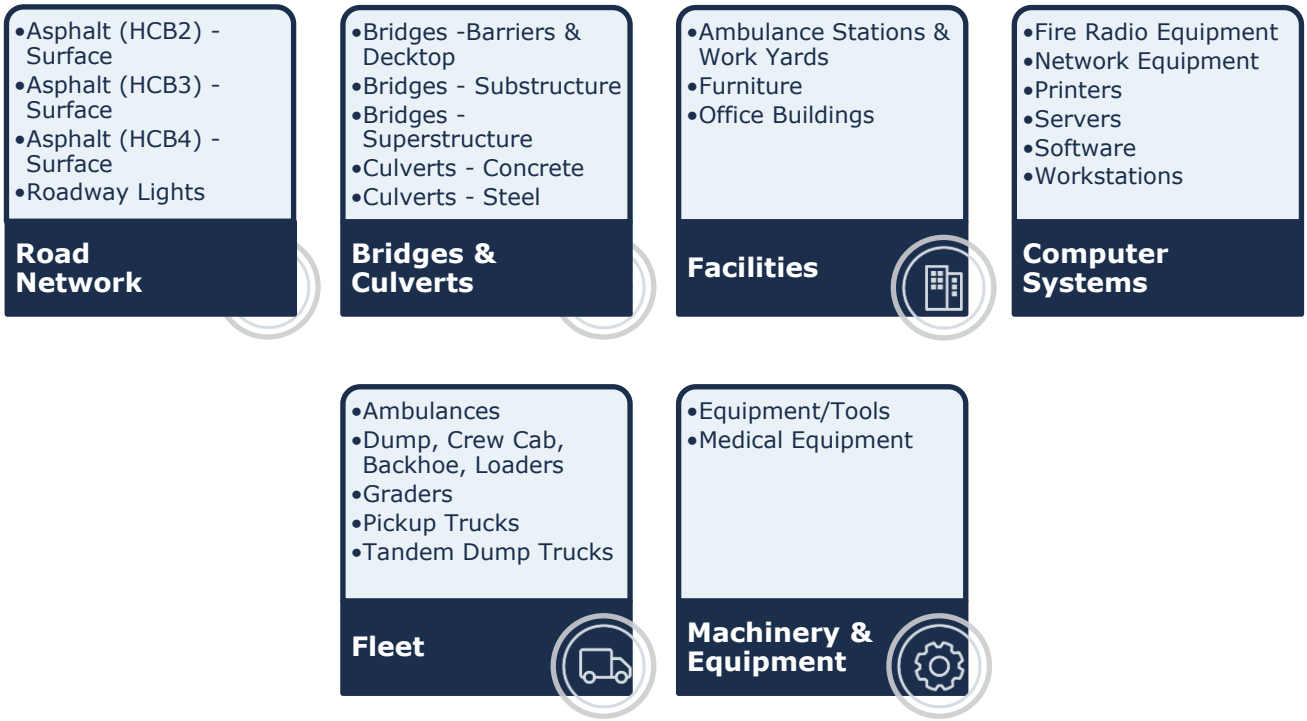

Figure 11 Asset Hierarchy and Data Classification

3.2 Portfolio Overview

3.2.1 Total Replacement Cost of Asset Portfolio

The six asset categories analyzed in this Asset Management Plan have a total current replacement cost of $328.4 million. This estimate was calculated using user-defined costing, cost per unit, as well as inflation of historical or original costs to current date. This estimate reflects replacement of historical assets with similar, not necessarily identical, assets available for procurement today. Figure 12 illustrates the replacement cost of each asset category.

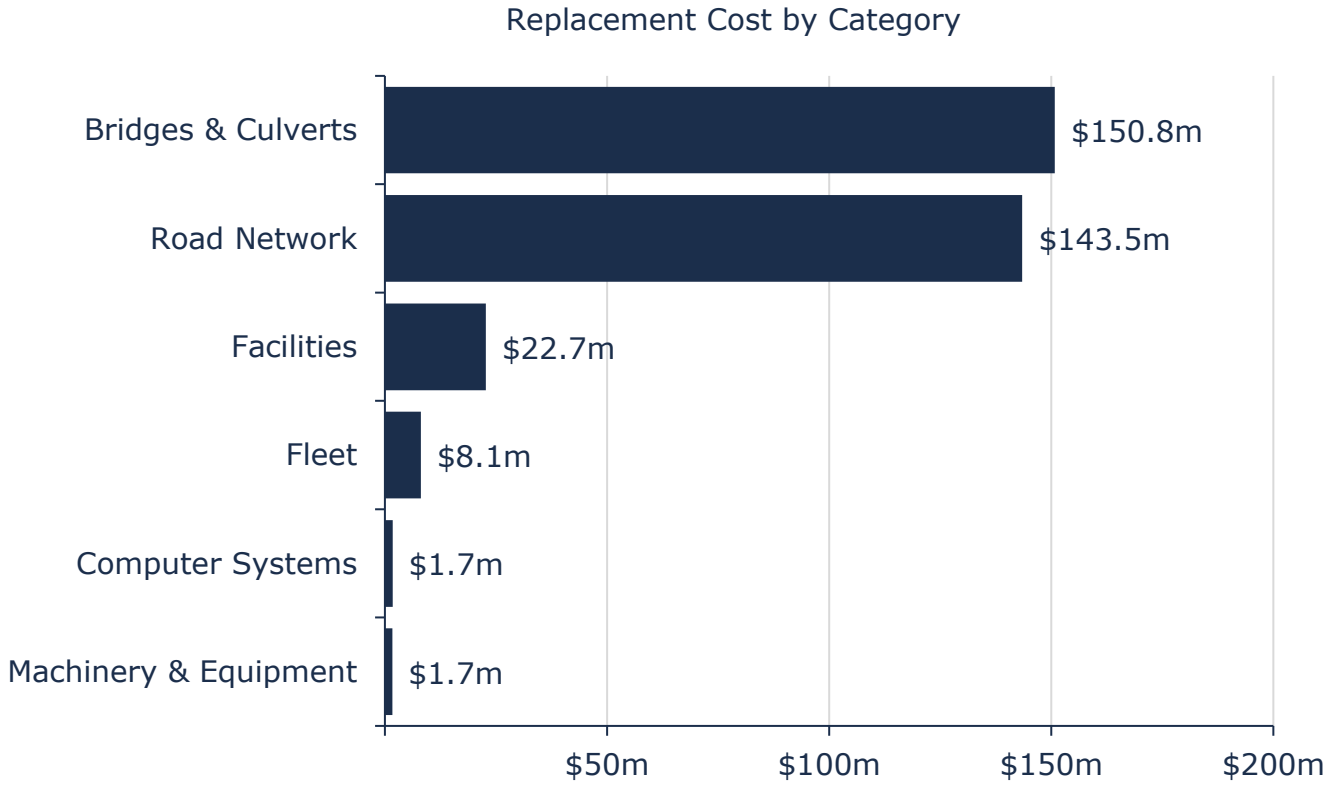

Figure 12 Current Replacement Cost by Asset Category

3.2.2 Target vs. Actual Reinvestment Rate

The graph below depicts funding gaps by comparing the target to the current reinvestment rate. To meet the existing long-term capital requirements, the County requires an annual capital investment of $9.8 million, for a target portfolio reinvestment rate of 2.97%. Currently, the annual investment from sustainable revenue sources is $7.0 million, for a current portfolio reinvestment rate of 2.12%. Target and current re-investment rates by asset category are detailed below.

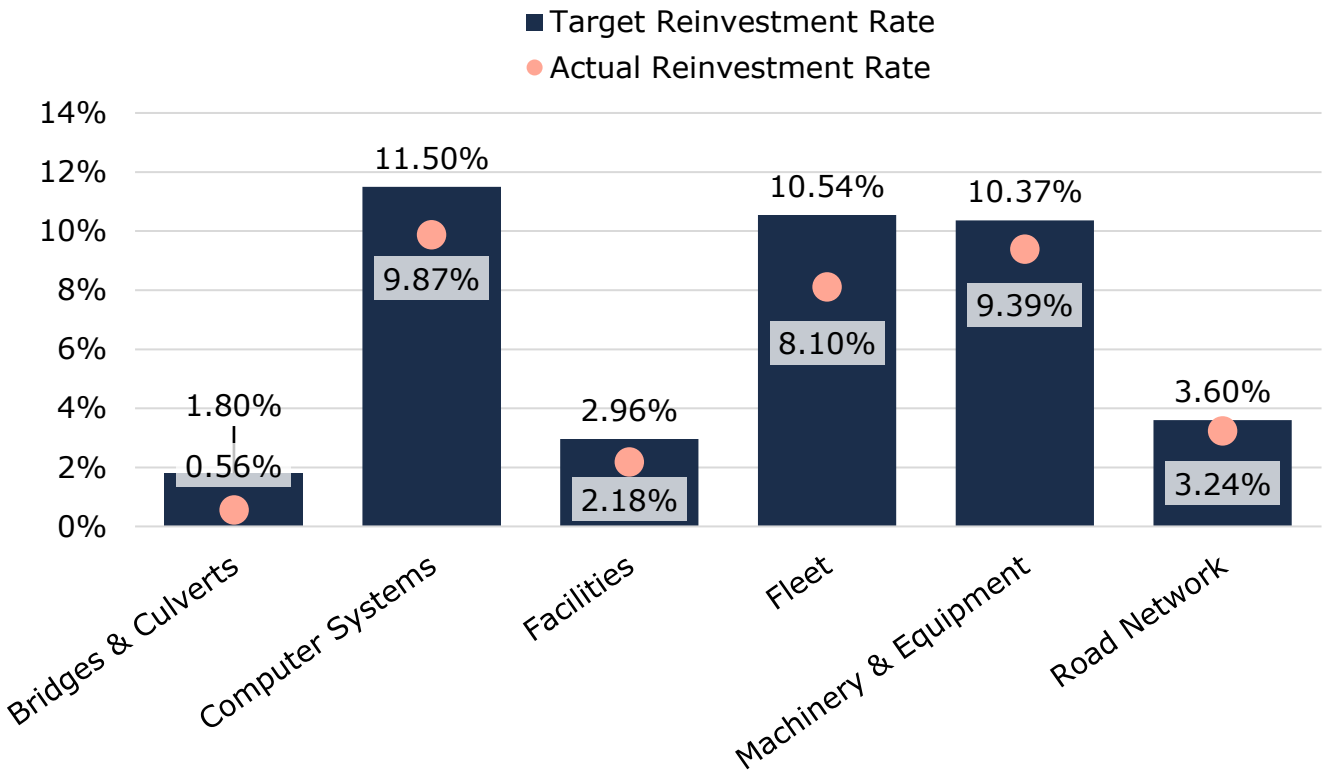

Figure 13 Current Vs. Target Reinvestment Rate

3.2.3 Condition of Asset Portfolio

Figure 14 & Figure 15 summarize asset condition at the portfolio and category levels, respectively. Based on both assessed condition, 76% of the County's infrastructure portfolio is in fair or better condition, with the remaining 24% in poor or worse condition. Typically, assets in poor or worse condition may require replacement or major rehabilitation in the immediate or short-term. Targeted condition assessments may help further refine the list of assets that may be candidates for immediate intervention, including potential replacement or reconstruction.

Similarly, assets in fair condition should be monitored for disrepair over the medium term. Keeping assets in fair or better condition is typically more cost-effective than addressing assets needs when they enter the latter stages of their lifecycle or decline to a lower condition rating. Condition data was available for 91% of assets included in the AMP.

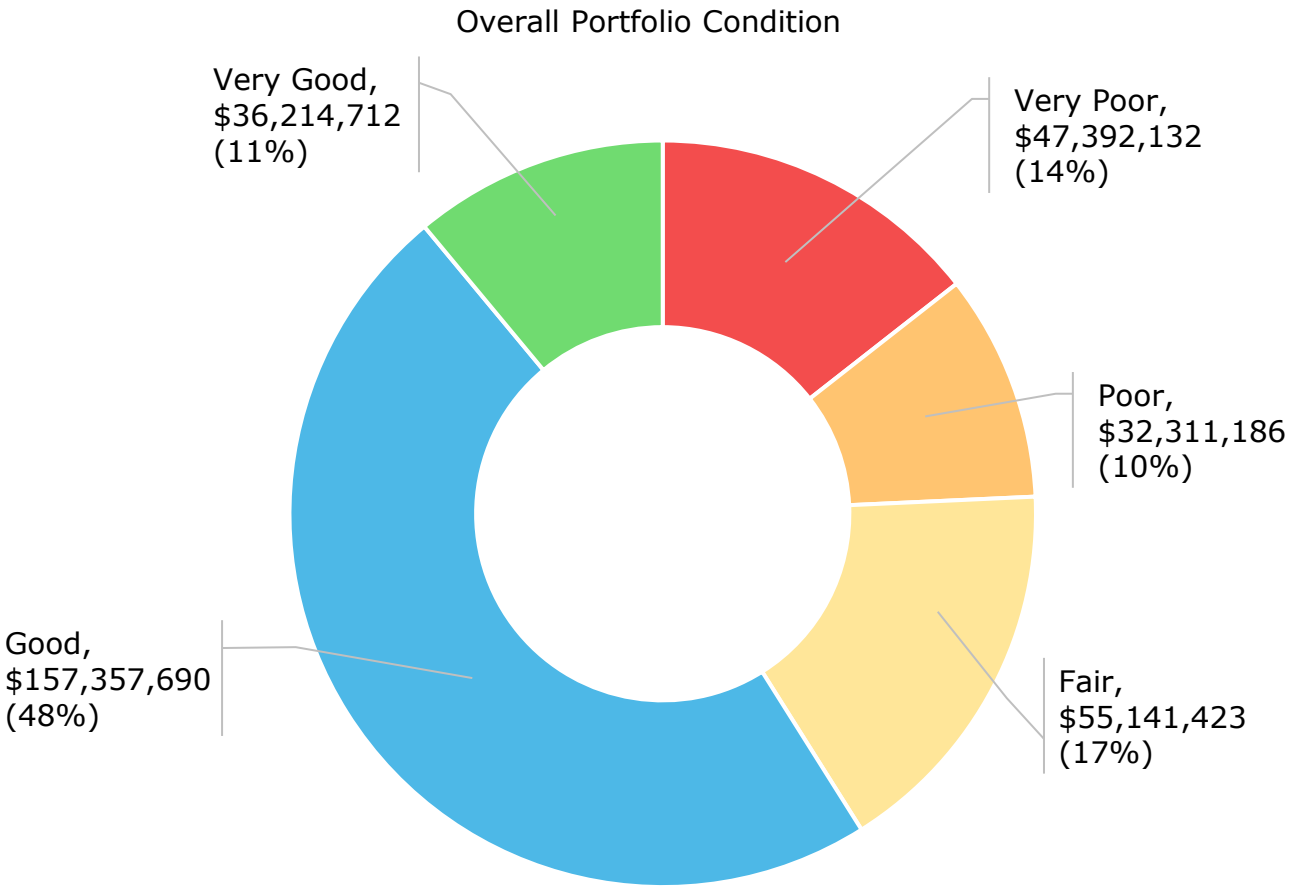

Figure 14 Asset Condition: Portfolio Overview

As further illustrated in Figure 15 at the category level, the majority of major, core infrastructure are in fair or better condition. These findings are based on in-field condition assessment data. See Table 7 for details on how condition data was derived for each asset segment.

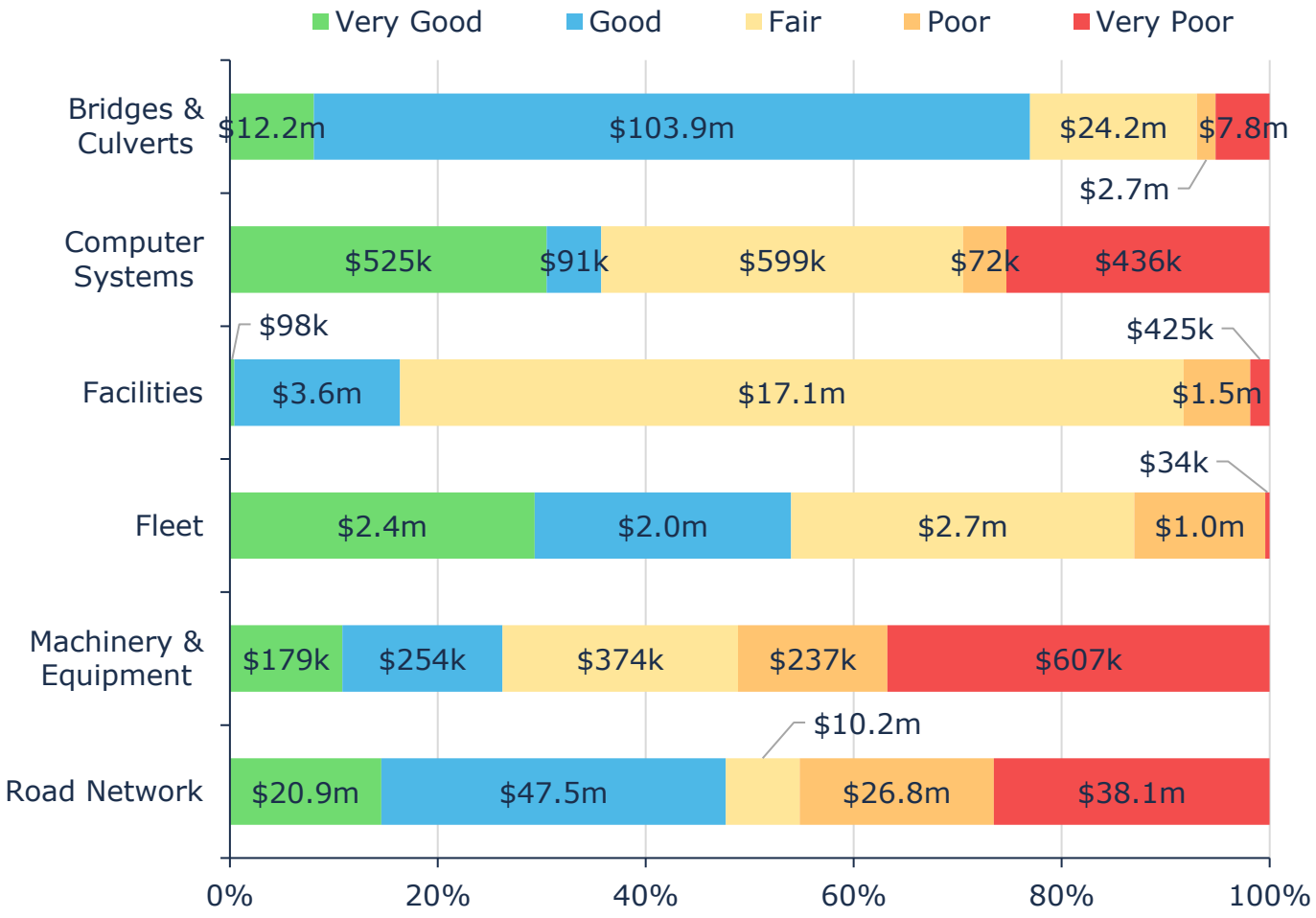

Figure 15 Asset Condition by Asset Category

Source of Condition Data

This AMP relies on assessed condition for 91% of assets, based on and weighted by replacement cost. Assessed condition data is invaluable in asset management planning as it reflects the true condition of the asset and its ability to perform its functions. The table below identifies the source of condition data used throughout this AMP.

Asset Category	Asset Segment(s)	% of Assets with Assessed Conditions	Source of Condition Data
Road Network	Asphalt (HCB2) - Surface	100%	Roads Needs Studies Internal Assessments
	Asphalt (HCB3) - Surface	83%	
	Asphalt (HCB4) - Surface	83%	
	Roadway Lights	0%	
Bridges & Culverts	Bridges - Barriers & Decktop	100%	OSIM Reports
	Bridges - Substructure	100%	
	Bridges - Superstructure	100%	
	Culverts - Concrete	100%	
	Culverts - Steel	100%	
Facilities	Ambulance Stations & Work Yards	99%	Building Condition Assessments
	Furniture	0%	
	Office Buildings	98%	
Fleet	Ambulances	87%	Internal Assessments
	Dump, Crew Cab, Backhoe, Loaders	71%	
	Graders	100%	
	Pickup Trucks	48%	
	Tandem Dump Trucks	93%	

Asset Category	Asset Segment(s)	% of Assets with Assessed Conditions	Source of Condition Data
Machinery & Equipment	Equipment/Tools	0%	Internal Assessments
	Medical Equipment	88%	
Computer Systems	Fire Radio Equipment	50%	Internal Assessments
	Network Equipment	0%	
	Printers	0%	
	Servers	0%	
	Software	0%	
	Workstations	0%	

Table 7 Source of Condition Data

3.2.4 Service Life Remaining

Based on asset age, available assessed condition data and estimated useful life, 21% of the County's assets will require replacement within the next 10 years (not accounting for asset replacement backlog).

3.2.5 Risk Matrix

Using the risk equation and preliminary risk models, Figure 16 shows how the County's assets across the different asset categories are stratified within a risk matrix.

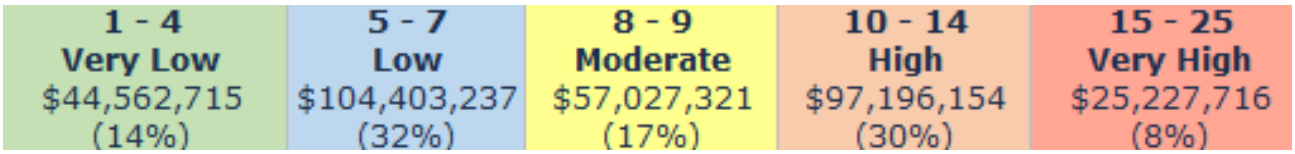

Figure 16 Risk Matrix: All Assets

The analysis shows that based on current risk models, approximately 8% of the County's assets, with a current replacement cost of approximately $25.2 million, carry a risk rating of 15 or higher (red) out of 25. Assets in this group may have a high probability of failure based on available condition data and age-based estimates.

As new asset attribute information and condition assessment data are integrated with the asset register, asset risk ratings will evolve, resulting in a redistribution of assets within the risk matrix. Staff should also continue to calibrate risk models.

We caution that since risk ratings rely on many factors beyond an asset's physical condition or age; assets in a state of disrepair can sometimes be classified as low risk, despite their poor condition rating. In such cases, although the probability of failure for these assets may be high, their consequence of failure ratings was determined to be low based on the attributes used and the data available.

Similarly, assets with very high condition ratings can receive a moderate to high-risk rating despite a low probability of failure. These assets may be deemed as highly critical to the County based on their costs, economic importance, social significance, and other factors. Continued calibration of an asset's criticality and regular data updates are needed to ensure these models more accurately reflect an asset's actual risk profile.

Core Assets

4. Road Network

4.1 Inventory & Valuation

Table 8 summarizes the quantity, unit of measure, total replacement cost, and primary replacement cost method of each asset segment in the County's road network inventory.

Segment	Quantity	Unit of Measure	Replacement Cost	Primary RC Method
Asphalt (HCB2) - Surface	4	Length (km)	$1,077,190	CPI
Asphalt (HCB3) - Surface	422	Length (km)	$123,648,965	CPI
Asphalt (HCB4) - Surface	63	Length (km)	$18,319,793	CPI
Roadway Lights	78	Assets	$440,220	CPI
Total			**$143,486,168**	

Table 8 Detailed Asset Inventory: Road Network

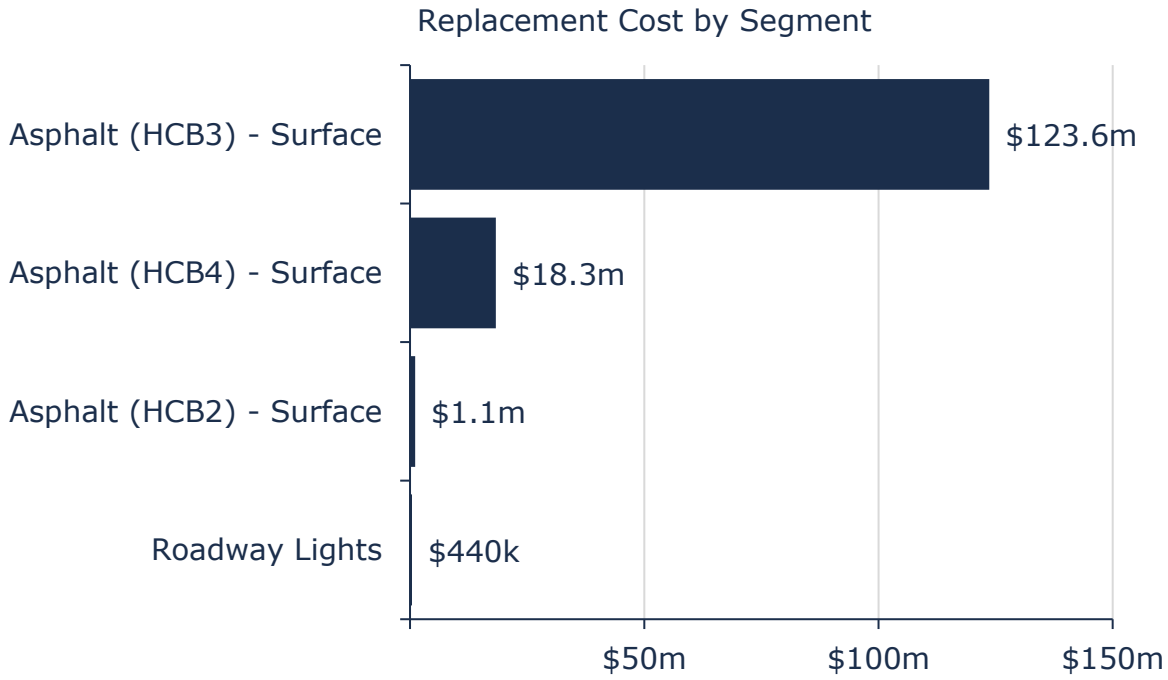

Figure 17 Portfolio Valuation: Road Network

4.2 Asset Condition

Figure 18 summarizes the replacement cost-weighted condition of the County's road network. Based on a combination of field inspection data, 55% of assets are in fair or better condition; the remaining 45% of assets are in poor to very poor condition. Condition assessments were available for 83% of assets in the Road Network, based on replacement cost. This condition data was projected from inspection date to current year to estimate their condition today.

Assets in poor or worse condition may be candidates for replacement in the short term; similarly, assets in fair condition may require rehabilitation or replacement in the medium term and should be monitored for further degradation in condition. As illustrated in Figure 18, the majority of the County's road network assets are in fair or better condition.

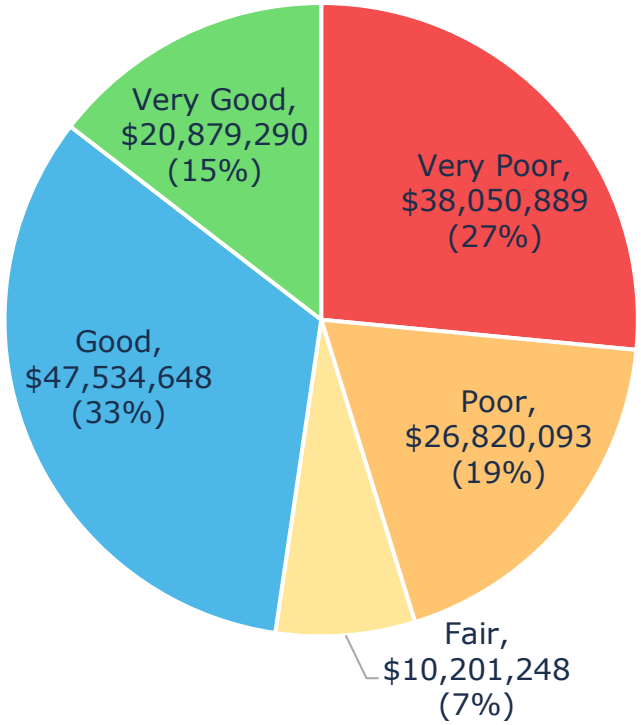

Figure 18 Asset Condition: Road Network Overall

As illustrated in Figure 19, based on condition assessments, the majority of the County's road network is in fair or better condition.

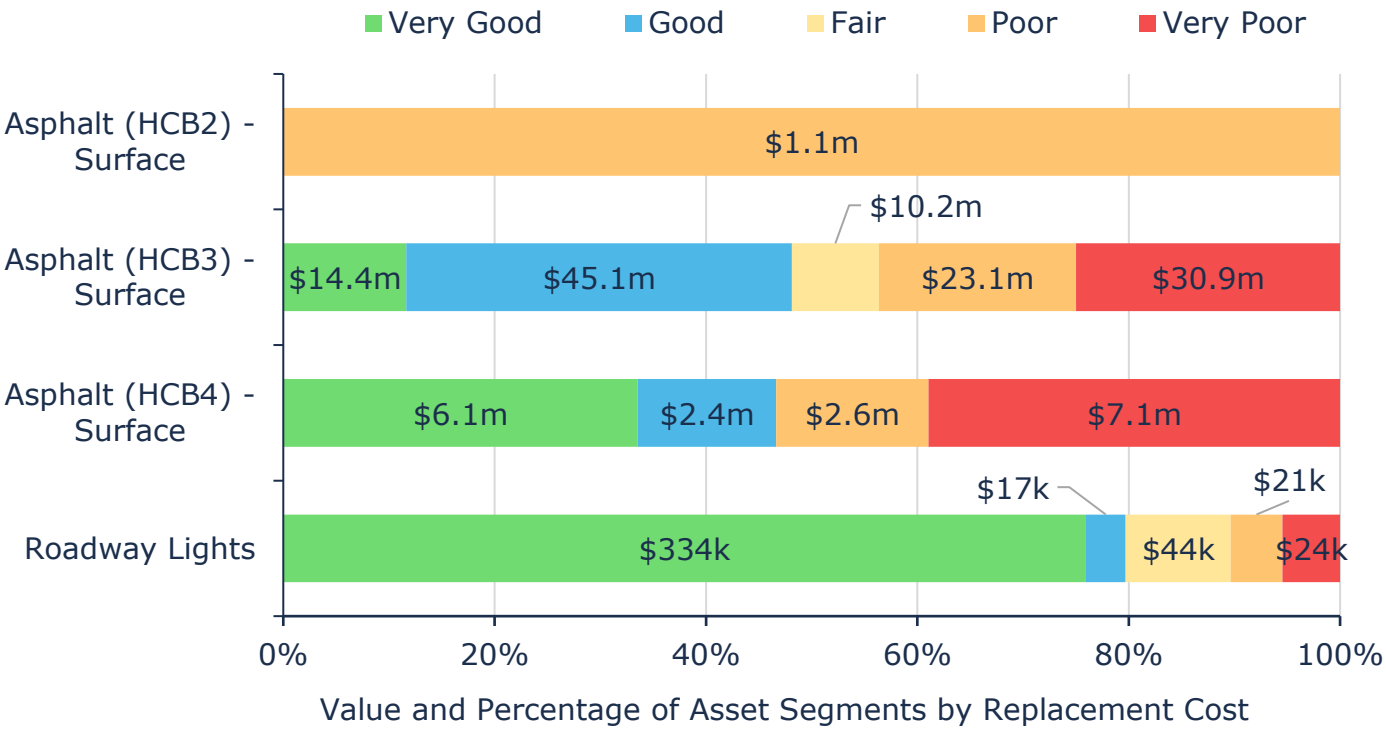

Figure 19 Asset Condition: Road Network by Segment

4.2.1 Current Approach to Condition Assessment

Accurate and reliable condition data allows staff to more confidently determine the remaining service life of assets and identify the most cost-effective approach to managing assets. The following describes the County's current approach:

- The most recent Road Needs Study was completed in April of 2022 by 4 Roads Management Services. The study includes pertinent details on road assets including assessed condition, AADT, MMS service class, surface material, replacement cost, etc.

The following rating criteria, is used to determine the current condition of HCB2 and HCB3 road segments and forecast future capital requirements:

Condition	Rating
Very Good	95 – 100
Good	75 – 94
Fair	60 – 74
Poor	40 – 59
Very Poor	0 – 39

The following rating criteria, is used to determine the current condition of HCB4 road segments and forecast future capital requirements:

Condition	Rating
Very Good	90 – 100
Good	75 – 89
Fair	60 – 74
Poor	40 – 59
Very Poor	0 – 39

The following rating criteria, is used to determine the current condition of roadway lighting and forecast future capital requirements:

Condition	Rating
Very Good	80 – 100
Good	60 – 79
Fair	40 – 59
Poor	20 – 39
Very Poor	0 – 19

4.3 Age Profile

An asset's age profile comprises two key values: estimated useful life (EUL), or design life; and the percentage of EUL consumed. The EUL is the serviceable lifespan of an asset during which it can continue to fulfil its intended purpose and provide value to users, safely and efficiently. As assets age, their performance diminishes, often more rapidly as they approach the end of their design life.

In conjunction with condition data, an asset's age profile provides a more complete summary of the state of infrastructure. It can help identify assets that may be candidates for further review through condition assessment programs; inform the selection of optimal lifecycle strategies; and improve planning for potential long-term replacement spikes.

Figure 20 illustrates the average current age of each asset type and its estimated useful life. Both values are weighted by the replacement cost of individual assets.

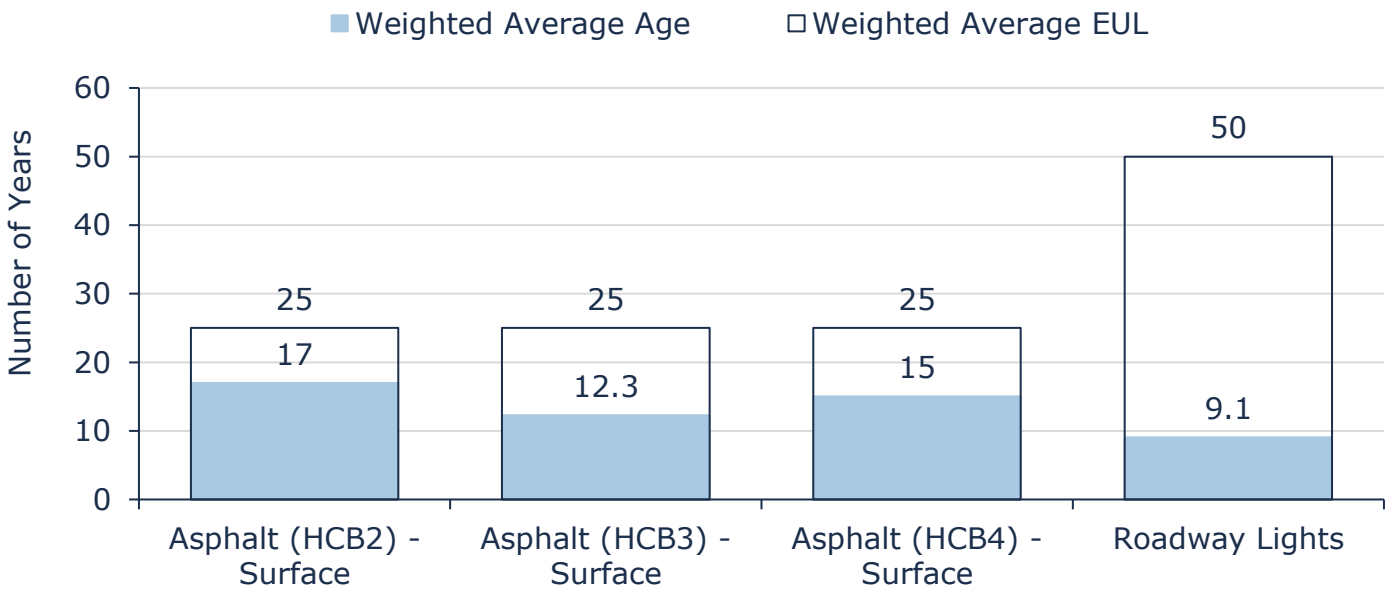

Figure 20 Estimated Useful Life vs. Asset Age: Road Network

Age analysis shows that most asset segments have plenty of life left and are in a healthy state.

Although asset age is an important measurement for long-term planning, condition assessments provide a more accurate indication of actual asset needs.

4.4 Current Approach to Lifecycle Management

The condition or performance of most assets will deteriorate over time. This process is affected by a range of factors including an asset's characteristics, location, utilization, maintenance history and environment.

The following lifecycle strategies have been developed as a proactive approach to managing the lifecycle of various HCB road classes. Instead of allowing the roads to deteriorate until replacement is required, strategic rehabilitation is expected to extend the service life of roads at a lower total cost.

Road profiles were separated to incorporate different interventions based on HCB class. See below:

HBC2 & HCB3 Roads		
Event Name	**Event Class**	**Event Trigger**
Crack Sealing	Preventative Maintenance	5 Years
Crack Sealing	Preventative Maintenance	9 Years
Microsurfacing	Maintenance	10 Years
Resurfacing – Single Lift	Rehabilitation	PCI 50
Crack Sealing	Preventative Maintenance	20 Years
Mill & Resurfacing – Double Lift	Rehabilitation	PCI 50
Crack Sealing	Preventative Maintenance	30 Years
Crack Sealing	Preventative Maintenance	35 Years
Crack Sealing	Preventative Maintenance	40 Years
Asset Replacement	Replacement	PCI 30

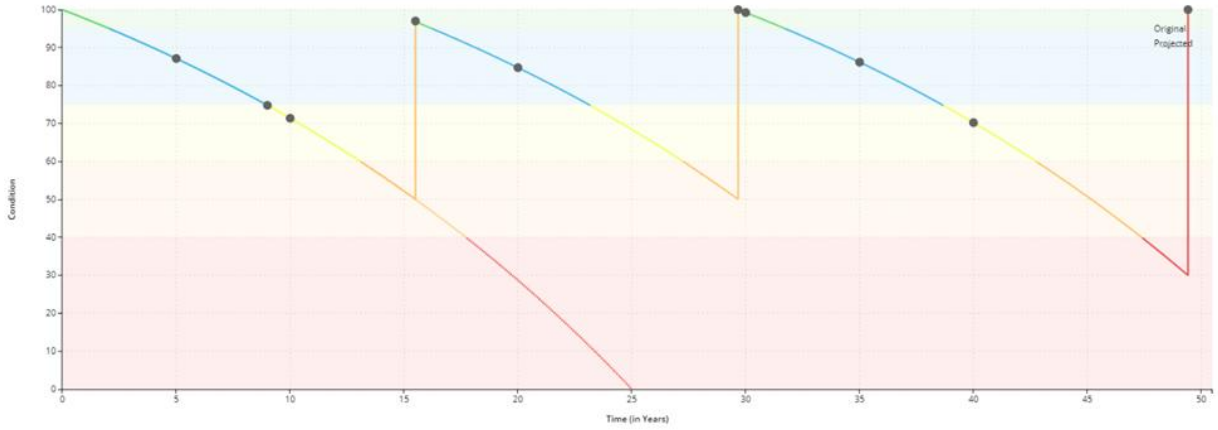

Table 9 Lifecycle Management Strategy: Road Network (HCB2 & HCB3 Roads)

HCB4 Roads		
Event Name	**Event Class**	**Event Trigger**
Crack Sealing	Preventative Maintenance	5 Years
Crack Sealing	Preventative Maintenance	10 Years
Microsurfacing	Maintenance	15 Years
Resurfacing – Single Lift	Rehabilitation	PCI 50
Crack Sealing	Preventative Maintenance	25 Years
Mill & Resurfacing – Double Lift	Rehabilitation	PCI 50
Crack Sealing	Preventative Maintenance	35 Years
Crack Sealing	Preventative Maintenance	40 Years
Crack Sealing	Preventative Maintenance	45 Years
Asset Replacement	Replacement	PCI 20-30

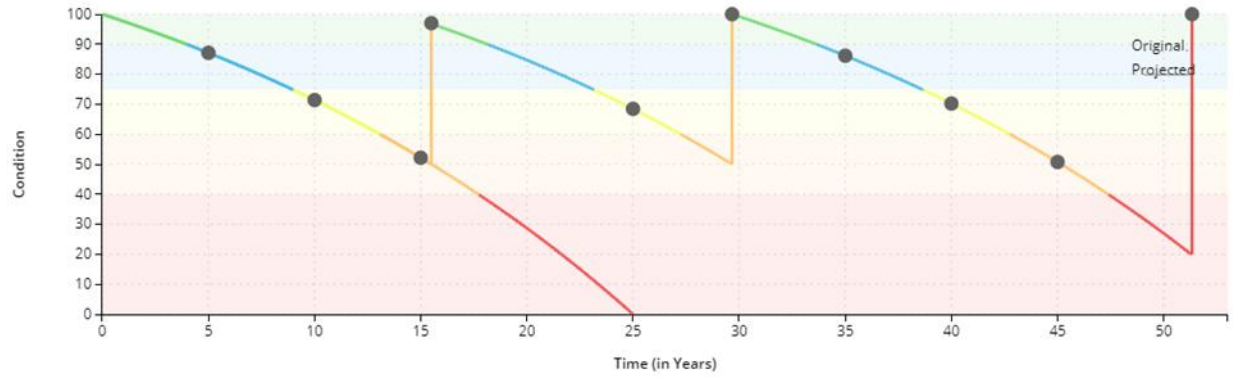

Table 10 Lifecycle Management Strategy: Road Network (HCB4 Roads)

4.5 Risk Analysis

The risk matrix below is generated using available asset data, including condition, service life remaining, replacement costs, and road class. The risk ratings for assets without useful attribute data were calculated using only condition, service life remaining, and their replacement costs.

The matrix stratifies assets based on their individual probability and consequence of failure, each scored from 1 to 5. Their product generates a risk index ranging from 1-25. Assets with the highest criticality and likelihood of failure receive a risk rating of 25; those with lowest probability of failure and lowest criticality carry a risk rating of 1. As new data and information is gathered, the County may consider integrating relevant information that improves confidence in the criteria used to assess asset risk and criticality.

These risk models have been built into the County's Asset Management Database (Citywide Assets). See *Risk & Criticality* section for further details on approach used to determine asset risk ratings and classifications.

1 - 4 **Very Low**	5 - 7 **Low**	8 - 9 **Moderate**	10 - 14 **High**	15 - 25 **Very High**
$25,882,499 (18%)	$45,530,011 (32%)	$14,840,261 (10%)	$39,471,194 (28%)	$17,762,203 (12%)

Figure 21 Risk Matrix: Road Network

4.6 Levels of Service

The tables that follow summarize the County's current and proposed levels of service with respect to prescribed KPIs under Ontario Regulation 588/17, as well as any additional performance measures that the County selected for this AMP.

4.6.1 Levels of Service – Current

Metric Type	KPI Metric	Service Attribute	Current LOS
Community	Description, which may include maps, of the road network in the County and its level of connectivity	Availability	The County's road network is critical infrastructure that supports multi-model transportation including commercial and personal transportation, emergency vehicles, agricultural machinery, and cyclists.
	Description, images, or map that illustrate the different levels of road class pavement condition	Performance	A Road Needs Study was conducted in 2022 by 4 Roads Management Services Inc. that provides pertinent details on each road owned and maintained by the County, including road classes. Perth County's road network can be seen in Appendix B.
Technical	Lane-km of arterial roads (MMS classes 1 and 2) per land area (km/km2)	Availability	0.051
	Lane-km of collector roads (MMS classes 3 and 4) per land area (km/km2)		0.402

Metric Type	KPI Metric	Service Attribute	Current LOS
	Lane-km of local roads (MMS classes 5 and 6) per land area (km/km2)		0.003
Technical	Average pavement condition index for paved roads in the County	Reliability	64
	Average surface condition for unpaved roads in the County (e.g. excellent, good, fair, poor)		N/A

Table 11: Road Network – Current Levels of Service

4.6.2 Levels of Service – Proposed

The scenarios that were used to analyse Perth County's inventory were run until 2074 to ensure all the lifecycles were included at least once. They are also all based on the data available in the asset management system which outlines estimated useful life and condition as well as replacement costs which all the results are based on.

Scenario 1: Current Lifecycle Strategy - this scenario utilizes the current lifecycle strategy outlined as current practice within each asset category. The condition and annual investment were then determined.

Scenario 2: Current Funding Levels - this scenario utilizes the current capital reinvestment within each asset category. The current annual investment was held, and the condition was determined.

Scenario 3: Minimum Condition Baseline - this scenario utilizes a target average condition of 40% of the infrastructure within each asset category. The condition value was held, and the annual investment was then determined.

The table below outlines the results for each scenario for the road network.

Scenarios	Replacement Cost	Average Condition	Annual Capital Reinvestment
Scenario 1 – Current Lifecycle Strategy **(selected)**[3]	$143,486,168	67%	$5,159,000
Scenario 2 - Current Funding Levels		70%	$4,642,000
Scenario 3 – Minimum Baseline Condition – 40%		42%	$2,138,000

Table 12: Road Network - Proposed Levels of Service

4.6.3 Additional Metrics

The table that follows summarize the County's additional performance measures to be tracked after the conclusion of this AMP under Ontario Regulation 588/17.

Metric Type	KPI Metric	Proposed LOS Metric (2034)
Technical	Average quantitative risk rating (0-25)[4]	9.48

Table 13: Road Network - Additional Metrics

[3] While scenario 1 has a higher annual capital reinvestment rate and a slightly lower *average* condition over the next 10 years, it is critical to note that longer range forecasts (2074; one full lifecycle iteration) indicate that the selected scenario yields a PCI of 87, as opposed to 59 (scenario 2).
[4] See Risk & Criticality in section 2.3.2

4.6.4 10-Year Capital Forecast

Below is the projected ten-year capital forecast (scenario 1) needed to obtain full funding, within the recommended timeframe.

Segment	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Asphalt (HCB2) - Surface										
Asphalt (HCB3) - Surface	$161k	-	$1.1m	$1.3m	-	$1.4m	-	$1.1m	$400k	-
Asphalt (HCB4) - Surface	$78k	-	-	-	-	-	-	$30k	-	-
Roadway Lights	-	-	-	$3k	-	-	-	-	-	-
Total	$239k	-	$1.1m	$1.3m	-	$1.4m	-	$1.1m	$400k	-

Table 14: Road Network - 10-Year Capital Forecast

5. Bridges & Culverts

5.1 Inventory & Valuation

Table 15 summarizes the quantity and current replacement cost of bridges and culverts.

Segment	Quantity (components)	Unit of Measure	Replacement Cost	Primary RC Method
Bridges - Barriers & Decktop	43	Assets	$31,955,249	User-Defined
Bridges - Substructure	43	Assets	$36,709,221	User-Defined
Bridges - Superstructure	43	Assets	$22,858,117	User-Defined
Culverts - Concrete	68	Assets	$50,199,100	User-Defined
Culverts - Steel	11	Assets	$9,070,311	User-Defined
TOTAL			**$150,791,998**	

Table 15 Detailed Asset Inventory: Bridges & Culverts

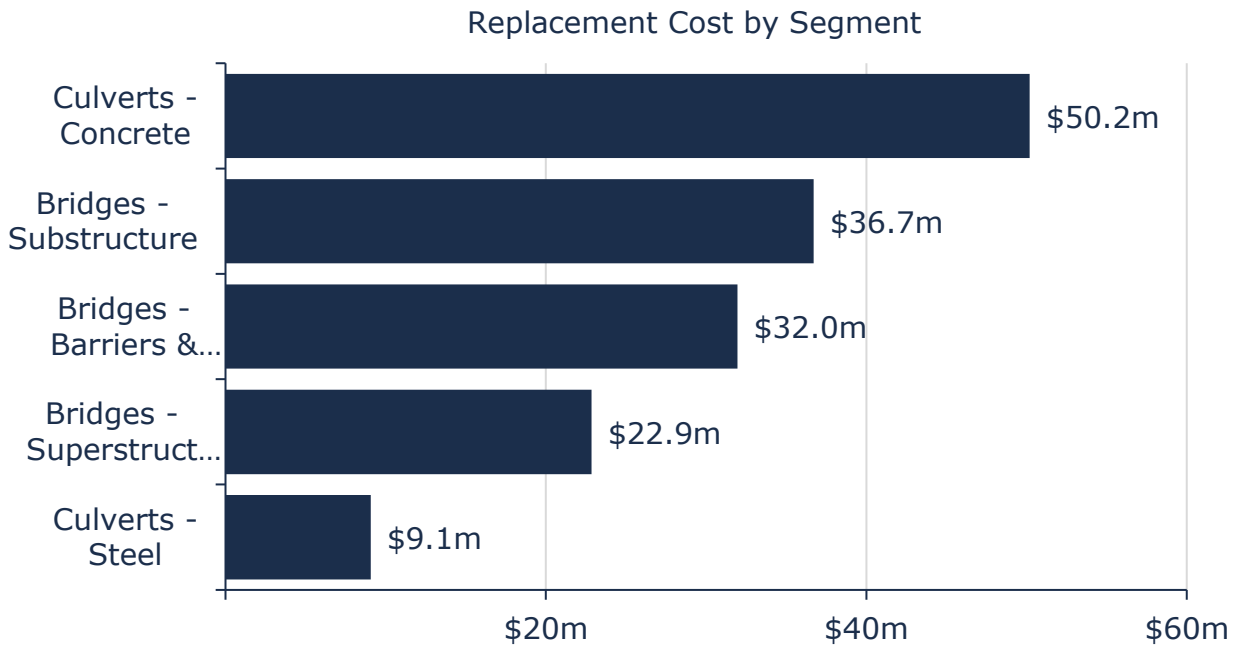

Figure 22 Portfolio Valuation: Bridges & Culverts

5.2 Asset Condition

Figure 23 summarizes the replacement cost-weighted condition of the County's bridges and culverts. Based on the County's latest Ontario Structures Inspection Manual (OSIM) assessments, 93% of bridges and culverts assets are in fair or better condition. Some elements or components of these structures may be candidates for replacement or rehabilitation in the medium term and should be monitored for further degradation in condition.

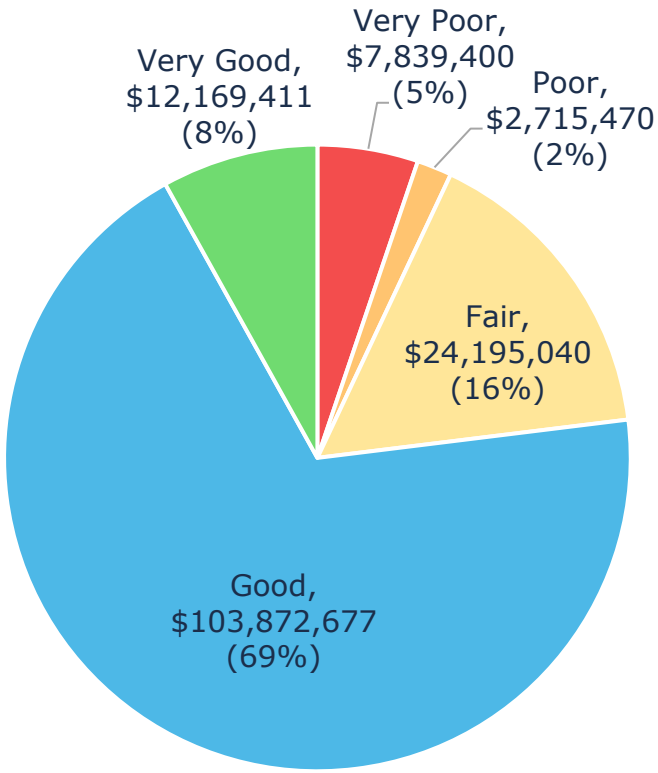

Figure 23 Asset Condition: Bridges & Culverts Overall

As illustrated below, based on condition assessments, the majority of the County's bridges & culverts are in fair or better condition, the exception being steel culvert components, where most of the segments are in very poor condition. However, this represents less than 6% of the total overall replacement cost of all bridges and structural culverts.

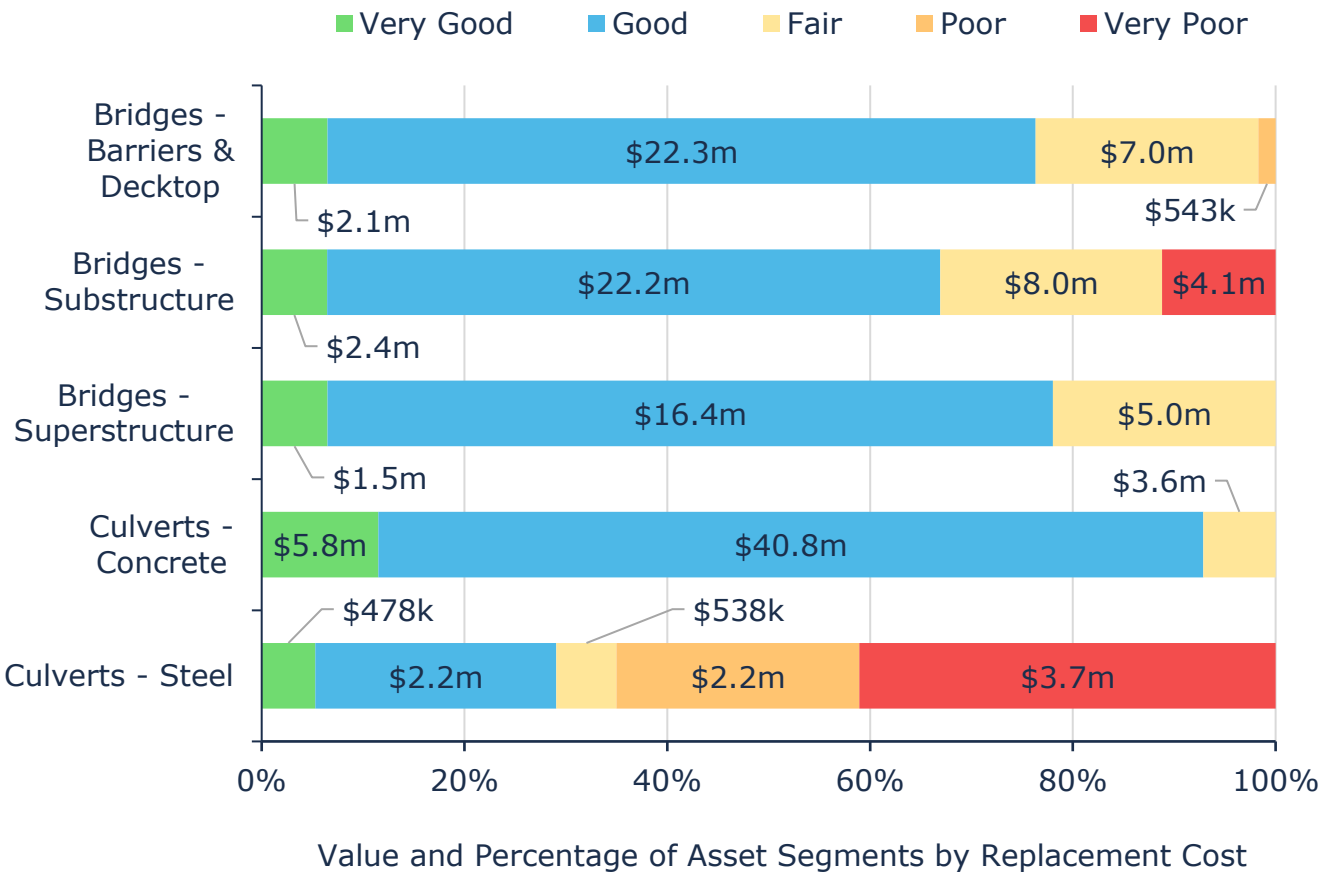

Figure 24: Asset Condition: Bridges & Culverts by Segment

5.2.1 Current Approach to Condition Assessment

Accurate and reliable condition data allows staff to more confidently determine the remaining service life of assets and identify the most cost-effective approach to managing assets. The following describes the County's current approach:

- Condition assessments for all bridges and structural culverts within the County are conducted biennially, following the guidelines of the Ontario Structure Inspection Manual (OSIM).
- Culverts with a span less than 3 meters are subject to internal condition assessments every 4 years

5.3 Age Profile

An asset's age profile comprises two key values: estimated useful life (EUL), or design life; and the percentage of EUL consumed. The EUL is the serviceable lifespan of an asset during which it can continue to fulfil its intended purpose and provide value to users, safely and efficiently. As assets age, their performance diminishes, often more rapidly as they approach the end of their design life.

In conjunction with condition data, an asset's age profile provides a more complete summary of the state of infrastructure. It can help identify assets that may be candidates for further review through condition assessment programs; inform the selection of optimal lifecycle strategies; and improve planning for potential replacement spikes.

Figure 25 illustrates the average current age of each asset type and its estimated useful life. Both values are weighted by the replacement cost of individual assets. As seen below, most asset segments are in a healthy state based on the age, the exception being Barriers and Decktop assets which have exceeded their estimated life by just over 20 years.

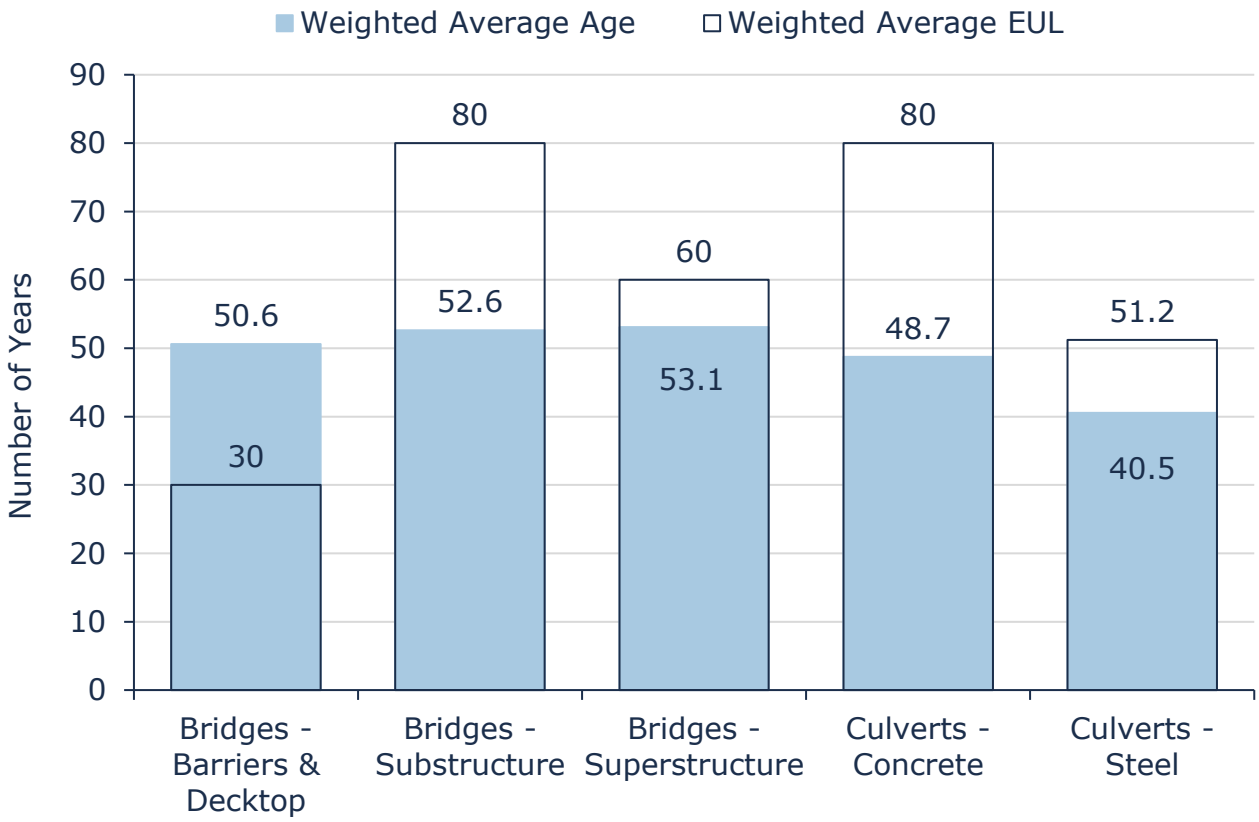

Figure 25 Estimated Useful Life vs. Asset Age: Bridges & Culverts

5.4 Current Approach to Lifecycle Management

The condition or performance of most assets will deteriorate over time. To ensure that municipal assets are performing as expected and meeting the needs of customers, it is important to establish a lifecycle management strategy to proactively manage asset deterioration.

The following table outlines the County's current lifecycle management strategy.

Activity Type	Description of Current Strategy
Maintenance, Rehabilitation and Replacement	All lifecycle activities are driven by the results of mandated structural inspections competed according to the Ontario Structure Inspection Manual (OSIM)
Inspection	The most recent inspection report was completed in 2024 by GM BluePlan Engineering Limited

Table 16 Lifecycle Management Strategy: Bridges & Culverts

5.5 Risk Analysis

The risk matrix below is generated using available asset data, including condition and replacement costs.

The matrix stratifies assets based on their individual probability and consequence of failure, each scored from 1 to 5. Their product generates a risk index ranging from 1-25. Assets with the highest criticality and likelihood of failure receive a risk rating of 25; those with lowest probability of failure and lowest criticality carry a risk rating of 1. As new data and information is gathered, the County may consider integrating relevant information that improves confidence in the criteria used to assess asset risk and criticality.

These risk models have been built into the County's Asset Management Database (Citywide Assets). See *Risk & Criticality* section for further details on approach used to determine asset risk ratings and classifications.

1 - 4	5 - 7	8 - 9	10 - 14	15 - 25
Very Low	**Low**	**Moderate**	**High**	**Very High**
$16,399,093 (11%)	$55,803,345 (37%)	$36,620,950 (24%)	$38,485,610 (26%)	$3,483,000 (2%)

Figure 26 Risk Matrix: Bridges & Culverts

5.6 Levels of Service

The table that follows summarize the County's current and proposed levels of service with respect to prescribed KPIs under Ontario Regulation 588/17 as well as any additional performance measures that the County has selected for this AMP.

5.6.1 Levels of Service – Current

Metric Type	KPI Metric	Service Attribute	Current LOS
Community	Description of the traffic that is supported by County bridges (e.g., heavy transport vehicles, motor vehicles, emergency vehicles, pedestrians, cyclists)	Availability	Bridges and structural culverts are a key component of the County's transportation network. There are no loading or dimensional restrictions on any structure, meaning that all types of vehicles, including heavy transport, motor vehicles, emergency vehicles, agricultural machinery, and cyclists can cross them without restriction
	Description or images of the condition of bridges and culverts and how this would affect use of the bridges and culverts	Performance	Every structure is given a condition rating from 0-100. Refer to sections 2.4.6 & 5.2.1.
Technical	% Of bridges in the County with loading or dimensional restrictions	Availability	0%
	Average bridge condition index value for bridges in the County	Reliability	66
	Average bridge condition index value for		66

Metric Type	KPI Metric	Service Attribute	Current LOS
	structural culverts in the County		

Table 17: Bridges & Culverts – Current Levels of Service

5.6.2 Levels of Service – Proposed

The scenarios that were used to analyse Perth County's inventory were run until 2104 to ensure all the lifecycles were included at least once. They are also all based on the data available in the asset management system which outlines estimated useful life and condition as well as replacement costs which all the results are based on.

Scenario 1: Current Lifecycle Strategy - this scenario utilizes the current lifecycle activities outlined as current practice within each asset category. The condition and annual investment were then determined.

Scenario 2: Current Funding Levels - this scenario utilizes the current capital reinvestment within each asset category. The current annual investment was held, and the condition was determined.

Scenario 3: Minimum Condition Baseline - this scenario utilizes a target average condition of 40% of the infrastructure within each asset category. The condition value was held, and the annual investment was then determined.

The table below outlines the results for each scenario for the bridges & culverts.

Scenarios	Replacement Cost	Average Condition	Annual Capital Reinvestment
Scenario 1 – Current Lifecycle Strategy **(selected)**	$150,791,998	65%	$2,710,000
Scenario 2 - Current Funding Levels		30%	$840,000
Scenario 3 – Minimum Condition Baseline – 40%		40%	$1,281,000

Table 18: Bridges & Culverts - Proposed Levels of Service Scenarios

5.6.3 Additional Metrics

The table that follows summarize the County's additional performance measures to be tracked after the conclusion of this AMP under Ontario Regulation 588/17.

Metric Type	KPI Metric	Proposed LOS Metric (2034)
Technical	Average quantitative risk rating (0-25)[5]	10.75

Table 19: Bridges & Culverts - Additional Metrics

5.6.4 10-Year Capital Forecast

Below is the projected ten-year capital forecast (scenario 1) needed to obtain full funding, within the recommended timeframe.

Segment	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Bridges - Barriers & Decktop	$1.8m	$693k	$266k	$386k	$1.3m	$356k	$476k	$796k	$632k	$1.2m
Bridges - Substructure	$2.2m	$792k	$304k	$1.6m	-	$589k	$362k	$909k	$722k	$1.4m
Bridges - Superstructure	$1.4m	$495k	$190k	$276k	$900k	$368k	$226k	$568k	$451k	$1.5m
Culverts - Concrete	-	$1.6m	$1.6m	-	$335k	$370k	-	-	-	-
Culverts - Steel	-	-	$2.7m	-	-	-	-	-	$538k	-
Total	$5.4m	$3.6m	$5.0m	$2.3m	$2.5m	$1.7m	$1.1m	$2.3m	$2.3m	$4.0m

Table 20: Bridges & Structural Culverts - 10-Year Capital Forecast

[5] See Risk & Criticality in section 2.3.2

Non-Core Assets

6. Facilities

6.1 Inventory & Valuation

Table 21 summarizes the quantity and current replacement cost of all Facilities assets available in the County's asset register. The quantity listed represents the number of asset records currently available for each segment.

Segment	Quantity	Unit of Measure	Replacement Cost	Primary RC Method
Ambulance Stations & Work Yards	17	Assets	$15,341,308	CPI
Furniture	203	Assets	$443,695	CPI
Office Buildings	5	Assets	$6,910,828	CPI
TOTAL			**$22,695,831**	

Table 21 Detailed Asset Inventory: Facilities

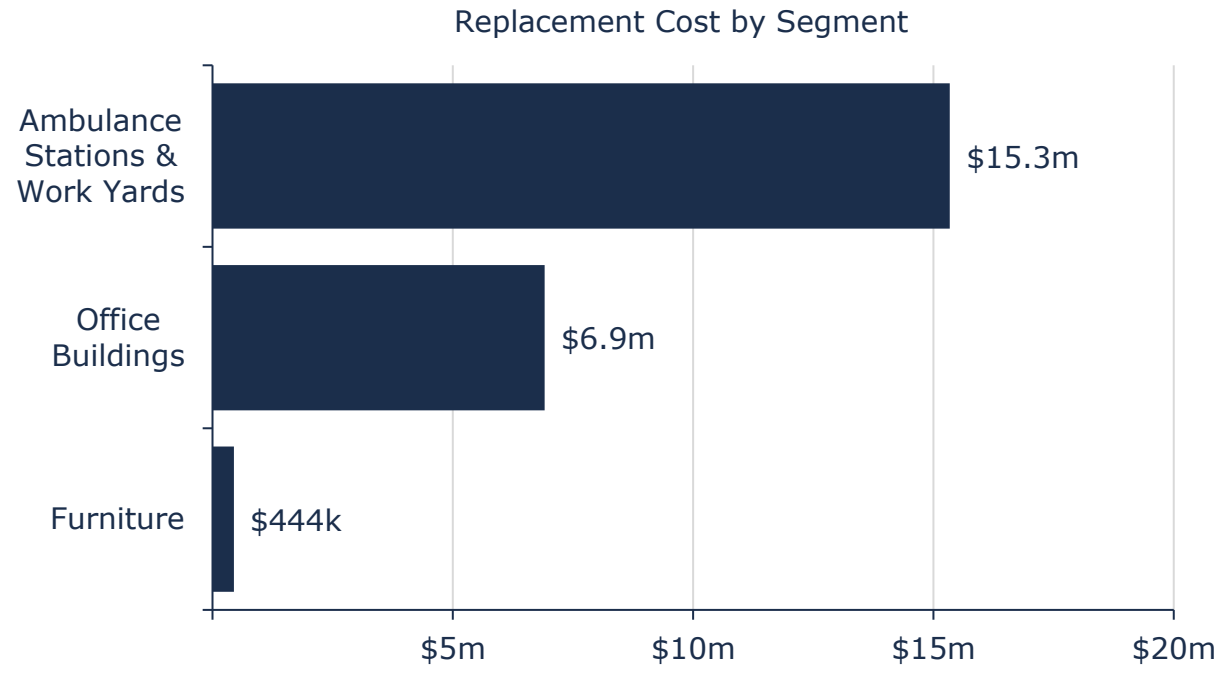

Figure 27 Portfolio Valuation: Facilities

6.2 Asset Condition

Figure 28 summarizes the replacement cost-weighted condition of the County's Buildings portfolio. Based on mostly (96%) assessment data, 92% of Facilities assets are in fair or better condition. Aspects of some of these assets may be candidates for replacement in the short term; similarly, assets in fair condition may require rehabilitation or replacement in the medium term and should be monitored for further degradation in condition.

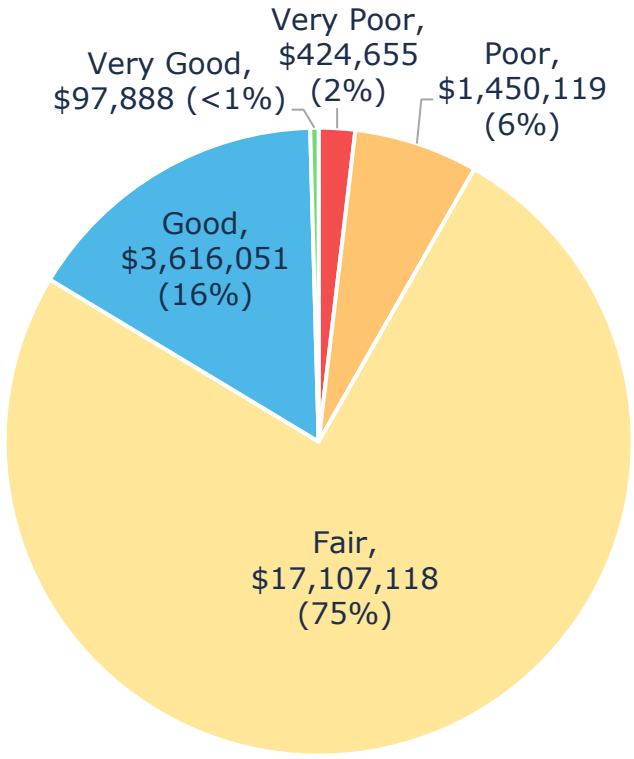

Figure 28 Asset Condition: Facilities Overall

Figure 29 summarizes the age-based condition of Buildings by each department. Most Facilities assets are in fair or better condition with some Furniture assets dipping to a very poor condition. Overall, based on the information available, this asset category is in a healthy state.

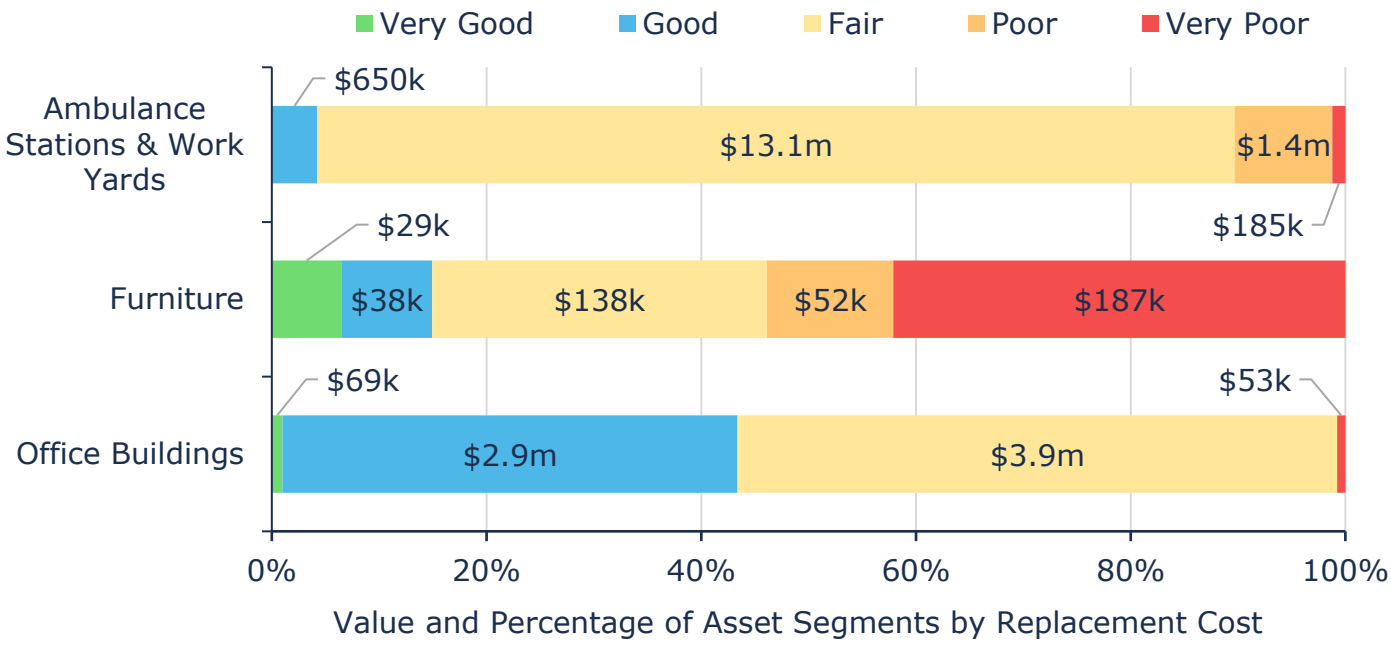

Figure 29 Asset Condition: Facilities by Segment

Facilities assets are unique in that they rarely require the need for replacement based solely on condition. It is typical that, in addition to condition, other factors, such as capacity, will impact the asset's ability to serve the purpose originally intended.

6.2.1 Current Approach to Condition Assessment

Accurate and reliable condition data allows staff to more confidently determine the remaining service life of assets and identify the most cost-effective approach to managing assets. The following describes the County's current approach:

- While there is no official policy regarding the County's facilities, the most recent facility condition assessment was completed in 2017
- County plans on conducting a portfolio-wide condition assessment of all facilities in 2025, with the intention of utilizing external resources on a 5-year cycle

6.3 Age Profile

An asset's age profile comprises two key values: estimated useful life (EUL), or design life; and the percentage of EUL consumed. The EUL is the serviceable lifespan of an asset during which it can continue to fulfil its intended purpose and provide value to users, safely and efficiently. As assets age, their performance diminishes, often more rapidly as they approach the end of their design life.

In conjunction with condition data, an asset's age profile provides a more complete summary of the state of infrastructure. It can help identify assets that may be candidates for further review through condition assessment programs; inform the selection of optimal lifecycle strategies; and improve planning for potential replacement spikes.

Figure 30 illustrates the average current age of each asset type and its estimated useful life. Both values are weighted by the replacement cost of individual assets. Although the overall state of the asset category is quite healthy as indicated in the section detailing condition, it is important to note that office buildings have exceeded their estimated useful life by about 13 years.

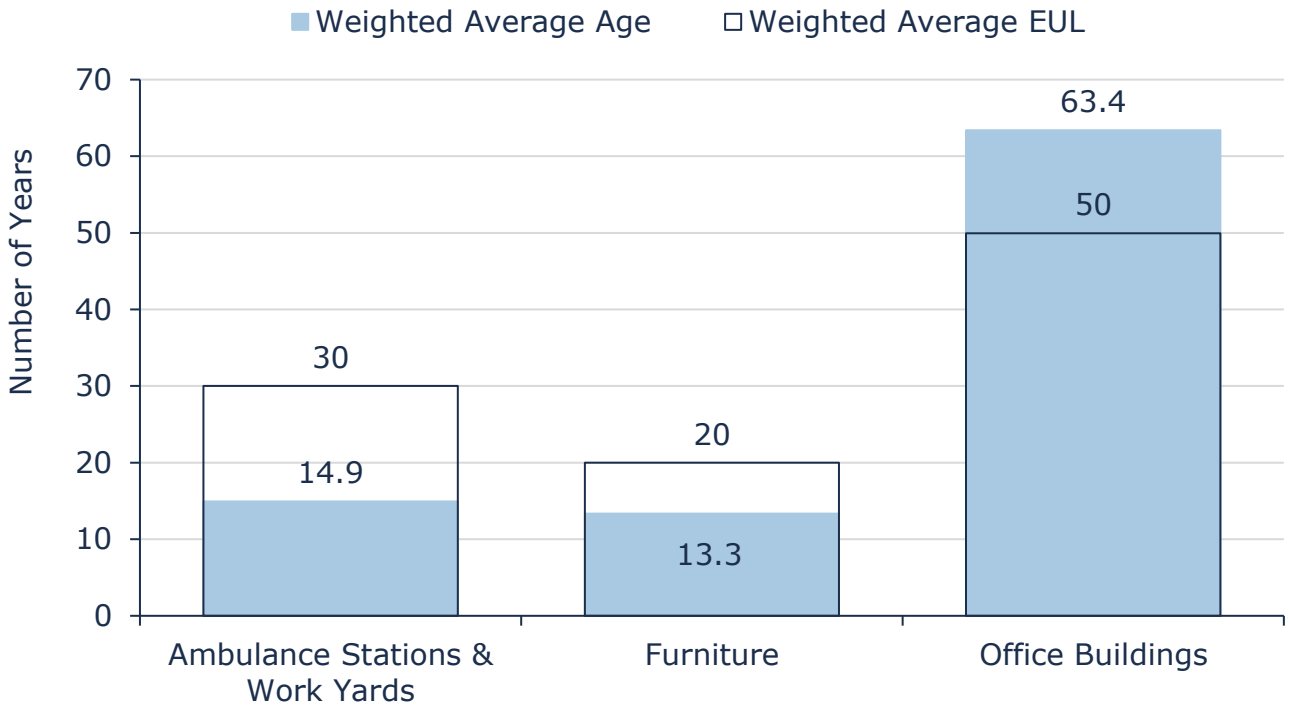

Figure 30 Estimated Useful Life vs. Asset Age: Facilities

6.4 Current Approach to Lifecycle Management

The condition or performance of most assets will deteriorate over time. To ensure that municipal assets are performing as expected and meeting the needs of customers, it is important to establish a lifecycle management strategy to proactively manage asset deterioration.

Table 22 outlines the County's current lifecycle management strategy.

Activity Type	Description of Current Strategy
Maintenance /Rehabilitation	Maintenance activities for buildings include HVAC systems, fire safety equipment, refrigeration needs, boilers, water heaters, and general upkeep. Routine maintenance is performed weekly for buildings where municipal staff work.
	Maintenance is initiated by identifying staff-reported issues, including safety or structural concerns, and promptly addressing public concerns.
	Rehabilitation efforts include replacements of roofs, windows, doors, etc., as needed based on lifecycle considerations or unexpected requirements arising from condition assessments.
Replacement	Decisions regarding building replacements hinge on factors such as cost, ongoing maintenance needs, and budget approval. The usage of the building also plays a pivotal role, with priority given to facilities that are crucial to the community and those with high utilization rates. This ensures that resources are allocated effectively to maintain essential community infrastructure.

Table 22 Lifecycle Management Strategy: Facilities

6.5 Risk Analysis

The risk matrix below is generated using available asset data, including service life remaining, replacement costs, and building department. The risk ratings for assets without useful attribute data were calculated using only age, service life remaining, and their replacement costs.

The matrix classifies assets based on their individual probability and consequence of failure; each scored from 1 to 5. Their product generates a risk index ranging from 1-25. Assets with the highest criticality and likelihood of failure receive a risk rating of 25; those with lowest probability of failure and lowest criticality carry a risk rating of 1. As new data and information is gathered, the County may consider integrating relevant information that improves confidence in the criteria used to assess asset risk and criticality.

These risk models have been built into the County's Asset Management Database (Citywide Assets). See *Risk & Criticality* section for further details on approach used to determine asset risk ratings and classifications.

1 - 4 **Very Low** $254,068 (1%)	5 - 7 **Low** $158,206 (<1%)	8 - 9 **Moderate** $3,605,527 (16%)	10 - 14 **High** $17,096,505 (75%)	15 - 25 **Very High** $1,581,525 (7%)

Figure 31 Risk Matrix: Facilities

6.6 Levels of Service

The table that follows summarizes the County's current and proposed levels of service with respect to prescribed KPIs under Ontario Regulation 588/17 as well as any additional performance measures that the County has selected for this AMP.

6.6.1 Levels of Service – Current

Metric Type	KPI Metric	Service Attribute	Current LOS
Community	Description of the types of facility assets that the County operates and maintains	Scope	Refer to section 6.1
	Description of criteria for rehabilitation and replacement decisions and any related long-term forecasts	Quality	Refer to sections 6.2 & 6.4
Technical	Average Condition Rating	Quality	51
	Average Risk Rating	Reliability	11.46

Table 23: Facilities – Current Levels of Service

6.6.2 Levels of Service – Proposed

The scenarios that were used to analyse Perth County's inventory were run until 2069 to ensure all the lifecycles were included at least once. They are also all based on the data available in the asset management system which outlines estimated useful life and condition as well as replacement costs which all the results are based on.

Scenario 1: Current Lifecycle Strategy - this scenario utilizes the current lifecycle activities outlined as current practice within each asset category. The condition and annual investment were then determined.

Scenario 2: Current Funding Levels - this scenario utilizes the current capital reinvestment within each asset category. The current annual investment was held, and the condition was determined.

Scenario 3: Minimum Condition Baseline - this scenario utilizes a target average condition of 40% of the infrastructure within each asset category.

The condition value was held, and the annual investment was then determined.

The table below outlines the results for each scenario for the Facilities.

Scenarios	Replacement Cost	Average Condition	Annual Capital Reinvestment
Scenario 1 – Current Lifecycle Strategy **(selected)**[6]	$22,695,831	38%	$672,000
Scenario 2 - Current Funding Levels		38%	$494,000
Scenario 3 – Minimum Condition Baseline – 40%		38%	$357,000

Table 24: Facilities - Proposed Levels of Service Scenarios

6.6.3 Additional Metrics

The table that follows summarize the County's additional performance measures to be tracked after the conclusion of this AMP under Ontario Regulation 588/17.

Metric Type	KPI Metric	Proposed LOS Metric (2034)
Technical	Average quantitative risk rating (0-25)[7]	15.18

Table 25: Facilities - Additional Metrics

[6] While scenario 1 has a higher annual capital reinvestment rate with the same average condition, it is critical to note that longer range forecasts (2069; one full lifecycle iteration) indicate that the selected scenario yields a condition score of 66, while scenarios 2 & 3 have projected condition scores of 49 & 43, respectively.
[7] See Risk & Criticality in section 2.3.2

6.6.4 10-Year Capital Forecast

Below is the projected ten-year capital forecast (scenario 1) needed to obtain full funding, within the recommended timeframe.

Segment	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Ambulance Stations & Work Yards	-	-	-	-	-	-	-	-	$768k	$337k
Furniture	$5k	$89k	$53k	$30k	$27k	$7k	$11k	$8k	$2k	$15k
Office Buildings	-	-	-	-	-	-	-	-	-	-
Total	$5k	$89k	$53k	$30k	$27k	$7k	$11k	$8k	$771k	$351k

Table 26: Facilities - 10-Year Capital Forecast

7. Fleet

7.1 Inventory & Valuation

Table 27 summarizes the quantity and current replacement cost of all vehicle assets available in the County's asset register.

Segment	Quantity	Unit of Measure	Replacement Cost	Primary RC Method
Ambulances	11	Assets	$2,394,286	CPI
Dump, Crew Cab, Backhoe, Loaders	8	Assets	$925,859	CPI
Graders	1	Assets	$267,230	CPI
Pickup Trucks	13	Assets	$888,617	CPI
Tandem/Tri-Axel Dump Trucks	12	Assets	$3,594,179	CPI
TOTAL			**$8,080,171**	

Table 27 Detailed Asset Inventory: Fleet

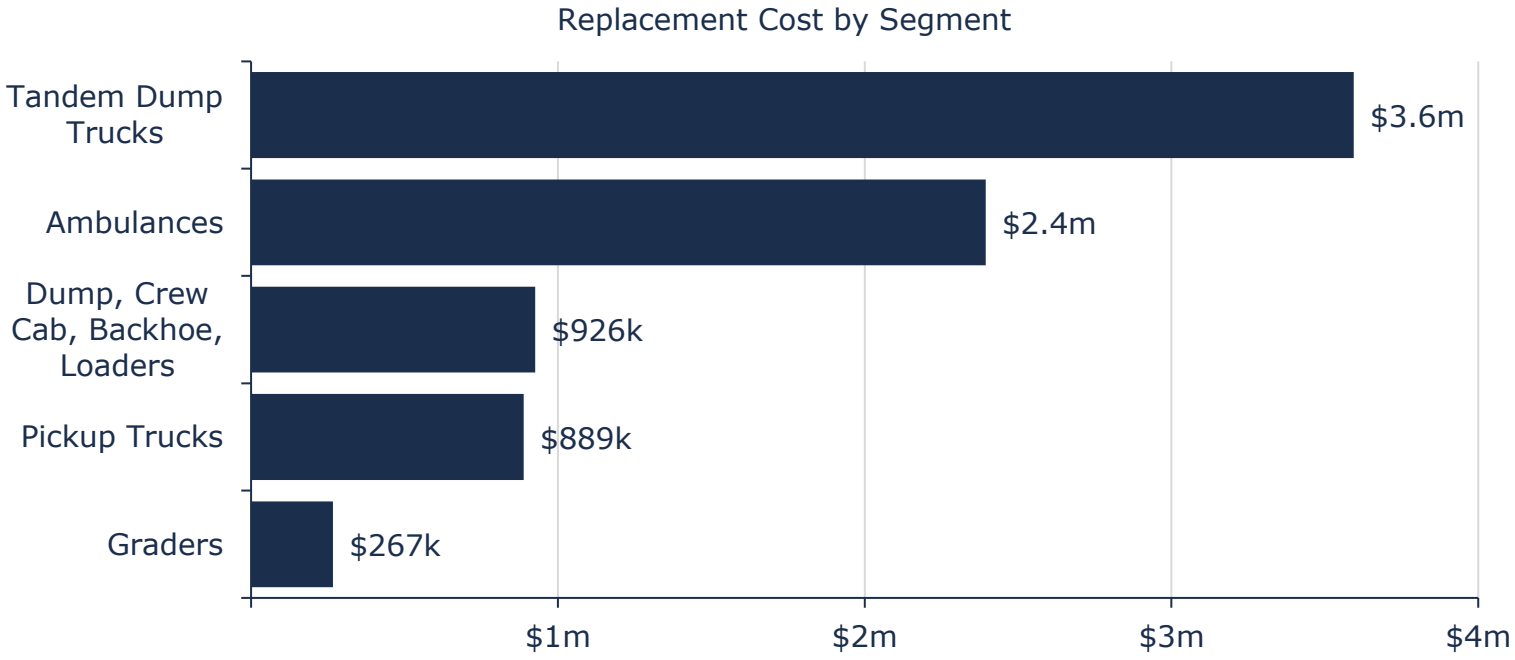

Figure 32 Portfolio Valuation: Fleet

7.2 Asset Condition

Figure 33 summarizes the replacement cost-weighted condition of the County's fleet portfolio. Based on a combination of assessment and age data, 87% of vehicles are in fair or better condition, with the remaining 13% are in poor or worse condition. These assets may be candidates for replacement in the short term; similarly, assets in fair condition may require rehabilitation or replacement in the medium term and should be monitored for further degradation in condition. Condition data was available for 84% of vehicles, based on replacement costs.

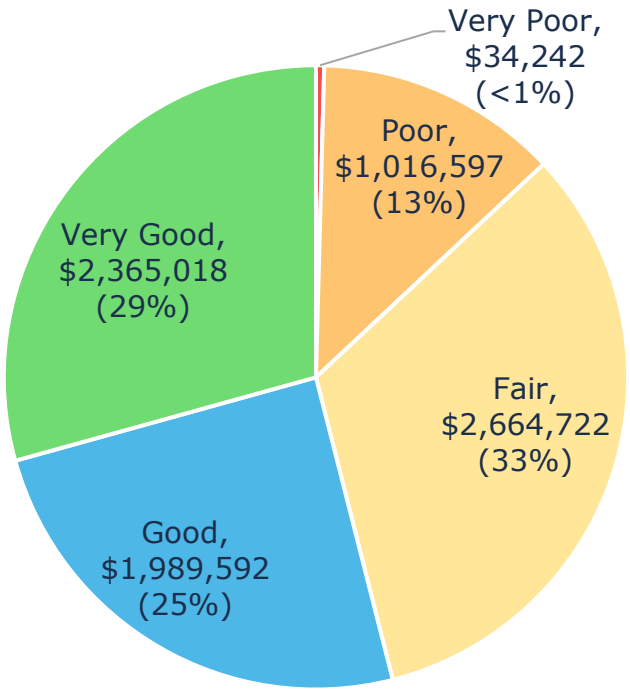

Figure 33 Asset Condition: Fleet Overall

Figure 34 summarizes the condition of vehicles by use case. All vehicles are in fair or better condition, but attention may be needed to address the small number of assets with a lower condition grade.

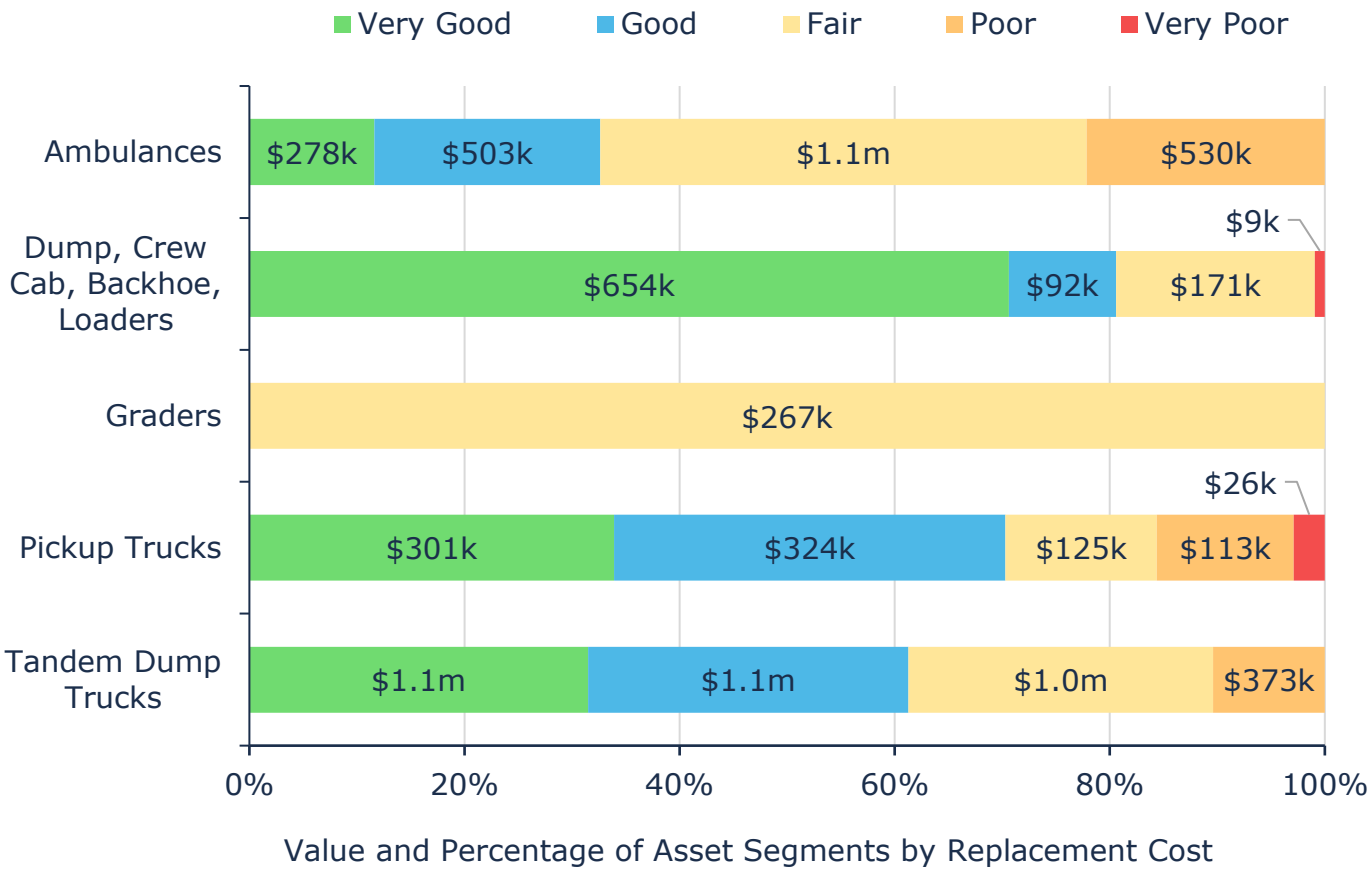

Figure 34 Asset Condition: Fleet by Segment

7.2.1 Current Approach to Condition Assessment

Accurate and reliable condition data allows staff to more confidently determine the remaining service life of assets and identify the most cost-effective approach to managing assets. The following describes the County's current approach:

- While there are no formal condition assessment protocols, the County does conduct ad hoc assessments
- Considerations are being made to move away from age-based an age-based approach

7.3 Age Profile

An asset's age profile comprises two key values: estimated useful life (EUL), or design life; and the percentage of EUL consumed. The EUL is the serviceable lifespan of an asset during which it can continue to fulfil its intended purpose and provide value to users, safely and efficiently. As assets age, their performance diminishes, often more rapidly as they approach the end of their design life.

In conjunction with condition data, an asset's age profile provides a more complete summary of the state of infrastructure. It can help identify assets that may be candidates for further review through condition assessment programs; inform the selection of optimal lifecycle strategies; and improve planning for potential replacement spikes.

Figure 35 illustrates the average current age of each asset type and its estimated useful life. Both values are weighted by the replacement cost of individual assets.

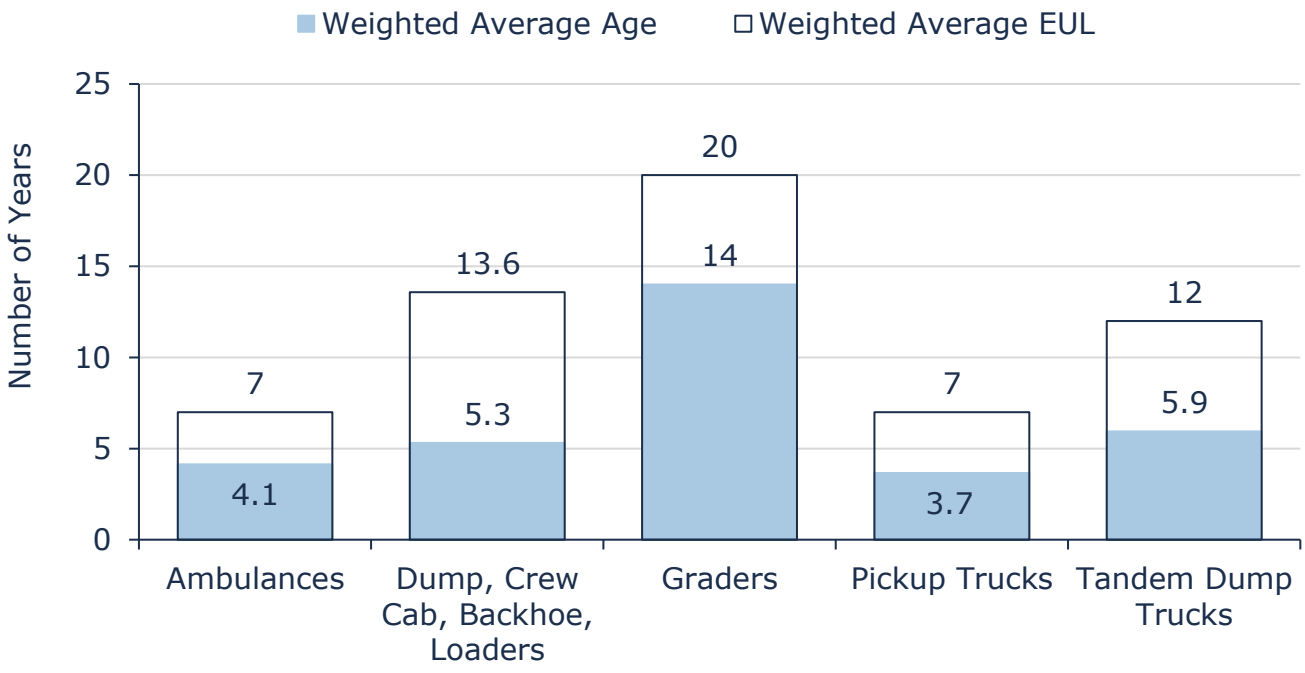

Figure 35 Estimated Useful Life vs. Asset Age: Fleet

7.4 Current Approach to Lifecycle Management

The condition or performance of most assets will deteriorate over time. To ensure that municipal assets are performing as expected and meeting the needs of customers, it is important to establish a lifecycle management strategy to proactively manage asset deterioration.

The following table outlines the County's current lifecycle management strategy.

Activity Type	Description of Current Strategy
Maintenance/ Rehabilitation	Routine maintenance for fleet includes inspections, tire rotations, minor repairs, and oil changes. Other necessary maintenance tasks are promptly addressed upon identification during inspections or reported concerns from operators regarding safety or mechanical issues. Maintenance for fleet depends on class type, kilometers driven, time between oil changes, frequency of calls, and the annual safety inspection.
Replacement	Replacement schedules for fleet are determined based on condition data and the defined asset lifecycle. This information directly informs budget considerations for fleet asset replacement. Fleet nearing the end of their expected service life or requiring frequent and costly repairs are prioritized for replacement to ensure continued operational efficiency and safety.

Table 28 Lifecycle Management Strategy: Fleet

7.5 Risk Analysis

The risk matrix below is generated using available asset data, including condition, service life remaining, replacement costs, and department or service area. The risk ratings for assets without useful attribute data were calculated using only condition, service life remaining, and their replacement costs.

The matrix stratifies assets based on their individual probability and consequence of failure; each scored from 1 to 5. Their product generates a risk index ranging from 1-25. Assets with the highest criticality and likelihood of failure receive a risk rating of 25; those with lowest probability of failure and lowest criticality carry a risk rating of 1. As new data and

information is gathered, the County may consider integrating relevant information that improves confidence in the criteria used to assess asset risk and criticality.

These risk models have been built into the County's Asset Management Database (Citywide Assets). See *Risk & Criticality* section for further details on approach used to determine asset risk ratings and classifications.

1 - 4 Very Low $946,505 (12%)	5 - 7 Low $2,028,269 (25%)	8 - 9 Moderate $1,741,801 (22%)	10 - 14 High $1,787,104 (22%)	15 - 25 Very High $1,566,492 (19%)

Figure 36 Risk Matrix: Fleet

7.6 Levels of Service

The table that follows summarizes the County's current and proposed levels of service with respect to prescribed KPIs under Ontario Regulation 588/17 as well as any additional performance measures that the County has selected for this AMP.

7.6.1 Levels of Service – Current

Metric Type	KPI Metric	Service Attribute	Current LOS
Community	Description of the types of fleet assets that the County operates and maintains	Scope	Refer to section 7.1
	Description of criteria for rehabilitation and replacement decisions and any related long-term forecasts	Quality	Refer to sections 7.2 & 7.4
Technical	Average condition Rating	Quality	64
	Average Risk Rating	Reliability	9.51

Table 29: Fleet – Current Levels of Service

7.6.2 Levels of Service – Proposed

The scenarios that were used to analyse Perth County's inventory were run until 2039 to ensure all the lifecycles were included at least once. They are also all based on the data available in the asset management system which outlines estimated useful life and condition as well as replacement costs which all the results are based on.

Scenario 1: Current Lifecycle Strategy - this scenario utilizes the current lifecycle activities outlined as current practice within each asset category. The condition and annual investment were then determined.

Scenario 2: Current Funding Levels - this scenario utilizes the current capital reinvestment within each asset category. The current annual investment was held, and the condition was determined.

Scenario 3: Minimum Baseline Condition - this scenario utilizes a target average condition of 40% of the infrastructure within each asset category. The condition value was held, and the annual investment was then determined.

The table below outlines the results for each scenario for Vehicles assets.

Scenarios	Replacement Cost	Average Condition	Annual Capital Reinvestment
Scenario 1 – Current Lifecycle Strategy **(selected)**	$8,070,171	47%	$851,000
Scenario 2 - Current Funding Levels		41%	$654,000
Scenario 3 – Minimum Baseline Condition – 40%		44%	$642,000

Table 30: Fleet - Proposed Levels of Service Scenarios

7.6.3 Additional Metrics

The table that follows summarize the County's additional performance measures to be tracked after the conclusion of this AMP under Ontario Regulation 588/17.

Metric Type	KPI Metric	Proposed LOS Metric (2034)
Technical	Average quantitative risk rating (0-25)[8]	13.2

Table 31: Fleet - Additional Metrics

7.6.4 10-Year Capital Forecast

Below is the projected ten-year capital forecast (scenario 1) needed to obtain full funding, within the recommended timeframe.

Segment	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Ambulances	-	-	$530k	$1.1m	-	$503k	$278k	-	-	$530k
Dump, Crew Cab, Backhoe, Loaders	$6k	$9k	-	-	-	-	$89k	$76k	-	-
Graders										
Pickup Trucks	-	-	$113k	$44k	$294k	$111k	$301k	$26k	-	$113k
Tandem Dump Trucks	$332k	$332k	-	-	$373k	$355k	-	$726k	-	$794k
Total	$338k	$340k	$643k	$1.1m	$667k	$969k	$669k	$828k	-	$1.4m

Table 32: Fleet - 10-Year Capital Forecast

[8] See Risk & Criticality in section 2.3.2

8. Machinery & Equipment

8.1 Inventory & Valuation

Table 33 summarizes the quantity and current replacement cost of all equipment assets available in the County's asset register.

Segment	Quantity	Unit of Measure	Replacement Cost	Primary RC Method
Equipment/Tools	7	Assets	$206,769	CPI
Medical Equipment	177	Assets	$1,444,625	CPI
TOTAL			**$1,651,394**	

Table 33 Detailed Asset Inventory: Machinery & Equipment

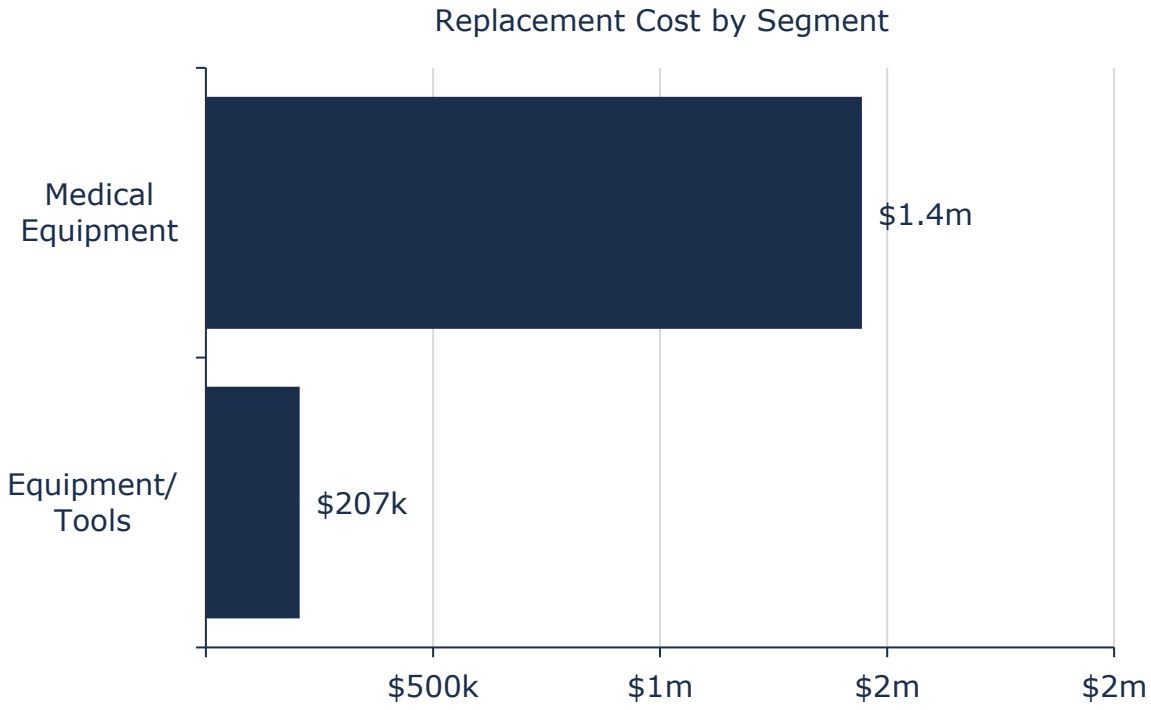

Figure 37 Portfolio Valuation: Machinery & Equipment

8.2 Asset Condition

Figure 38 summarizes the replacement cost-weighted condition of the County's equipment portfolio. Based on assessed conditions and age

estimates, 49% of assets are in fair or better condition; the remaining 51% are in poor or worse condition. These assets may be candidates for replacement in the short term; similarly, assets in fair condition may require rehabilitation or replacement in the medium term and should be monitored for further degradation in condition.

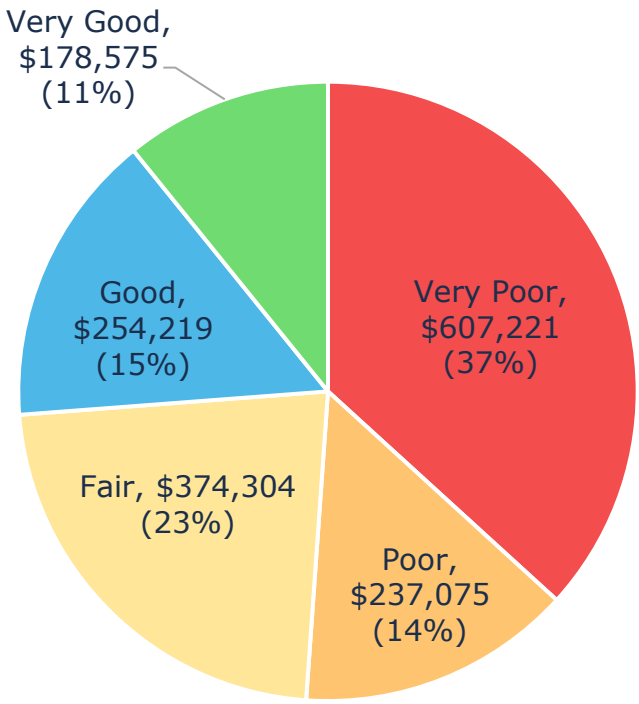

Figure 38 Asset Condition: Machinery & Equipment Overall

Figure 39 summarizes the age-based condition of machinery and equipment by each department.

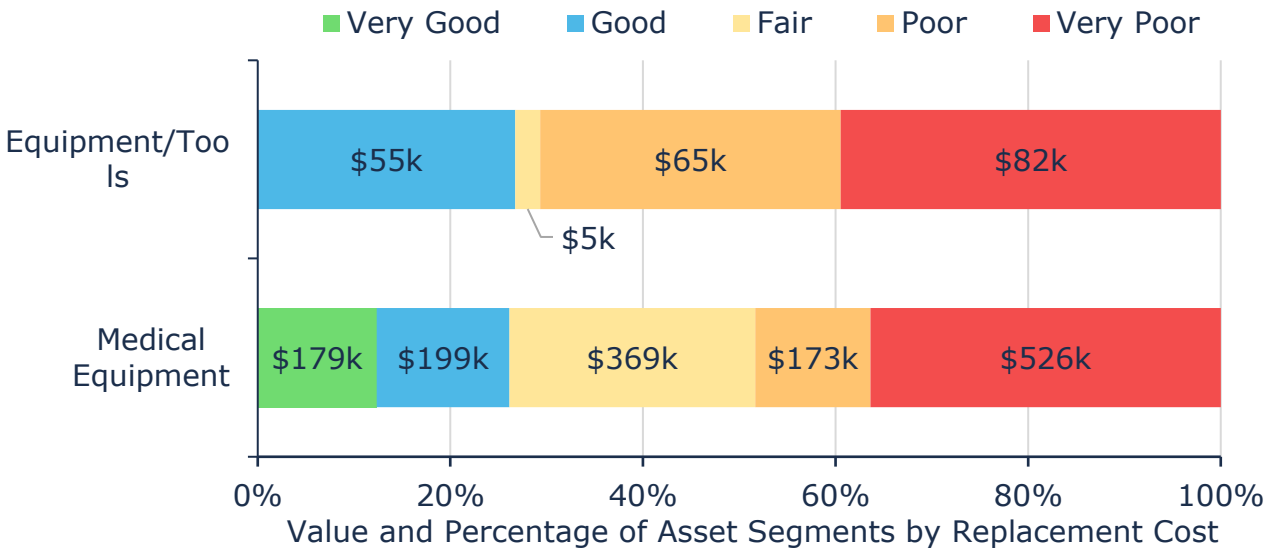

Figure 39 Asset Condition: Machinery & Equipment by Segment

8.2.1 Current Approach to Condition Assessment

Accurate and reliable condition data allows staff to more confidently determine the remaining service life of assets and identify the most cost-effective approach to managing assets. The following describes the County's current approach:

- Daily pre-trip inspections are conducted as part of regular operations. Otherwise, assessments/inspections occur annually or at 500 hours depending on the type of equipment
- While a formal condition rating system is not currently in place, it is under consideration for future implementation

8.3 Age Profile

An asset's age profile comprises two key values: estimated useful life (EUL), or design life; and the percentage of EUL consumed. The EUL is the serviceable lifespan of an asset during which it can continue to fulfil its intended purpose and provide value to users, safely and efficiently. As assets age, their performance diminishes, often more rapidly as they approach the end of their design life.

In conjunction with condition data, an asset's age profile provides a more complete summary of the state of infrastructure. It can help identify assets that may be candidates for further review through condition assessment programs; inform the selection of optimal lifecycle strategies; and improve planning for potential replacement spikes.

Figure 40 illustrates the average current age of each asset type and its estimated useful life. Both values are weighted by the replacement cost of individual assets.

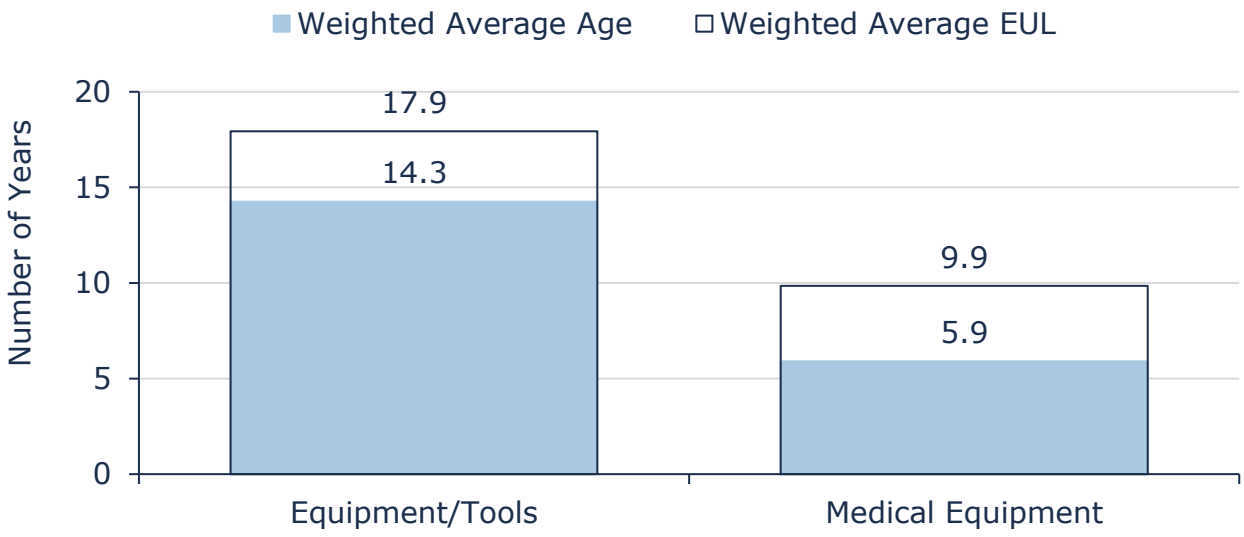

Figure 40 Estimated Useful Life vs. Asset Age: Machinery & Equipment

8.4 Current Approach to Lifecycle Management

The condition or performance of most assets will deteriorate over time. To ensure that municipal assets are performing as expected and meeting the needs of customers, it is important to establish a lifecycle management strategy to proactively manage asset deterioration.

The following table outlines the County's current lifecycle management strategy.

Activity Type	Description of Current Strategy
Maintenance/ Rehabilitation	While asset specific, there are typically no rehabilitation activities undertaken. Activities to repair or rehabilitate may occur to certain components depending on the condition and remaining life of the assets i.e. body repair, engine or transmission repair, etc.
Replacement	Asset replacement decisions are guided by reaching the defined useful life in years. Assets nearing their expected service life or experiencing frequent and costly repairs are prioritized for replacement. This approach ensures efficient

Activity Type	Description of Current Strategy
	operational performance and minimizes downtime associated with aging equipment.

Table 34 Lifecycle Management Strategy: Machinery & Equipment

8.5 Risk Analysis

The risk matrix below is generated using available asset data, including condition, service life remaining, and replacement costs. The risk ratings for assets without useful attribute data were calculated using only condition, service life remaining, and their replacement costs.

The matrix stratifies assets based on their individual probability and consequence of failure; each scored from 1 to 5. Their product generates a risk index ranging from 1-25. Assets with the highest criticality and likelihood of failure receive a risk rating of 25; those with lowest probability of failure and lowest criticality carry a risk rating of 1. As new data and information is gathered, the County may consider integrating relevant information that improves confidence in the criteria used to assess asset risk and criticality.

These risk models have been built into the County's Asset Management Database (Citywide Assets). See *Risk & Criticality* section for further details on approach used to determine asset risk ratings and classifications.

1 - 4	5 - 7	8 - 9	10 - 14	15 - 25
Very Low	**Low**	**Moderate**	**High**	**Very High**
$443,590	$402,819	$5,003	$174,112	$625,870
(27%)	(24%)	(<1%)	(11%)	(38%)

Figure 41 Risk Matrix: Machinery & Equipment

8.6 Levels of Service

The table that follows summarizes the County's current and proposed levels of service with respect to prescribed KPIs under Ontario Regulation 588/17 as well as any additional performance measures that the County has selected for this AMP.

8.6.1 Levels of Service – Current

Metric Type	KPI Metric	Service Attribute	Current LOS
Community	Description of the types of machinery & equipment assets that the County operates and maintains	Scope	Refer to section 8.1
	Description of criteria for rehabilitation and replacement decisions and any related long-term forecasts	Quality	Refer to sections 8.2 & 8.4
Technical	Average Condition Rating	Quality	44
	Average Risk Rating	Reliability	11.2

Table 35: Machinery & Equipment – Current Levels of Service

8.6.2 Levels of Service – Proposed

The scenarios that were used to analyse Perth County's inventory were run until 2039 to ensure all the lifecycles were included at least once. They are also all based on the data available in the asset management system which outlines estimated useful life and condition as well as replacement costs which all the results are based on.

Scenario 1: Current Lifecycle Strategy - this scenario utilizes the current lifecycle activities outlined as current practice within each asset category. The condition and annual investment were then determined.

Scenario 2: Current Funding Levels - this scenario utilizes the current capital reinvestment within each asset category. The current annual investment was held, and the condition was determined.

Scenario 3: Minimum Baseline Condition - this scenario utilizes a target average condition of 40% of the infrastructure within each asset category. The condition value was held, and the annual investment was then determined.

The table below outlines the results for each scenario for the Machinery & Equipment.

Scenarios	Replacement Cost	Average Condition	Annual Capital Reinvestment
Scenario 1 – Current Lifecycle Strategy **(selected)**	$1,651,394	43%	$171,000
Scenario 2 - Current Funding Levels		39%	$155,000
Scenario 3 – Minimum Baseline Condition – 40%		40%	$159,000

Table 36: Machinery & Equipment - Proposed Levels of Service Scenarios

8.6.3 Additional Metrics

The table that follows summarize the County's additional performance measures to be tracked after the conclusion of this AMP under Ontario Regulation 588/17.

Metric Type	KPI Metric	Proposed LOS Metric (2034)
Technical	Average quantitative risk rating (0-25)[9]	10.34

Table 37: Machinery & Equipment - Additional Metrics

[9] See Risk & Criticality in section 2.3.2

8.6.4 10-Year Capital Forecast

Below is the projected ten-year capital forecast (scenario 1) needed to obtain full funding, within the recommended timeframe.

Segment	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Equipment/ Tools	-	$70k	-	-	$97k	-	-	-	-	-
Medical Equipment	$12k	$515k	$147k	$105k	$123k	$44k	$222k	$283k	$16k	-
Total	$12k	$585k	$147k	$105k	$220k	$44k	$222k	$283k	$16k	-

Table 38: Machinery & Equipment - 10-Year Capital Forecast

9. Computer Systems

9.1 Inventory & Valuation

Table 39 summarizes the quantity and current replacement cost of all computer system assets available in the County's asset register.

Segment	Quantity	Unit of Measure	Replacement Cost	Primary RC Method
Fire Radio Equipment	177	Assets	$966,037	CPI
Network Equipment	147	Assets	$252,524	CPI
Printers	4	Assets	$37,545	CPI
Servers	7	Assets	$83,881	CPI
Software	555	Assets	$122,958	CPI
Workstations	131	Assets	$258,636	CPI
TOTAL			**$1,721,581**	

Table 39 Detailed Asset Inventory: Computer Systems

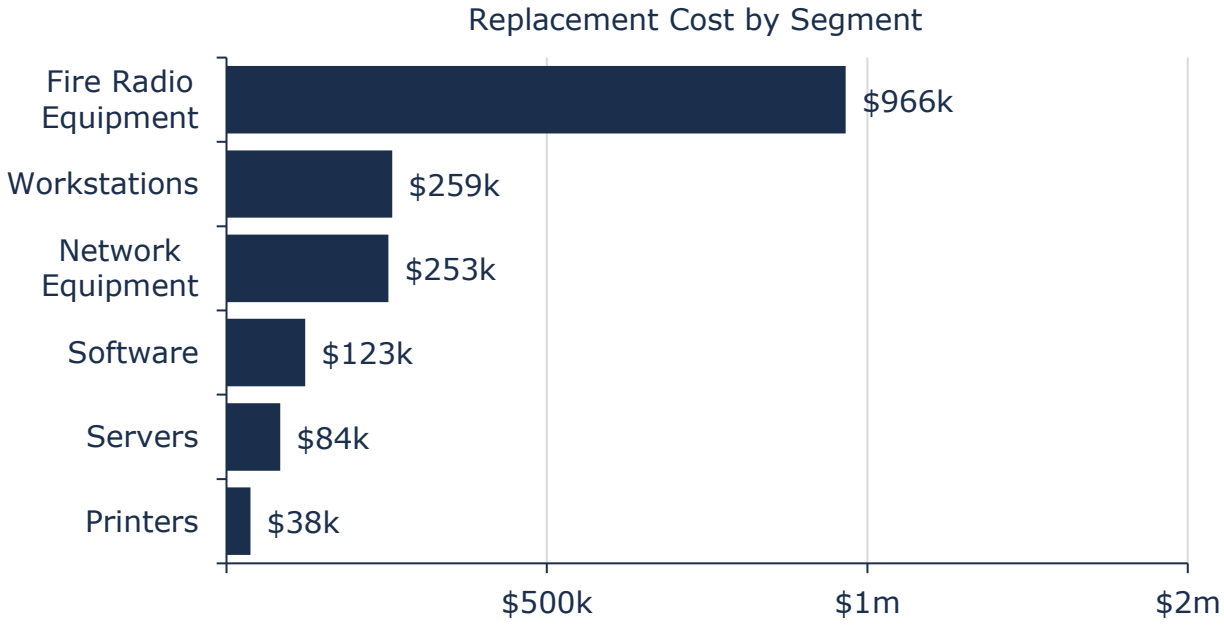

Figure 42 Portfolio Valuation: Computer Systems

9.2 Asset Condition

Figure 43 summarizes the replacement cost-weighted condition of the County's computer systems portfolio. Based on assessed conditions and age-based estimates, 71% of assets are in fair or better condition. Assets in fair condition may require rehabilitation or replacement in the medium term and should be monitored for further degradation in condition.

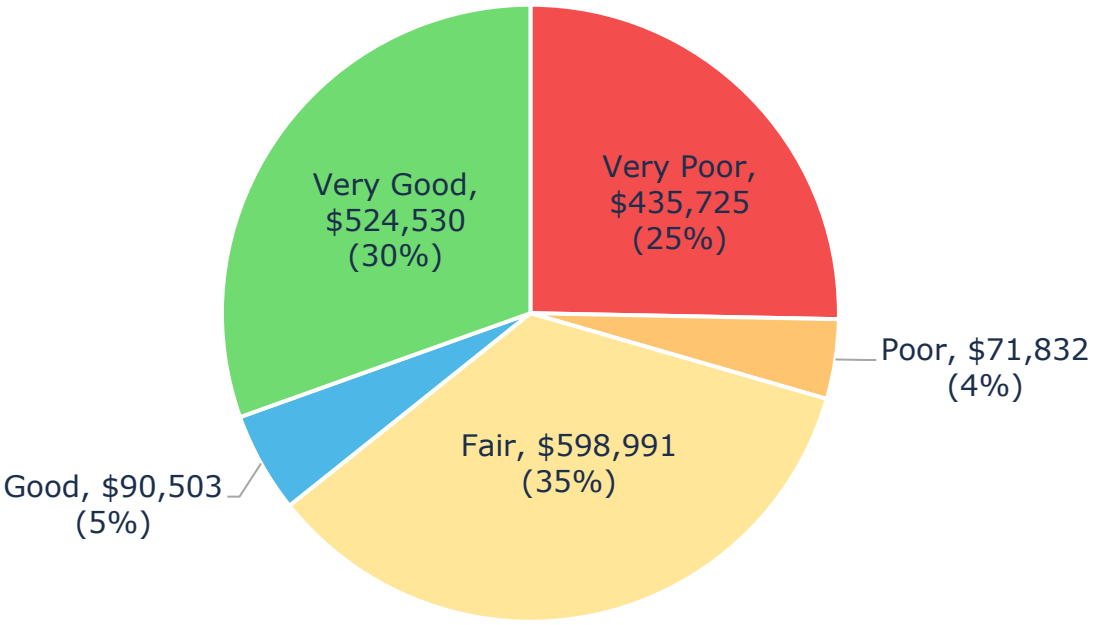

Figure 43: Asset Condition: Computer Systems Overall

Figure 44 summarizes the age-based condition of computer systems by each department.

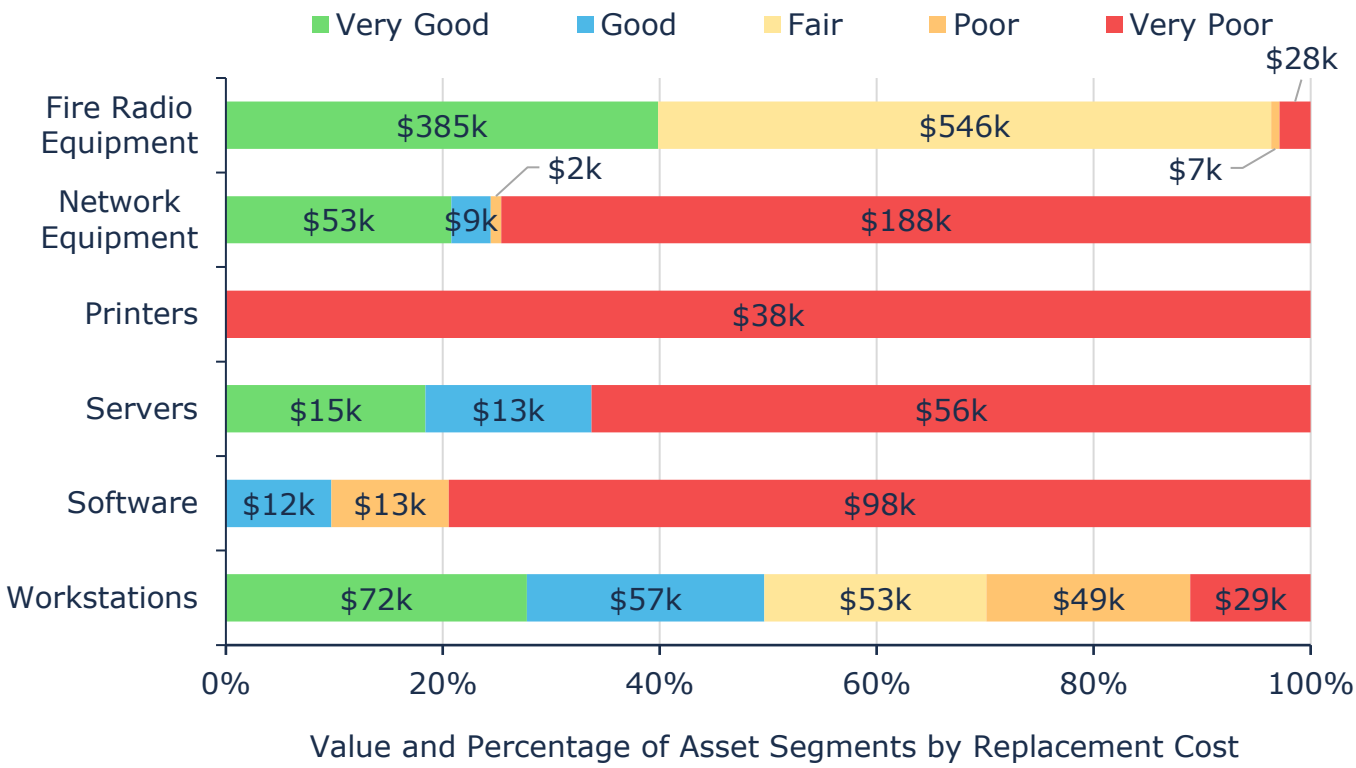

Figure 44 Asset Condition: Computer Systems by Segment

9.2.1 Current Approach to Condition Assessment

Accurate and reliable condition data allows staff to more confidently determine the remaining service life of assets and identify the most cost-effective approach to managing assets. The following describes the County's current approach:

- County staff complaints are used to identify acute asset failures
- Assets receive ad hoc inspections and updates as required, to ensure that they are in good working order
- Assets are replaced as per 5/10-year planning in step with available warranties

9.3 Age Profile

An asset's age profile comprises two key values: estimated useful life (EUL), or design life; and the percentage of EUL consumed. The EUL is the serviceable lifespan of an asset during which it can continue to fulfil its intended purpose and provide value to users, safely and efficiently. As assets age, their performance diminishes, often more rapidly as they approach the end of their design life.

In conjunction with condition data, an asset's age profile provides a more complete summary of the state of infrastructure. It can help identify assets that may be candidates for further review through condition assessment programs; inform the selection of optimal lifecycle strategies; and improve planning for potential replacement spikes.

Figure 45 illustrates the average current age of each asset type and its estimated useful life. Both values are weighted by the replacement cost of individual assets.

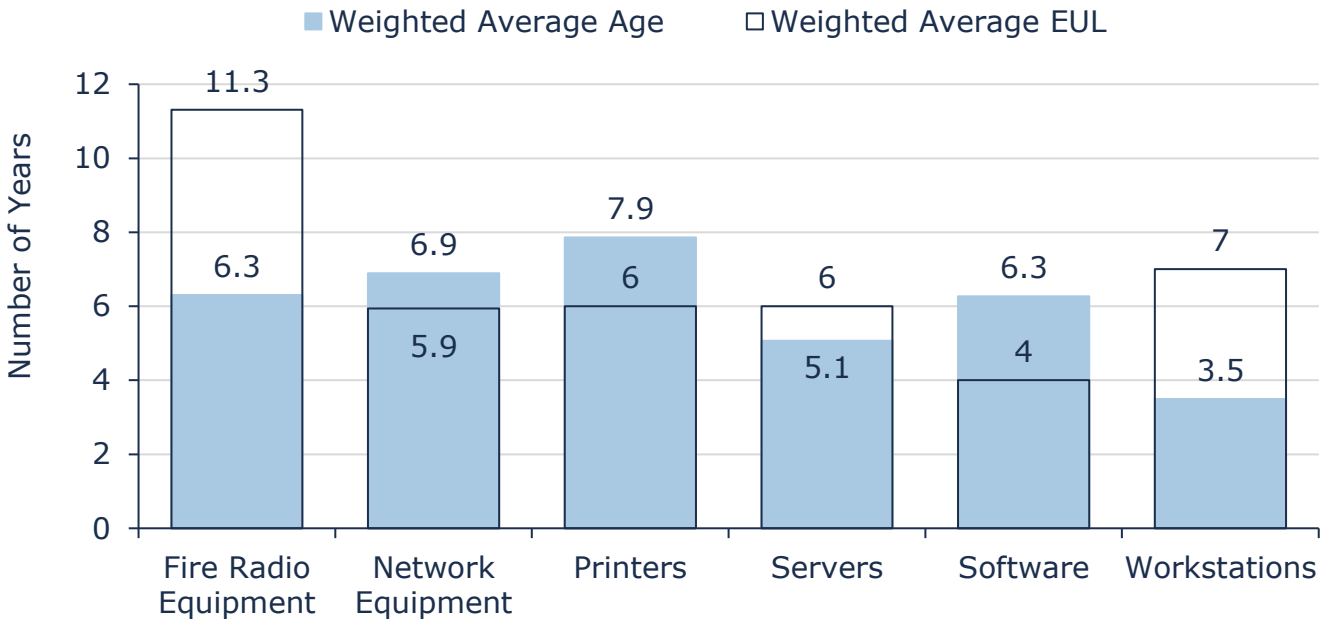

Figure 45 Estimated Useful Life vs. Asset Age: Computer Systems

9.4 Current Approach to Lifecycle Management

The condition or performance of most assets will deteriorate over time. To ensure that municipal assets are performing as expected and meeting the needs of customers, it is important to establish a lifecycle management strategy to proactively manage asset deterioration.

The following table outlines the County's current lifecycle management strategy.

Activity Type	Description of Current Strategy
Maintenance/ Rehabilitation	Routine maintenance for computer systems includes inspections, updates, small repairs and/or upgrades as well as replacement of consumables. Daily inspections ensure immediate operational checks, while regular inspections are conducted at defined intervals as part of ongoing maintenance protocols.
Replacement	Asset replacement decisions are guided by reaching the defined useful life in years. Assets nearing their expected service life or experiencing frequent and costly repairs are prioritized for replacement. This approach ensures efficient operational performance and minimizes downtime associated with aging equipment.

Table 40 Lifecycle Management Strategy: Computer Systems

9.5 Risk Analysis

The risk matrix below is generated using available asset data, including condition, service life remaining, and replacement costs. The risk ratings for assets without useful attribute data were calculated using only condition, service life remaining, and their replacement costs.

The matrix stratifies assets based on their individual probability and consequence of failure; each scored from 1 to 5. Their product generates a risk index ranging from 1-25. Assets with the highest criticality and likelihood of failure receive a risk rating of 25; those with lowest probability of failure and lowest criticality carry a risk rating of 1. As new data and information is gathered, the County may consider integrating relevant information that improves confidence in the criteria used to assess asset risk and criticality.

These risk models have been built into the County's Asset Management Database (Citywide Assets). See *Risk & Criticality* section for further details on approach used to determine asset risk ratings and classifications.

1 - 4 Very Low	5 - 7 Low	8 - 9 Moderate	10 - 14 High	15 - 25 Very High
$636,960 (37%)	$480,587 (28%)	$213,779 (12%)	$181,629 (11%)	$208,626 (12%)

Figure 46 Risk Matrix: Computer Systems

9.6 Levels of Service

The table that follows summarizes the County's current and proposed levels of service with respect to prescribed KPIs under Ontario Regulation 588/17 as well as any additional performance measures that the County has selected for this AMP.

9.6.1 Levels of Service – Current

Metric Type	KPI Metric	Service Attribute	Current LOS
Community	Description of the types of computer systems assets that the County operates and maintains	Scope	Refer to section 9.1
	Description of criteria for rehabilitation and replacement decisions and any related long-term forecasts	Quality	Refer to sections 9.2 & 9.4
Technical	Average Condition Rating	Quality	49
	Average Risk Rating	Reliability	7.16

Table 41: Computer Systems – Current Levels of Service

9.6.2 Levels of Service – Proposed

The scenarios that were used to analyse Perth County's inventory were run until 2039 to ensure all the lifecycles were included at least once. They are also all based on the data available in the asset management system which outlines estimated useful life and condition as well as replacement costs which all the results are based on.

Scenario 1: Current Lifecycle Strategy - this scenario utilizes the current lifecycle activities outlined as current practice within each asset category. The condition and annual investment were then determined.

Scenario 2: Current Funding Levels - this scenario utilizes the current capital reinvestment within each asset category. The current annual investment was held, and the condition was determined.

Scenario 3: Minimum Condition Baseline - this scenario utilizes a target average condition of 40% of the infrastructure within each asset category. The condition value was held, and the annual investment was then determined.

The table below outlines the results for each scenario for computer system assets.

Scenarios	Replacement Cost	Average Condition	Annual Capital Reinvestment
Scenario 1 – Current Lifecycle Strategy **(selected)**	$1,721,581	45%	$198,000
Scenario 2 - Current Funding Levels		32%	$170,000
Scenario 3 – Minimum Condition Baseline – 40%		40%	$191,000

Table 42: Computer Systems - Proposed Levels of Service Scenarios

9.6.3 Additional Metrics

The table that follows summarize the County's additional performance measures to be tracked after the conclusion of this AMP under Ontario Regulation 588/17.

Metric Type	KPI Metric	Proposed LOS Metric (2034)
Technical	Average quantitative risk rating (0-25)[10]	8.54

[10] See Risk & Criticality in section 2.3.2

Table 43: Computer Systems - Additional Metrics

9.6.4 10-Year Capital Forecast

Below is the projected ten-year capital forecast (scenario 1) needed to obtain full funding, within the recommended timeframe.

Segment	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Fire Radio Equipment	$6k	-	$40k	-	-	$88k	-	$32k	$454k	$2k
Network Equipment	$12k	$2k	-	$5k	$50k	$11k	$188k	$2k	-	$5k
Printers	$2k	-	-	-	-	-	$38k	-	-	-
Servers	$15k	$14k	-	-	$13k	$15k	$42k	$14k	-	-
Software	-	$13k	$12k	-	$98k	$13k	$12k	-	$98k	$13k
Work-stations	$23k	$26k	$27k	$23k	$69k	$37k	$51k	$26k	$26k	$27k
Total	$58k	$55k	$78k	$28k	$230k	$165k	$330k	$75k	$577k	$47k

Table 44: Computer Systems - 10-Year Capital Forecast

Strategies

Growth

Financial Strategy

10. Growth

The demand for infrastructure and services will change over time based on a combination of internal and external factors. Understanding the key drivers of growth and demand will allow the County to plan for new infrastructure more effectively, and the upgrade or disposal of existing infrastructure. Increases or decreases in demand can affect what assets are needed and what level of service meets the needs of the community.

10.1 County of Perth Official Plan (2024)

Perth County is poised for significant growth in population, employment, and housing over the next 25 years. The Official Plan provides a structured approach to managing this expansion sustainably, with policies that support a balanced community framework. By concentrating growth within designated areas and encouraging diverse housing and economic opportunities, the County aims to enhance quality of life, sustain economic resilience, and preserve its unique rural and agricultural character.

Population Growth

Perth County's population is projected to increase from approximately 42,100 in 2021 to 62,900 by 2051. This growth will primarily result from net migration, with a significant portion of new residents expected to migrate from urban centers, such as Kitchener/Waterloo, and the Greater Toronto Area. The new residents are anticipated to be a mix of working-age individuals (ages 25–54) and retirees (ages 55–74), with both demographics drawn to the county’s appealing lifestyle and community-focused environment. However, with the county’s aging population expected to increase and natural population growth to decline, migration will be crucial in maintaining demographic stability.

In response, Perth County’s Official Plan directs most of this population growth to existing urban and village centers, including Listowel, Milverton, Mitchell, Atwood, and Shakespeare. Concentrating growth in these hubs will leverage existing infrastructure and services, creating more efficient land use and preserving rural and agricultural lands. This approach aligns with the County’s goals to maintain compact, well-serviced communities that provide both economic opportunities and community-oriented living environments.

Employment Growth

The employment landscape in Perth County is also expected to grow substantially, with projections indicating an increase from 18,790 jobs in 2021 to about 29,700 by 2051. Economic diversification is a priority within the Official Plan, as the County seeks to build on its traditional manufacturing and agricultural base by promoting knowledge-based industries, healthcare services, professional and scientific services, and information technology. This shift will not only enhance the local economy's resilience but also align with broader trends in regional and national labor markets.

To support this employment growth, the County emphasizes the importance of maintaining designated employment lands, particularly in urban and serviced areas where industries can benefit from infrastructure support. By protecting these lands, Perth County aims to provide a foundation for industrial and commercial activities while facilitating the development of mixed-use zones that combine residential, retail, and office spaces in strategic locations. This mixed-use approach will support a vibrant local economy, promote job creation, and ensure that economic development remains responsive to both traditional and emerging industries.

Housing and Dwelling Projections

To accommodate the projected increase in population, the Official Plan projects a need for approximately 8,600 new residential units by 2051. The housing strategy outlined in the plan focuses on offering a diverse mix of housing types and densities to cater to various income levels and family structures. The breakdown of housing types includes:

- Low-Density: Single-detached, semi-detached, duplex, triplex, and fourplex homes, designed for families and individuals seeking traditional housing options.
- Medium-Density: Townhouses and row houses that provide a balance between space and affordability.
- High-Density: Apartment-style developments, typically more than three stories, aimed at supporting housing affordability and catering to younger residents, single individuals, and downsizing seniors.

To make efficient use of land, the county has set a target for 15% of new housing to come from intensification within existing built-up areas. This approach prioritizes infill development, such as additional units on existing properties and redevelopment of underutilized sites, reducing the need for sprawling expansion. Additionally, Perth County supports policies for affordable housing, including the development of secondary and accessory units, to ensure that housing is accessible to residents across all income levels.

Infrastructure and Community Services

The anticipated growth in population and housing will necessitate investments in infrastructure and community services. The Official Plan incorporates policies to ensure that essential services can support new developments. Emphasis is placed on:

- Active Transportation and Connectivity: Promoting active transportation options, such as pedestrian and cycling paths, to enhance connectivity within urban centers and foster sustainable travel options.
- Public Services: Ensuring the availability of schools, libraries, recreational centers, and healthcare facilities to accommodate a growing population.
- Sustainable Infrastructure Development: Upgrading existing infrastructure and incorporating sustainable practices, such as green stormwater management and energy-efficient facilities, to minimize environmental impacts and enhance community resilience.

Perth County's Official Plan is a strategic guide for managing growth in a way that balances development with preservation. By concentrating population and housing growth in urban centers, promoting economic diversification, and investing in sustainable infrastructure, the County aims to create a community that is both livable and resilient. The plan underscores Perth County's commitment to fostering complete communities that meet residents' needs while preserving the natural and agricultural heritage that defines the county. Through a structured and integrated approach to planning, Perth County can anticipate and accommodate growth while ensuring a high quality of life for both current and future residents.

11. Financial Strategy

For an asset management plan to be effective and meaningful, it must be integrated with financial planning and long-term budgeting. The development of a comprehensive financial plan will allow the County of Perth County to identify the financial resources required for sustainable asset management based on existing asset inventories, desired levels of service, and projected growth requirements.

This report develops such a financial plan by presenting several scenarios for consideration and culminating with final recommendations. As outlined below, the scenarios presented model different combinations of the following components:

1. The financial requirements for:
    a. Existing assets
    b. Existing/proposed service levels
    c. Requirements of contemplated changes in service
    d. Requirements of anticipated growth
2. Use of traditional sources of municipal funds:
    a. Tax levies
    b. User fees
    c. Debt
    d. Development charges
3. Use of non-traditional sources of municipal funds:
    a. Reallocated budgets
    b. Partnerships
    c. Procurement methods
4. Use of Senior Government Funds:
    a. Build Communities Strong Fund (BCSF)
    b. Annual grants

Note: Periodic grants are normally not included due to Provincial requirements for firm commitments. However, if moving a specific project forward is wholly dependent on receiving a one-time grant, the replacement cost included in the financial strategy is the net of such grant being received.

If the financial plan component results in a funding shortfall, the province requires the inclusion of a specific plan as to how the impact of the shortfall will be managed. In determining the legitimacy of a funding shortfall, the province may evaluate a Municipality’s approach to the following:

1. To reduce financial requirements, consideration has been given to revising service levels downward.
2. All asset management and financial strategies have been considered. For example:
    a. If a zero-debt policy is in place, is it warranted? If not the use of debt should be considered.
    b. Do user fees reflect the cost of the applicable service? If not, increased user fees should be considered.

11.1 Annual Requirements & Capital Funding

11.1.1 Annual Requirements

The annual requirements represent the amount the County should allocate annually to each asset category to meet replacement needs as they arise, prevent infrastructure backlogs and achieve long-term sustainability. In total, the Municipality must allocate approximately $9.8 million annually to address capital requirements for the assets included in this AMP.

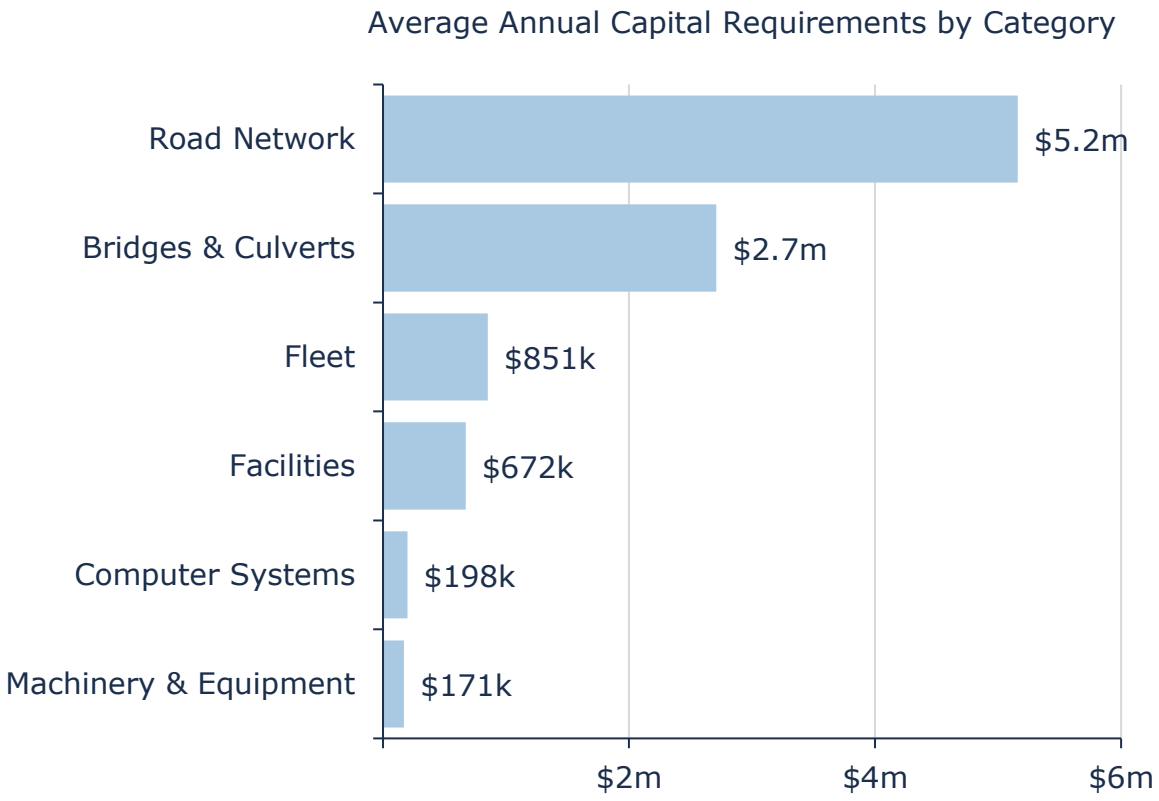

Figure 47 Annual Capital Funding Requirements by Asset Category

Where applicable, lifecycle management strategies have been developed to identify capital costs that are realized through strategic rehabilitation and renewal of some of the main assets in these categories. The development of these strategies allows for a comparison of potential cost avoidance if the strategies were to be implemented. The following compares the two different strategies:

1. **Replacement Only Scenario**: Based on the assumption that assets deteriorate and – without regularly scheduled maintenance and rehabilitation – are replaced at the end of their service life.
2. **Lifecycle Strategy Scenario**: Based on the assumption that lifecycle activities are performed at strategic intervals to extend the service life of assets until replacement is required.

The implementation of a proactive lifecycle strategy leads to potential annual cost avoidance and better overall performance. As the lifecycle strategy scenario represents the lowest cost option available to the County, we have used these annual requirements in the development of the financial strategy.

11.1.2 Annual Funding Available

Based on a historical analysis of sustainable capital funding sources, the Municipality is committing approximately $7.0 million towards capital projects per year. Given the annual capital requirement of $9.8 million, there is currently a funding gap of $2.8 million annually.

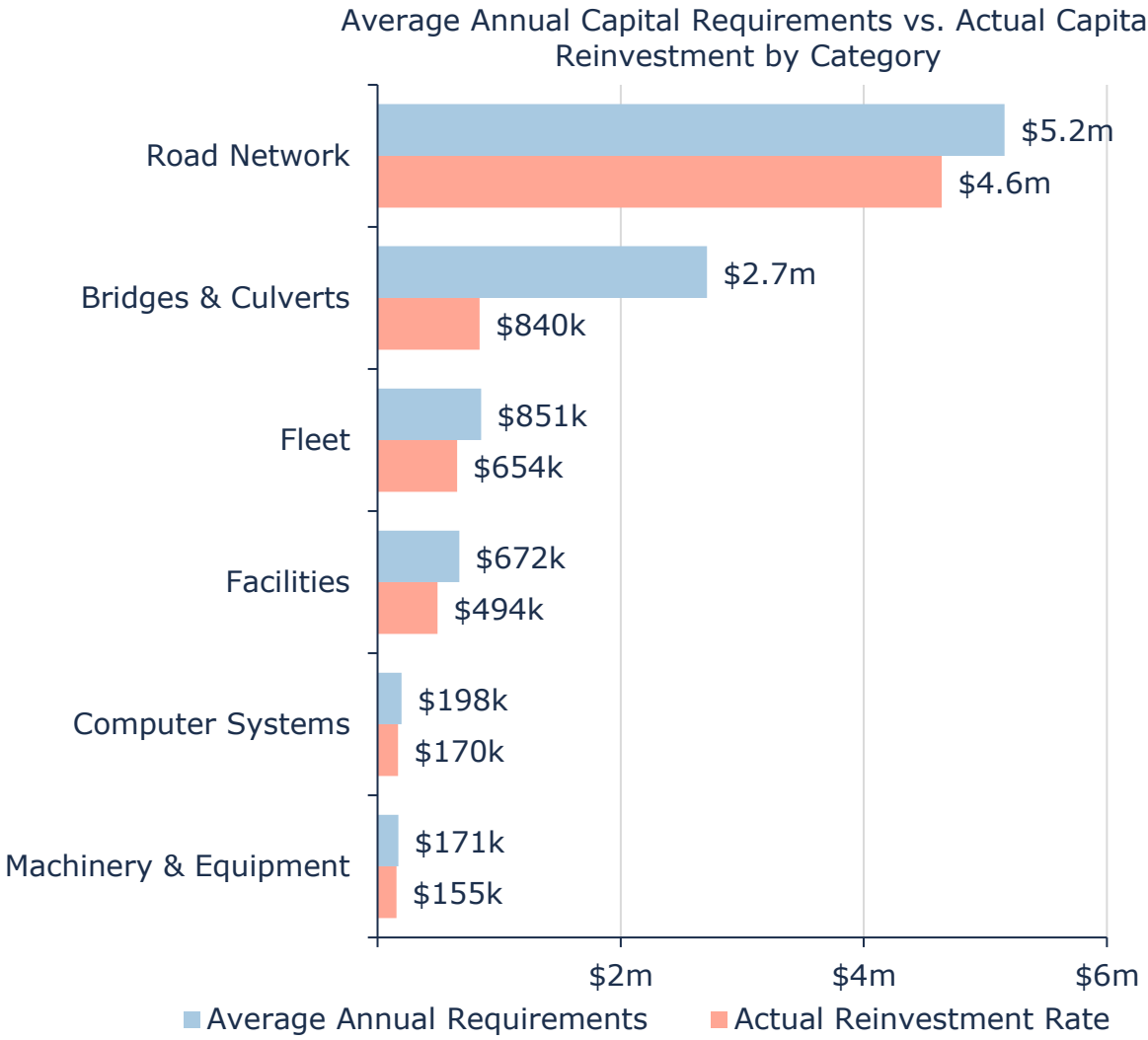

Figure 48 Annual Requirements vs. Capital Funding Available

11.2 Funding Objective

We have developed a scenario that would enable Perth County to achieve full funding within 1 to 20 years for the following asset categories:

- **Tax Funded Assets:** bridges & culverts, computer systems, facilities, fleet, machinery & equipment, and road network

11.3 Financial Profile: Tax Funded Assets

11.3.1 Current Funding Position

The following tables show, by asset category, Perth County's average annual asset investment requirements, current funding positions, and funding increases required to achieve full funding on assets funded by taxes.

Asset Category	Avg. Annual Require-ment	Annual Funding Available				Annual Deficit
		Property Taxation & Reserves	BCSF	OCIF	Total Available	
Bridges & Culverts	2,710,000	840,000[11]			840,000	1,870,000
Computer Systems	198,000	170,000			170,000	28,000
Facilities	672,000	494,000			494,000	178,000
Fleet	851,000	654,000			654,000	197,000
Machinery & Equipment	171,000	155,000			155,000	16,000
Road Network	5,159,000	2,550,000	1,259,000	833,000	4,642,000	517,000
Total	**9,761,000**	**4,863,000**	**1,259,000**	**833,000**	**6,955,000**	**2,806,000**

Table 45 Annual Available Funding for Tax Funded Assets

The average annual investment requirement for the above categories is approximately $9.8 million. Annual revenue currently allocated to these assets for capital purposes is approximately $7.0 million leaving an annual deficit of about $2.8 million. Put differently, these infrastructure categories are currently funded at 71.3% of their long-term requirements.

11.3.2 Full Funding Requirements

In 2023, Perth County had annual tax revenues of $19.9 million. As illustrated in the following table, without consideration of any other sources

[11] Beginning in 2026, the County will implement a revised funding approach for bridge, culvert, and municipal drain assets. Municipal drain expenditures will be reclassified from operating to capital maintenance within the capital program and will be supported through the bridges and culverts capital reserve. This change results in an $860,000 annual funding requirement being redirected to the bridges and culverts reserve, increasing the reserve's annual utilization capacity without representing a net increase in overall County expenditures.

of revenue or cost containment strategies, full funding would require the following tax change over time:

Asset Category	Tax Change Required for Full Funding
Bridges & Culverts	9.4%
Computer Systems	0.1%
Facilities	0.9%
Fleet	1.0%
Machinery & Equipment	0.1%
Road Network	2.6%
Total	**14.1%**

Table 46 Tax Increase Requirements for Full Funding

Our recommendations include capturing the above changes and allocating them to the infrastructure deficit outlined above. The table below outlines this concept and presents several options:

	5 Years	10 Years	15 Years	20 Years
Infrastructure Deficit	2,806,000	2,806,000	2,806,000	2,806,000
Change in Debt Costs	-173,000	-318,000	-827,000	-827,000
Resulting Infrastructure Deficit:	**2,633,000**	**2,488,000**	**1,979,000**	**1,979,000**
Tax Increase Required	13.2%	12.5%	9.9%	9.9%
Annually:	**2.6%**	**1.3%**	**0.7%**	**0.5%**

Table 47 Tax Increase Options 5-20 Years

11.3.3 Financial Strategy Recommendations

Considering all the above information, we recommend the 10-year option. This involves full funding being achieved over 10 years by:

a) when realized, reallocating the debt cost reductions of $318,000 to the infrastructure deficit as outlined above.

b) increasing tax revenues by 1.3% each year for the next 10 years solely for the purpose of phasing full funding and attaining the County's identified proposed level of service metrics

c) adjusting tax revenue increases in future year(s) when allocations to capital expenditure exceed or fail to meet budgeted amounts

d) allocating the current BCSF and OCIF revenue as outlined previously

e) reallocating appropriate revenue from categories in a surplus position to those in a deficit position

g) increasing existing and future infrastructure budgets by the applicable inflation index on an annual basis in addition to the deficit phase-in

Notes:

1. As in the past, periodic senior government infrastructure funding will most likely be available during the phase-in period. By Provincial AMP rules, this periodic funding cannot be incorporated into an AMP unless there are firm commitments in place. We have included OCIF formula-based funding, if applicable, since this funding is a multi-year commitment.[12]
2. We realize that raising tax revenues by the amounts recommended above for infrastructure purposes will be very difficult to do. However, considering a longer phase-in window may have even greater consequences in terms of infrastructure failure.

Although this option achieves full funding within 10 years and provides financial sustainability over the period modeled, the recommendations do require prioritizing capital projects to fit the resulting annual funding available. Current data shows a pent-up investment demand of $652 thousand, across all asset categories.

Prioritizing future projects will require the current data to be replaced by condition-based data. Although our recommendations include no further use of debt, the results of the condition-based analysis may require otherwise.

[12] The Municipality should take advantage of all available grant funding programs and transfers from other levels of government. While OCIF has historically been considered a sustainable source of funding, the program is currently undergoing review by the provincial government. Depending on the outcome of this review, there may be changes that impact its availability.

11.4 Use of Debt

The following tables outline how Perth County has historically used debt for investing in the asset categories as listed. There is currently $11.7 million of debt outstanding for the assets covered by this AMP with corresponding principal and interest payments of $1.2 million (2025), well within its provincially prescribed maximum of $5,001,000.[13]

Asset Category	Current Debt Outstanding (2024)	Use of Debt in the Last Five Years				
		2019	2020	2021	2022	2023
Bridges & Culverts						
Computer Systems						
Facilities	11,706,000				1,285,000	
Fleet						
Machinery & Equipment						
Road Network						
Total Tax Funded	**11,706,000**				**1,285,000**	

Table 48: Current Debt Overview

[13] Schedule 81

Asset Category	Principal & Interest Payments in the Next Ten Years						
	2025	2026	2027	2028	2029	2030	2035
Bridges & Culverts							
Computer Systems							
Facilities	1,227,000	1,227,000	1,141,000	1,054,000	1,054,000	1,054,000	909,000
Fleet							
Machinery & Equipment							
Road Network							
Total Tax Funded	**1,227,000**	**1,227,000**	**1,141,000**	**1,054,000**	**1,054,000**	**1,054,000**	**909,000**

Table 49: Principal Interest

The revenue options outlined in this plan allow Perth County to fully fund its long-term infrastructure requirements without further use of debt.

11.5 Use of Reserves

Available Reserves

Reserves play a critical role in long-term financial planning. The benefits of having reserves available for infrastructure planning include:

a) the ability to stabilize tax rates when dealing with variable and sometimes uncontrollable factors
b) financing one-time or short-term investments
c) accumulating the funding for significant future infrastructure investments
d) managing the use of debt
e) normalizing infrastructure funding requirement

By asset category, the table below outlines the details of the reserves currently available to Perth County

Asset Category	Reserve Balance
Bridges & Culverts	1,838,000
Computer Systems	96,000
Facilities	2,173,000
Fleet	-504,000
Machinery & Equipment	329,000
Road Network	2,446,000
Total Tax Funded:	**6,378,000**

Table 50: Use of Reserves

There is considerable debate in the municipal sector as to the appropriate level of reserves that a Municipality should have on hand. There is no clear guideline that has gained wide acceptance. Factors that municipalities should consider when determining their capital reserve requirements include:

a) breadth of services provided
b) age and condition of infrastructure
c) use and level of debt
d) economic conditions and outlook
e) internal reserve and debt policies.

These reserves are available for use by applicable asset categories during the phase-in period to full funding. This coupled with Perth County's judicious use of debt in the past, allows the scenarios to assume that, if required, available reserves and debt capacity can be used for high priority and emergency infrastructure investments in the short- to medium-term.

Appendices

Appendix A – Infrastructure Report Card

Appendix B – Level of Service Maps

Appendix A – Infrastructure Report Card

Asset Category	Replacement Cost	Average Condition	Financial Capacity	
Road Network	**$ 143.5m**	**Good**	Annual Requirement:	$5,159,000
			Funding Available:	$4,642,000
			Annual Deficit:	**$517,000**
Bridges & Culverts	**$ 150.8m**	**Good**	Annual Requirement:	$2,710,000
			Funding Available:	$840,000
			Annual Deficit:	**$1,870,000**
Facilities	**$22.7m**	**Fair**	Annual Requirement:	$672,000
			Funding Available:	$494,000
			Annual Deficit:	**$178,000**
Fleet	**$ 8.1m**	**Good**	Annual Requirement:	$851,000
			Funding Available:	$654,0000
			Annual Deficit:	**$197,000**
Machinery & Equipment	**$ 1.7m**	**Fair**	Annual Requirement:	$171,000
			Funding Available:	$155,000
			Annual Deficit:	**$16,000**
Computer Systems	**$ 1.7m**	**Fair**	Annual Requirement:	$198,000
			Funding Available:	$170,000
			Annual Deficit:	**-$28,000**

Appendix B – Level of Service Maps & Photos