County of Essex

ASSET MANAGEMENT PLAN 2025

Asset Management Plan 2025

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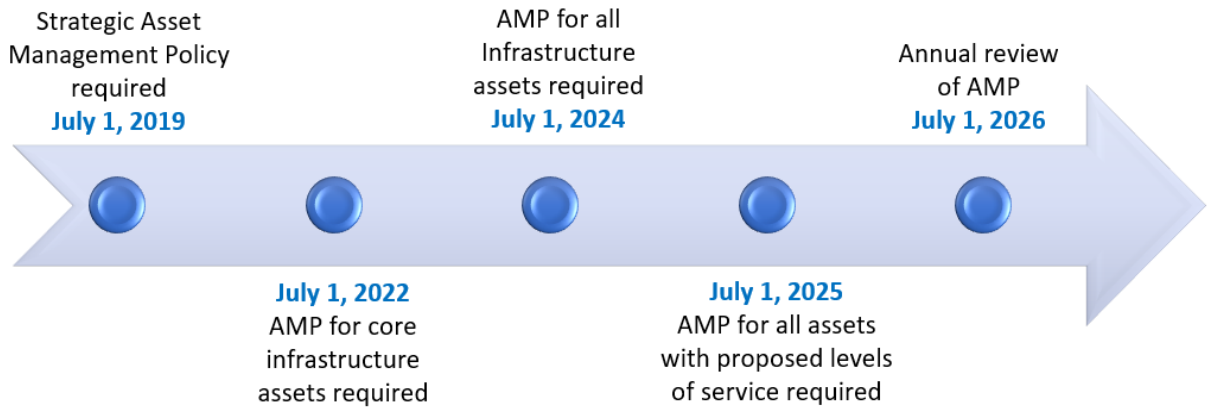
Executive Summary

Infrastructure plays an integral role in the economic, social and environmental advancement of a community. As the backbone of the region, infrastructure supports the municipal services relied on by local municipalities, residents, businesses and other stakeholders. Municipalities own and manage nearly 60% of the public infrastructure stock in Canada.

Over the past decade, asset management has become a key focus for municipalities mainly in part due to provincial legislation. In particular, Ontario Regulation 588/17 ("O. Reg 588/17") has driven municipalities to enhance their asset management planning. The following figure outlines the timeline of events related to Asset Management Plan ("AMP") development as prescribed by the Regulations:

Ontario Regulation 588/17 Timeline



In addition, the regulations have several ongoing requirements to ensure the County is committed to its asset management planning. First is a review of the Strategic Asset Management Policy at least every 5 years – the County's policy, originally issued on July 1, 2019 was revised in June 2023. Second, the County must conduct an annual review of its asset management progress on or before July 1st in each subsequent year, following approval of this Plan. This will ensure Council is informed and equipped to make decisions that continue to support sound asset management practices. The annual review is required to identify any factors that may impede the County's ability to implement its AMP, as well as a strategy to mitigate those factors. Finally, a comprehensive review and update of this Plan will be completed at least every 5 years thereafter. This will ensure a continued focus is placed on sustainable infrastructure for residents, businesses and future generations.

The County of Essex (the "County") is an upper-tier municipality that support the economies of 7 local municipalities, over 192,000 residents and various local businesses and industries. In accordance with O. Reg 588/17, the scope of this Asset Management Plan includes all capital assets owned by the County, including the Essex County Library. This includes core infrastructure such as the County's road network, bridges, culverts and stormwater network, as well as non-core infrastructure such as buildings, land improvements, fleet and equipment. Together, these assets have a total replacement cost of $1,207,844,000 as of December 31, 2024. This represents an estimated increase of $84,045,000 or 7.5% over the prior year report. Core assets represent 77.6% of the total portfolio cost. Non-core assets are categorized by operational department and represent the following percentage of total replacement costs:

- Infrastructure Services 3.2%
- Sun Parlor Home 5.6%
- Emergency Medical Services 6.3%
- General Government 3.5%
- Essex County Library 0.5%
- Essex Windsor Solid Waste Authority 3.3%

As a Board of Management established by agreement between the County of Essex and the City of Windsor, the Essex Windsor Solid Waste Authority has been 50% consolidated in this report.

Asset management can be best defined as an integrated business approach within an organization with the aim to minimize the lifecycle costs of owning, operating and maintaining assets, at an acceptable level of risk, while continuously delivering established Levels of Service for present and future customers. It includes the planning, design, construction, operation and maintenance of infrastructure used to provide services. By implementing robust asset management processes, infrastructure needs can be prioritized over time, ensuring timely investments to minimize repair and rehabilitation costs supporting the maintenance of municipal assets.

Strategic asset management is critical to delivering the highest total value at the lowest lifecycle cost. This AMP details the current state of the County's asset portfolio for all service departments, outlines the current Levels of Service in place, and establishes a proposed Level of Service deemed appropriate to meet the needs of the residents of the County. Each section provides strategies designed to balance the desired Levels of Service with a financing strategy that is affordable while mitigating, as best as possible, any expenditure gaps. In order for an AMP to be effective, it must be based on sound financial planning and integrated within the long-term budget framework. The development of a financing strategy allows the County to

identify the financial resources required for sustainable asset management based on existing asset inventories, desired Levels of Service and projected growth requirements.

Based on the current replacement cost of core infrastructure and non-core assets and a combination of age-based and assessed conditions, 64% of assets, with a valuation of $773 million, are in Good to Very Good condition. This is a slight decline from the 70% of assets, with a $793 million value that were in Good to Very Good condition in the last report. Further, 8.1% are identified as in Poor to Very Poor condition or still in service beyond their useful life, compared to 6.2% as previously reported.

The average annual investment requirement for all asset categories is $58,591,500, and increase of $12,383,700 from the previously reported $46,207,800. This is the direct result of an increase in expected replacement cost, as well as the addition of new assets. Annual revenue currently allocated for the replacement of these assets is $27,810,600, an increase of $8,885,900 from the previously reported $18,924,700. The net result is an annual deficit of $30.8 million (previously reported at $27.3 million). Investment in municipal infrastructure has increased slightly to 43.4% of the long-term requirements (2023 - 41.0%), meaning that the level of spending is barely keeping pace with inflation.

1.0 Scope & Objectives

This document forms part of an overarching corporate strategy and was developed to support the County's vision for asset management practices and programs. This iteration of the AMP continues to improve the level of data accuracy and relevance to today's economic, social and political environment.

In compliance with O. Reg 588/17, this AMP continues to provide a detailed discussion of the state of local infrastructure for each County department and asset category, including the following information:

- current composition of the County's asset portfolio;
- an estimate of the current replacement value;
- the average age of the assets;
- an evaluation of the current condition, based on an assessment of the expected useful life;
- an outline of the current Levels of Service ("LOS") and key performance indicators (KPIs) currently being tracked;
- the strategy used to guide the County's asset lifecycle management, which identifies the maintenance and/or renewal strategy and lifecycle costs required to sustain current Levels of Service;
- an estimate of the capital expenditures and significant operating costs related to new construction or upgrades to existing municipal infrastructure assets;
- an assessment of the current capital spending levels; and
- the framework that establishes the risk associated with each asset in order to aid in decision making.

In addition to reporting on the current LOS, the scope has been expanded to include proposed LOS, the costs associated with the proposed LOS and an analysis of the impact of implementing one of several financing strategies which the County may adopt in order to close the infrastructure gap.

The data presented in this report, except where otherwise stated, includes assets in service on December 31, 2023 and requiring replacement at the end of their anticipated useful life. Each *Projected Growth* section further discusses the impact of assets deemed necessary to support the anticipated growth facing our region.

1.1 Data and Methodology

The County's asset inventory is maintained in PSD's CityWide® Asset Manager. This database maintains asset data in accordance with Public Sector Accounting Board (PSAB) Standard 3150, as well as other key asset attributes that facilitate reporting and decision making: historical costs, in-service dates, asset life (for amortization purposes as well as lifecycle estimated useful life), field inspection data (as available), lifecycle management activities, condition assessments, replacement costs, risk assessments, etc.

Core infrastructure assets, such as the road network, bridges, culverts and stormwater network, are categorized by category. Non-core assets, such as buildings, land improvements, fleet, equipment and other assets, have been categorized by the operational service departments. This facilitates a greater understanding of the impact these assets have on the Level of Service provided by each service department. The departments include Infrastructure and Planning Services (IPS), Sun Parlor Home (SPH), Emergency Medical Services (EMS), General Government Services, and the Essex County Library (Library). The Essex Windsor Solid Waste Authority (EWSWA) has been 50% consolidated with the aggregate figures in this Plan, however the detailed information has been included in Appendix H this year. Within each department, the assets are further broken down by segment, such as building, land improvement, fleet, equipment or "other". "Other" assets include, but are not limited to, furniture and fixtures, aerial photography and information technology (IT) equipment.

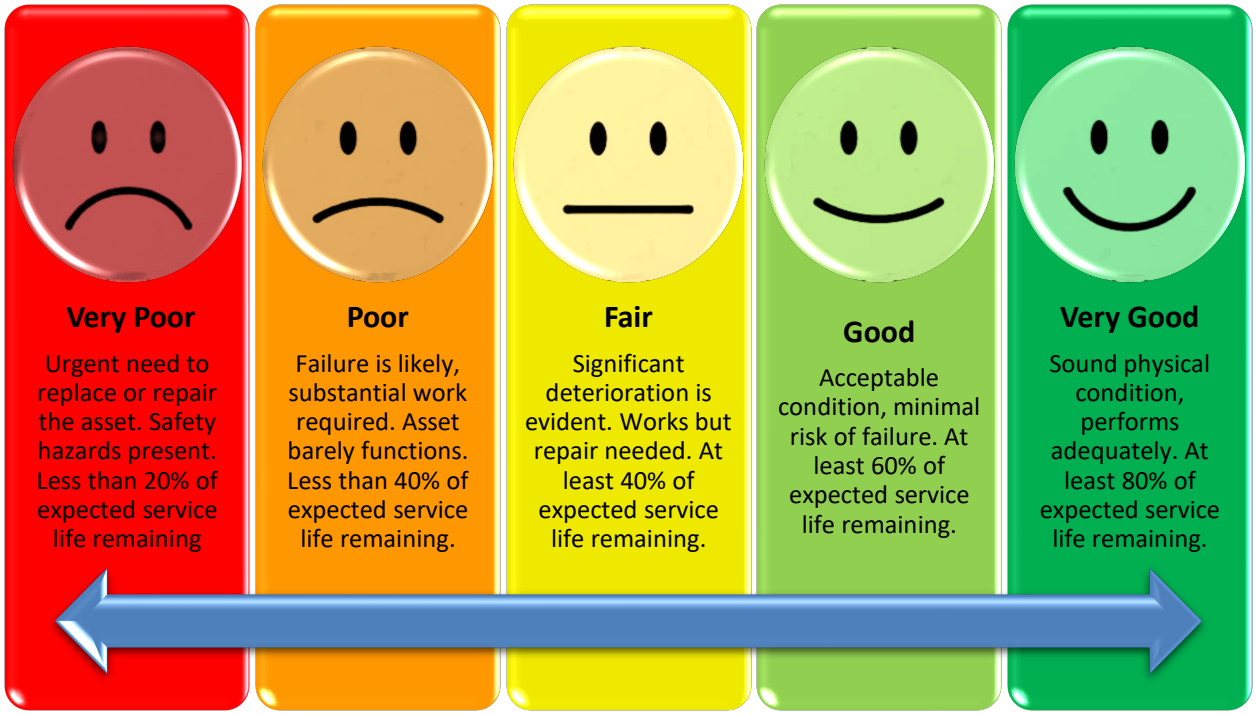
This segmentation allows the AMP to report on the overall state of the assets by service department, yet provide a deeper level of detail and highlight any areas of importance relevant to the unique operations of each department.

1.2 Condition Data

For accounting purposes, municipalities implement a straight-line amortization approach to depreciate their capital assets. In general, this approach may not be reflective of an asset's actual condition and the true nature of its deterioration, which tends to accelerate toward the end of the asset's lifecycle. However, it is often a useful approximation in the absence of actual field condition data and can provide a benchmark for future requirements. Consistent with previous versions of the AMP, each asset is analyzed individually; therefore, while deficiencies may be present at the individual level, imprecisions are minimized at the asset-class level when the data is aggregated. A condition scale utilized by Canada's Core Public Infrastructure Survey is used to assist in determining asset condition and is outlined in the Figure on the following page. The condition assessments of

buildings are determined using a calculated deterioration curve, on the premise that, as stated above, an asset's actual condition tends to deteriorate at a faster rate toward the end of the asset's life. The condition assessment of all other assets assumes a straight-line of deterioration over time.

Figure 1-1: Condition Ratings



The preceding condition rating scale generally applies to all assets with an assessed condition. In some cases, assets are unique and may have a specific replacement lifecycle which requires the use of a customized condition rating scale. These exceptions have been indicated in the *State of the Local Infrastructure* section for each category or department in which they apply.

Table 1-1: Condition Rating Scale

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

1.3 Condition Assessment Approach

The following Table summarizes the source of condition data used for each asset category/segment.

Table 1-2: Source of Condition Data

Asset Component	Source of Condition Data
Road Network	Assessed 2023 Pavement Condition Index
Bridges	Assessed 2024 Bridge Condition Index
Culverts	Assessed 2023 Culvert Condition Index
Stormwater Network	Age-based
Buildings	Building Condition Assessment report / User-Defined
Land Improvements	Building Condition Assessment report / User-Defined
Fleet	Age-based / User-Defined
Equipment	Age-based / User-Defined
Other	Age-based / User-Defined

For most assets, observed data generally provides the most accurate indication of an asset's physical health. Where possible, actual field condition data combined with professional judgement is used to reasonably assess the overall condition of the asset. This includes knowledge of the asset's repair

history, performance and reliability, regular maintenance activities and expectations for remaining service life. In the absence of such information, the age of the asset is used to approximate the asset's condition.

In 2024, a consultant was engaged to conduct Building Condition Assessments for 39 various buildings owned by the County, including 11 buildings owned by the Essex Windsor Solid Waste Authority. The reports provided a detailed listing of the various components in each building along with a comprehensive review of the current condition of each component, a schedule of recommended lifecycle activities necessary to maintain the asset, an estimate of the service life remaining, as well as an estimate of the current replacement cost. The information contained therein was then analyzed and reviewed against current data, market pricing trends, local economic conditions and internal knowledge of current assets. With consideration for all of these factors, professional judgement was ultimately applied in incorporating the findings from these reports into the development of this Plan.

1.4 Lifecycle Management Strategy

The Lifecycle Management Strategy is the set of planned activities that will enable an asset to maintain its current Level of Service in a sustainable way, while managing risk, at the lowest lifecycle cost. These activities are often funded through the operating budget or, where the cost of the activity is significant, through the capital budget. Each asset category may have different activities executed at different times, the objective of which is to ensure an asset meets its estimated useful life in the most cost-effective manner possible. Activities include actions such as inspection, repairs, maintenance, preventative maintenance, rehabilitation and eventual full replacement of an asset. Failure to address minor repairs and maintenance in the short term will lead to increased costs in the future, as well as a shortened lifespan of the asset.

1.5 Levels of Service

The Levels of Service (LOS) framework is built on a series of core values that were established based on consultation with the operating departments and alignment with the County's Strategic Plan. The following core values, commonly held by the public, have been used to shape the key performance indicators being monitored:

- Availability – the services are accessible and available for customers who require them

- Efficiency – services are delivered in a manner that achieves the best value for money; that is, maximum efficiency for minimum cost
- Quality – the standard of service level that is provided to customers is acceptable and meets their needs
- Reliability – services are provided with minimal service disruption, are available to customers, and are aligned with their needs and expectations.
- Safety – services are delivered in a manner that minimizes health, safety and security risks
- Scope – the extent of the area to which services are being provided is adequate
- Sustainability – services are designed to be used efficiently and long-term plans are in place to ensure they are available to all customers in the future
- Environmental stewardship – services are provided in a manner that minimizes the impact on the environment

A Level of Service Statement is a high-level statement that describes the desired service outcome. This statement is guided by the selected core value with consideration given to the alignment with strategic goals and operational mandates.

A Community Level of Service statement is a simple, plain language description of what the resident receives. The service being provided is described using language that is easily understood by the average person.

A Technical Level of Service statement is a key performance indicator measured internally that indicates how an organization is performing in relation to the Level of Service. This is a reliable and quantifiable measurement of the service being provided and its alignment with the Level of Service Statement and is based on the collection of asset data.

In December 2024, Council's input was sought to develop proposed LOS that align with community expectations and are realistic and reasonable. The proposed LOS are designed to reflect the core values held by the public and are based on a thorough understanding of resident expectations, prioritizing safety and well-being while being mindful of the municipality's financial capacity. The goal is to provide the highest quality service possible without overburdening taxpayers.

1.6 Financial Data

The average annual capital requirement is the amount, based on current replacement costs, that municipalities should set aside annually for the lifecycle activities, including replacement of assets when they reach the end of their life. A municipality that plans for the sufficient funding of capital costs will ensure its reliance on external funding sources is minimized and strengthen its ability to maintain service levels. Determining the appropriate amount of annual funding is complicated by changes in economic conditions affecting replacement cost volatility and the affordability capacity of taxpayers. The reality of asset useful lives may also afford a municipality more or less time to raise replacement funds. Climate change, growth pressures and the availability and quality of raw materials used to construct or manufacture assets can alter the timing of when funding is needed to replace aged assets. While achievement of 100% funding would be ideal, few, if any municipalities have achieved this level. It is often more realistic to aim for year-over-year increases in the overall capital requirement funding percentage. A strong commitment to asset management planning ensures the necessary resources will be available to maintain a consistent Level of Service for the residents of Essex County.

1.7 Financing Strategy

Proposed Levels of Service

The development of the proposed Levels of Service outlined in this AMP were guided by evaluating three approaches where feasible: Status Quo, Inflationary and Progressive.

- **Status Quo**: This approach maintains current spending levels and is the most affordable in the short term. However, it does not account for inflation, which increases asset replacement costs annually. As a result, projected infrastructure conditions and service levels would be expected to decline over time. There would be no cost to adopting this approach.
- **Inflationary**: This approach accounts for cost increases, particularly in sectors like construction, where inflation often outpaces the Consumer Price Index (CPI). While more effectively maintaining Levels of Service, this approach will require a commitment to increased funding and a comprehensive review of all funding sources available to minimize the financial impact on taxpayers. Without adjusting for inflationary pressures, the ability to maintain infrastructure at current levels would be compromised. With Council's direction to maintain assets at their current levels of service and ensure a risk-based

approach is the primary focus, the Inflationary approach is estimated to cost approximately $1 million each year starting in 2026, plus an annual inflationary adjustment. This is outlined in Figure 1-2: *Annual Increase in Capital Expenditures* for Proposed LOS below, and discussed in more depth in each Financing Strategy section.

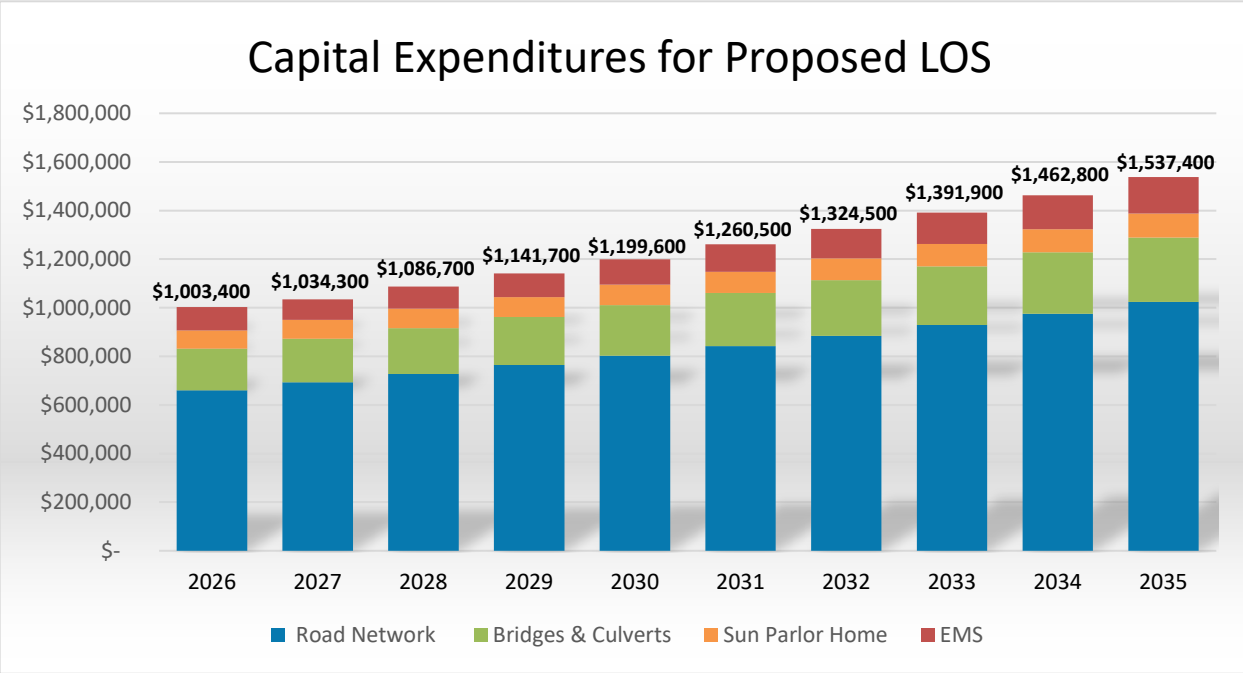
- **Progressive**: This approach prioritizes closing the infrastructure gap to ensure long-term sustainability. It positions the County to maintain high service levels, respond effectively to emergencies and support future growth. While it requires an even greater financial commitment than the inflationary approach, it proactively addresses infrastructure needs before they become critical. This approach will seek to close the $30.8 million infrastructure gap over a period of time, the sustainability and affordability of which will depend on how long it takes to close this gap.

The financing strategies proposed in this Plan provide options to address the current infrastructure gap and meet the proposed LOS targets, while balancing the affordability factor of local taxpayers.

Failure to maintain the existing asset base and address the growing infrastructure needs of the region will negatively impact the County's ability to provide a reliable Level of Service. Challenges such as increased congestion or more frequent repairs will directly impact the quality of life of our residents and the future of our businesses. Keeping up with investment and planning helps ensure infrastructure remains reliable, supporting the community's daily needs and growth. This AMP seeks to manage our assets in a way that ensures investments are optimized, timely and meet the needs of the community at large while balancing long-term fiscal sustainability.

The following Chart shows the estimated incremental capital expenditures required by each Department over the next 10 years to achieve the proposed Level of Service for existing assets.

Figure 1-2: Annual Increase in Capital Expenditures for Proposed LOS



Funding from external sources is always prioritized to ensure eligibility requirements are met and funds are spent within the timeframe required. Currently, the County receives annual funding for core assets through the Canada Community Building Fund (CCBF), as well as the Ontario Community Infrastructure Fund (OCIF). These funds are fully spent annually towards road rehabilitation projects and the rehabilitation or replacement of critical bridges and culverts. As provincial funding has declined more than $500,000 over the last several years, it is important to continue advocacy efforts at the provincial level to ensure the sustainability of funding and to mitigate the pressures on the local municipalities.

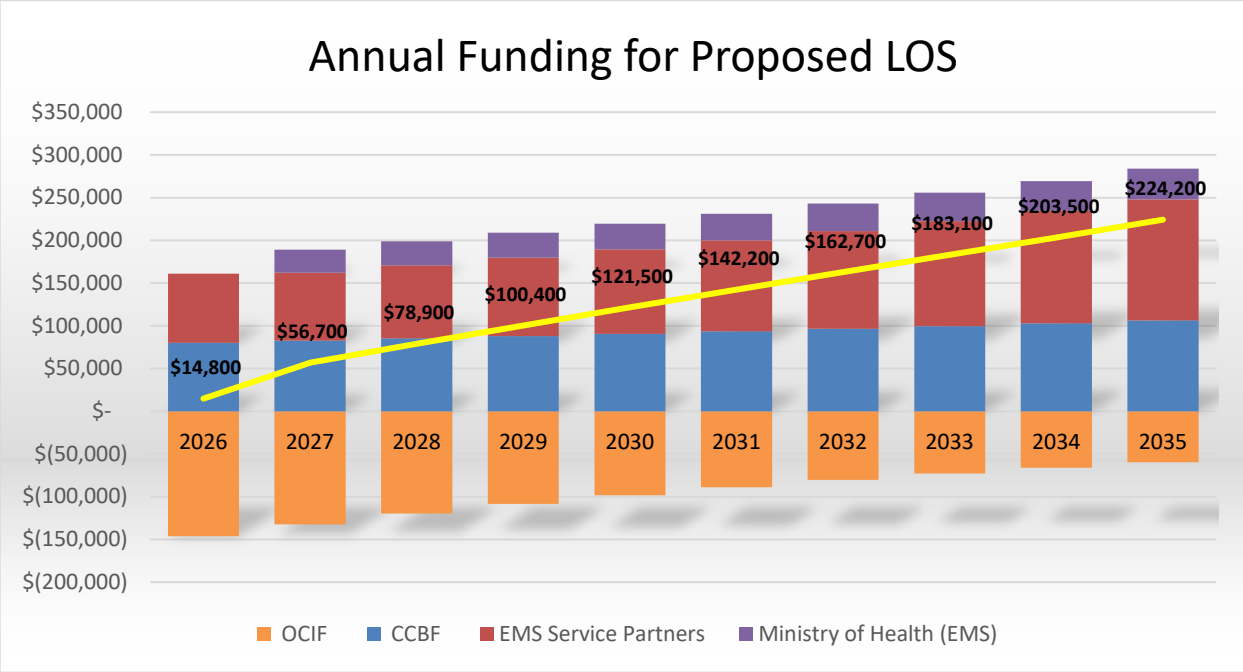
The funding model of EMS provides for a cost-share of some capital expenditures between the County of Essex, the City of Windsor and the Township of Pelee based on weighted assessment. Operating expenses are funded 50% by the province (with a one-year lag in funding) and the remaining 50% shared by the County, City of Windsor and Township of Pelee, also based on weighted assessment. The Ministry of Health provides funding towards capital replacement at a rate of 50% of the previous year amortization of historical costs, resulting in a small lag in annual funding.

Capital Reserves are maintained to mitigate the sometimes-volatile market pricing, as well as the inherent peaks and valleys of capital spending and to ensure funding is available for contingencies and emergency expenditures. Balances are reviewed annually in accordance with the corporate Reserve Policy. Currently, the capital reserve is our only underfunded reserve,

however we are working to close this gap in a financially sustainable manner through the annual budget process. As a result, reserve funding has not been considered as a financing option.

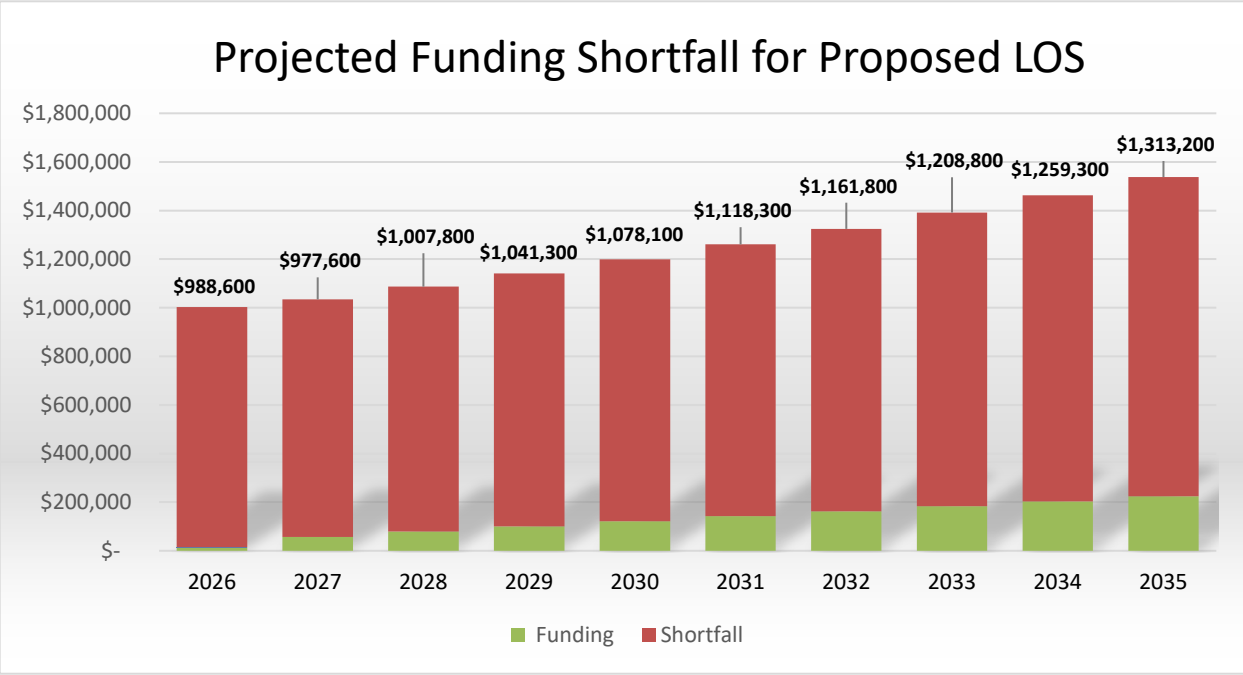
The following Chart identifies the incremental increase in annual funding projected to be available to undertake the necessary lifecycle activities over the next 10 years and reach the Proposed LOS targets. Based on a declining trend over the last 3 years, it is anticipated that OCIF funding will continue to decline as provincial funding allocation changes. The yellow line indicates the net impact that this decline will have on the incremental increase in other funding sources, such as CCBF and EMS Service Partner contributions.

Figure 1-3: Annual Funding Projection for Proposed LOS



As a result of declining provincial funding and inflationary pressures on market pricing, a funding shortfall is projected to be in excess of $1 million each year, as outlined in the following Chart.

Figure 1-4: Projected Funding Shortfall for Proposed LOS



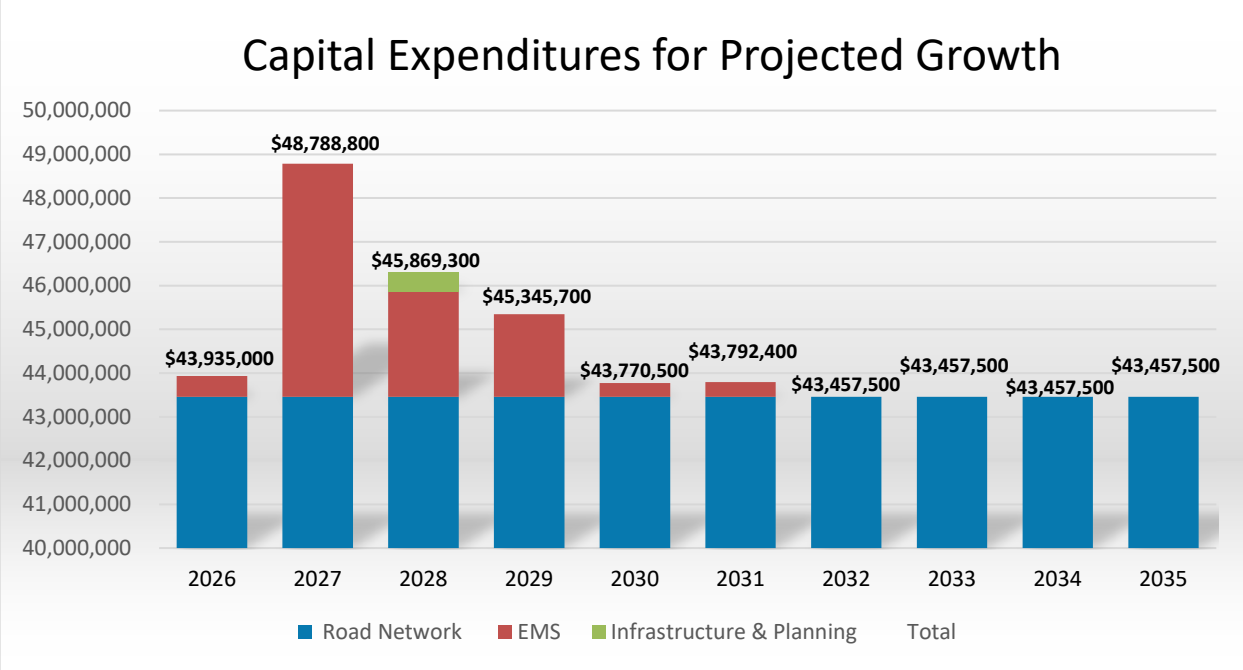
Projected Growth

The anticipated impact of projected growth on the County's infrastructure needs is outlined in more detail in each category or department's *Projected Growth* section of the Plan.

The exact timing of the County's Roadway Expansion Plan is still under development, so the estimated $414 million cost over the next 10 years has been evenly distributed. Also, the costs associated with the impact on bridges, culverts and stormwater mains are included with the road network estimates as the breakdown is unknown at this time. As the network grows, an additional truck will be required to ensure minimum maintenance standards continue to be met. It is anticipated that the current fleet still has capacity to absorb a small amount of growth before this addition will be needed. To maintain service levels in the Emergency Medical Services department, capital infrastructure will be needed in advance of the projected growth to ensure EMS remains ready and available to respond as the demand for service grows. It is anticipated that the enhancements needed according to the Master Plan will be implemented in the earlier years of the projected growth timeline.

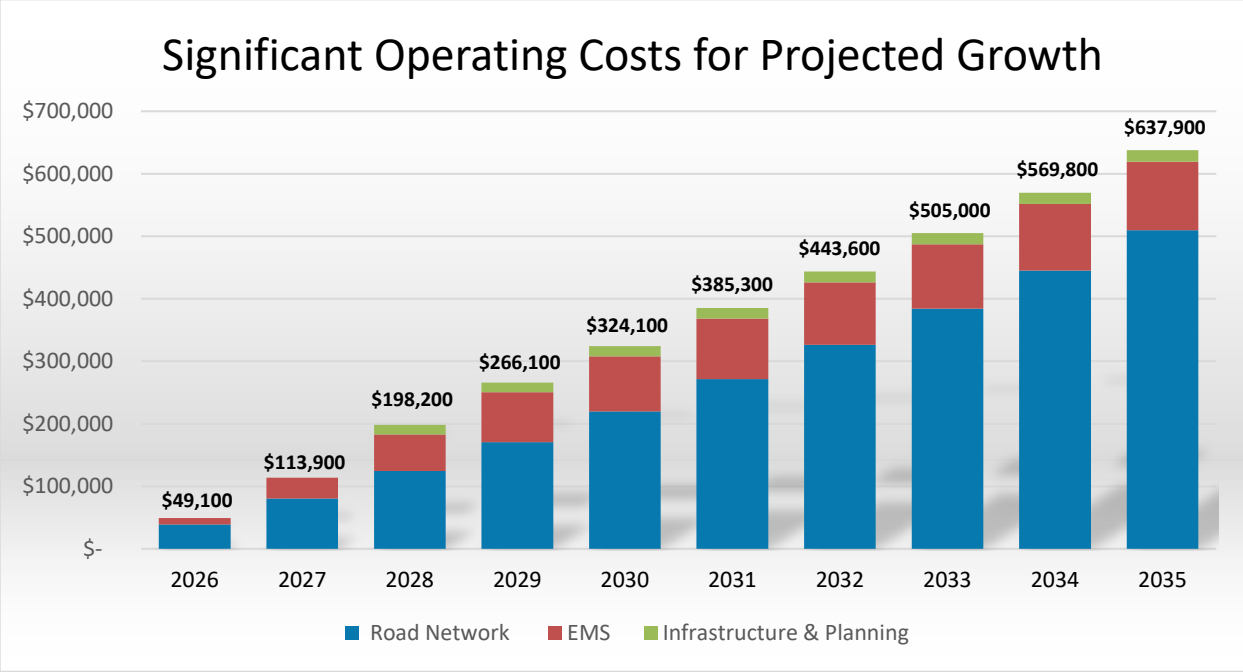
The following Chart summarizes the estimated incremental capital expenditures required by each Department over the next 10 years in response to this projected growth.

Figure 1-5: Capital Expenditures for Projected Growth



With additional assets comes the need for additional funding to repair and maintain the infrastructure investments made to support population growth. The following Chart outlines the expected timeline for funding needed for the incremental operating costs associated with the new assets.

Figure 1-6: Significant Operating Costs for Projected Growth

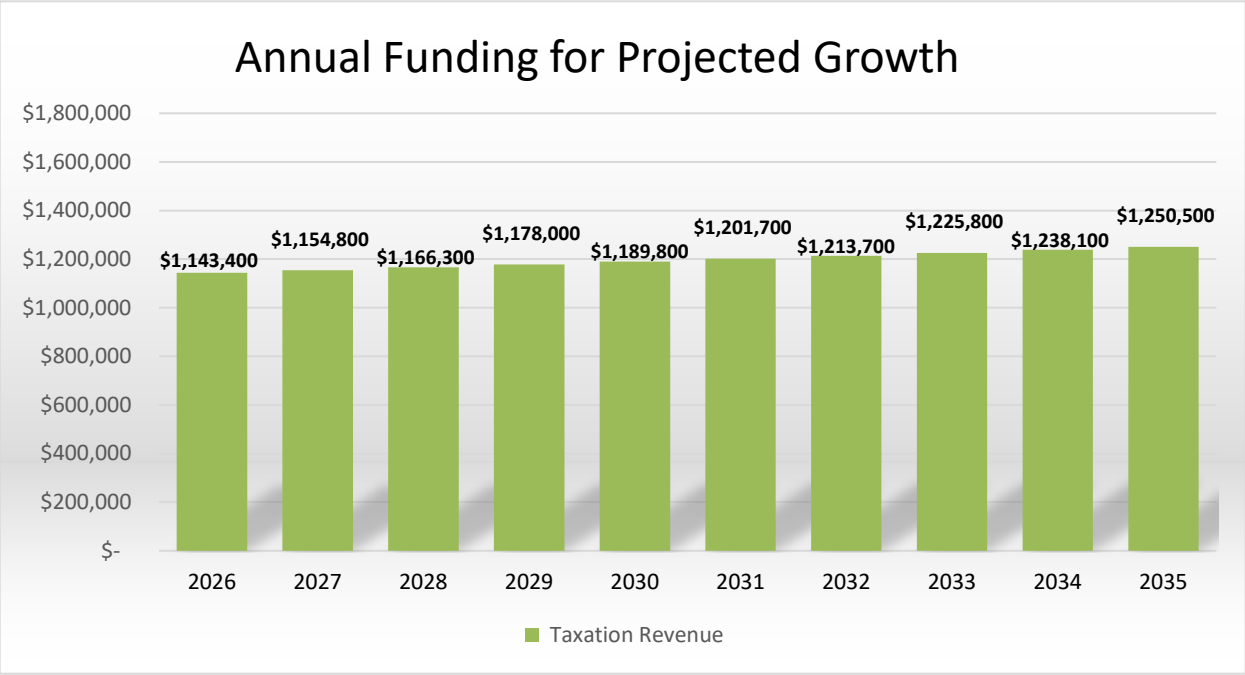


In addition to the funding sources identified above in relation to Proposed LOS, the County is currently exploring the potential introduction of Development Charges, which could be implemented as early as September 2025. The impact of any additional revenue from this source has not be considered in this plan.

The County's financial history has not typically involved debt financing. With significant growth projected in the near future, however, it is likely that this may be a necessary element of the future financing strategy. At this stage, debt financing has not been evaluated as this decision is more appropriately made in a separate discussion.

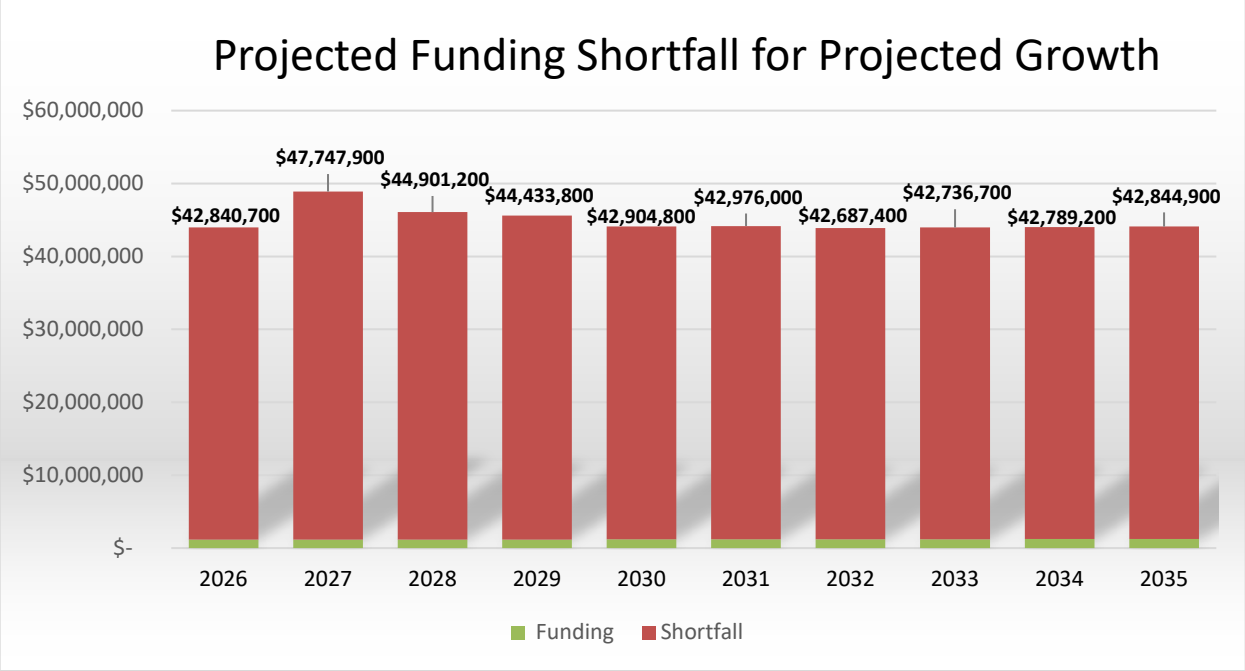
A final key consideration is Current Value Assessment (CVA) growth, which could provide additional revenue for the County. Preliminary conservative estimates suggest a potential growth rate of 1.0% per year could result in an additional $1.1 million in tax revenue, though these figures are estimates and remain subject to change. The following Chart highlights the annual funding anticipated based on the most conservative forecast for projected growth in Section 1.11 *Population and Employment Forecasts*.

Figure 1-7: Annual Funding for Projected Growth



Without any new sources of revenue, existing funding will not be sufficient to cover the impact of this projected growth. The following Chart highlights the projected funding shortfall, in excess of $40 million each year, showing the magnitude of the cost of growth, unsustainable by levy funding alone.

Figure 1-8: Projected Funding Shortfall for Projected Growth



Funding growth through increased taxation of existing assessment is neither affordable nor sustainable. With population increase comes an inherent increase in the demand for County services and an expectation that current residents continue to receive the same standard of service as before. It would be impossible to maintain current Levels of Service without significant investments in the assets and infrastructure that support these services. As highlighted above, new sources of revenue, such as Development Charges or debt financing, will need to be seriously considered in order to ensure the quality and sustainability of services provided to the residents, businesses and visitors of Essex County.

1.8 Replacement Cost

Replacement cost valuation is based on one of the following methods:

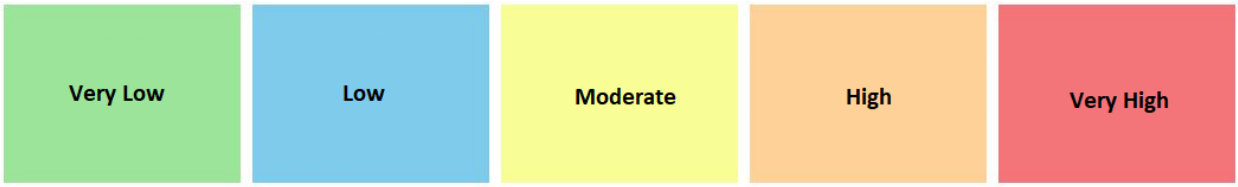
- historical costs inflated to today's dollars using the Non-Residential Building Consumer Price Index (NRBCPI) or Consumer Price Index (CPI) tables for Ontario; or
- an estimate of current costs for non-linear assets, based on a combination of historical cost trends, current market pricing, estimates provided by a third-party consultant through formal Building Condition Assessment reports and professional judgement; or
- an estimate of current costs per unit for linear assets, based on an average of costs from the prior year and tenders awarded in the last 12 months.

1.9 Risk Management Strategies

Risk Management is key to determining how to efficiently and effectively prioritize capital spending on municipal infrastructure assets. The Risk Assessment can be quantified by multiplying the probability of failure of an asset by the consequences of failure of that asset. The assessment of risk starts by categorizing the type of asset, followed by an in-depth analysis of its significance to departmental operations, its current condition and its estimated replacement cost. In all cases, the probability of failure is based 100% on the condition of the asset, on a scale of 1 to 5, where 1 is a rare likelihood of failure and 5 represents an almost certain failure. The lower the condition assessment, the higher the probability of failure of the asset. In most cases, unless otherwise stated, the consequence of failure is based 100% on the replacement cost of the asset, on a scale of 1 to 5, where 1 is an insignificant consequence of failure and 5 represents severe

consequences. Generally speaking, the higher the replacement cost of the asset, the greater the impact on operations, should that failure occur.

Figure 1-9: Risk Rating Scale



1.10 Estimated Useful Life

The estimated useful life (EUL) of an asset represents the average number of years it is expected to be available for use and remain in service before its value is fully depreciated. The EUL for each asset is determined by considering industry standards, practical experience and consulting with knowledgeable staff. Many assets will continue to have their EUL extended due to the comprehensive preventative maintenance schedules in place. By monitoring the overall cost of repairs & maintenance for each asset, Administration has been generally successful in extending the EUL of most assets and therefore the value obtained from those assets, by scheduling their replacement at an optimal point in the asset's life.

1.11 Population and Employment Forecasts

Ontario Regulation 588/17 requires the disclosure of population and employment forecasts as set out in the County's Official Plan. These forecasts are important in understanding the impact on future infrastructure requirements in the region, and ensuring that the asset management plan is aligned with the Official Plan.

The purpose of the County of Essex Official Plan is to establish a policy framework for managing growth, protecting resources and providing direction on land use decisions during the current planning period. The current Official Plan was adopted by County Council in November 2024 and is presently with the Ministry of Municipal Affairs and Housing for final approval. In accordance with the Planning Act, municipalities are required to update their Official Plans within 10 years. The development of the new Official Plan has been based on the Growth Analysis Report, as finalized by Watson and Associates in October of 2022. The results of the growth analysis are also intended to guide decision-making and policy development specifically related to long-term growth planning and growth management, municipal finance and infrastructure planning carried out for the County.

Phase 1 of the Official Plan review exercise provided an update to the County's long-term population, household and employment growth forecasts and allocations by Area Municipality to the year 2051. The results of this Phase 1 analysis have been used as part of the second phase of the Official Plan Review to assess long-term urban land needs county-wide.

The draft Growth Analysis Background Report identified that between 2016 and 2021, the County's annual population increased at a rate of 1.2%, fueling steady demand for new housing construction throughout the County. According to the draft report *"looking forward over the next five to 10 years, housing demand across the Windsor-Essex Area is anticipated to remain strong relative to recent historical levels fueled by steady immigration as well as positive net migration from elsewhere in Ontario and Canada".*

In contrast to the period between 2016 and 2021, which provided an annual population increase at a rate of 1.2%, the new 2022 Growth Analysis Report provides a range of low, medium and high population growth scenarios for the planning period to 2051, at 1.0%, 1.3% and 1.5%. By 2051, the County's total population base is forecast to grow to approximately 268,000 to 315,000. This represents an increase of between approximately 69,000 to 116,000 persons between 2021 and 2051. The Watson Report did not provide a recommended scenario as part of the Phase 1 Official Plan Review analysis to allow a detailed assessment of the corresponding urban land needs over the next 25 years associated with each growth scenario.

According to the growth analysis, all of the area municipalities within the County are anticipated to experience higher levels of annual population and housing growth over the 2021 to 2051 forecast period relative to the past 20 years. Under each of the long-term range growth scenarios, the share of population and employment growth by area municipality is anticipated to remain relatively consistent.

It is important to recognize that future population and employment growth within the County strongly correlate with the growth outlook and competitiveness of the broader Windsor-Essex area and surrounding region, specifically the surrounding municipalities which fall within the County's commuter-shed.

Employment growth in the regional economy represents a key driver of population growth to the County. Similar to historical population trends, the County has experienced periods of employment growth and decline over the past 20 years resulting from occasions of economic expansion and contraction across the broader Windsor-Essex Area economy during this time.

Given the competitive position of existing and planned Employment Areas across the County, as measured in terms of location/access to major North American employment markets and large population centres, parcel size, price per acre, and competitive development costs, etc. The County is anticipated to achieve a relatively stronger rate of industrial absorption over the long-term planning horizon under all three growth scenarios.

The three long-term employment forecast scenarios for the County over the 2021 to 2051 forecast period relative to historical employment trends between 2001 to 2021 identify a projected increase under all three growth scenarios. By 2051, the County's employment base is forecast to grow between approximately 108,000 and 124,000. This represents an increase of approximately 36,000 to 52,000 jobs between 2021 and 2051. Under the low scenario the employment annual growth rate is 1.3%, while under the medium and high scenario the employment growth rates are 1.6% and 1.8%.

Steady future economic growth is anticipated across the County, most notably associated with the need for local supply chains to support the planned Stellantis NV and LG Energy Solution (L.G.E.S) electric vehicle battery manufacturing facility. The joint venture will invest over $5 billon CAD to create approximately 3,200 direct new jobs and an additional 15,000 indirect jobs within the regional supply chain.

The Growth Management Report prepared by NPG Planning Solutions Inc. analyzed land needs based on four growth scenarios: status quo, no settlement area expansion, balanced growth and higher density housing and higher density employment areas as noted above under the low, medium and high scenarios. Based on the analysis regarding housing land supply needs as part of the County's Municipal Comprehensive Review, Leamington requires 87 ha of additional land. Kingsville was identified as having approximately 90 ha of land in Secondary Settlement Areas to be added to the Primary Settlement Area. Pertaining to employment land needs, Amherstburg, Essex, Kingsville, Lakeshore and LaSalle were identified to require additional land supply. The Local Comprehensive Reviews will address the preferred location for the lands to be added to the Primary Settlement Area.

2.0 Asset Portfolio Overview

2.1 Asset Management Report Card

This report focuses on all municipal infrastructure assets as required by O. Reg 588/17. Unless disclosed separately, Road Network data is inclusive of road surfaces of all types, as well as roundabouts and County-Wide Active Transportation System ("CWATS") routes. Other assets including furniture, aerial photography and IT equipment have been aggregated due to their nominal value. The assets included in this report are those in service as at December 31, 2023. Assets anticipated due to growth and/or expansion of services related to growth are discussed in the *Projected Growth* section of each category or department.

As outlined in the Table below, assets are generally in Good overall condition, however the annual funding deficit has grown to $30.78 million and, if not addressed, will lead to decreased Levels of Service and a deteriorating asset base. The County has successfully implemented several preventative maintenance strategies and takes a proactive approach to maintaining and repairing assets, which has directly resulted in an overall favourable condition assessment. However, maintenance and repairs only go so far and eventual replacement of assets is inevitable.

Table 2-1: Asset Portfolio Summary

Category	Replacement Cost (million)	Weighted Average Condition	Annual Requirement	Annual Deficit
Road Network	$606.9	65.3% (Good)	$34,819,900	$21,520,700
Bridges & Culverts	$309.4	63.9% (Good)	$9,120,400	$6,185,000
Stormwater Network	$21.4	91.8% (Very Good)	$535,300	$535,300
Infrastructure and Planning Services	$38.3	63.6% (Good)	$2,257,300	$368,100
Sun Parlor Home	$67.1	72.3% (Good)	$1,810,800	$1,571,400

Category	Replacement Cost (million)	Weighted Average Condition	Annual Requirement	Annual Deficit
Emergency Medical Services	$76.4	81.2% (Very Good)	$5,520,100	$771,500
General Government Services	$41.7	75.4% (Good)	$920,700	($227,200)
Essex County Library	$6.3	45.5% (Fair)	$635,500	$41,200
Essex Windsor Solid Waste Authority	$40.3	62.7% (Good)	$2,971,500	$14,900
Total	**$1,207.8**	**66.9% (Good)**	**$58,591,500**	**$30,780,900**

2.2 Total Replacement Cost of Asset Portfolio

The total replacement cost of all assets owned by the County is currently estimated at just over $1.2 billion.

The replacement cost of linear assets, such as asphalt, concrete and tar & chip roads as well as CWATS routes were originally calculated in 2022 based on an estimate of current cost per lane kilometre as determined internally by professional engineers in the Infrastructure and Planning Services department. Since then, these costs continue to be reviewed internally by the Infrastructure and Planning Services and Finance departments, and updated as necessary based on an average of historical cost, recently awarded tenders, professional judgement and knowledge of current market pricing.

The replacement cost of the roundabout intersections is determined using historical cost inflated quarterly to today's dollars using the Consumer Price Index (CPI) tables for Non-Residential Business Consumer Price Index (NRBCPI) (Toronto). This formula is deemed to be a reasonable approach given the recent age of the intersections, complex design and construction, and low quantity of these assets.

Building Condition Assessment reports completed in 2024 provided valuable information on the replacement cost of the various building components and helped in determining the overall building replacement cost.

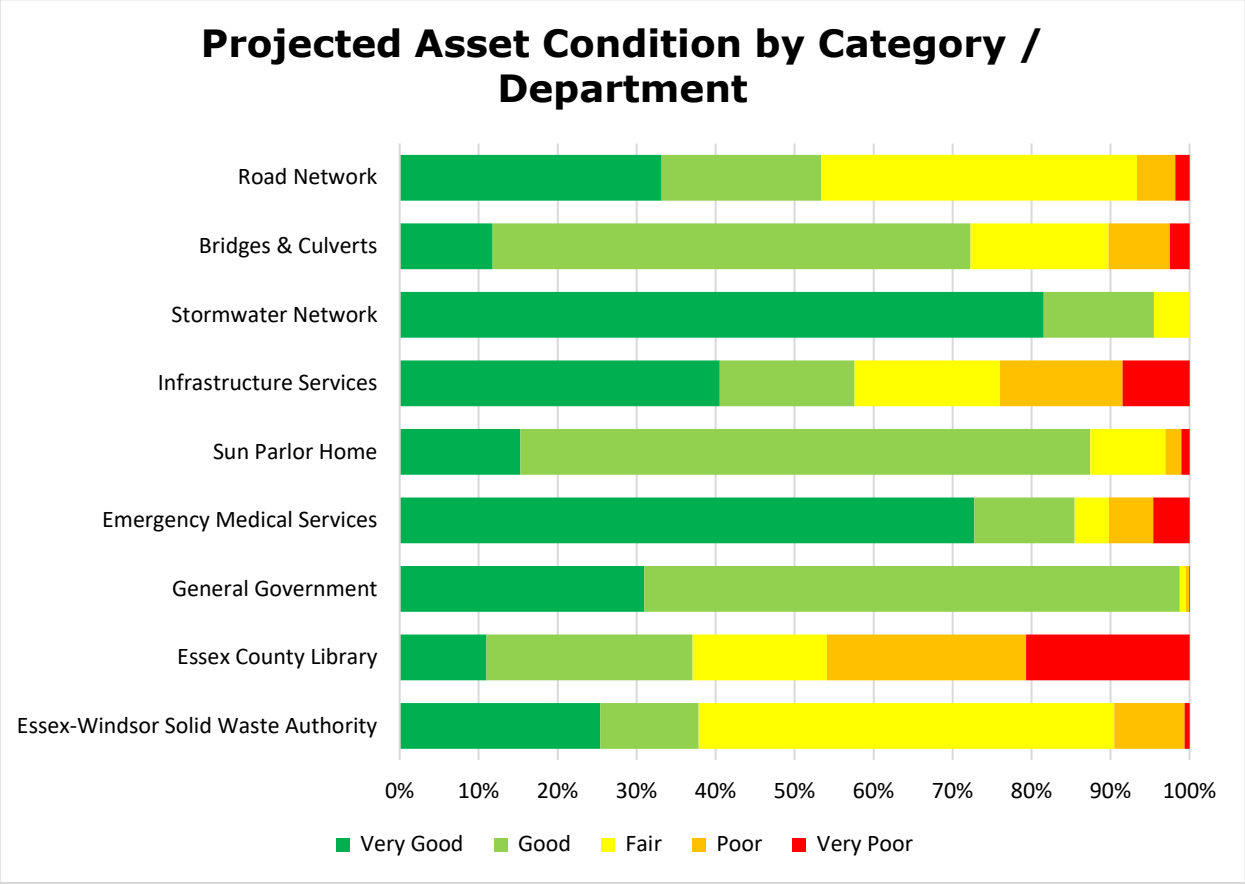
The replacement costs of all other municipal assets are determined using either historical cost inflated monthly to today's dollars using the Consumer Price Index (CPI) tables for Ontario, or using an estimate of the current replacement value. This estimate is established through consultation with industry professionals, departmental managers, reviewing historical price trends and evaluation of current market prices.

2.3 Condition of Asset Portfolio

The overall condition of County assets is integral to achieving and maintaining desired Levels of Service. The portfolio consists of 92.3% of core assets and 90.4% of non-core assets that are in Fair or better condition. Further, 60.6% of core assets and 75.8% of non-core assets are in Good to Very Good condition. Core infrastructure assets continue to be formally assessed on a regular basis, with the exception of the stormwater network, which currently relies on an aged based condition assessment. The County continues to refine its' inspection and maintenance strategies in order to provide better information on asset condition and proactively forecast necessary repairs or replacement of assets.

The following Chart highlights the projected condition assessments by category (core assets) or department (non-core assets).

Figure 2-1: Projected Asset Condition by Category / Department



For linear assets, Pavement Condition Indexes are generally calculated annually, while the assessments for Bridges and Culverts are completed every 2 years, in accordance with Ontario Structure Inspection Manual (OSIM) regulations. These are performed internally by professional engineers in the Infrastructure and Planning Services Department. The County has contracted with a third-party vendor to perform a condition assessment of its road network in 2025. The results will be compared to our internal assessment procedures and used to update the condition assessments of our road segments.

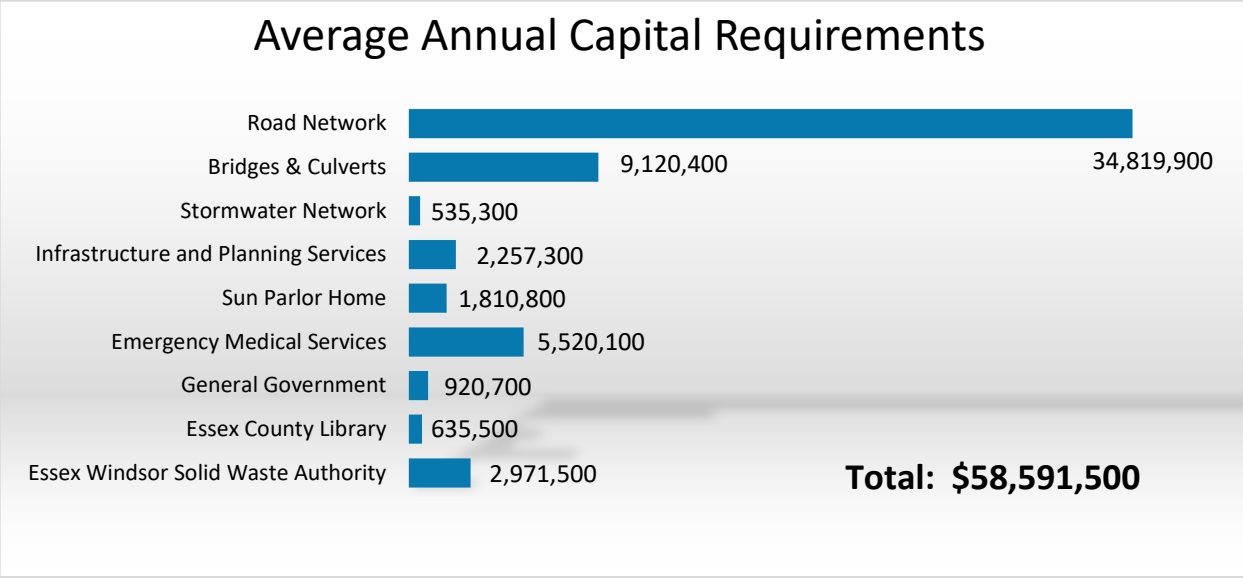
The majority of assets have been assessed within the last few years, primarily by internal staff with appropriate knowledge and expertise. Building Condition Assessments were prepared by a third-party consultant in late 2024 for all County & EWSWA buildings and have been incorporated into this report.

An age-based approach has been taken on all other non-core assets and a review of the expected service life remaining was conducted in order to provide a reasonably accurate projected condition assessment.

2.4 Capital Requirements

The annual capital requirement represents the amount of funding necessary for lifecycle management and eventual replacement of an asset. This allocation is essential to ensuring sustainable service levels. This calculation does not consider amounts required for ongoing operating or maintenance associated with the assets but reflects the total replacement cost required over the estimated useful life of the asset. Operating and maintenance costs are reported on separately in each section of this report.

Figure 2-2: Average Annual Capital Requirements



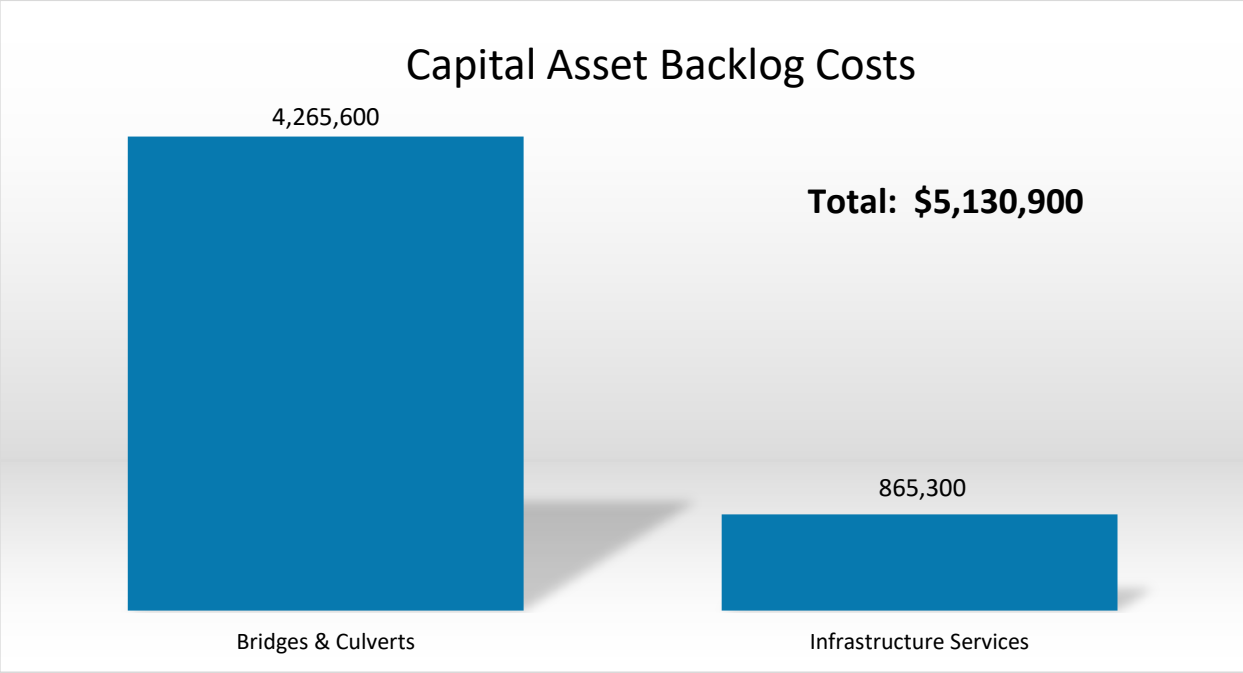
The County (including EWSWA) must allocate $58.6 million annually in order to address the ongoing capital requirements for all assets. This allocation is through a combination of current spending and reserve contributions to address future needs of existing assets. The annual requirements, however, do not include any costs to address backlog.

2.5 Backlog

Backlog costs represent the replacement cost of assets which have reached the end of their useful life by the end of 2023 but have not been rehabilitated or replaced. The assets included in this category are sometimes shared with local or neighbouring municipalities who, under agreement, are responsible for performing the condition assessments and establishing a rehabilitation or replacement schedule. Backlog also occurs where assets are unable to be replaced, for example, due to lack of funding or supply chain delays. Where backlog is within the County's control, these assets usually have lower risk rating and are often scheduled for replacement within a few years of their original estimated replacement date. As the risk assessment

grows, the County proactively seeks to take alternate actions to mitigate the risk associated with a potential failure. Further details are provided throughout the Plan.

Figure 2-3: Capital Asset Backlog Costs



2.6 Reinvestment Rate

Reinvestment rates compare actual and targeted annual expenditures against the capital expenditures required to sustain assets over time. Based on an annual capital requirement of $58.6 million and a total replacement cost of just over $1.2 billion, the overall target reinvestment rate is 4.85%. As of 2023, the current annual capital expenditure level is approximately $25.4 million, resulting in an actual reinvestment rate of 2.11%. With net contributions to reserves at just under $2.4 million, this leaves the current funding gap for all assets at approximately $30.8 million per year.

3.0 Road Network

3.1 Asset Portfolio: Segment, Quantity and Replacement Cost

The Infrastructure and Planning Services Department maintains 1,353.8 lane kilometres of various classes of roads, plus an additional 129.4 lane kilometres of connecting links. A connecting link is a road segment that is owned by a local municipality but maintained by the County through a cost-sharing agreement. See Section 3.5 *Shared Structures* for a complete listing of Connecting Links. An adjustment was made to reflect the transfer of a section of County Road 3 from the County to the Town of Lasalle. Connecting Link assets have been included in this report only to the extent of the County's responsibility.

The following Table illustrates the types of segments in the County's road network and summarizes their quantity, current replacement cost and the method used to estimate replacement cost by segment. Since County assets act as arterial roads to link transportation routes across the region, the majority of the segments are constructed to an asphalt or concrete standard.

Table 3-1: Road Network Portfolio Summary

Asset Segment	Quantity	Replacement Cost	Replacement Cost Method
Asphalt	1,282.1 lane km	$513,206,900	Cost / Lane km
Concrete	39.7 lane km	$21,342,700	Cost / Lane km
Tar & Chip	32.0 lane km	$4,739,200	Cost / Lane km
CWATS	310.4 lane km	$54,458,900	Cost / Lane km
Roundabouts	4	$13,130,800	CPI Tables
Total		**$606,878,500**	

The replacement cost of roads is presented as a 'worst-case scenario' and is used to illustrate the value of regular maintenance and rehabilitation. Unless a severe natural disaster occurred or a road segment required upgrading to a higher standard, full replacement is unlikely. The County's approach to road network assets is to perform maintenance and rehabilitation work at various points throughout the road asset's life to optimize its longevity.

Replacement costs were reviewed and updated based on inflationary costs experienced in recent years.

3.2 State of the Local Infrastructure

The following Table outlines the current state of the road network, including the average age (weighted average by replacement cost), useful life and average condition by surface type.

Table 3-2: Road Network Asset Age, Useful Life and Average Condition

Asset Segment	Average Age	Useful Life	Average Condition (%)
Asphalt	8.3 years	12 years	64.1% (Good)
Concrete	13.1 years	40 years	77.2% (Good)
Tar & Chip	13.0 years	12 years	62.2% (Good)
CWATS	5.6 years	12 years	69.7% (Good)
Roundabouts	7.7 years	12-40 years	77.2% (Good)

Pavement Condition Indices are updated annually as part of a regular inspection process conducted by internal staff. A third-party consultant has been contracted to complete an independent road network assessment in 2025 to confirm the results of these internal assessments and recalibrate our calculations.

As expected, the tar & chip roads are generally at end of their useful life and are planned to be resurfaced with asphalt within the next 2-4 years. Three of the four roundabouts have a concrete surface, which provides for a longer useful life and addresses the increasing daily volume of traffic at these intersections. CWATS assets continue to be added annually with the expansion of the active transportation network and as a result are maintaining their Good condition rating overall.

The Charts on the following page outline the overall condition of the County road network and the condition of the road segments by surface type (concrete, asphalt and tar & chip). These charts exclude CWATS and roundabouts.

Figure 3-1: Projected Road Segment Condition Summary

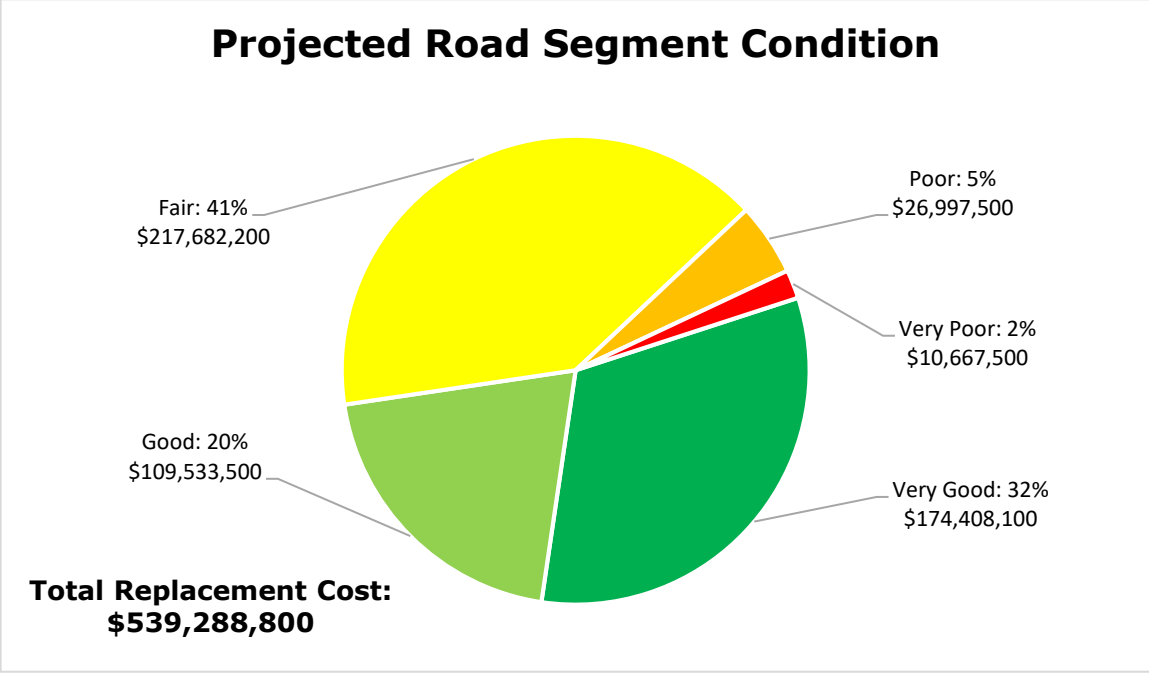
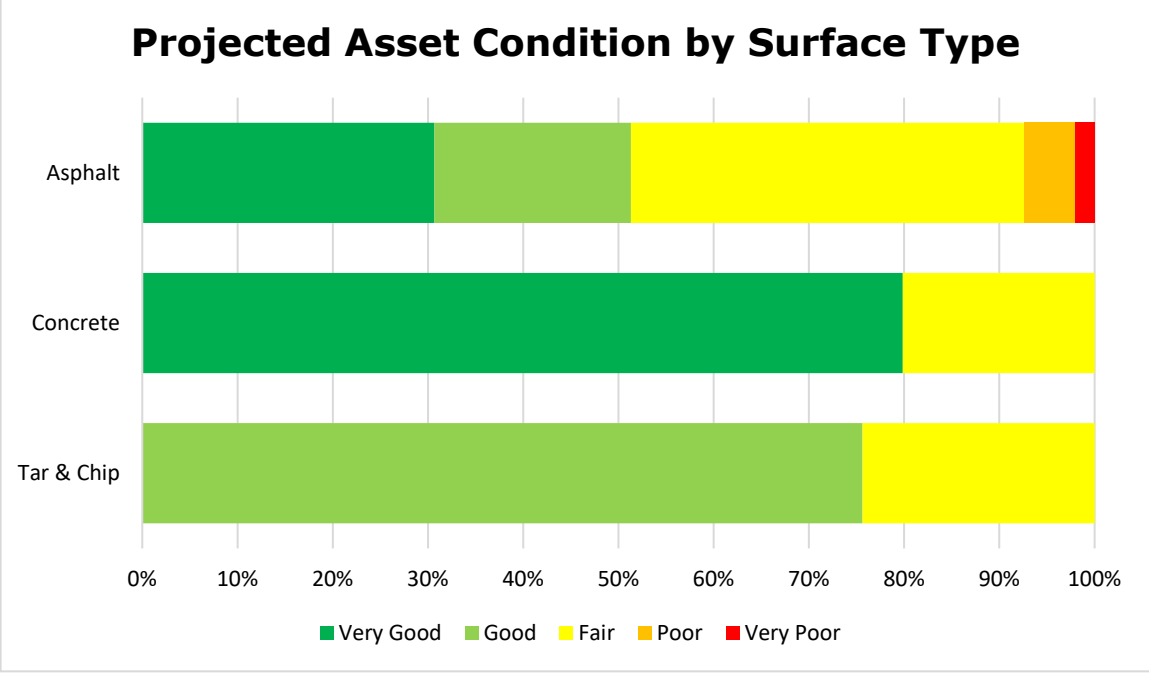


Figure 3-2: Projected Road Segment Condition by Surface Type

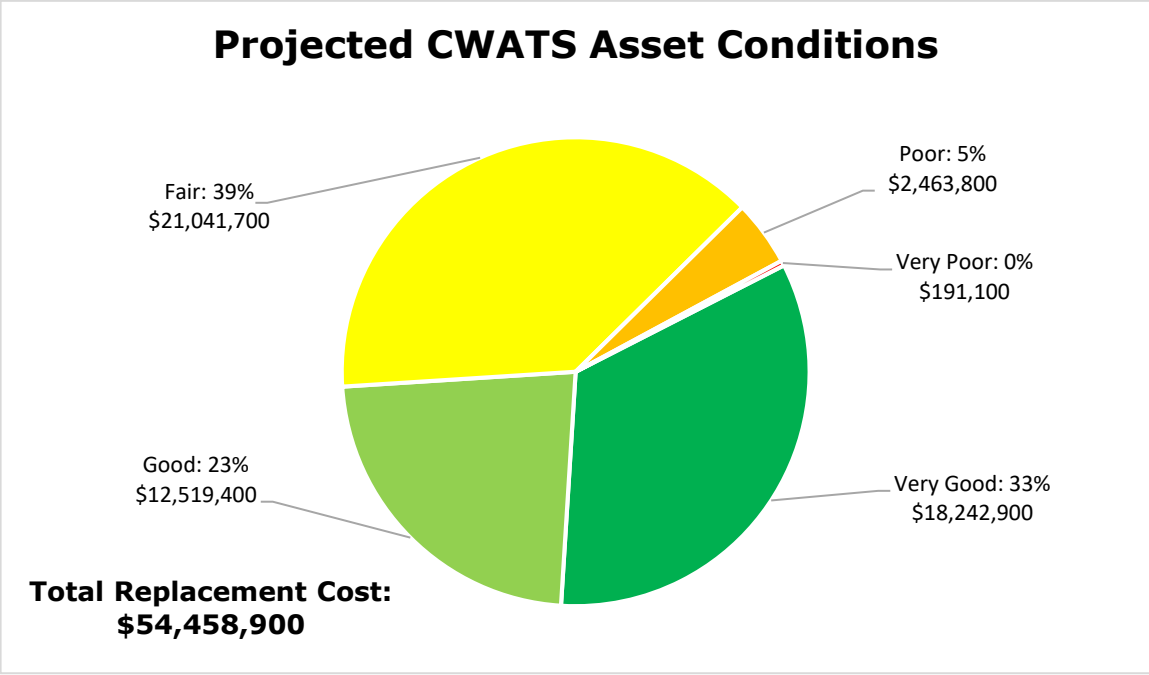


Overall, 52.7% of County roads are in Good to Very Good condition. The decline from the previous report is a result of funding not keeping pace with construction inflation and fewer kilometres being rehabilitated each year. In addition to rising asphalt prices, legislative requirements pertaining to excess soil is also adding to this increase. Eight road segments, totaling

35.58 lane km, are in very poor condition. This is an increase over the 7.58 lane km that were in very poor condition last year. These segments are part of the road rehabilitation plan within the following 5 years, and will continue to be monitored for safety issues until rehabilitation can be completed.

The Charts below outline the overall condition of the CWATS and Roundabout assets managed by Infrastructure and Planning Services.

Figure 3-3: Projected CWATS Asset Condition Summary

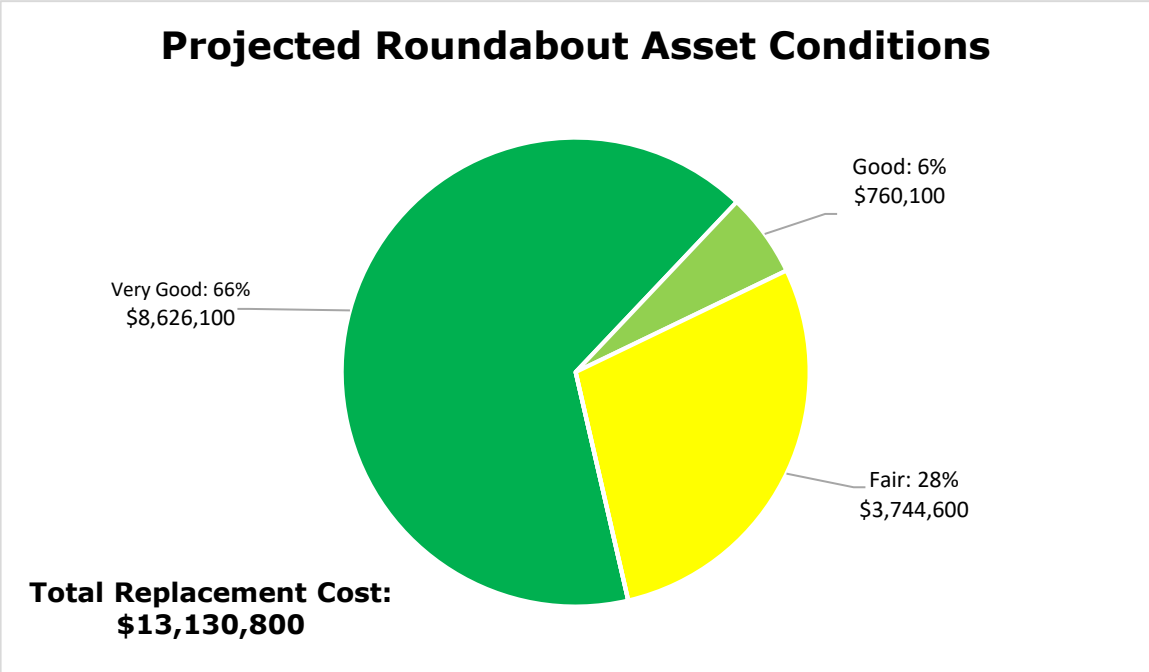


Overall, 56.5% of the CWATS network is in Good to Very Good condition. The overall assessment reflects the early stages of an aging network, of which the primary focus has historically remained on expansion. Despite the future funding sources for rehabilitation activities still being under discussion, rehabilitation of the existing network is planned to begin in 2026. Since 2011, the network has grown to over 310km of paved shoulders, cycle paths and multi-use trails.

The creation of CWATS assets is governed by the CWATS Master Plan with initial costs for construction shared with the local municipality in which the trail/path is located. The regional CWATS Committee continues to meet to discuss the responsibility for ownership, maintenance and future replacement of the network. As no agreement has been reached, the County continues to incorporate 100% of the future replacement cost of CWATS assets that are adjacent to County-owned roads (excluding connecting links) into its AMP. This approach ensures CWATS assets are captured at a regional level. Once responsibility for the financial obligation for future rehabilitation

has been agreed upon, the County will transfer the appropriate data to the various local municipalities and this will be reflected in future AMPs.

Figure 3-4: Projected Roundabout Asset Condition Summary



The overall condition of County roundabouts also reflects the early stages of an aging network, with the first roundabout constructed in 2011 and no major rehabilitation projects undertaken to date.

3.3 Current Levels of Service

The following tables illustrate the current Level of Service for the County's road network. These metrics include the community and technical Level of Service metrics that are required as part of O. Reg. 588/17 as well as any additional performance measures the County selected. The County is committed to maintaining a safe, reliable and efficient road network that facilitates the movement of people and goods between our local municipalities and our neighbouring municipalities.

3.3.1 Community Levels of Service

The following Table outlines the qualitative descriptions that determine the community Levels of Service provided by the road network structures.

Table 3-3: Road Network Community Levels of Service

Qualitative Description
The road network consists of asphalt, concrete and tar & chip road segments that connect our local municipalities
Pavement conditions are indexed from Very Good to Very Poor

Appendix B: Map of Road Segments shows the geographic location of each road segment in the County and highlights the Connecting Links. Refer to *Section 3.5 Shared Structures* for a complete listing of shared structures.

Appendix F: Condition Indexes provide a visualization of the quality of a Very Good road segment (a very pleasant, smooth ride with minimal distress) compared to a Very Poor segment (dangerous to maintain posted speed, with very severe distresses throughout).

3.3.2 Technical Levels of Service

The following Table outlines the quantitative descriptions that determine the technical Levels of Service provided by the road network structures.

Table 3-4: Road Network Technical Levels of Service

Key Performance Indicator	2024 LOS	2025 LOS	Proposed LOS
Number of lane-kilometres of roads as a proportion of square kilometres of land area of the municipality	0.74	0.74	N/A
Average pavement condition index value of paved roads	68.2%	64.6%	60-79%

3.3.3 Proposed Levels of Service

The proposed LOS options considered by Administration include:

1. **Status Quo** – This approach would maintain current funding levels, negating the need for a tax rate increase. While affordable to the taxpayer, with declining provincial funding and increasing construction inflation rates, this would continue to reduce the number of lane kilometres that would be rehabilitated each year, resulting in a further decline in pavement condition indexes. Modeling indicates that the

average condition index could drop to a Poor rating if funding remains at the current level. This translates to an increased risk of failure of a road, potentially triggering road closures and could significantly impact the health and safety of motorists. Longer term, this would also result in greater pressure in the future, at a much higher cost, to restore roads back to a Good condition.

2. **Inflationary** – This approach seeks to maintain the County's paved roads in Good condition by increasing expenditures in line with current inflation rates. Understanding that the construction rate of inflation is often higher than the Consumer Price Index, this option would require a slight increase in spending, but would allow the County to continue providing a Level of Service that Essex County residents have come to expect and demand. This option aims to balance safety and availability with affordability.

3. **Progressive** – This approach would strive to increase the average pavement condition index to ensure all roads are in the higher range of Good to Very Good condition. While taxpayers would certainly enjoy driving on a perfectly smooth road in every corner of the County, the cost of providing this Level of Service would not likely be affordable to many and not necessarily an essential service in the eyes of the taxpayer. This Level of Service is unlikely to be sustainable in the long term.

Administration plans to maintain its current Level of Service, such that an average pavement condition index will remain in the Good range (60-79%). In turn, this will help the region be an attractive place to live, support growth and development and provide the best value for taxpayer dollar while maintaining an affordable and reliable infrastructure. The affordability of maintaining current Levels of Service can be achieved through the County's continued efforts towards competitive procurement and effective preventative maintenance strategies. It will, however, require a commitment to keep up with inflationary pressures. Section 3.7 *Financing Strategy* outlines the minimum expenditures required to maintain a Good condition.

3.4 Lifecycle Management Strategy

In order to maximize the estimated useful life of an asset, a lifecycle management strategy must be adopted to proactively maintain an asset's condition and prevent accelerated deterioration. The following lifecycle strategy was developed to provide timely repairs and enhancements to the asset and extend its EUL at a lower total lifecycle cost. Note: tar & chip roads will be replaced with asphalt at their next scheduled rehabilitation.

Refer to the Rehabilitation Schedule included in Appendix G: 5-Year Rehabilitation Program.

Table 3-5: Road Network Lifecycle Activities

Activity Type	Description of Strategy
Inspection	Inspections of road segments occur on a weekly basis as part of a routine maintenance program conducted in accordance with the Minimum Maintenance Standards.
Crack Sealing	Preventative maintenance measures are implemented where inspection results show initial signs of deterioration. This program reduces erosion of the base caused by poor drainage and protects the pavement from accelerated deterioration due to freeze/thaw cycles.
Shouldering	Road shouldering is performed on an annual basis to maintain the structural integrity of the road and prevent cracks originating from the sides.
Seasonal maintenance	Summer roadside maintenance includes regular ditching, mowing, tree trimming, road sign installation and maintenance and line painting. Winter maintenance includes salting, snow plowing and snow removal.
Rehabilitation: Overlay	Rehabilitation strategies are applied on a case-by-case basis and are dependent on the current thickness of road, condition of the base and rate of deterioration of the surface. Overlay consists of applying a thin layer of asphalt over the existing road surface and extends the useful life of the road by approximately 5 years.
Rehabilitation: Mill & Pave	Mill & pave strategies are utilized when road conditions deteriorate to a PCI of 60 or less. This strategy strips a layer of the existing asphalt surface and relays new asphalt to restore the thickness of the road. The condition of the segment is restored to a PCI of 90.

Activity Type	Description of Strategy
Rehabilitation: CIREAM & Pave	The most expensive strategy, CIREAM (Cold In-Place Recycling with Expanded Asphalt Material) and pave program is utilized when sufficient asphalt thickness is present and surface conditions are likely to affect the longevity of a new asphalt surface. This strategy is applied once the PCI falls below 40 and is estimated to restore the condition of the segment to a PCI of 95.
Rehabilitation: Concrete Panel Repairs	Concrete roads require a much different maintenance and rehabilitation strategy than asphalt roads. Designed to last much longer than asphalt, concrete roads will rarely be rehabilitated or replaced in their entirety. Instead, an approach to repair or replace concrete panels (sections of the road) as necessary is taken. Given the relatively young age of the concrete road network, a routine panel replacement strategy is still under development. It is estimated that panel repairs would be required when the PCI falls below 40 and that, on average, 3.6% of the road network may be subject to panel replacement.

3.5 Shared Structures

The following road segments are shared under separate Connecting Link agreements with each local municipality. The length is indicated in centreline kilometres.

Table 3-6: Road Network Shared Structures

County Road	Local Name	Location	Length (km)	County share
CR 5	Meloche Rd.	CR 16 (Alma St.) - CR 18 (Simcoe St.)	1.18	100%
CR 16	Alma St.	CR 20 (Sandwich St.) – CR 5 (Meloche Rd.)	2.40	92.3%
CR 18	Simcoe St.	CR 20 (Sandwich St.) – CR 5 (Meloche Rd.)	2.13	97.4%

County Road	Local Name	Location	Length (km)	County share
CR 20	Sandwich St.	Former North Limit of Amherstburg – Former South Limit of Amherstburg	3.61	59.9%
CR 8	Maidstone Ave.	Former West Limit of Essex – Former East Limit of Essex	1.92	91.8%
CR 23	Gosfield Townline	Former North Limit of Essex – Former South Limit of Essex	0.74	98.0%
CR 34	Talbot Rd.	Former Northwest Limit of Essex – Former Southeast Limit of Essex	3.10	69.5%
CR 11	Queen St.	Former North Limit of Harrow (3rd Conc.) – CR 20 EP	1.17	80.3%
CR 13	Erie St.	CR 20 EP – Shepley Drain	0.45	100%
CR 20	King St.	Former West Limit of Harrow – Former East Limit of Harrow	1.60	63.7%
CR 20	Main St.	Former West Limit of Kingsville – 201m east of centreline of Kratz Road	3.01	70.4%
CR 29	Division Rd.	210m North of Kingsville Rd 2 - CR 20 (Main St.) EP	1.83	75.7%
CR 50	Heritage Rd.	CR 20 (Main St.) EP – Former Southwest Limit of Kingsville	0.48	80.6%
CR 2	First St. / Broadway St. / Tecumseh Rd.	CR 22 (Notre Dame St.) – Former East Limit of Belle River (Duck Creek)	1.98	95.9%
CR 22	Notre Dame St.	Former West Limit of Belle River – Former East Limit of Belle River (Duck Creek)	2.51	60.8%
CR 25	East Puce River Rd.	Former East ROW Limit of CR 25 – North ROW Limit of CPR	0.15	46.3%

County Road	Local Name	Location	Length (km)	County share
CR 27	Belle River Rd. / South St.	CR 22 EP – Former South Limit of Belle River (CP Railway NPL)	0.93	97.0%
CR 6	Todd Lane	CR 3 (Malden Rd.) – Hwy 3	2.09	86.8%
CR 40	Sprucewood Ave.	Matchette Rd (Windsor City Limits) – CR 2 (Malden Rd.)	1.45	90.4%
CR 7	Huron Church Line	Hwy 3 – Sandwich W. Parkway	1.71	84.9%
CR 20	Front Rd.	Morton Dr. (Windsor City Limits) – Gary Ave.	3.23	49.3%
CR 3	Malden Rd.	Windsor City Limits – Reaume Rd.	2.07	60.8%
CR 3	Malden Rd.	Reaume Rd. – Golfview Dr.	2.40	79.4%
CR 2	Tecumseh Rd.	Windsor City Limits – Former East Limit of St. Clair Beach (Pike Creek CL)	4.33	61.4%
CR 19	Manning Rd.	Riverside Dr. – Former South Limit of Tecumseh & St. Clair Beach (Via Railway ROW)	1.68	56.7%
CR 21	Brighton Rd.	Former South Limit of St. Clair Beach (Via Railway ROW) – CR 2 (Tecumseh Rd.) EP	.33	100%
CR 20	Seacliff Dr.	Mun#71 – 432m East of CR 33 (Bevel Line Rd) (Mun#929)	2.25	82.9%
CR 33	Bevel Line Rd.	CR 20 (Seacliff Dr.) to Former Limit of Leamington	.96	100%
CR 34	Talbot St.	Former West Limit of Leamington to Former East Limit of Leamington	2.70	56.4%

County Road	Local Name	Location	Length (km)	County share
CR 48	Oak St.	Former West Line of Leamington to Erie St.	.77	68.3%

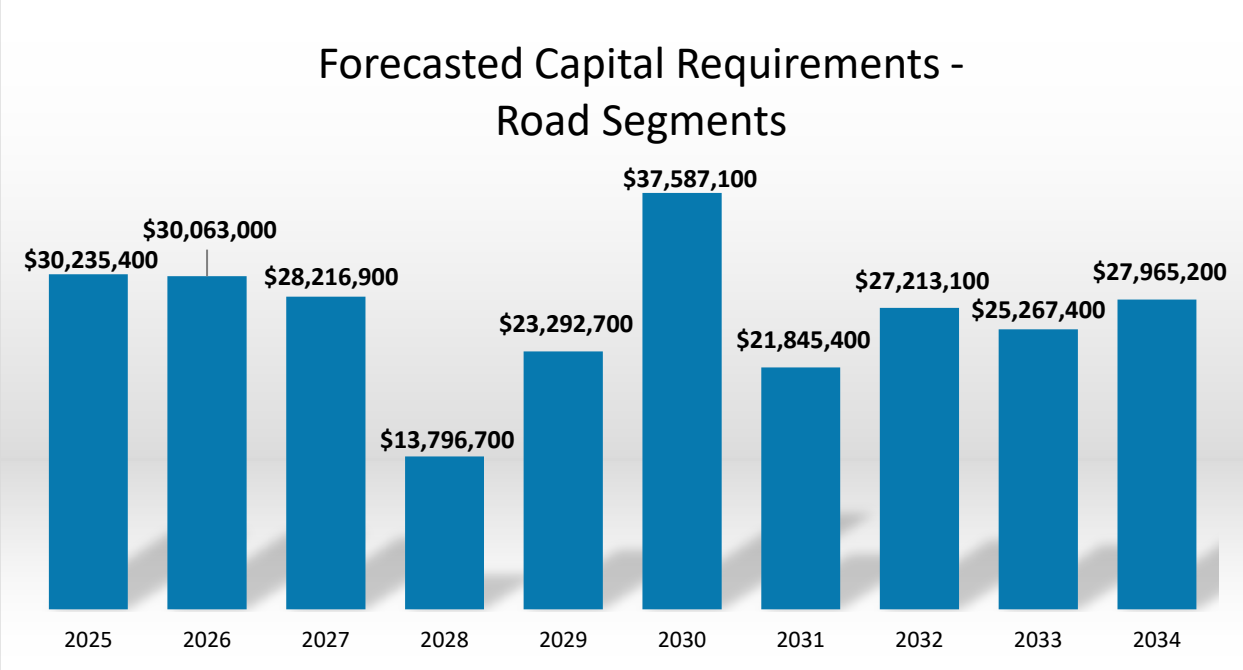
Ownership of Connecting Links is held with the local municipality; therefore, the replacement cost and condition of such assets are considered beyond the scope of this AMP. The individual agreements allow only for cost sharing of operating maintenance activities as per the schedule above. The annual requirement for County contributions to Connecting Links has not been included in the figures presented in this report and instead is factored into the County's annual operating budget requirement.

3.6 Forecasted Capital Requirements

3.6.1 Road Segments

The forecasted capital requirements for road segments for the next 10 years are outlined in the following Chart. The annual capital requirements represent the average amount of funding per year that the County should allocate towards future rehabilitation and lifecycle management activities. This does not include capital requirements for CWATS or roundabouts, which are reported on separately.

Figure 3-5: Forecasted Capital Requirements – Road Segments



Annual Capital Requirement – Road Segments: $30,990,500

Target Reinvestment Rate: 5.75%

Actual Reinvestment Rate: 2.47%

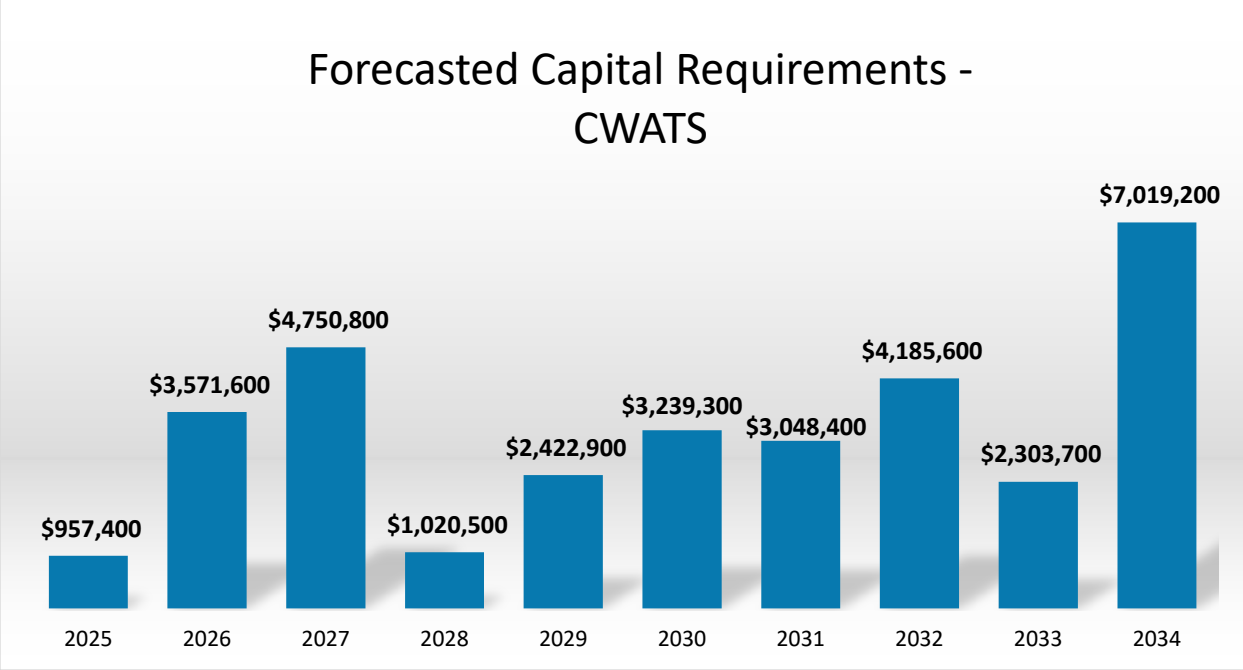
Shortfall: $17,691,300 per year

In addition, it is forecasted that $71,363,000 will be required over the next 10 years to finance the significant operating costs relating to the lifecycle activities identified in Section 3.3.3 *Proposed Levels of Service* and remain within the proposed LOS target range. This would include maintenance of the complete road network, including CWATS and Roundabouts. This estimate includes a 3% annual inflationary adjustment.

3.6.2 CWATS

CWATS spending currently continues to be focused on expansion. Due to deteriorating conditions and alignment with planned road rehabilitation, it is anticipated that sections of the current CWATS network will be rehabilitated starting in the next few years. It is expected that a funding agreement will be settled to address responsibility for this necessary lifecycle activity prior to construction. The following Chart identifies the capital requirement to maintain existing CWATS assets over the next 10 years.

Figure 3-6: Forecasted Capital Requirements - CWATS



Annual Capital Requirements – CWATS: $3,411,300

Target Reinvestment Rate: 6.26%

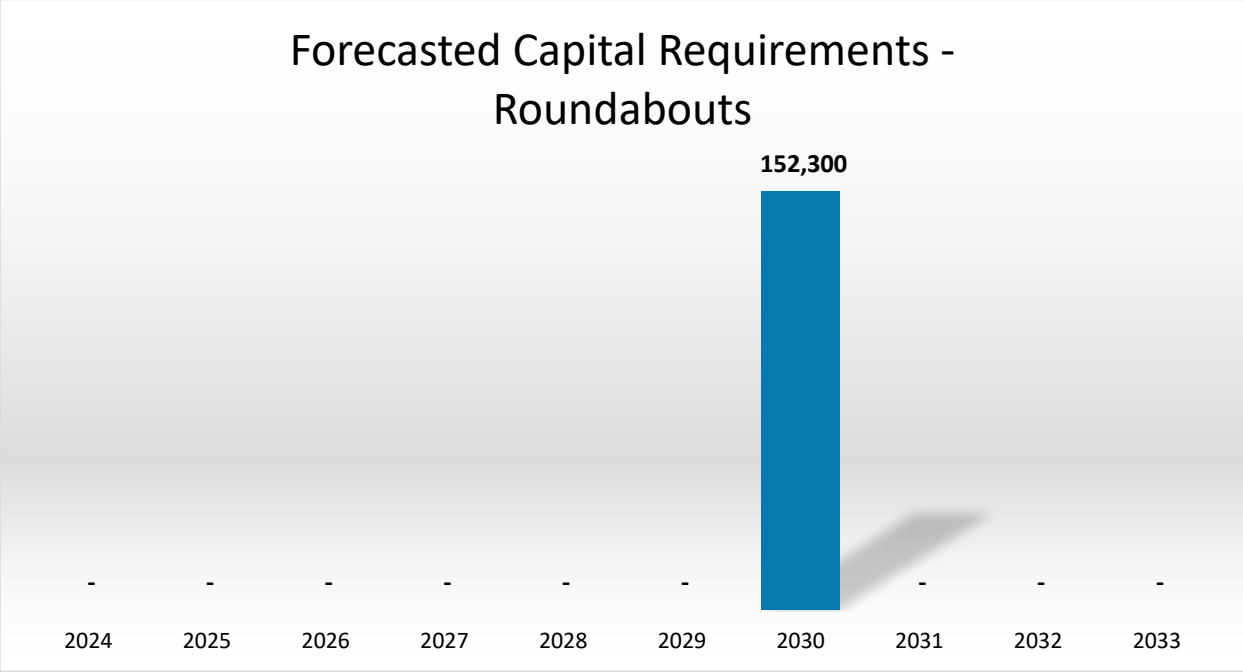
Actual Reinvestment Rate: 0.00%

Shortfall: $3,411,300

3.6.3 Roundabouts

The roundabout network is also relatively young and therefore the requirement for significant capital financing needs are still a few years away. Most roundabouts will only require concrete panel repairs throughout their expected lifespan, however the roundabout at County Road 8 and County Road 23 will eventually require asphalt rehabilitation. The forecasted capital requirements necessary to maintain current LOS for the next 10 years are outlined in the following Chart. The annual capital requirement represents the average amount of funding per year that the County should allocate towards future rehabilitation and replacement needs of all roundabouts.

Figure 3-7: Forecasted Capital Requirements - Roundabouts



Annual Capital Requirements – Roundabouts: $418,100

Target Reinvestment Rate: 3.18%

Actual Reinvestment Rate: 0.00%

Shortfall: $418,100

3.7 Financing Strategy

The Proposed LOS aims to maintain the average pavement condition at a minimum index of 60. While we are currently at the low end of the target range, historical comparison shows us that current investments have not kept pace with inflation and the average condition is declining. According to the Ontario Asphalt Pavement Council, the cost of asphalt has increased an average of 4.8% per year since 2009. In order to ensure the average pavement condition index remains in Good condition and to continue to provide a safe, reliable transportation network, inflationary increases will be required to keep pace with rising costs.

Road rehabilitation projects are partially funded by Canada Community-Building Fund, with allocations remaining relatively stable over the last few years. Advocacy efforts at the Federal level should continue to ensure the sustainability of this critical funding. In the absence of upper-level government funding, Administration will remain focused on cost-containment measurements through its competitive procurement process and will seek levy funding to support these inflationary costs where other funding sources are insufficient.

3.8 Risk Management

When determining the priority of attention to asset management, the County utilizes a risk-based approach focused on probability and consequence.

The assessment of risk is determined based on the asset segment, with consideration for the asset's criticality to operations. In all cases, the probability of failure is based 100% on the condition (PCI) of the asset, on a scale of 1 to 5, where 1 is a rare likelihood of failure and 5 represents an almost certain failure. The consequence of failure is based 100% on the Road Classification using a scale of 1 to 5, where 1 is an insignificant consequence of failure and 5 represents severe consequences. A Class 1 road, which is more heavily travelled, would have a severe impact on the Levels of Service provided if it were to fail, more so than a Class 3 road which sees a lower volume of traffic. The County has deemed that the failure of any road is not insignificant in consequence, therefore even the lowest Class of road still carries a minor consequence of failure.

The following Tables summarize the risk assessment and how it is determined based on the condition and Road Class rating of the asset.

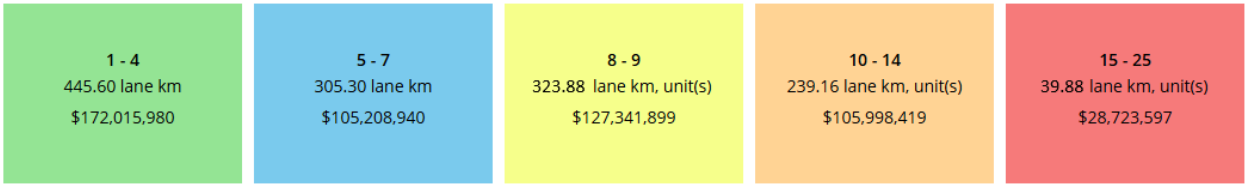
Table 3-7: Road Network Risk Management Assessment

Condition Range	Probability of Failure Score
0 – 20	5
20 – 40	4
40 – 60	3
60 – 80	2
80 – 100	1

Road Class	Consequence of Failure Score
Class 1	5 (Severe)
Class 2	4 (Major)
Class 3	3 (Moderate)
Class 4	2 (Minor)
	1 (Insignificant)

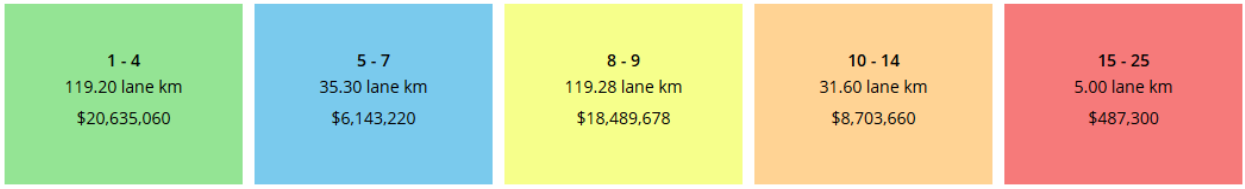
The Figures below summarize the overall risk assessment for each asset and categorizes them according to the level of risk they carry. The assessment is determined by multiplying the probability of failure by the consequences of failure.

Figure 3-8: Road Segments Risk Matrix (All Surface Types)



Road segments assessed with the highest risk rating include 13.8 lane km of Class 1 roads, 15.4 lane km of Class 2 roads and 10.68 lane km of Class 3 roads. Each of these segments falls into this category based on their Poor / Very Poor projected condition, their Major to Severe consequence of failure, or a combination of both.

Figure 3-9: CWATS Risk Matrix



The paved shoulders segment in the highest risk category was one of the first CWATS assets constructed and is assessed in this category based on its location on a Class 2 road. Rehabilitation will be addressed as part of a longer-term expansion plan along the corridor.

Figure 3-10: Roundabouts Risk Matrix

The roundabout which poses a very high risk of failure or disruption to the Levels of Service provided is located on a Class 2 Road and is projected to be in Fair condition.

3.9 Projected Growth

The Infrastructure and Planning Services Department has developed and maintains a long-term Roadway Expansion Plan that forecasts the additional infrastructure that will be needed to address population growth and economic development over the next 20 years.

Within the next 10 years, the forecasted growth is expected to place pressure on the County's road network with significant increases in traffic volume in certain parts of the region. This will be the direct result of the development of new residential neighbourhoods to accommodate population growth, as well as significant commercial and institutional developments such as a new Windsor Essex acute care hospital and major investments in the electric vehicle and manufacturing sectors.

The County plans to expand its road network with the addition of 54.3 lane kilometres by 2034, primarily on Class 1 and 2 Roads. This expansion will also include the construction of 5 new roundabouts to facilitate better traffic flow and reduce the risk of motor vehicle collisions at key intersections (one of which was completed in 2024 at the intersection of County Roads 42 and 43).

The Roadway Expansion Plan is currently estimated to cost $414 million over the next 10 years, and fully encompasses all capital costs of the project, including necessary land expropriations and bridge and culvert enhancements as part of the program. In addition, significant operating costs to repair and maintain these new assets is estimated at up to $2,862,300 over the next 10 years, including a 3% annual inflationary adjustment.

In addition, the CWATS Master Plan calls for an additional 61.3 km of paved shoulders and bike lanes over the next 10 years, in response to population growth and current and forecasted demand for more Active Transportation routes. This represents infrastructure built adjacent to a County Road in a

Rural area only, the $18.8 million cost of which would be born 100% by the County. Additionally, the Plan calls for the construction of 9.6km of paved shoulders, bike lanes and multi-use paths over the next 10 years. The capital cost of $1.4 million represents the County's 40% share of the cost of these projects, while significant operating costs have been estimated at up to $1,615,700 over the next 10 years, including a 3% annual inflationary adjustment.

4.0 Bridges & Culverts

4.1 Asset Portfolio: Segment, Quantity and Replacement Cost

The County of Essex owns 84 bridges and 125 culverts with spans greater than 3m. (Note: it was confirmed in 2024 that one of the culverts previously reported is actually owned by the Ministry of Transportation Ontario. This culvert has been removed from the database). The following Table illustrates the key asset attributes for these structures, including quantity, current replacement cost and the method used to estimate replacement cost by segment. Bridges are further broken down into three components: deck, structure and foundation. Each of these components has a different EUL and therefore the timing of the replacement cost varies.

Table 4-1: Bridges & Culverts Portfolio Summary

Asset Segment	Quantity	Replacement Cost	Replacement Cost Method
Bridges - Deck	84	$100,475,600	Cost / Unit
Bridges - Structure	84	$68,864,800	Cost / Unit
Bridges - Foundation	84	$55,375,800	Cost / Unit
Culverts	125	$84,719,900	Cost / Unit
Total		**$309,436,100**	

The replacement cost of a bridge has been calculated by comparing the historical cost of recent comparable projects with an inflationary increase over estimates used in prior reports. The allocation of cost by component remains the same as previously reported: 45% for the deck, 30% for the structure and 25% for the foundation.

The replacement cost of a culvert has also been updated to reflect the average cost of a culvert over the last 5 years. Where the deck area is unknown, non-residential building CPI tables were used to estimate the current replacement cost.

4.2 State of the Local Infrastructure

The Table below outlines the current state of the County's bridge and culvert infrastructure, including the average age (weighted average by replacement cost), useful life and average condition of assets by segment.

Table 4-2: Bridges & Culverts Age, Useful Life and Average Condition

Asset Segment	Average Age	Useful Life	Average Condition (%)
Bridges - Deck	14.6 years	20 years	67.0% (Good)
Bridges - Structure	21.5 years	40 years	66.8% (Good)
Bridges - Foundation	28.3 years	80 years	65.3% (Good)
Culverts	38.4 years	60 years	57.0% (Fair)

The majority of the County's bridges, 94.5% are assessed in Fair or better condition. Of these, 81.0% are assessed as Good to Very Good condition. Of the County's culverts, 77.3% are assessed in Fair or better condition. Of these, 49.1% are assessed as Good to Very Good condition.

Subsequent to December 31, 2023, all bridges listed in Poor or Very Poor condition have been or are currently being rehabilitated. Numerous culverts listed in Poor or Very Poor condition have previously been scheduled for replacement but later deferred for various reasons. Additional funding will be requested in upcoming budgets to address the backlog as these structures pose the highest risk of failure and greatest public safety concern. County Engineers continue to closely monitor these structures to ensure they remain safe until replacement can ultimately take place.

The following Charts outline the overall condition of the current bridge and culvert infrastructure assets.

Figure 4-1: Projected Bridge Condition Summary

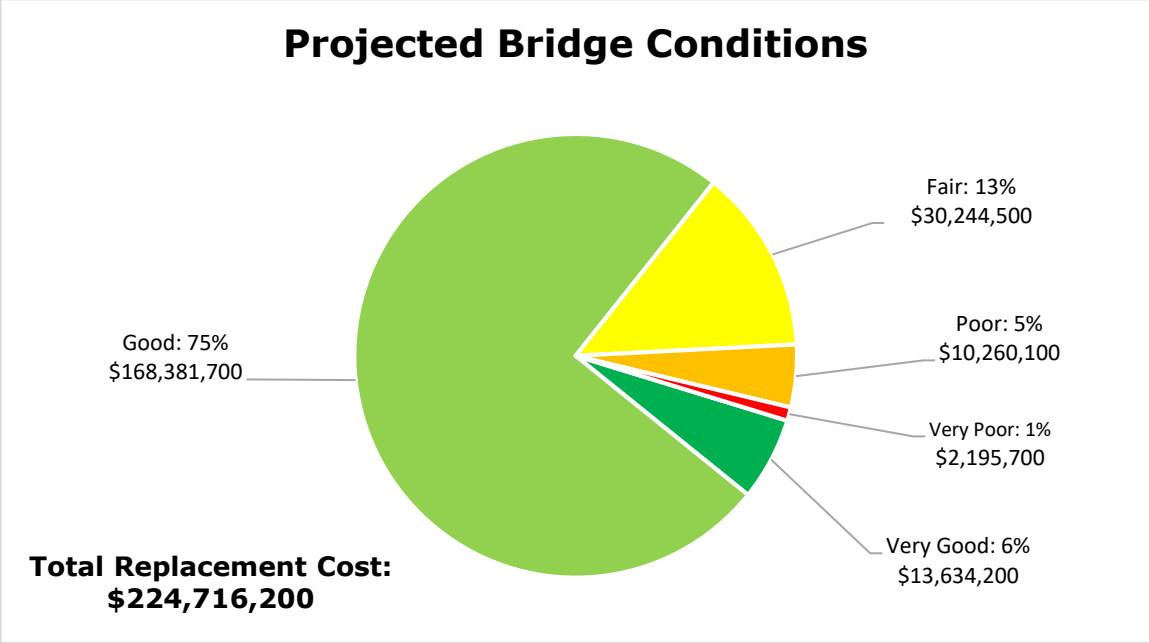
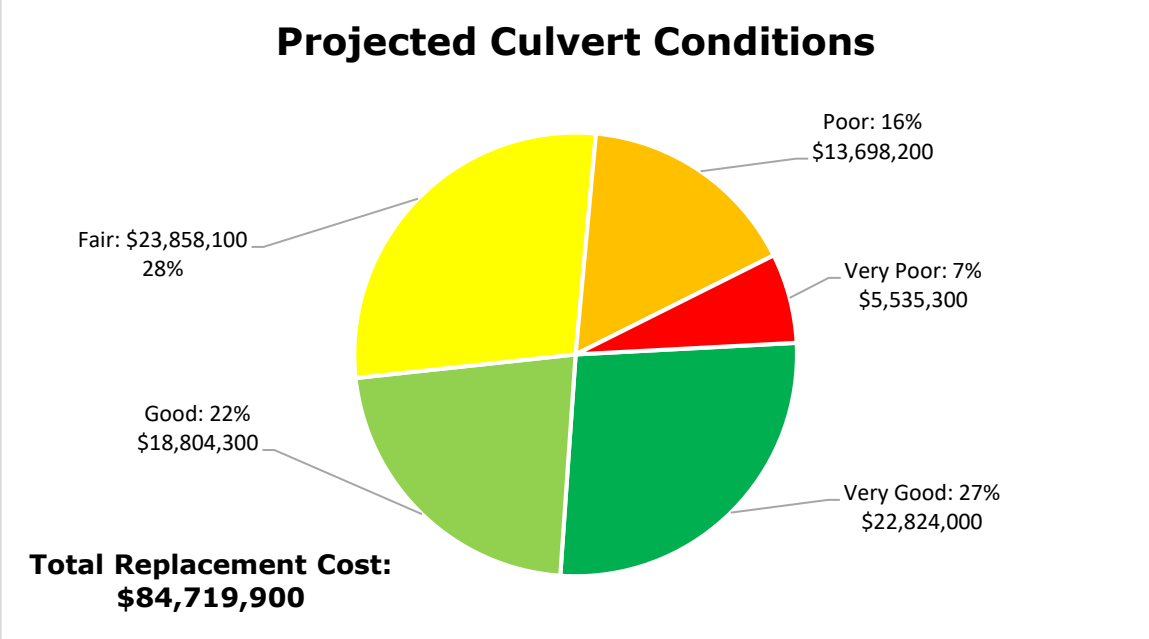


Figure 4-2: Projected Culvert Condition Summary



Condition assessments are conducted every two years in accordance with the OSIM. Average conditions presented are based on the weighted average replacement cost of the segment. All structures receive a Condition Index ranging from 0 to 100. Bridge structures were inspected in 2024, while structural culverts greater than 3 metres were inspected in 2023.

4.3 Current Levels of Service

The following tables illustrate the current Level of Service for the County's bridges and culverts. These metrics include the community and technical Level of Service metrics that are required as part of O. Reg. 588/17 as well as any additional performance measures the County selected for this AMP. As with the road network, bridges and culverts also play an integral part in the movement of people and goods between our local municipalities. The County is committed to maintaining safe and reliable bridges and culverts that facilitate this goal.

4.3.1 Community Levels of Service

The following Table outlines the qualitative descriptions that determine the community Levels of Service provided by the bridge and culvert structures.

Table 4-3: Bridges & Culverts Community Levels of Service

Qualitative Description
The bridge network provides safe and reliable crossings, facilitating the flow of traffic across the region while managing stormwater
The culvert network provides safe and reliable crossings, facilitating the flow of traffic across the region while managing stormwater
Bridge conditions are indexed from Very Good to Very Poor
Culvert conditions are indexed from Very Good to Very Poor

Appendix C: Map of Bridges shows the geographic location of each of the County bridges, including those located on Connecting Links with local municipalities and shared structures with neighbouring municipalities. Refer to Section 4.5 *Shared Structures* for a complete listing of shared structures.

Appendix D: Map of Culverts shows the geographic location of each of the County culverts, including those located on Connecting Links with local municipalities and shared structures with neighbouring municipalities. Refer to Section 4.5 *Shared Structures* for a complete listing of shared structures.

Appendix F: Condition Indexes provide a visualization of the quality of a Very Good Bridge/Culvert (in 'new' condition with no visible defects) compared to a Very Poor Bridge/Culvert (where elements have severe to very severe defects that are visible, usually indicating more serious underlying problems).

4.3.2 Technical Levels of Service

The following Table outlines the quantitative descriptions that determine the technical Levels of Service provided by the bridge and culvert structures.

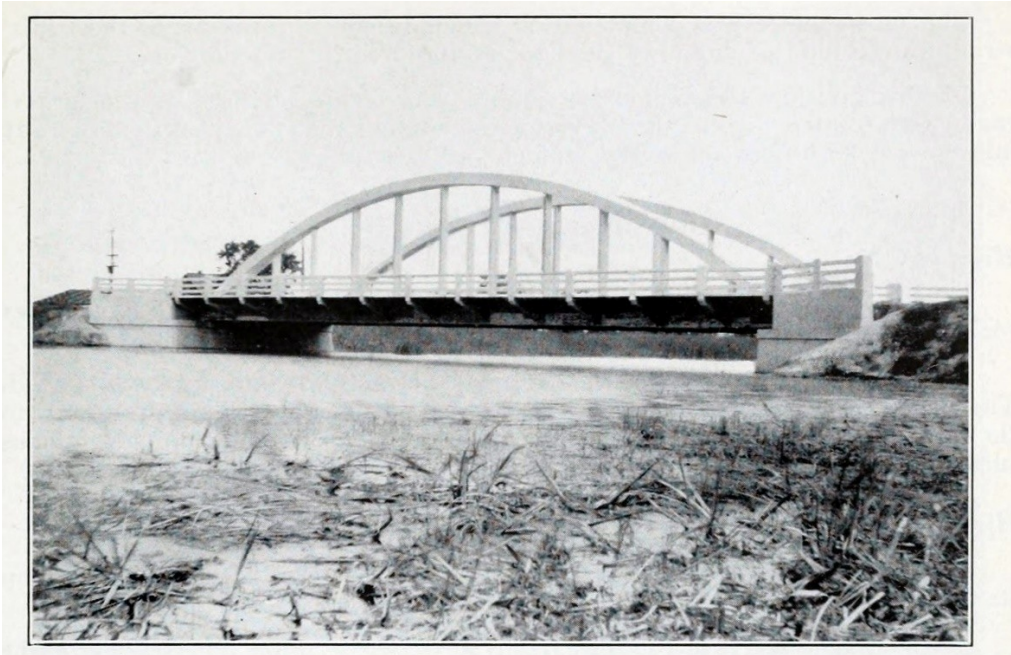
Table 4-4: Bridges & Culverts Technical Levels of Service

Key Performance Indicator	2024 LOS	2025 LOS	Proposed LOS
Number of bridges in the municipality with loading or dimensional restrictions	1	1	N/A
Average bridge condition index value	64.7%	66.5%	60-79%
Average culvert condition index value	59.0%*	57.0%	60-79%

*The 2024 LOS for culverts has been restated for comparative purposes to remove the impact of a culvert that was recently determined not to be owned by the County of Essex.

There is only one bridge that has load and/or dimension restrictions: the bowstring arch bridge on County Road 8 crossing Canard River. Due to its heritage designation and the fact that it continues to be one of the most photographed structures in the region, there are no plans to rehabilitate or replace this bridge to mitigate these restrictions.

Photo courtesy of www.historicbridges.org
Photographer credit: Nathan Holth & Rick McOmber



Bridge over River Canard at Loiselleville, Essex County, Road No. 20. Built in 1937; 120-foot span.

Newly Completed Bridge
Source: Ontario Sessional Papers, Highway Report, 1937
Digitized by Internet Archive and Enhanced By HistoricBridges.org

4.3.3 Proposed Levels of Service

The proposed LOS options considered by Administration include:

1. **Status Quo** – This approach would allow the current bridge and culvert conditions to decrease, in an effort to avoid any potential tax rate increase. By maintaining expenditure levels at their current rates, additional funds would not be needed, however critical infrastructure would continue to deteriorate as rising costs would prevent the County from rehabilitating or replacing structures in a timely manner, increasing risk of failure and significantly impacting the safety of motorists.

2. **Inflationary** – This approach is designed to maintain current LOS in Good condition by increasing expenditures in line with current inflation rates, especially for rehabilitation and replacement of bridges. Understanding that the construction rate of inflation is often higher than the Consumer Price Index, this option would require a slightly larger revenue contribution, but would allow the County to maintain a safe and reliable transportation network.

3. **Progressive** – This approach proposes to increase the average bridge or culvert condition index to ensure that all bridges and culverts are in the higher end of the Good range or even Very Good condition. While infrastructure in such condition would certainly facilitate a smooth ride and effective stormwater management, the cost of providing this Level of Service is not realistic and would not likely be affordable.

Administration plans to maintain a Level of Service such that the average bridge/culvert condition index remains within the Good range (60-79%), consistent with an Inflationary approach. This ensures a reliable and safe network that will help the region be an attractive place to live, support growth and development and provide the best value for taxpayer dollar. The affordability of maintaining this Level of Service can be achieved through the County's continued efforts towards competitive procurement, effective preventative maintenance strategies and keeping up with inflationary demands. Advocacy at the Provincial Level will also help to ensure provincial funding continues to be available to support these projects.

4.4 Lifecycle Management Strategy

In order to maximize the estimated useful life of an asset, a lifecycle management strategy must be adopted to proactively maintain an asset's condition and prevent accelerated deterioration. The following lifecycle strategy was developed to provide timely repairs and enhancements to the asset and extend its EUL at a lower total lifecycle cost.

Table 4-5: Bridges & Culverts Lifecycle Activities

Activity Type	Description of Strategy
Inspection	Inspections of bridge and culvert structures are conducted on alternate years, in compliance with the OSIM.
Maintenance, rehabilitation and replacement	Maintenance, rehabilitation and replacement of structures are scheduled according to the results of the OSIM inspections.

4.5 Shared Structures

The following structures are shared between the County and other municipalities and are governed by an agreement with each municipality.

Table 4-6: Bridges & Culverts Shared Structures

Asset ID	Bridge Name	Other Owner	Share
B-01-09	Tilbury Creek	Municipality of Chatham-Kent	50%
B-01-12A	Government Drain #4	Municipality of Chatham-Kent	50%
B-01-13	Campbell Sideroad Drain	Municipality of Chatham-Kent	50%
B-01-14	Cottingham Drain	Municipality of Chatham-Kent	50%
B-01-19	Two Creeks Drain	Municipality of Chatham-Kent	50%
B-01-25	West Two Creek	Municipality of Chatham-Kent	50%
B-03-01	Grand Marais Drain	Town of Lasalle	50%
B-03-02	Cahill Drain	Town of Lasalle	50%

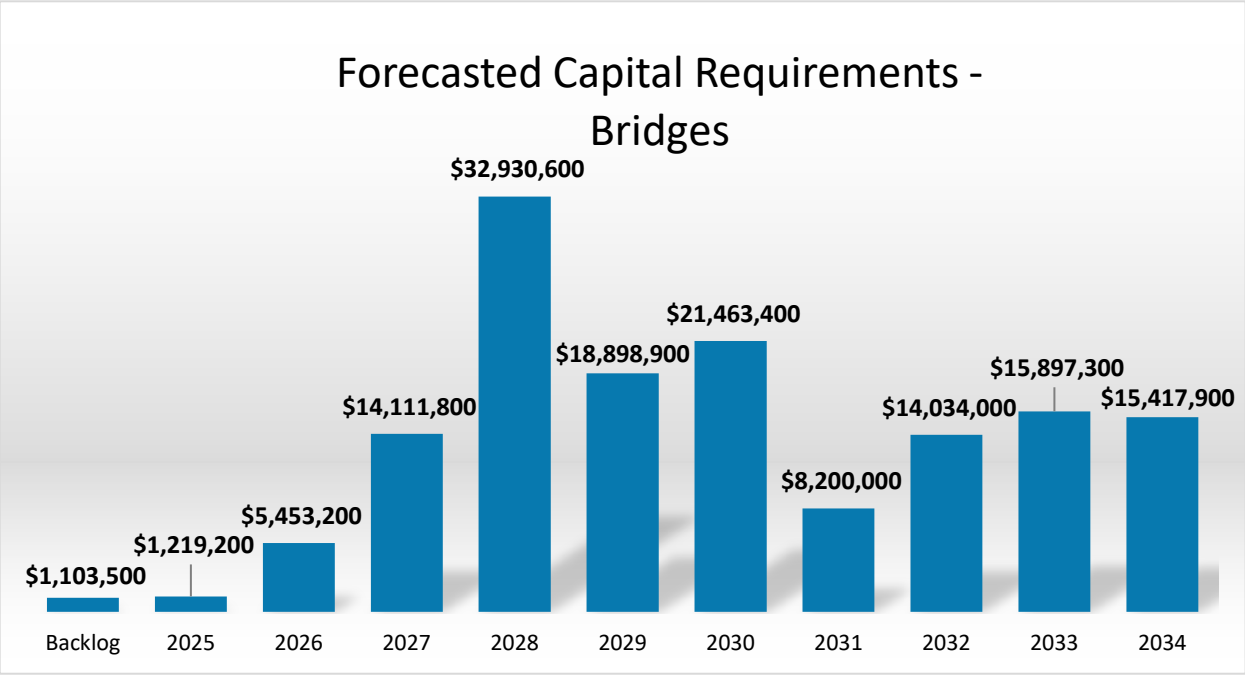
Asset ID	Bridge Name	Other Owner	Share
B-05-04	Big Creek	Town of Amherstburg	50%
B-06-01	Grand Marais Drain	Town of Lasalle	50%
B-16-01	Big Creek	Town of Amherstburg	50%
B-20-01	Turkey Creek	Town of Lasalle	50%
B-22-16	Belle River	Municipality of Lakeshore	50%
B-40-01	South Branch Turkey Creek	Town of Lasalle	50%
C-01-216	South Dales Drain Extension	Municipality of Chatham-Kent	50%
C-29-086	Mill Creek	Town of Kingsville	50%

The County's portion of the shared structures was used to determine the replacement cost of the assets included in this Plan.

4.6 Forecasted Capital Requirements

The forecasted capital requirements for bridges for the next 10 years are outlined in the following Chart. The annual capital requirements represent the average amount of funding per year that the County should allocate towards future rehabilitation and replacement needs. Projects may include partial rehabilitation of the deck and/or structure, or may require complete replacement including foundation. Due to the complex and varying engineering designs of bridge structures, it is difficult to establish a lifecycle management strategy that applies to all assets. Minor rehabilitation which may fall below the threshold for capitalization, is often undertaken as part of a regular maintenance plan until the eventual full replacement of the bridge component is performed.

Figure 4-3: Forecasted Capital Requirements - Bridges



Backlog at the end of 2023 is comprised of one bridge, which is currently scheduled for replacement as part of the 2025 Rehabilitation Program.

Annual Capital Requirement - Bridges: $7,629,900 per year

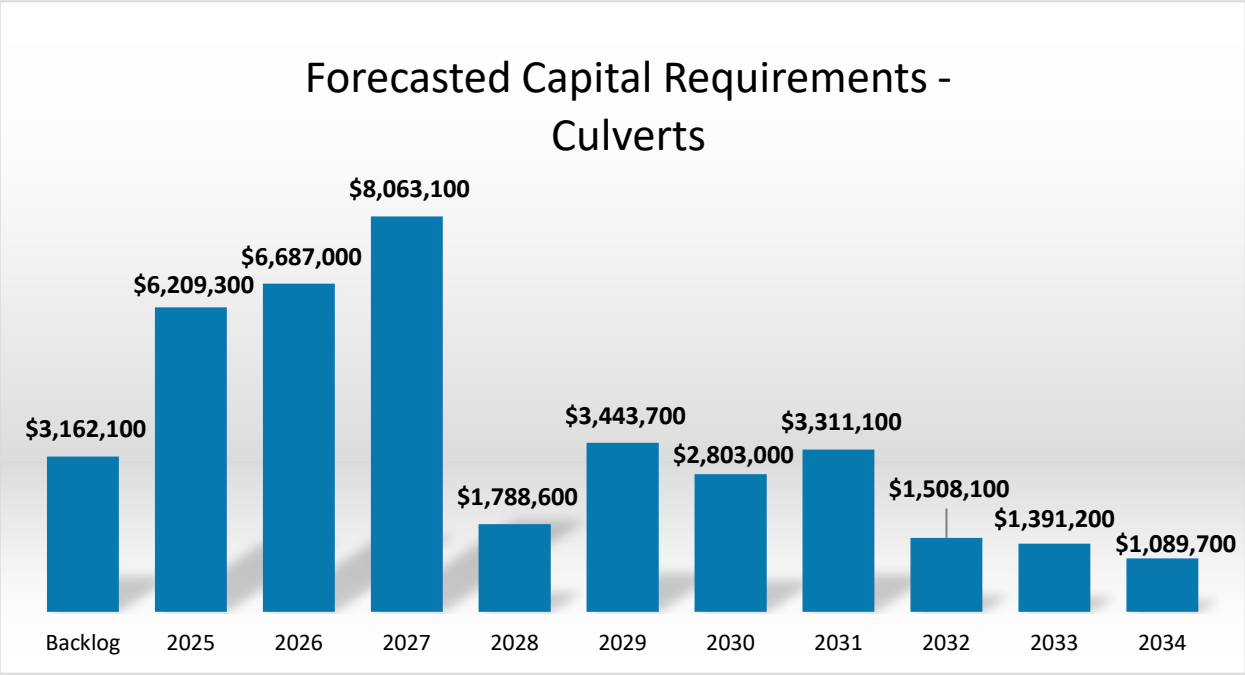
Target Reinvestment Rate: 3.40%

Actual Reinvestment Rate: 0.64%

Shortfall: $6,196,200 per year

Due to the challenges associated with the rehabilitation, culverts are more often replaced at the end of their useful life. Due to their inferior quality, Corrugated Steel Pipe culverts are now being replaced with concrete culverts in higher-risk environments to provide increased capacity and improve safety and reliability. The forecasted capital requirements for culverts for the next 10 years are outlined in the following Chart. The annual capital requirement represents the average amount of funding per year that the County should allocate towards future rehabilitation and replacement needs.

Figure 4-4: Forecasted Capital Requirements - Culverts



Backlog at the end of 2023 includes 4 culverts, 3 of which were budgeted for rehabilitation beginning in 2022, but were deferred for various reasons and ultimately replaced in 2024. The fourth culvert has been budgeted for replacement in 2025.

Annual Capital Requirement – Culverts: $1,490,500 per year

Target Reinvestment Rate: 1.76%

Actual Reinvestment Rate: 1.77%

Funding Surplus: $11,200 per year

Average expenditures over the last 4 years exceeds the annual capital requirement as an unbudgeted culvert was replaced in 2021 as a result of an emergency. The forecasted capital requirements over the next 10 years reflects the need to address culverts that are or are projected to be in Poor to Very Poor condition during the next 6-7 years. Ideally, 4 culverts should be rehabilitated per year, once this pending backlog is addressed.

In addition, it is forecasted that $2,063,000 will be required over the next 10 years to finance the significant operating costs relating to the Bridge and Culvert lifecycle activities identified in Section 4.3.3 *Proposed Levels of Service*. This estimate includes a 3% annual inflationary adjustment.

4.7 Financing Strategy

The Proposed LOS aims to maintain the current bridge condition index (BCI) within the "Good" range (60-79%), while increasing the average culvert condition index (CCI) to be within this range. Maintaining the BCI at a minimum of 60 will require an inflationary increase of at least 5%. This translates to an average of at least $202,250 per year over the next 10 years.

Based on Figure 4-4: *Forecasted Capital Requirements - Culverts*, a significant investment will be needed over the next few years in order to increase the CCI to meet this target range. The 2025 State of Good Repair program allocates $4,025,000 towards replacing culverts (including 1 backlog) and will need to remain at this investment level at a minimum for at least the next 9 years in order to address current infrastructure that will need replacement during this time. In addition, smaller road crossing culverts (less than 3 metres in diameter) were not historically included in our Asset Management database due to their lower historical cost, but are costing significantly more to replace now. Where the cost exceeds the capitalization threshold (currently $50,000), these are now being added to our infrastructure listing as replacement occurs. Dollars that were typically earmarked for replacement of larger culverts have been diverted to replacing these road crossings, resulting in this impending backlog. This strategy seeks to maintain a consistent level of funding for culverts with a goal to address the imminent backlog over a period of 9 years.

Some bridge and culvert projects are partially funded from the provincial Ontario Community Infrastructure Fund (OCIF). As OCIF funding has steadily declined over the last few years, provincial advocacy efforts will be critical to supporting these projects as the decline in funding places additional pressure on local municipalities.

4.8 Risk Management

When determining the priority of attention to asset management, the County utilizes a risk-based approach focused on probability and consequence.

The assessment of risk is determined based on the asset segment, with consideration for the asset's criticality to operations. In all cases, the probability of failure is based 100% on the condition (BCI or CCI) of the asset, on a scale of 1 to 5, where 1 is a rare likelihood of failure and 5 represents an almost certain failure. The consequence of failure is based 100% on the Road Classification where the bridge or culvert is located, using a scale of 1 to 5, where 1 is an insignificant consequence of failure and 5 represents severe consequences. The County has deemed that the failure of

any bridge or culvert is not insignificant in consequence, therefore even those located on the lowest Class of road still carry a minor consequence of failure.

The following Tables summarize the risk assessment and how it is determined based on the condition and Road Class rating of the asset.

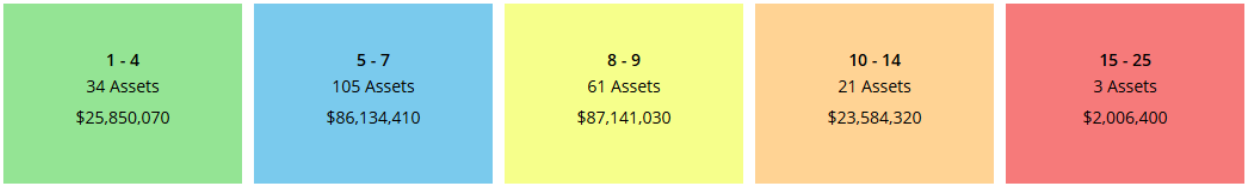
Table 4-7: Bridges & Culverts Risk Management Assessment

Condition Range	Probability of Failure Score
0 – 20	5
20 – 40	4
40 – 60	3
60 – 80	2
80 – 100	1

Road Class	Consequence of Failure Score
Class 1	5 (Severe)
Class 2	4 (Major)
Class 3	3 (Moderate)
Class 4	2 (Minor)
	1 (Insignificant)

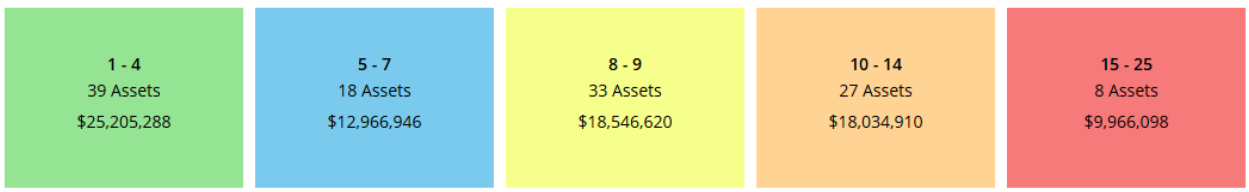
The Figures below summarize the overall risk assessment for each asset and categorizes them according to the level of risk they carry. For bridges, the risk matrix is applied to each component of the bridge (i.e. deck, structure & foundation). For culverts, the risk matrix is applied to the whole asset. The assessment is determined by multiplying the probability of failure by the consequences of failure.

Figure 4-5: Bridges Risk Matrix



One bridge (3 components) assessed with a very high-risk rating is currently under construction as of early 2025.

Figure 4-6: Culverts Risk Matrix



All of the culverts with a very-high risk are assessed in Poor or Very Poor condition, and have been replaced or will be budgeted for replacement within the next few years.

4.9 Projected Growth

Based on the Roadway Expansion Plan prepared by the Infrastructure and Planning Services Department, 18 existing bridges and culverts are located on road segments that are scheduled for expansion in the next 10 years. Of these, it is anticipated that at least 11 may be impacted by these projects and require replacement or expansion. The capital cost of this impact has been included in the estimated costs provided in Section 3.9 *Projected Growth*. Significant operating costs for this expansion cannot be reasonably estimated at this time, since no new bridges or culverts are expected to be added. The incremental cost of repair and maintaining a potentially slightly larger bridge will be factored into future operating budget requests.

Bridge and Culvert projects are currently funded by a combination of tax dollars and Ontario Community Infrastructure Fund (OCIF) dollars, as part of the County's State of Good Repair program. While the County saw increasing OCIF funds flowing from the Province throughout the pandemic (2019-2022), funding has been steadily decreasing over the last 3 years, anywhere from 4% to 15% of the prior year allocation. Given this trend, along with the anticipated costs of replacing or expanding impacted structures, additional financial strategies will need to be explored.

5.0 Stormwater Network

5.1 Asset Portfolio: Segment, Quantity and Replacement Cost

With the completion of Phase 1 of construction on County Road, the County of Essex now owns and maintains 7.6km of stormwater mains. The Table below illustrates the key asset attributes for the County's stormwater network, including quantity, current replacement cost and the method used to estimate replacement cost.

Table 5-1: Stormwater Network Portfolio Summary

Asset Segment	Quantity	Replacement Cost	Replacement Cost Method
Stormwater Mains	7.6km	$21,410,300	CPI Tables

A new stormwater main was constructed in 2023 to aid with redirecting water runoff from the newly constructed County Road 42 corridor. The replacement cost of the stormwater network was determined using the historical cost inflated to present value using CPI tables. As the stormwater network is still relatively new and not extensive, this approach remains most appropriate.

In addition to stormwater mains, which are located in more urban areas, the County also owns and maintains 3,170km of open drains and ditches which aid in drainage and stormwater management. Municipal drains have not historically formed part of the capital asset inventory and as a land feature, do not have a replacement cost associated with them. An annual operating budget contributes to the maintenance of these drains. Billings to the County to repair and maintain drains constructed under the Drainage Act are received from local municipalities upon completion of the repair/maintenance work. The County is charged a percentage of costs relating to its share of the benefit of the drain (often referred to as the road authority benefit). All other abutting property owners are billed their share. Drainage works are often undertaken at the request of a benefitting landowner adding uncertainty to the County's ability to budget/forecast long-term asset management costs.

5.2 State of the Local Infrastructure

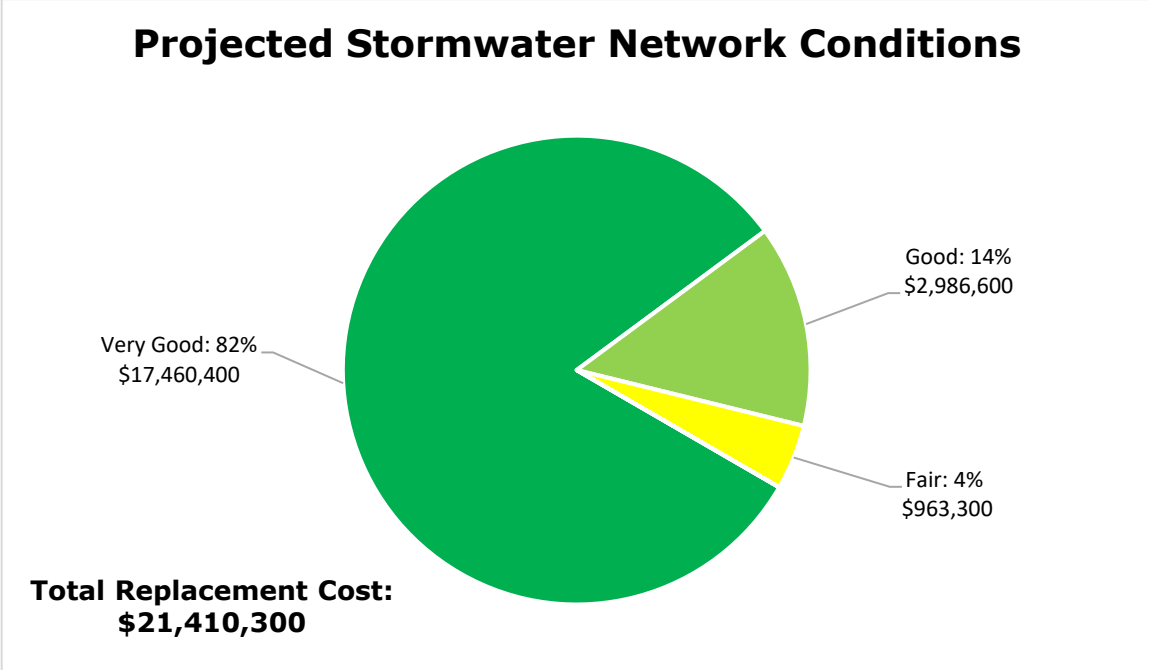
The following Table identifies the average age (weighted average by replacement cost), useful life and the average condition of the stormwater network.

Table 5-2: Stormwater Network Age, Useful Life and Average Condition

Asset Segment	Average Age	Useful Life	Average Condition (%)
Stormwater Mains	3.3 years	40 years	91.8% (Very Good)

The average condition is currently assessed using an age-based approach, which remains appropriate given the relatively young age of the network.

Figure 5-1: Projected Stormwater Network Condition Summary



5.3 Current Levels of Service

The County is committed to maintaining its infrastructure in a state of good repair to minimize safety risks associated with the failure of the stormwater network and ensure the network is reliable.

The tables on the following page illustrate the current Level of Service for the County's stormwater network. These metrics include the community and technical Level of Service metrics that are required as part of O. Reg. 588/17 as well as any additional performance measures the County selected for this AMP.

5.3.1 Community Levels of Service

The following Table outlines the qualitative description that determines the community Levels of Service provided by the stormwater network.

Table 5-3: Stormwater Network Community Levels of Service

Qualitative Description
The stormwater network will be maintained to ensure that it can effectively manage a 5- to 10-year storm event with no significant flooding.

Appendix E: Map of Stormwater Network shows the geographic location of the stormwater mains. As an upper tier municipality, the network is relatively small. Local municipalities are primarily responsible for stormwater management in urban areas and are responsible for responding to construction, repair and maintenance of drains constructed under the Drainage Act in rural areas.

5.3.2 Technical Levels of Service

The following Table outlines the quantitative description that determines the technical Levels of Service provided by the stormwater network.

Table 5-4: Stormwater Network Technical Levels of Service

Key Performance Indicator	2024 LOS	2025 LOS	Proposed LOS
Average condition of stormwater network	72.0%	91.8%	40-60%

Due to the relatively good condition of the stormwater management network, there have been few complaints from residents, most of which are resolved in a timely manner with simple maintenance procedures. The average condition of the network has increased solely from the addition of a new main along the County Road 42 corridor.

5.3.3 Proposed Levels of Service

The proposed LOS options considered by Administration include:

1. **Status Quo** – This approach continues with periodic visual inspections and regular catch basin cleaning practices. This would require minimal investment and provide the most affordable solution. The lack of a formal and comprehensive inspection process would increase the risk that deterioration may go unnoticed, leading to lack of maintenance and ultimate premature failure. Given the location of most stormwater drains below Class 1 and Class 2 Roads, failure of a stormwater main would have a significant impact on the safety and availability of the County's road network, ultimately placing motorists at risk. The

longevity of the stormwater network would also be jeopardized, with assets potentially failing prior to reaching their EUL.

2. **Inflationary** – This approach develops a formal inspection process which would include periodic flushing as well as CCTV camera inspections performed by a third party. Where deterioration is observed, trenchless re-lining may be a feasible option to prolong full replacement. Stormwater mains would ultimately be replaced only once the asset reaches a Poor or Very Poor condition, given the inherent complexities and cost of replacing the underground infrastructure. While slightly more expensive than a Status Quo approach, this option would still be affordable and would reduce the risk of unnoticed deterioration, ultimately prolonging failure. Capital funding would not be immediately required, however an allocation for operating expenses to cover the cost of the inspections would be requested as part of the annual budget process.

3. **Progressive** – In addition to the development of a comprehensive inspection and maintenance program, the stormwater network could be fully replaced using traditional construction methods once the condition is observed to be in Fair or Poor condition. While this would ensure the best risk mitigation strategy, it would also impact the availability of the road network more frequently, as roads would need to be closed to facilitate the complete replacement of the stormwater mains. In addition, replacing the asset while it still has some useful life left may not be affordable.

Administration will adopt an Inflationary approach as the most affordable option in conjunction with the mitigation of failure of the network and risk associated with that failure. Given the relatively young age and current Good condition of the network, this strategy could be phased in over a number of years, easing any burden on the taxpayer. Administration will seek an annual contribution to Capital Reserve for the future replacement of the older stormwater mains.

5.4 Lifecycle Management Strategy

In order to maximize the estimated useful life of an asset, a lifecycle management strategy must be adopted to proactively maintain an asset's condition and prevent accelerated deterioration. The following lifecycle strategy was developed to provide timely repairs and enhancements to the asset and extend its EUL at a lower total lifecycle cost.

Table 5-5: Stormwater Network Lifecycle Activities

Activity	Description of Current Strategy
Inspection and Maintenance	Drive-by visual inspections are done weekly as part of the regular route patrol; catch basins are cleaned regularly and repaired or replaced as needed.
Rehabilitation and Replacement	Capital repairs and replacement are scheduled based on the results of visual inspection.

5.5 Forecasted Capital Requirements

As a result of the relatively young age and good condition of the stormwater network, there are no capital requirements forecasted in the next 10 years. The annual capital requirements represent the average amount of funding per year that the County should allocate towards future rehabilitation and replacement of the current stormwater network.

Annual Capital Requirement: $535,300

Target Reinvestment Rate: 2.50%

Actual Reinvestment Rate: 0%

Shortfall: $535,300 per year

There are currently no significant operating costs associated with the stormwater network. Repairs and maintenance are currently performed on a reactive basis, addressing issues as needed.

5.6 Financing Strategy

The Proposed LOS aims to implement an inspection and monitoring strategy to maintain the current linear stormwater network, and expand the scope to include smaller road crossing culverts which are less than 3 metres in diameter (not subject to OSIM), perpendicular to the road and generally open at both ends. Due to the long life and complex nature of a full asset replacement, no capital replacements of the underground linear stormwater network are required within the next 10 years. Smaller road crossings, however, are costing significantly more to replace, crossing the threshold to be included in this Plan and more frequently needing to be replaced. As the total number of road crossings is still being determined, Management is currently working reactively to quickly respond when a failure occurs. The Inflationary approach will require an initial investment of $122,500 with an annual inflationary adjustment as part of an operating budget. This will allow

management to establish a preventative maintenance program of periodic flushing and CCTV inspections of the stormwater network, as well as address the increasing number of failures of smaller road crossing culverts. As these assets do not fall within the *Municipal Drainage* Act, Administration will formally request the operating budget estimate as well as a contribution to capital reserve for future replacement as part of the annual budget process. In the absence of funding to perform these preventative maintenance strategies, the true condition of the network will remain uncertain, and road crossings may continue to deteriorate, requiring the diversion of existing budgeted funds and deferral of planned projects. As the network ages, the risk of disruption to the road network and safety of motorists will only increase.

5.7 Risk Management

When determining the priority of attention to asset management, the County utilizes a risk-based approach focused on probability and consequence.

The probability of failure is based 100% on the condition of the asset, on a scale of 1 to 5, where 1 is a rare likelihood of failure and 5 represents an almost certain failure. The consequence of failure is based 100% on the Road Classification where the stormwater main is located, using a scale of 1 to 5, where 1 is an insignificant consequence of failure and 5 represents severe consequences. The County has deemed that the failure of any length of the stormwater network is not insignificant in consequence, therefore even those located on the lowest Class of road still carried a minor consequence of failure.

The following Tables summarize the risk assessment and how it is determined based on the condition and Road Class rating of the asset.

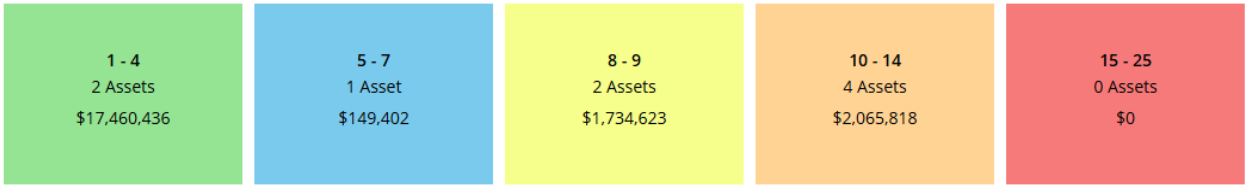
Table 5-6: Stormwater Network Risk Management Assessment

Condition Range	Probability of Failure Score
0 – 20	5
20 – 40	4
40 – 60	3
60 – 80	2
80 – 100	1

Road Class	Consequence of Failure Score
Class 1	5 (Severe)
Class 2	4 (Major)
Class 3	3 (Moderate)
Class 4	2 (Minor)
	1 (Insignificant)

The Figure below summarizes the overall risk assessment for each asset and categorizes them according to the level of risk they carry. The assessment is determined by multiplying the probability of failure by the consequences of failure.

Figure 5-2: Stormwater Network Risk Matrix



5.8 Projected Growth

The Capital Expansion Plan as developed by the Infrastructure and Planning Services Department has laid the impact that the forecasted population growth will have on our region in the next 10 years. It is uncertain at this time whether these expansion projects will require the addition or expansion of the current stormwater network. However, Administration believes that there should not be any impact on our network as all projects are planned to go through the Drainage Act. This means that stormwater management will be achieved through existing surface drains or tied in with the local municipal stormwater infrastructure.

6.0 Infrastructure and Planning Services

6.1 Asset Portfolio: Segment, Quantity and Replacement Cost

The Infrastructure and Planning Services department ("IPS") oversees the construction, maintenance and rehabilitation of the County's core infrastructure (road network, bridges, culverts and stormwater network) as well as non-core assets including the various maintenance depots, vehicle fleet and heavy machinery and equipment used in these activities.

The following Table outlines the key attributes for these assets, including quantity, current replacement cost and the method used to estimate replacement cost by segment. Fleet is further broken down into 2 sub-segments: Pickups and Heavy Trucks. Each of these sub-segments has a different EUL and therefore the timing of the replacement cost varies. The "Other" segment includes assets such as traffic signal cameras and other technological devices.

Table 6-1: IPS Asset Portfolio Summary

Asset Segment	Quantity	Replacement Cost	Replacement Cost Method
Building	20	$16,765,700	User-Defined
Equipment	81	$5,442,200	CPI Tables
Fleet - Pickups	38	$2,855,100	CPI Tables
Fleet - Heavy Trucks	26	$10,395,600	CPI Tables
Land Improvements	9	$1,954,300	CPI Tables / User-Defined
Other	32	$921,100	CPI Tables
Total		**$38,334,000**	

Replacement cost of assets not covered by the Building Condition Assessment reports are based on historical cost inflated to present value using CPI tables.

6.2 State of the Local Infrastructure

The Table below identifies the average age (weighted by replacement cost), useful life and the average condition of the IPS assets by segment.

Table 6-2: IPS Asset Age, Useful Life and Average Condition

Asset Segment	Average Age	Useful Life	Average Condition (%)
Buildings	17.9 years	10-50 years	87.3% (Very Good)
Equipment	10.5 years	5-20 years	48.2% (Fair)
Fleet - Pickups	7.5 years	7 years	41.8% (Fair)
Fleet - Heavy Trucks	8.0 years	8 years	41.2% (Fair)
Land Improvements	7.6 years	15-40 years	53.4% (Fair)
Other	2.3 years	10 years	66.2% (Good)

Building and land improvement conditions are based on a critical review of the assessments provided by a third-party consultant in 2024, in collaboration with internal knowledge and professional judgment. All other asset conditions are assessed by management and based on professional judgement and knowledge of the asset's repair history, performance and reliability, regular maintenance activities and expectations for remaining service life. Traffic cameras included in the "Other" category were determined to have a shorter lifespan than initially thought, and therefore their average condition has significantly declined.

The scale used to assess the condition of heavy trucks is different than the scale used to assess all other assets and is outlined in the table below:

Table 6-3: IPS Condition Rating Scale

Condition Value Rating	Condition Index Rating
Very Good	80 - 100
Good	55 – 79
Fair	35 – 54
Poor	0 – 34

This adjusted condition assessment scale is meant to reflect the important role that these heavy trucks play in maintaining critical infrastructure. We do not wait until our trucks are in Very Poor condition to replace them. There is still some service life remaining when these assets are disposed of; however, the risk and consequence of failure of one of these assets is simply too significant to operations to delay replacement any longer.

Trucks that are in service beyond 8-years are deemed in Very Poor condition; not because failure is imminent but because scheduled replacement is overdue. This generally occurs due to supply chain delays, as was experienced recently as a result of the recent pandemic. These trucks, used in year-round operations, are critical to maintaining a quality road network and ensuring the safety of motorists, especially during a winter snow storm.

The Charts below outlines the overall condition of the IPS assets and the asset conditions by segment.

Figure 6-1: Projected IPS Asset Condition Summary

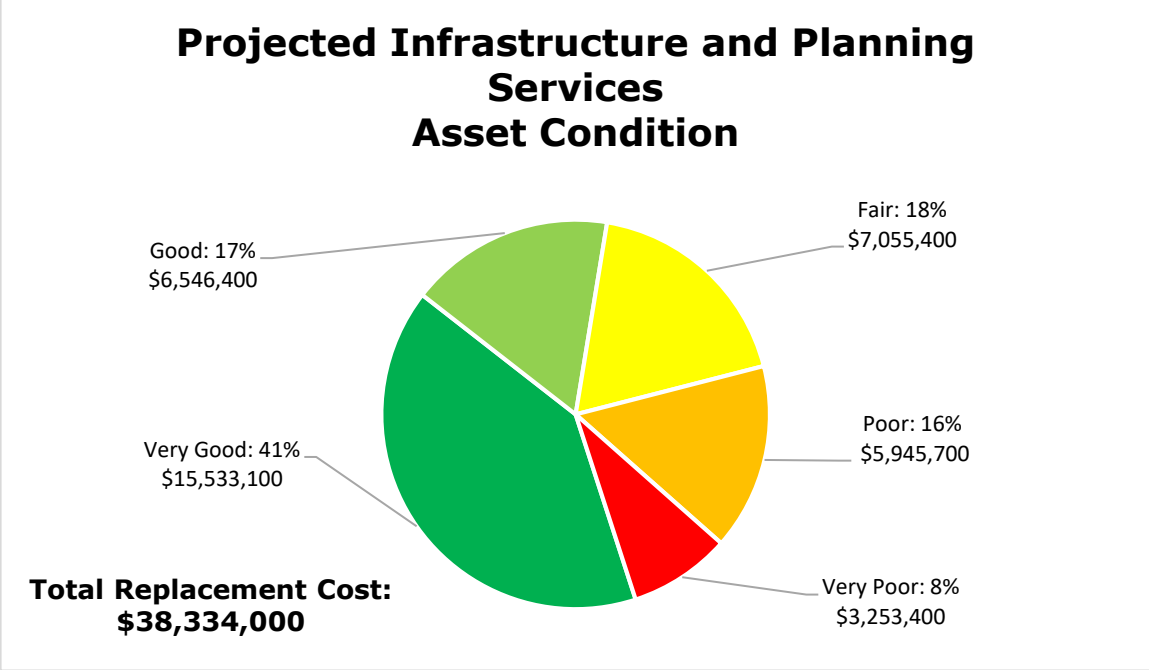
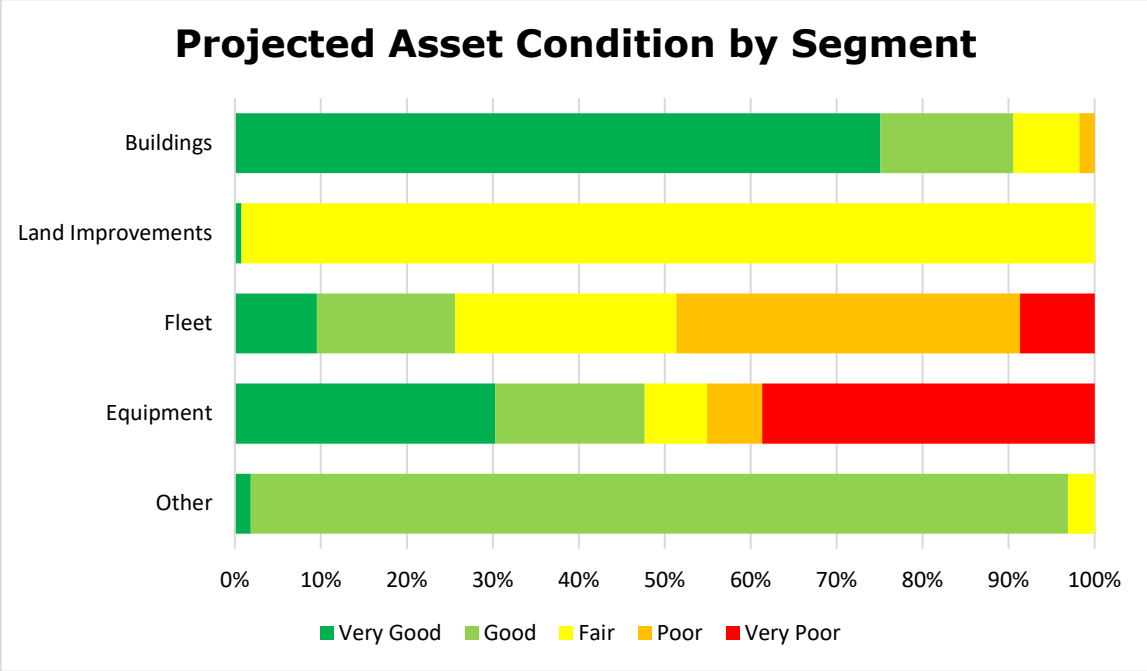


Figure 6-2: Projected IPS Asset Condition by Segment



Overall, 57.6% of the Infrastructure and Planning Services assets are in Good to Very Good condition. Excluding buildings, only 32.0% of assets are in Good to Very Good condition. The overall average condition rating of the assets is a result of improved condition information from third-party Building Condition Assessment reports, contrasted with continued deterioration of the heavy trucks and equipment necessary to maintain Levels of Service.

Most equipment, used mainly in roads maintenance operations and summer maintenance activities, continues to approach end of useful life. Recent budgetary approval to replace some backlogged assets has helped to address this, the impact of which will be reflected in future updates to this Plan.

Fleet assets are reflecting in Poor or Very Poor condition as a result of supply chain delays. Similar to the strategy undertaken by EMS, requesting early approval to secure orders in advance will help to mitigate the delivery delay and ensure we receive our trucks on schedule.

6.3 Current Levels of Service

The County is committed to maintaining a safe, reliable and efficient infrastructure network that facilitates the movement of people and goods between our local municipalities and our neighbouring municipalities.

The following tables illustrate the Levels of Service for the non-core assets within the Infrastructure and Planning Services department. These metrics

include performance measures established by the County that are relevant and reflective of the risk associated with the assets.

6.3.1 Community Levels of Service

The following Table outlines the qualitative descriptions that determine the community Levels of Service for non-core assets provided by Infrastructure and Planning Services.

Table 6-4: IPS Community Levels of Service

Community Levels of Service
Fleet and buildings are in adequate condition to ensure core assets meet minimum provincial standards. Appropriate actions and interventions are taken to ensure proper maintenance of machinery & equipment assets
Equipment is maintained at the lowest cost possible while maintaining current Levels of Service
Services are designed to be delivered efficiently and long-term plans are in place to ensure that they are available to serve the public into the future

6.3.2 Technical Levels of Service

The following Table outlines the quantitative descriptions that determine the technical Levels of Service for non-core assets provided by Infrastructure and Planning Services.

Table 6-5: IPS Technical Levels of Service

Key Performance Indicator	2024 LOS	2025 LOS	Proposed LOS
Average condition of Fleet	45.2%	41.3%	55-79%
Average % of service life remaining on Heavy Trucks	37.7%	32.0%	N/A
Average cost of repairs & maintenance per piece of equipment (excluding heavy trucks) with a replacement cost in excess of $100,000	$6,040 / year	$6,930 / year	N/A
Average cost of repairs & maintenance per Heavy Truck	$13,150 / year	$14,400 / year	N/A

The key performance indicators selected are focused on assets which contain the highest risk to maintaining current Levels of Service. Equipment with a significant replacement cost includes heavy machinery such as excavators, graders, loaders and tractors. These assets are critical to maintaining current Levels of Service, especially when compared to their lower-value counterparts such as pressure washers, hoists and trailers.

6.3.3 Proposed Levels of Service

The proposed LOS options considered by Administration include:

1. **Status Quo** – This approach will allow the current condition of fleet to further decrease by maintaining expenditure levels at their current rates and avoiding any potential tax rate increase. However, asset conditions would continue to deteriorate, resulting in significantly higher repairs and maintenance costs, as well as an increased risk of failure of assets, many of which are critical to maintaining a safe and reliable transportation network. Once ultimate replacement occurs, there would be low to no residual value left in the asset. While being the most affordable option, it also carries the greatest risk of failure, results in an increased lifecycle cost and will, in the long term, most certainly result in a decrease in Levels of Service.

2. **Inflationary** – This approach is designed to increase the LOS to the higher end of the Fair condition range (35-54%) by slowly continuing to address assets that are in use well beyond their useful life and increasing expenditures in line with current inflation rates. Fleet backlog is generally the result of supply chain delays, similar to what is still being experienced in Emergency Medical Services. Proactive, pre-budgetary approval to replace heavy trucks will allow additional time to compensate for these delivery delays, ensuring critical assets are received in a timely manner. While this option may require a nominal tax increase, changing the approach to procurement would address backlog without the need for significant additional spending.

3. **Progressive** – This approach proposes to increase the LOS to a Good condition (55-79%) by continuing to proactively address backlog and increasing expenditures in line with current inflation rates. Building on the pre-budgetary approval strategy in Option 2, this option would require additional resources to not only address equipment backlog that is not related to delivery delays, but would also seek to prioritize spending on equipment that is critical to ensuring the safety of motorists on County highways. The objective would be to find the "sweet spot" and replace critical fleet and equipment before repairs and maintenance become substantial and while the asset still has

some residual value. The implementation of this strategy would take place over a longer period of time; however, it would ensure a commitment to prudent fleet management, minimizing risk of failure and prioritizing efficiency and value for money.

Administration will follow the Inflationary approach to addressing the concerns, recognizing that the backlog of assets and low average condition will take time to improve at an affordable rate. Seeking pre-budget approval for the replacement of tandem trucks will inherently improve the average condition, such that the inflationary increase needed to address the remaining fleet and equipment in Poor or Very Poor condition should be manageable over a longer period of time.

6.4 Lifecycle Management Strategy

In order to maximize the estimated useful life of an asset, a lifecycle management strategy must be adopted to proactively maintain an asset's condition and prevent accelerated deterioration. The following lifecycle strategy was developed to provide timely repairs and enhancements to the asset and extend its EUL at a lower total lifecycle cost.

Table 6-6: IPS Lifecycle Activities

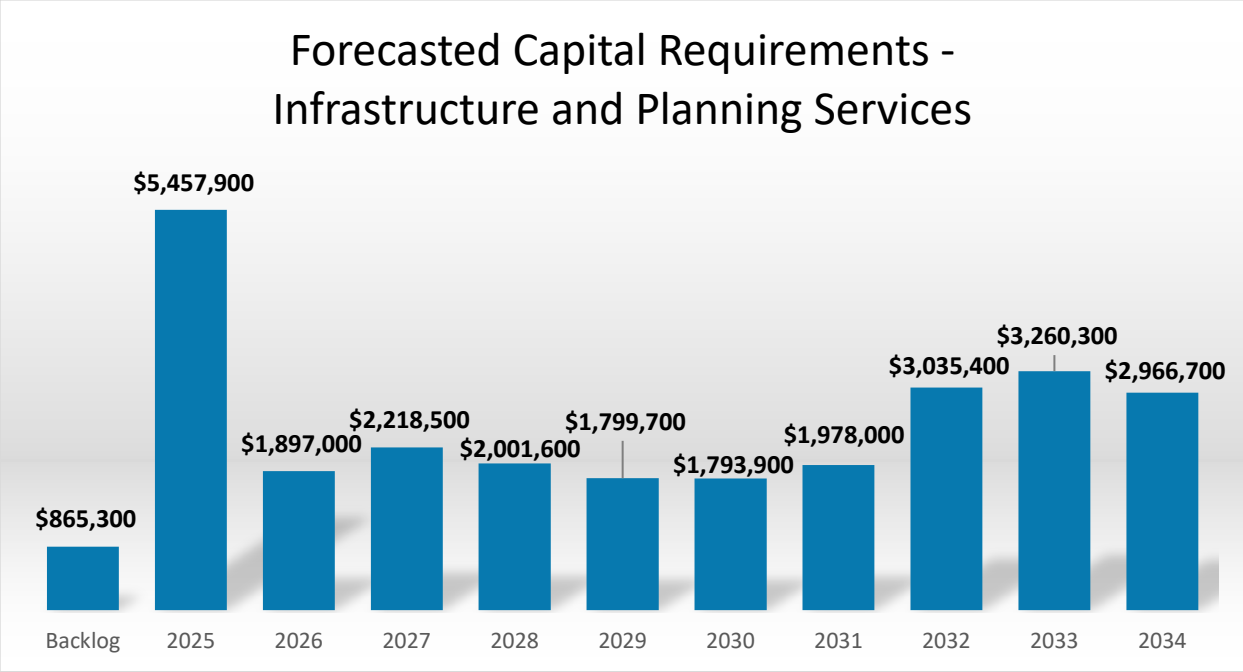
Activity Type	Description of Strategy
Inspection	Inspection of buildings, fleet and equipment are conducted regularly by Infrastructure and Planning Services staff and/or third-party contractors. Buildings and their components are also subject to a regular inspection program, with many components part of a regular service plan.
Repairs & Maintenance	A comprehensive preventative maintenance program is in place with scheduled maintenance of buildings, fleet and equipment performed by licensed staff, equipment manufacturers or third-party trained professionals. Repairs and maintenance duties are performed as part of the inspection process or as needed. Fleet and equipment are generally maintained in a good state of repair, well beyond their EUL.
Replacement	When an asset is nearing the end of its EUL and the cost of repairs and maintenance becomes non-value-adding, the asset is disposed of, often by public

Activity Type	Description of Strategy
	auction where some residual value may be present, and fully replaced.

6.5 Forecasted Capital Requirements

The forecasted capital requirements for Infrastructure and Planning Services non-core assets for the next 10 years are outlined in the following Chart. The annual capital requirements represent the average amount of funding per year that the County should allocate towards future rehabilitation and replacement needs.

Figure 6-3: Forecasted Capital Requirements – IPS



Backlog represents assets which are in service beyond their estimated useful life. These assets generally pose a high probability of failure due to their Very Poor condition. The capital requirements identified in 2025 align with Council's commitment to address backlog and end-of-life assets. All backlogged assets have been replaced subsequent to December 31, 2023.

Annual Capital Requirement: $2,257,300 per year

Target Reinvestment Rate: 5.89%

Actual Reinvestment Rate: 3.27%

Shortfall: $368,100 per year

In addition, it is forecasted that $11,167,000 will be required over the next 10 years to finance the significant operating costs relating to the lifecycle activities identified in Section 6.4 *Lifecycle Management Strategy*. This estimate includes a 3% annual inflationary adjustment.

6.6 Financing Strategy

The Proposed LOS starts with a commitment to continue pre-budget approval for the replacement of tandem trucks as a "no-cost" solution to addressing supply chain delays, and inherently increasing the average condition of the County's fleet. Management continues to perform regular maintenance on all fleet and equipment to ensure the asset's service life can be stretched as far as possible.

Fleet such as heavy trucks and pickups generally follow a scheduled capital replacement cycle to ensure replacement is undertaken at the most economic and optimal time in the asset's useful life. The capital requirements for fleet will require an average of $1,500,000 per year, of which funds are already included in the current tax levy. Therefore, no further increase is required in order to achieve the proposed LOS. Any unspent funds during the year would be contributed to the Capital reserve to help offset costs during years where expenditures exceed this amount.

Administration will continue to monitor this requirement for potential inflationary impacts and advise Council through the annual budget process if additional funds may be required in the future. Administration will also continue to investigate alternative procurement methods such as leasing options in order to ensure maximum value for dollar.

6.7 Risk Management

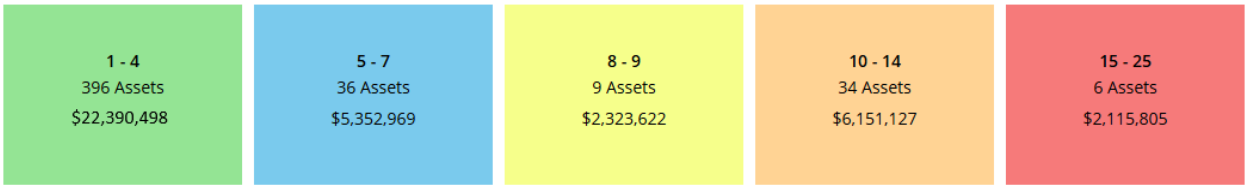
When determining the priority of attention to asset management, the County utilizes a risk-based approach focused on probability and consequence.

The assessment of risk is determined based on the asset segment, with consideration for the asset's criticality to operations. In all cases, the probability of failure is based 100% on the condition of the asset, on a scale of 1 to 5, where 1 is a rare likelihood of failure and 5 represents an almost certain failure. The consequence of failure is based 100% on the replacement cost of the asset, on a scale of 1 to 5, where 1 is an insignificant consequence of failure and 5 represents severe consequences.

The following Figure summarizes the overall risk assessment for each asset and categorizes them according to the level of risk they carry. The

assessment is determined by multiplying the probability of failure by the consequences of failure.

Figure 6-4: IPS Asset Risk Matrix



Assets identified as carrying the most risk include 1 heavy truck and 5 pieces of equipment used in the Roads maintenance operations. All equipment included in this risk assessment category are in Very Poor condition and are scheduled for replacement within the next 2 years.

6.8 Projected Growth

As previously stated, the Infrastructure and Planning Services Department has developed a long-range Roadway Expansion plan that addresses the impact that forecasted population growth in the region will have on core municipal infrastructure. The spin-off result of this growth will also impact the fleet and equipment necessary to maintain this additional infrastructure. The additional capital requirements have been estimated at one-time costs of $435,000 with ongoing repairs and maintenance estimated at $135,600 over the next 10 years, assuming a 3% annual inflationary increase.

7.0 Sun Parlor Home

7.1 Asset Portfolio: Segment, Quantity and Replacement Cost

The Sun Parlor Home ("SPH") is a municipal long-term care home, owned and operated by the County of Essex and located in the Municipality of Leamington. SPH provides a safe and secure home for 206 residents, operating 24 hours per day, 365 days per year.

The following Table outlines the key attributes for the assets at SPH, including quantity, current replacement cost and the method used to estimate replacement cost by segment. Equipment is further broken down into 3 sub-segments: Appliances, Medical Equipment and Other. Each of these sub-segments has a different EUL and therefore the timing of the replacement cost varies. The "Other" segment includes assets such as furniture and information technology equipment.

Table 7-1: SPH Asset Portfolio Summary

Asset Segment	Quantity	Replacement Cost	Replacement Cost Method
Building	2	$62,120,600	User-Defined
Land Improvements	9	$1,279,400	CPI Tables / User-Defined
Equipment – Appliances	47	$733,800	CPI Tables
Equipment – Medical Equipment	53	$901,500	CPI Tables
Equipment - Other	14	$832,900	CPI Tables
Other	6	$1,190,900	CPI Tables
Total		**$67,059,100**	

Replacement costs are determined using industry knowledge and professional judgment based on recent market pricing where available. Where recent market data is not available, historical costs are inflated to present value using current inflation rates. A Building Condition Assessment Report was completed by a third-party consultant in early 2024, providing an updated estimate of the replacement cost of the building. This estimate

was analyzed for reasonableness and factored into the revised replacement cost of the building.

7.2 State of the Local Infrastructure

The following Table outlines the current state of the SPH assets, including the average age (weighted average by replacement cost), useful life and average condition of assets by segment.

Table 7-2: SPH Asset Age, Useful Life and Average Condition

Asset Segment	Average Age	Useful Life	Average Condition (%)
Building	30+ years	50 years	74.1% (Good)
Equipment – Appliances	9.5 years	10 years	38.3% (Fair)
Equipment – Medical Equipment	5.9 years	10 years	56.9% (Fair)
Equipment – Other	6.4 years	10 years	27.3% (Poor)
Land Improvements	15.4 years	15-30 years	59.6% (Fair)
Other	7.7 years	3-15 years	55.4% (Fair)

Asset conditions are assessed by management and based on either age or professional judgement and knowledge of the asset's repair history, performance and reliability, regular maintenance activities and expectations for remaining service life.

The original Long-Term Care Home residence was built in 1901, housing 35 individuals and was eventually expanded to 296 beds. In the 1960's, the Home was renovated and in 1992, a portion of this building was demolished and a new building erected, creating a capacity of 206 beds. Both the remaining original building and the new building are in Good condition, but continue to show signs of aging. Significant repairs will be needed in the next 10 years to replace major components such as windows, roof and HVAC systems. While the current Home is classified as an "A" Bed home, the specifications do not meet the current Long-Term Care Home Design standards which were updated in 2015. A Feasibility Study prepared by a consultant in early 2024 outlines the significant investment needed to update the Home to these standards and compares this with the option of rebuilding a new Long-Term Care Home. A more detailed Feasibility Study is

being undertaken to provide Council with sufficient information to determine how best to meet future needs.

The Charts below outline the overall condition of the SPH assets and the asset condition by segment.

Figure 7-1: Projected SPH Asset Condition Summary

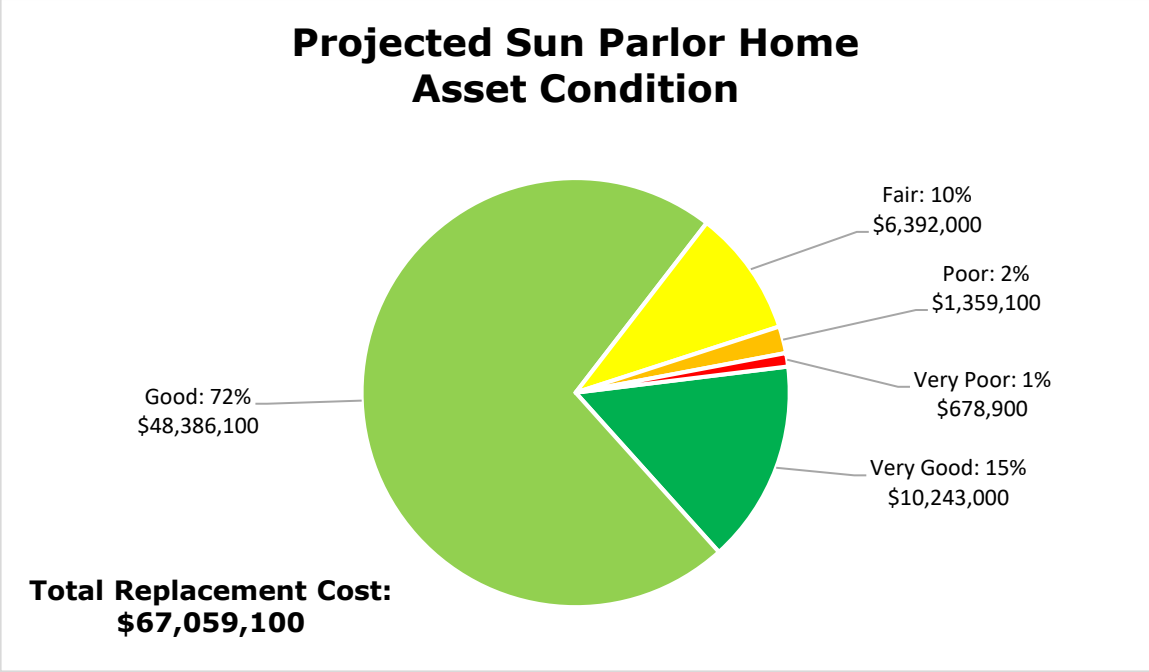
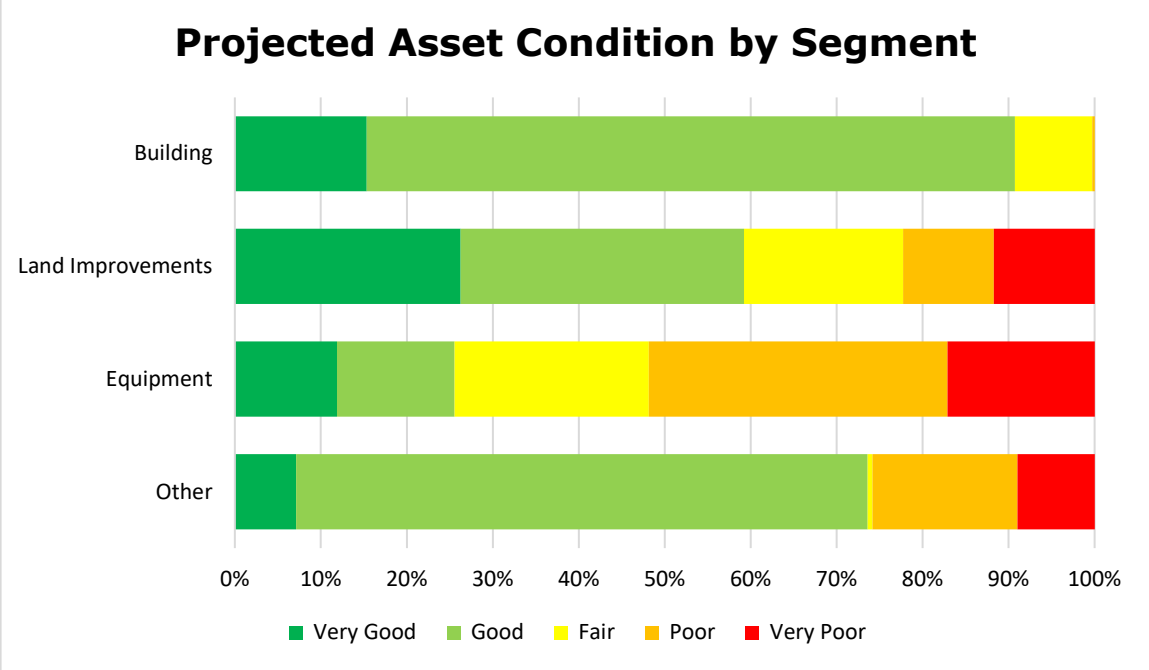


Figure 7-2: Projected SPH Asset Condition by Segment



Overall, 87.4% of the Sun Parlor Home's assets are in Good to Very Good condition. Excluding the buildings, 45.9% of the remainder of the Home's assets are in Good to Very Good condition. While the overall condition of the Long-Term Care Home is Good, it is important to note that the existing structure and configuration of the Home does not meet all of the requirements of the Ontario Long Term Care Home Design Manual, 2015. Remediation would be required to meet some of the design standards, such as widening doorways, replacement of every window and improving lighting systems. It should be noted that many other deficits such as inadequate square footage in dining rooms, resident lounge spaces, activity rooms and resident washrooms cannot be addressed without significant retrofits to these spaces and home areas.

Assets in Poor or Very Poor condition include the front driveway and visitor parking lot, some appliances, medical equipment and technology-based equipment that are nearing end of life. Technological advances have necessitated the replacement of the current Nurse Call system; therefore, investments are being made to replace it within the next few years. Appliances and equipment, such as bathtubs and resident lifts, are inspected annually to ensure safe operation.

7.3 Levels of Service

Sun Parlor Home is a vibrant, diverse home where residents, families and team members foster meaningful relationships based on equality, empowerment and mutual respect; where people want to live and work; where residents experience excellent quality of life and care built on our shared values.

The following tables illustrate the current Levels of Service for the non-core assets at SPH. These metrics include performance measures established by the County that are relevant and reflective of the risk associated with the asset.

7.3.1 Community Levels of Service

The following Table outlines the qualitative descriptions that determine the community Levels of Service provided by SPH.

Table 7-3: SPH Community Levels of Service

Community Levels of Service
Residents want to live in an environment that meets their personal, healthcare and social needs
Residents want to live in an accessible and well-maintained Home
Stakeholders want to ensure best value for dollar spent
Residents expect to live in a safe environment

7.3.2 Technical Levels of Service

The following Table outlines the quantitative descriptions that determine the technical Levels of Service for non-core assets in use at the Sun Parlor Home.

Table 7-4: SPH Technical Levels of Service

Key Performance Indicator	2024 LOS	2025 LOS	Proposed LOS
Average condition of equipment	55.0%	41.2%	60-79%
% of rooms occupied during the year	97%	98%	97%

7.3.3 Proposed Levels of Service

From our dedicated frontline staff to the professional leadership team, everyone at Sun Parlor Home works extremely hard to provide an excellent quality of life and care to every resident. The commitment to caring for our vulnerable population is reflected in the results of the Resident Satisfaction Survey, which indicate that 95% of residents feel that Sun Parlor Home is a good place to live. Our occupancy levels also attest to the Level of Service provided. With funding from the Ministry of Health and Long-Term Care maximized when occupancy levels reach 97%, this continues to be the target for the Home. Proposing any other Level of Service would not be efficient, nor would it maximize the value for dollar when considering all external revenue sources.

Administration has reviewed and considered the following proposed Levels of Service:

1. **Status Quo** – Average annual spending on equipment has been $123,000 over the last 4 years. Continuing to replace equipment at this level of spending ensures affordability to the taxpayer but also allows a further decrease in average condition of equipment ancillary to operations. Failure of equipment such as resident lifts or cooking appliances places the health and safety of staff and residents at increased risk.

2. **Inflationary** – Increasing the average annual spending each year by a nominal inflationary amount will allow for timelier replacement of aging equipment, reducing the probability of failure and associated risks. With a 3% increase each year, however, spending is already sufficiently below the annual requirement such that the attainment of an average Good condition would only be possible after approximately 18 years.

3. **Progressive** – Closing the gap by replacing assets that are in Poor or Very Poor condition before they reach end of useful life and impose significant risk will require a significant investment over the next few years. Some funding from the Ministry of Health and Long-Term Care is available, but is not guaranteed, does not sufficiently cover the full cost of replacing everything that needs to be replaced and comes with significant restrictions on eligibility. While this approach greatly reduces the health and safety risks associated with failure of assets, it may challenge the affordability by taxpayers.

While the detailed Feasibility Study is underway, operations will continue status quo. Administration will continue to replace assets only when Levels of Service may be significantly impacted, or the health and safety of our residents, our staff or our visitors is at risk of being compromised, until a decision is made on the future of the Sun Parlor Home building.

7.4 Lifecycle Management Strategy

In order to maximize the estimated useful life of an asset, a lifecycle management strategy must be adopted to proactively maintain an asset's condition and prevent accelerated deterioration. The following lifecycle strategy was developed to provide timely repairs and enhancements to the asset and extend its EUL at a lower total lifecycle cost.

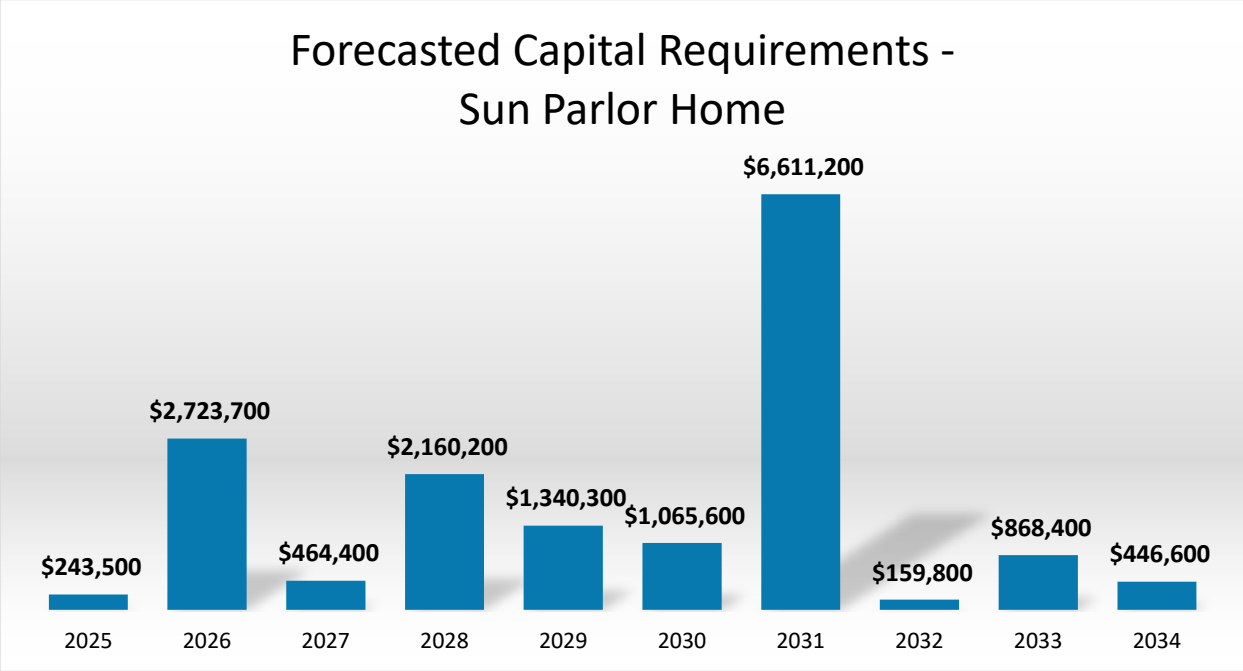
Table 7-5: SPH Lifecycle Activities

Activity Type	Description of Strategy
Inspection	Inspections of key components of the building (i.e. fire system, elevators, HVAC, hot water boilers, etc.) are conducted on a regular basis by internal staff and/or third-party contractors. Equipment inspections are also conducted regularly to ensure vital equipment is in good working condition (i.e. kitchen exhaust fans, stoves, fridges, resident lifts, etc.)
Repairs & Maintenance	A comprehensive preventative maintenance program is in place with scheduled maintenance performed by internal staff or third-party contractors. Repairs and maintenance duties are performed as part of the inspection process or as needed.
Replacement	When an asset is nearing the end of its EUL and the cost of repairs and maintenance becomes non-value-adding, the asset is disposed of, sometimes by public auction where some residual value may be present and fully replaced.

7.5 Forecasted Capital Requirements

The forecasted capital requirements for the SPH assets for the next 10 years are outlined in the following Chart. The annual capital requirement represents the average amount of funding per year that the County should allocate towards future rehabilitation and replacement needs. As previously mentioned, pending the outcome of the detailed Feasibility Study, Administration does not recommend at this time the replacement of any building components where the replacement cost is deemed to be significant, unless there is a risk of imminent failure, safety hazards or other concerns which would negatively impact the quality of life and care provided to the residents.

Figure 7-3: Forecasted Capital Requirements – SPH



Within the next 10 years, it is anticipated that significant capital expenditures will be needed to replace the roof, lighting, flooring and exterior windows of the Sun Parlor Home building. These expenditures will be vital, regardless of the outcome of the feasibility study.

Annual Capital Requirement: $1,810,800 per year

Target Reinvestment Rate: 2.70%

Actual Reinvestment Rate: 0.36%

Funding Shortfall: $1,571,400 per year

In addition, it is forecasted that $11,899,000 will be required over the next 10 years to finance the significant operating costs relating to the lifecycle activities identified in Section 7.3.3 *Proposed Levels of Service*, excluding full replacement of any major building components. This estimate includes a 3% annual inflationary adjustment.

7.6 Financing Strategy

Despite the pending outcome of the feasibility study, the replacement of critical equipment remains a necessity. Modeling indicates that an additional investment of at least $75,000, adjusted annually for inflation, will be needed over the next 10 years in order to reach the proposed LOS. After years of changes to and reductions in Ministry of Health funding programs,

advocating at the Provincial level has never been more important. The Ministry funding levels and eligibility criteria have continued to narrow the scope of equipment replacement, putting more pressure on local municipalities to cover these costs, or do without. While levy contributions to reserve have remained steady since 2021, continued decline of provincial funding has made it necessary to rely on these contributions to finance asset replacements. This places the reserve balance at risk of being underfunded, especially with significant capital costs expected on the horizon.

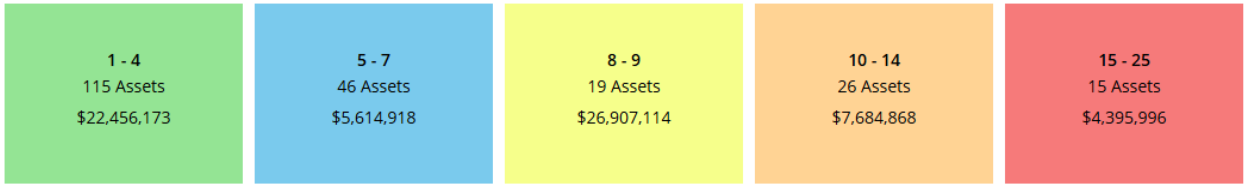
7.7 Risk Management

When determining the priority of attention to asset management, the County utilizes a risk-based approach focused on probability and consequence.

The assessment of risk is determined based on the asset segment, with consideration for the asset's criticality to operations. In all cases, the probability of failure is based 100% on the condition of the asset, on a scale of 1 to 5, where 1 is a rare likelihood of failure and 5 represents an almost certain failure. The consequence of failure is based 100% on the replacement cost of the asset, on a scale of 1 to 5, where 1 is an insignificant consequence of failure and 5 represents severe consequences.

The Figure below summarizes the overall risk assessment for each asset and categorizes them according to the level of risk they carry. The assessment is determined by multiplying the probability of failure by the consequences of failure.

Figure 7-4: SPH Asset Risk Matrix



Assets identified as carrying the most risk include resident dining room furniture, the Nurse Call system as well as several appliances and medical equipment. All high-risk assets have either been replaced, or are being planned for replacement in a future budget.

7.8 Projected Growth

The projected growth for the region will certainly impact the operations of the County's Long-Term Care Home. With an already aging population, it is anticipated that demand will continue to grow for these services, placing pressure on a system already near or at capacity. The results from the Feasibility Study are expected to address the future needs at Sun Parlor Home. As such, it would be premature to speculate the impact that this report, and the decisions that follow, may place on the future asset requirements. Any financial impact on asset management relating to this growth will therefore be covered in future updates to the County's Asset Management Plan.

8.0 Emergency Medical Services

8.1 Asset Portfolio: Segment, Quantity and Replacement Cost

The Essex-Windsor Emergency Medical Services ("EMS") department is responsible for the provision of land ambulance services for the County of Essex, City of Windsor and Township of Pelee. In 2024, ambulance resources were deployed 111,800 times. This includes patient requests for service as well as standby coverage to balance resources across the region. This service level is supported by 42 ambulances and 16 Emergency Response Units, staffed by trained paramedics equipped with the necessary medical equipment and devices and 7 administrative and special events vehicles.

The following Table outlines the key attributes for these assets, including quantity, current replacement cost and the method used to estimate replacement cost by segment. Fleet is divided into 2 sub-segments: Ambulances and Other, while Equipment is divided into 2 sub-segments: Medical Equipment and Other. Each of these sub-segments has a different EUL and therefore the timing of replacement varies. The "Other" segment includes assets such as furniture and information technology equipment.

Table 8-1: EMS Asset Portfolio Summary

Asset Segment	Quantity	Replacement Cost	Replacement Cost Method
Building	9	$53,340,300	CPI Tables / User-Defined
Land Improvements	27	$1,396,900	User-Defined
Fleet – Ambulances	42	$11,492,800	User-Defined
Fleet - Other	18	$1,973,300	CPI Tables / User-Defined
Equipment – Medical Equipment	24	$6,242,800	CPI Tables
Equipment - Other	17	$1,042,400	CPI Tables
Other	8	$898,100	CPI Tables / User-Defined
Total		**$76,386,600**	

As of 2023, the County of Essex owns EMS bases in 9 different locations, including a newly constructed base in Kingsville. Services are also provided from 3 additional bases, located in the Towns of Essex, Lasalle and the Township of Pelee, operating under a lease agreement with the various local municipalities.

Replacement cost of assets not covered by the Building Condition Assessment reports are based on historical cost inflated to present value using CPI tables, or estimated according to prices paid on recent orders for fleet vehicles.

8.2 State of the Local Infrastructure

The following Table outlines the current state of the EMS assets, including the average age (weighted average by replacement cost), useful life and average condition of assets by segment.

Table 8-2: EMS Asset Age, Useful Life and Average Condition

Asset Segment	Average Age	Useful Life	Average Condition (%)
Building	13.9 years	50 years	90.0% (Very Good)
Land Improvements	10.8 years	15-20 years	53.6% (Fair)
Fleet – Ambulance	2.7 years	5 years	61.5% (Good)
Fleet - Other	3.5 years	5 years	42.5% (Fair)
Equipment – Medical Equipment	2.2 years	5 years	68.7% (Good)
Equipment - Other	9.7 years	5-20 years	48.1% (Fair)
Other	5.4 years	3-15 years	57.6% (Fair)

Building and land improvement conditions are based on a critical review of the assessments provided by a third-party consultant in 2024, in collaboration with internal knowledge and professional judgment. All other asset conditions are assessed by management and based on either age or professional judgement and knowledge of the asset's repair history, performance and reliability, regular maintenance activities and expectations for remaining service life.

In reality, ambulances and other fleet vehicles generally have a useful life of longer than 5 years. However, in order to provide the best quality service to our residents, we want to ensure our fleet are in prime condition and ready to respond. County of Essex ambulances are generally replaced on a 5-year cycle, before they require substantial repairs and maintenance. The typical ambulance has been driven approximately 350,000km when it is retired.

The scale used to assess the condition of ambulances and on-board equipment is different than the scale used to assess all other assets and is outlined in the table below:

Table 8-3: EMS Condition Rating Scale

Condition Value Rating	Condition Index Rating
Very Good	80 - 100
Good	50 – 79
Fair	0 - 49

Ambulances with an assessed condition below 50 will be reported in Fair condition until the end of its 5-year lifecycle. Ambulances that are in service beyond 5-years are deemed in Poor condition; not because failure is imminent but because scheduled replacement is overdue. This generally occurs only due to delays in manufacturing and delivery, as was experienced recently as a result of supply chain constraints. This adjusted condition assessment method is meant to reflect the fact that we do not wait until our ambulances are in Poor or Very Poor condition to replace them. There are still several years of service life remaining when these assets are disposed of; the risk and consequence of failure of one of these assets is simply too significant to operations to delay replacement.

The following Charts outline the overall condition of the EMS assets and the asset condition by segment.

Figure 8-1: Projected EMS Asset Condition Summary

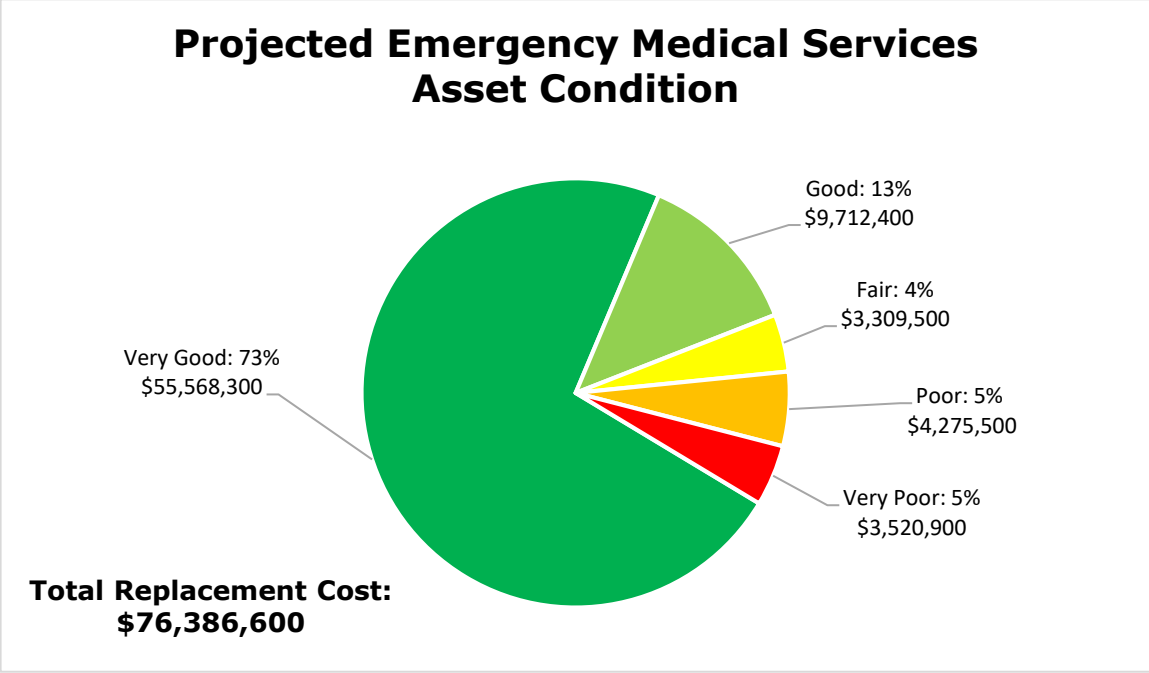
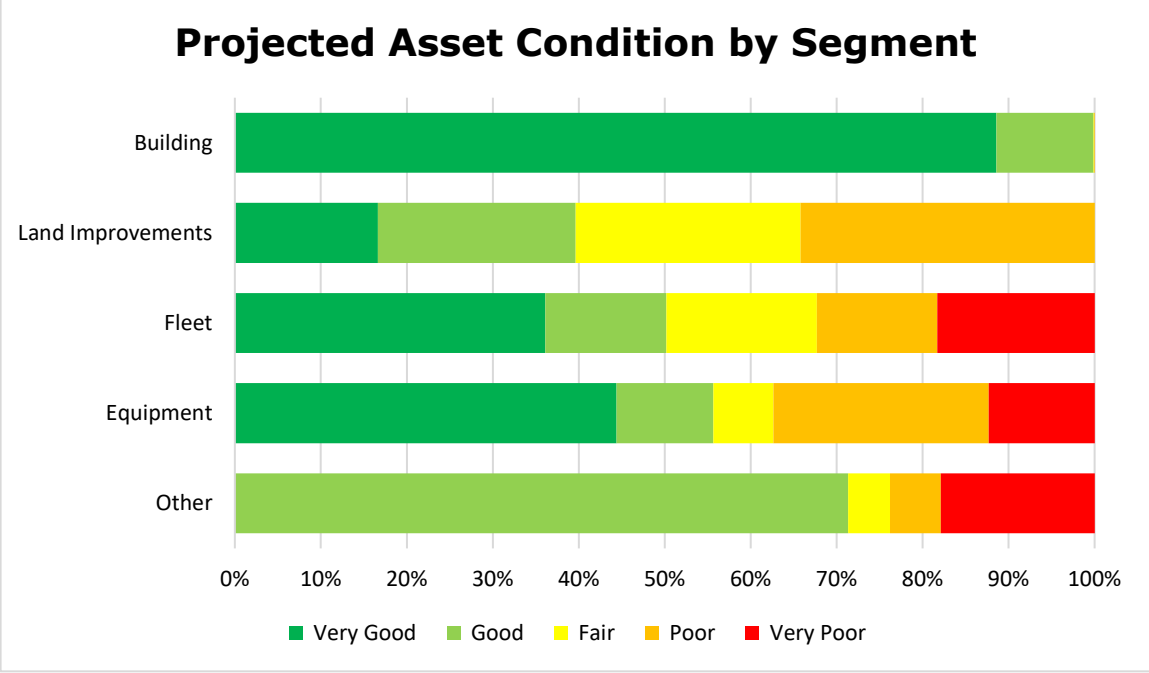


Figure 8-2: Projected EMS Asset Condition by Segment



Overall, 85.5% of the Emergency Medical Services' assets are in Good to Very Good condition. Excluding the buildings, only 52.1% of assets are in Good to Very Good condition. The condition rating of the assets, especially Fleet and Equipment, have improved as a result of Administration's efforts to secure orders earlier. These additional efforts have made good progress

towards successfully mitigating manufacturer delivery delays, ensuring a timely and prudent capital replacement cycle that prioritizes the health and well-being of the residents of Essex County. Fleet in Poor or Very Poor condition, including 14 ambulances and 8 first-response vehicles, have since been received and placed into service. In addition, equipment and other assets in Very Poor condition include manikins, RTVs and furniture that are less critical to daily operations, but have surpassed their estimated useful life.

8.3 Levels of Service

EMS is committed to providing the highest quality services in a manner that is accessible, accountable, responsive, seamless and integrated. Ensuring our vehicles are in good working order through preventative maintenance programs and addressing repairs immediately ensures that we're ready to respond when it counts.

The following tables illustrate the current Level of Service for the assets used by EMS. These metrics include performance measures established by the County that are relevant and reflective of the risk associated with the asset.

8.3.1 Community Levels of Service

The following Table outlines the qualitative descriptions that determine the community Levels of Service provided by EMS.

Table 8-4: EMS Community Levels of Service

Qualitative Description
EMS uses the latest technology and specialized vehicles and equipment to provide the best patient care possible.
EMS fleet are available to respond to calls in accordance with the legislated call response times
Fleet is maintained at the lowest cost possible while maintaining current Levels of Service

8.3.2 Technical Levels of Service

The following Table outlines the quantitative descriptions that determine the technical Levels of Service for assets used by EMS.

Table 8-5: EMS Technical Levels of Service

Key Performance Indicator	2024 LOS	2025 LOS	Proposed LOS
Average age of frontline Fleet	3.9 years	2.8 years	N/A
Average condition of Fleet	42.6%	58.7%	50-79%
Readiness to respond to all types of emergencies	100%	100%	N/A
Percentage of time when response vehicles and equipment are available and operating properly	100%	100%	N/A
Average annual cost of repairs & maintenance	$10,641 / vehicle	$11,130 / vehicle	N/A

Key Performance Indicators, such as the average age and average condition of fleet have been improving due to the mitigation strategies implemented in recent years to deal with supply chain delays. Administration believes that by maintaining these strategies, the Levels of Service will remain within the proposed range.

Ensuring response vehicles and equipment are ready and able to respond in an emergency is a direct result of having an adequate number of these assets in inventory combined with minimizing downtime when these assets need repairs or regular maintenance.

While the average age of fleet continues to decline and average condition continues to increase, the cost of repairs and maintenance remains relatively steady due to the rising costs of vehicle inspections, materials and labour. A Request for Proposal (RFP) was recently completed to ensure that our repairs and maintenance costs remain competitive. The results indicate that current prices are competitive and inflationary pressures still persist.

8.3.3 Proposed Levels of Service

The Land Ambulance service is regulated by the Ontario Ministry of Health, with response times and minimum service levels being mandated by the Province in accordance with the *Ambulance Act, R.S.O. 1990*.

The proposed LOS options considered by Administration include:

1. **Status Quo** – This approach would see the pre-budget approval strategy remain intact, along with the current replacement cycle of 5 years for vehicles. This strategy aligns replacement with the optimal point in the vehicle's lifecycle before kilometres on the vehicle are too high, repairs become too significant and the vehicle still has some residual value. Administration would continue to explore and evaluate alternative replacement options such as remounts, in an effort to combat rising costs. No additional ambulances would be added to the fleet, and no increase in funding would be sought. As costs of ambulances continue to rise, the replacement of ambulances may be delayed if funding is insufficient, resulting in a decrease in average fleet condition.

2. **Inflationary** – This approach recognizes the importance of being ready to respond to emergency calls in a timely manner, valuing the health and well-being of the residents. Similar to the Status Quo approach, the pre-budget approval strategy will remain intact, along with the current replacement cycle of 5 years for frontline vehicles. To ensure current LOS can be maintained, an increase in funding will be required to mitigate rising costs due to recent tariffs and inflationary adjustments, despite Administration's continued efforts to explore more cost-efficient solutions. Since the Province does not cover capital expenditures relating to vehicles, the costs will be shared by the County of Essex and its Service Partners.

As the EMS operations are currently compliant with provincial regulations, Administration intends to maintain current LOS by adopting an inflationary approach which recognizes the increased market costs, especially on frontline vehicles and ambulances. Sharing this cost with the Service Partners reduces the impact on County taxpayers, and mitigates the risk associated with maintaining vehicles in deteriorating condition by ensuring their timely replacement.

8.4 Lifecycle Management Strategy

In order to maximize the estimated useful life of an asset, a lifecycle management strategy must be adopted to proactively maintain an asset's condition and prevent accelerated deterioration. The following lifecycle strategy was developed to provide timely repairs and enhancements to the asset and extend its EUL at a lower total lifecycle cost.

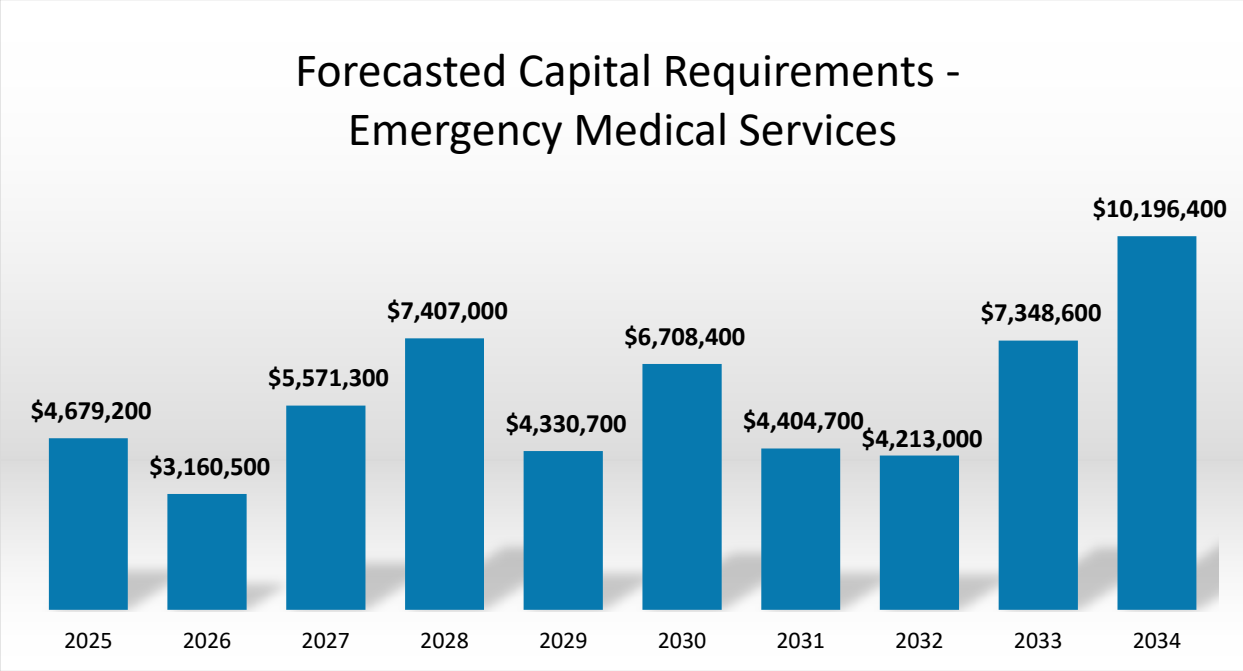
Table 8-6: EMS Lifecycle Activities

Activity Type	Description of Strategy
Inspection	Inspections are completed during the procurement phase to ensure the acquisition of defect-free assets. Throughout deployment and utilization, internal staff and third-party contractors conduct regular inspections to detect any defects or failures. Scheduled inspections for maintenance and repair are completed to prevent asset downtime by promptly addressing wear, tear and malfunctions. Furthermore, completing inspections ensures compliance with regulations and standards, thereby enhancing safety and operational efficiency. Inspections of key components of the building (i.e. fire system, HVAC, plumbing, etc.) are conducted on a regular basis by internal staff and/or third-party contractors.
Repairs / Maintenance	A comprehensive preventative maintenance program is in place with scheduled maintenance provided by internal staff or third-party contractors. Repairs and maintenance duties are performed as part of the inspection process or as needed.
Replacement	When an asset is nearing the end of its EUL and the cost of repairs and maintenance becomes non-value-adding, the asset is disposed of, often by public auction where some residual value may be present, and fully replaced.

8.5 Forecasted Capital Requirements

The forecasted capital requirements for the EMS assets for the next 10 years are outlined in the following Chart. The annual capital requirement represents the average amount of funding per year that the County should allocate towards future rehabilitation and replacement needs. The shortfall is based on the average capital expenditures over the last 4 years, and also considers the annual amount contributed to reserve for future replacement.

Figure 8-3: Forecasted Capital Requirements – EMS



It is expected that significant repairs will be needed to some of the older EMS Bases within the next 10 years, as shown in the chart above.

Annual Capital Requirement: $5,520,100 per year

Target Reinvestment Rate: 7.23%

Actual Reinvestment Rate: 4.01%

Shortfall: $771,500

In addition, it is forecasted that $18,496,000 will be required over the next 10 years to finance the significant operating costs relating to the lifecycle activities identified in Section 8.4 *Lifecycle Management Strategy*. This estimate includes a 3% annual inflationary adjustment.

8.6 Financing Strategy

The Proposed LOS plans to follow the Inflationary approach as outlined in Section 8.3.3 *Proposed Levels of Service*. The Pre-budget approval strategies have proven effective at reducing the impact of supply chain delays, with the replacement cycle of ambulances almost back to pre-pandemic timelines. The funding model of EMS provides for a cost-share of some capital expenditures between the County of Essex, the City of Windsor and the Township of Pelee based on weighted assessment. Capital expenditures such as vehicles and buildings are not eligible expenses under the funding

agreement with the Ontario Ministry of Health. A revised funding strategy is currently being developed, whereby ambulances will be fully funded from the dedicated EMS Reserve each year and the reserve balance replenished through an annual contribution from both the County and its Service Partners. Funds received from the sale of surplus vehicles equipment continue to be reinvested to offset the cost of their replacement, however the residual value cannot be guaranteed as it is subject to market demand.

Based on historical purchases, the cost of an ambulance has increased almost 78% since 2020. This translates to an additional $21,600 per ambulance per year, on average. While the full impact of the recent tariffs remains unknown, Administration will include, at minimum, an additional 15% in funding per year as part of the annual budget process to ensure the current replacement cycle can be maintained. The County's share of the increase will be $23,000 per ambulance in the first year alone. Should this funding not be available, the County's EMS Reserve could be used to support any temporary funding shortfalls. However, this Reserve may also be used to support the financial impact of the projected growth discussed in Section 8.8 *Projected Growth*. The longer-term impact of insufficient funding would jeopardize the replacement cycle, allowing conditions to deteriorate and increase risk of a breakdown while in service, as well as significantly higher repairs and maintenance. Reliability of vehicles directly impacts the response times, availability of resources and Level of Service of the EMS operations, placing the health and wellness of residents at risk.

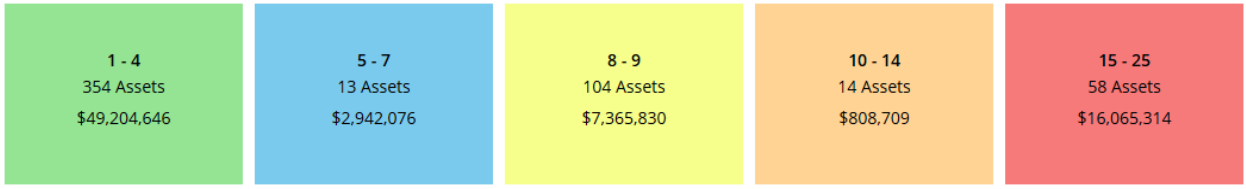
8.7 Risk Management

When determining the priority of attention to asset management, the County utilizes a risk-based approach focused on probability and consequence.

The assessment of risk is determined based on the asset segment, with consideration for the asset's criticality to operations. In most cases, the probability of failure is based 100% on the condition of the asset, on a scale of 1 to 5, where 1 is a rare likelihood of failure and 5 represents an almost certain failure. For ambulances in particular, the probability of failure is based on the number of service life years remaining – the fewer the years remaining, the higher the risk of failure. The consequence of failure is based 100% on the replacement cost of the asset, on a scale of 1 to 5, where 1 is an insignificant consequence of failure and 5 represents severe consequences. The failure of an ambulance would have a severe impact on operations.

The Figure below summarizes the overall risk assessment for each asset and categorizes them according to the level of risk they carry. The assessment is determined by multiplying the probability of failure by the consequences of failure.

Figure 8-4: EMS Asset Risk Matrix



Assets identified as carrying the most risk include all 42 ambulances, as well as some of the older Emergency Response Units and medical equipment. A high-risk assessment doesn't always mean poor condition, but just recognizes the inherent risk that certain assets pose to operations should failure occur.

8.8 Projected Growth

The EMS Master Plan prepared by a third-party consultant for the next 5 years calls for a hub and spoke model of service, as well as capital and health human resource enhancements to meet increasing call volumes. An average annual increase of 4.5% is projected across Essex-Windsor from 2024 to 2030. In Windsor, the projected increase is 5.1% per annum, compared to an average of 3.2% across the County. Within the County, population growth is the main driver, accounting for 61.7% of the projected demand increase. Demand rate changes are the main factor in Windsor, whereas aging has a very small impact.

Funding sources remain as prescribed in the Land Ambulance Service Agreement, whereas the Ministry of Health pays for 50% of the expenses, and the County of Essex and City of Windsor Split the remaining 50% based on a weighted assessment. If funding is not available to support the necessary growth of Essex Windsor EMS, then response times will be adversely affected due to an imbalance in demand versus supply.

The expansion of an EMS Headquarters within the City of Windsor is recommended to align service response with call volumes from the City, as well as to provide the ability to build smaller satellite stations that are fed from the headquarters, where appropriate. In addition, the need for additional resources in Lasalle, Essex, and Amherstburg is met by capacity constraints, and all three will need new stations.

In order to maintain the current Level of Service, the Master Plan also calls for an expansion of the service in order to respond to increasing call volumes. This will require the addition of a minimum of 9 frontline vehicles and corresponding medical equipment. Adding 12 frontline vehicles with equipment would facilitate an improvement in response times. Understanding the Master Plan is based on information obtained at a single moment in time, it is entirely possible that innovative solutions or economic changes may reduce the required amount of resources.

Depending on the number of frontline vehicles added to the fleet, the estimated incremental capital cost to the County of the fleet, equipment and satellite stations noted above, excluding expansion of the EMS headquarters, would range from $9.9 million to $10.6 million. Expansion of the EMS Headquarters is excluded as the cost could not be reasonably estimated at this time. The County's share of the significant operating costs will range from $925,500 to $1,092,200 over the next 10 years, including a 3% annual inflationary adjustment. It is important to note that the County is exclusively responsible for the capital cost of all buildings. Capital costs for vehicles and equipment are also not part of the provincial funding model, and therefore would be shared only by Municipal Service Partners (City of Windsor and Township of Pelee), while operating costs would be shared with the Province starting in year 2.

9.0 General Government Services

9.1 Asset Portfolio: Segment, Quantity and Replacement Cost

General Government Services oversees the administrative functions of the municipal government, including Corporate Management, Community & Legislative Services, Financial Services, Procurement, Information Technology and Human Resources.

The following Table outlines the key attributes for these assets, including quantity, current replacement cost and the method used to estimate replacement cost by segment. The "Other" segment includes assets such as information technology equipment. General Government Services is the host to the County's network infrastructure resources, providing connectivity and shared resources which support County-wide operations.

Table 9-1: General Government Services Asset Portfolio Summary

Asset Segment	Quantity	Replacement Cost	Replacement Cost Method
Building	1	$39,209,200	User-Defined
Land Improvements	4	$1,638,700	CPI Tables
Fleet	1	$56,100	User-Defined
Other	20	$833,900	CPI Tables / User-Defined
Total		**$41,737,900**	

Replacement cost of assets not covered by the Building Condition Assessment reports are determined using industry knowledge and professional judgement based on recent market pricing where available. Where recent market data is not available, historical costs are inflated to preserve value using current inflation rates to reasonably estimate future replacement costs.

9.2 State of the Local Infrastructure

The following Table outlines the current state of the General Government Services assets, including the average age (weighted average by replacement cost), useful life and average condition of assets by segment.

Table 9-2: General Government Services Asset Age, Useful Life and Average Condition

Asset Segment	Average Age	Useful Life	Average Condition (%)
Building	47 years	100 years	75.9% (Good)
Land Improvements	6.5 years	25-40 years	70.3% (Good)
Fleet	2.5 years	10 years	73.6% (Good)
Other	2.9 years	3-15 years	63.1% (Good)

Building and land improvement conditions are based on a critical review of the Building Condition Assessment report recently prepared by a consultant in collaboration with internal knowledge and professional judgment. All other asset conditions are assessed by management and based on either age or professional judgement and knowledge of the asset's repair history, performance and reliability, regular maintenance activities and expectations for remaining service life.

The County Administration building (formerly the "Civic Centre") houses General Government Services, as well as IPS, EMS administration, Library administration and EWSWA administration as well as several third-party tenants. The building has undergone a number of renovations over the last 10 years, including an update to the exterior façade and interior office redesigns to more than 40% of the building. The second-floor meeting spaces occupied by the County are currently under redevelopment, with completion expected later this year. These renovations have brought energy efficient upgrades including enhanced LED lighting, enhanced accessibility features and the modernization of building control systems.

The building, originally constructed in 1976, was previously owned as a joint venture between the County, the Greater Essex County District School Board, the Windsor-Essex Catholic District School Board and the Essex Regional Conservation Authority, until 2017 when the County purchased the remainder of the building from its partners. The renovations and ongoing routine maintenance contribute to its' current condition and will help to support the various administrative services it provides to County operations.

Land improvements encompass a diverse array of enhancements, including curbs and sidewalks and parking lot lighting upgrades. These improvements significantly contribute to the aesthetic appeal, health and safety and overall functionality of the facility.

The fleet category is comprised of a vehicle utilized for operational needs. The condition of this asset reflects recent acquisition and routine maintenance practices, ensuring its reliability and efficiency in supporting our operations. Other assets include office furniture and technology-based assets such as IT servers, which tend to have a shorter estimated useful life.

Figure 9-1: Projected General Government Services Asset Condition Summary

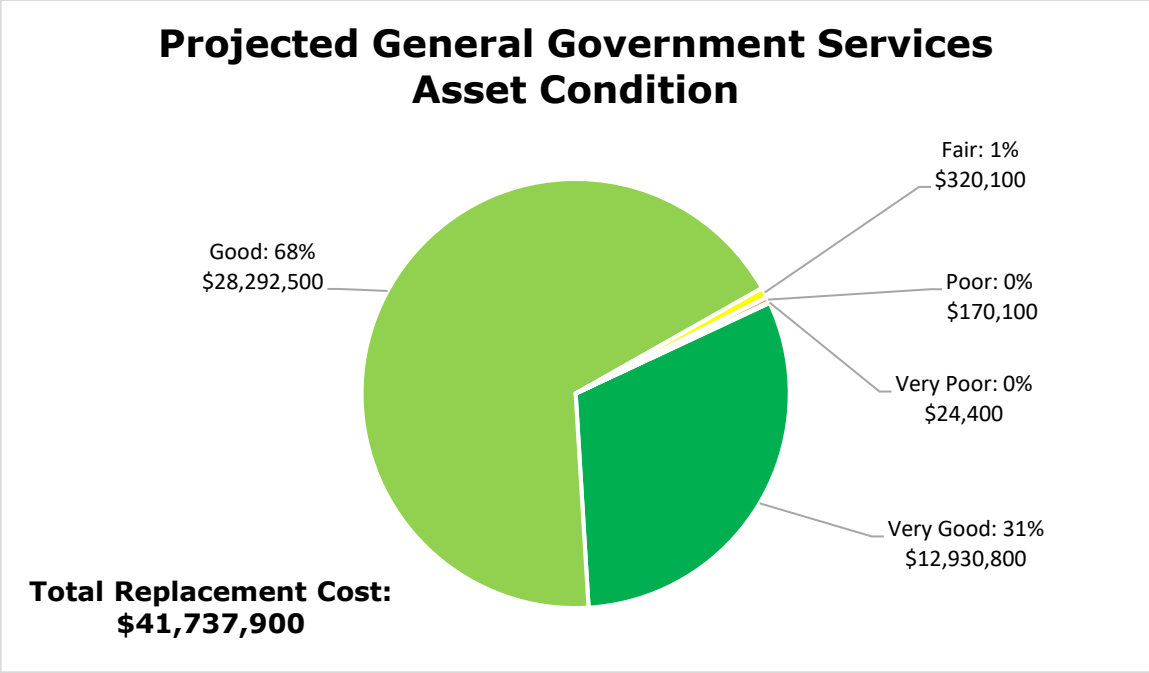
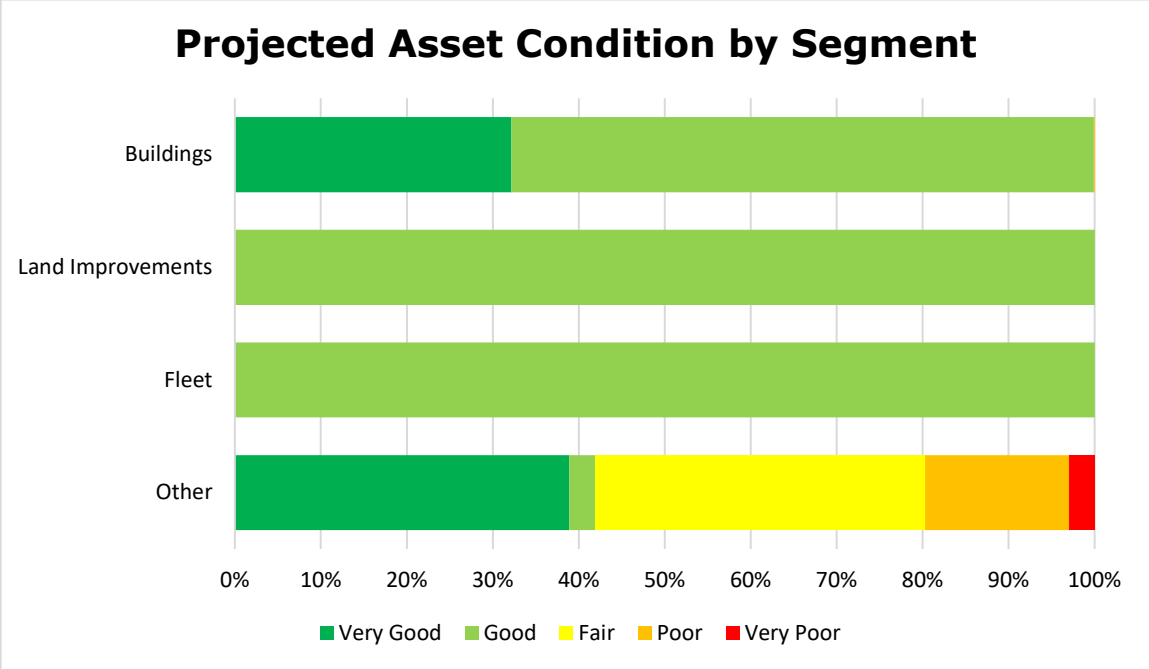


Figure 9-2: Projected General Government Services Asset Condition by Segment



Overall, 98.8% of assets are in Good to Very Good condition. Excluding the building, 80.8% of assets are in Good to Very Good condition. This condition rating is the direct result of investments made to maintain the assets which support the remainder of the County's operations.

9.3 Levels of Services

General Government Services efficiently manage non-core assets, including buildings, land improvements, fleet and other assets such as IT equipment to support municipal administrative functions.

The following tables illustrate the current Level of Service for the non-core assets within the departments in General Government Services. These metrics include performance measures established by the County that are relevant and reflective of the risk associated with the assets.

9.3.1 Community Levels of Service

The following Table outlines the qualitative descriptions that determine the community Levels of Service for non-core assets within the departments in General Government Services.

Table 9-3: General Government Services Community Levels of Service

Qualitative Description
General Government Services non-core assets provide the necessary infrastructure, tools and resources to facilitate day to day operations, ensure compliance with regulatory requirements, support employee productivity and deliver services to the community.

9.3.2 Technical Levels of Service

The following Table outlines the quantitative descriptions that determine the technical Levels of Service for non-core assets within the departments in General Government Services.

Table 9-4: General Government Services Technical Levels of Service

Key Performance Indicator	2024 LOS	2025 LOS	Proposed LOS
Average condition of assets (including building)	77.4%	75.4%	60-79%
Average condition of assets (excluding building)	69.6%	68%	60-79%

9.3.3 Proposed Levels of Service

The proposed LOS options considered by Administration include:

1. **Status Quo** – This approach would see the completion of renovations currently in progress, but leave the remaining unrenovated spaces within the County Administration building in their current state. As these renovations have been funded from the Capital Reserve, there would be no financial impact on the taxpayer, and no further draws from the reserve. The remaining spaces would remain in their original condition and Administration would evaluate alternative solutions to remediate any remaining security or health and safety issues with the existing footprint.

2. **Inflationary** – This approach would allow Administration to complete renovations to the remainder of the building, excluding spaces occupied by external tenants (Essex Windsor Solid Waste Authority, Essex Region Conservation Authority, Essex County Library and Windsor-Essex Student Transportation Services). Renovations to the lobby would allow for continued enhancements to address security and health and safety concerns, while other spaces would be transformed into useable office, meeting, event and/or storage space. There would be no immediate financial impact on the levy, as funds from the Capital Reserve would be allocated to cover the capital costs. These Reserve funds would need to be replenished over a longer period of time.

Administration plans to maintain an average condition of all assets in the Good range. Recent investments to renovate portions of the almost 50-year building are nearing completion, and will provide a lasting benefit to assist with attracting and retaining staff, as well as improving security within the building. As a result, the Level of Service is currently within the proposed target range of 60-79%. Investment in IT assets in response to technological advances will continue to be needed as those assets reach end

of useful life. This will allow the department to efficiently and effectively support County operations.

9.4 Lifecycle Management Strategy

In order to maximize the estimated useful life of an asset, a lifecycle management strategy must be adopted to proactively maintain an asset's condition and prevent accelerated deterioration. The following lifecycle strategy was developed to provide timely repairs and enhancements to the asset and extend its EUL at a lower total lifecycle cost.

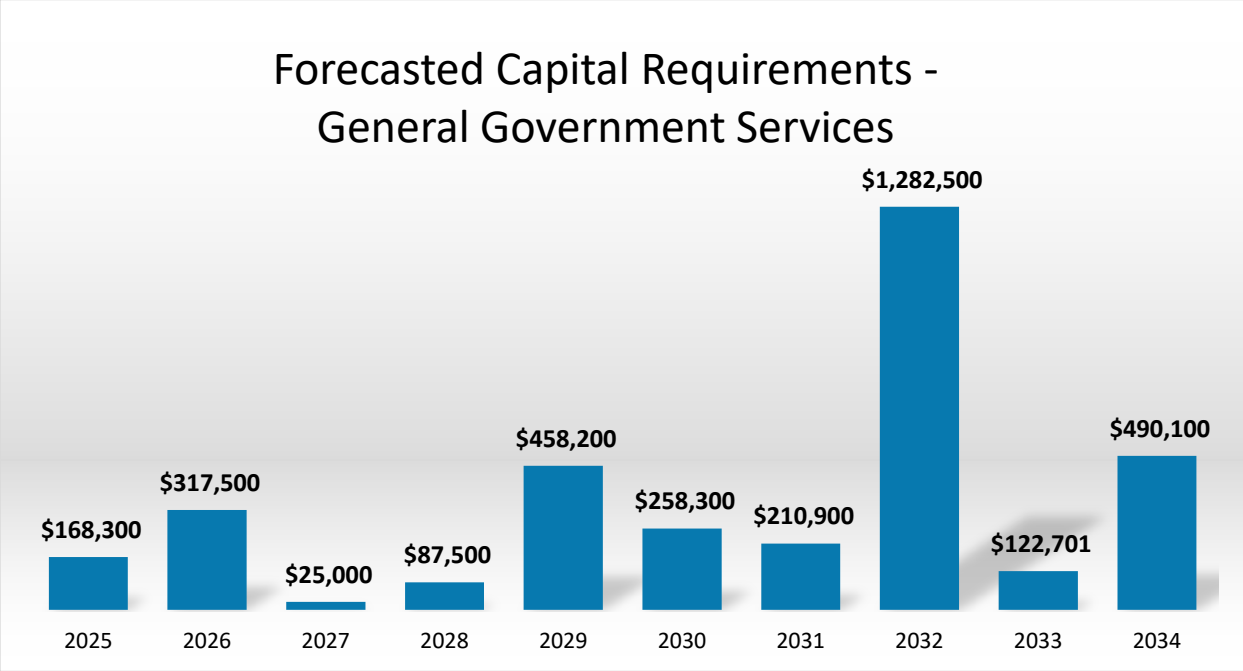
Table 9-5: General Government Services Lifecycle Activities

Activity Type	Description of Strategy
Inspection	Inspections of key components of the building (i.e. fire system, elevators, HVAC, hot water boilers, etc.) are conducted on a regular basis by internal staff and/or third-party contractors. Fleet is also inspected high level on a regular basis by internal staff and on a more thorough basis by third-party professionals as needed.
Repairs & Maintenance	A comprehensive preventative maintenance program is in place with scheduled maintenance performed by internal staff or third-party contractors. Repairs and maintenance duties are performed as part of the inspection process or as needed. Fleet are generally maintained in a good state of repair, well beyond their EUL.
Replacement	When an asset is nearing the end of its EUL and the cost of repairs and maintenance becomes non-value-adding, the asset is disposed of, sometimes by public auction where some residual value may be present, and fully replaced.

9.5 Forecasted Capital Requirements

The forecasted capital requirements for the General Government Services departments are outlined in the following Chart. The annual capital requirement represents the average amount of funding per year that the County should allocate towards future rehabilitation and replacement needs. The spike in 2032 reflects the pending replacement of the roof of the County Administration Building.

Figure 9-3: Forecasted Capital Requirements – General Government Services



Annual Capital Requirement: $920,700 per year

Target Reinvestment Rate: 2.21%

Actual Reinvestment Rate: 2.75%

Surplus: $227,200 per year

In addition, it is forecasted that $7,518,000 will be required over the next 10 years to finance the significant operating costs relating to the lifecycle activities identified in Section 9.3.3 *Proposed Levels of Service*. This estimate includes a 3% annual inflationary adjustment.

9.6 Financing Strategy

The Proposed LOS seeks to maintain the County Administration Building in Good condition, recognizing the recent investments made to renovate the almost-50-year-old building will provide long-lasting benefit to preserving the integrity and improving the efficiency of the facility, while providing a modern, accessible and ergonomic work environment for employees. As current renovations wrap up, no further plans are being made for further construction. The security and health and safety risks will continue to be monitored by Administration and steps taken to mitigate any risks within the current budget allocation.

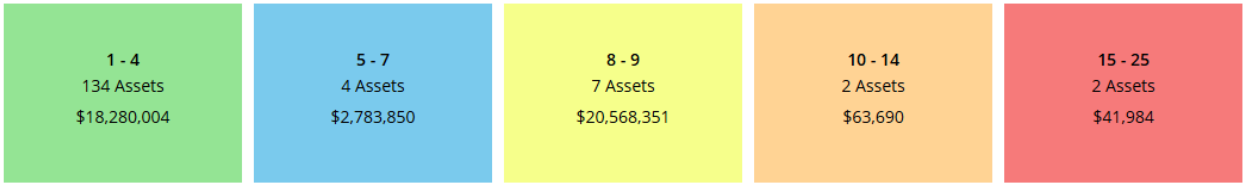
9.7 Risk Management

When determining the priority of attention to asset management, the County utilizes a risk-based approach focused on probability and consequence.

The assessment of risk is determined based on the asset segment, with consideration for the asset's criticality to operations. In all cases, the probability of failure is based 100% on the condition of the asset, on a scale of 1 to 5, where 1 is a rare likelihood of failure and 5 represents an almost certain failure. The consequence of failure is based 100% on the replacement cost of the asset, on a scale of 1 to 5, where 1 is an insignificant consequence of failure and 5 represents severe consequences.

The Figure below summarizes the overall risk assessment for each asset and categorizes them according to the level of risk they carry. The assessment is determined by multiplying the probability of failure by the consequences of failure.

Figure 9-4: General Government Services Asset Risk Matrix



Assets identified as carrying the most risk include information technology assets which form the backbone of the County's network infrastructure. Due to the rapid pace of technological change, these servers have a very short useful life. Administration is currently working with a consultant to plan a phased-in migration to the cloud. These assets will be part of a comprehensive review of our server infrastructure that will take place over the next several years, with the outcome to be determined in a later phase. A migration to the cloud will result in a shift in the need for capital funding to operating funding as the physical infrastructure is retired and replaced with cloud-based services.

9.8 Projected Growth

The forecasted growth for the region is not expected to significantly impact the capital asset requirements of the General Government Services department. There is sufficient capacity within the County's current facilities to support any employment growth that may occur as a result.

10.0 Essex County Library

10.1 Asset Portfolio: Segment, Quantity and Replacement Cost

The Essex County Library ("Library") provides information resources and services to the residents of Essex County by connecting through 14 community branch locations and through 24/7 online services and various mobile apps. While the physical branch buildings are owned by the local municipalities, the Library asset portfolio consists of the assets integral to the delivery of services.

The following Table outlines the key attributes for the assets at the Library, including quantity, current replacement cost and the method used to estimate replacement cost by segment. Equipment is further broken down into 2 sub-segments: AV Materials & Books and Other. Each of these sub-segments has a different EUL and therefore the timing of the replacement cost varies. The "Other" segment includes assets such as furniture, shelving and information technology equipment.

Table 10-1: Library Asset Portfolio Summary

Asset Segment	Quantity	Replacement Cost	Replacement Cost Method
Fleet	2	$150,000	User-Defined
Equipment – AV Materials & Books	16	$4,149,100	CPI Tables
Equipment - Other	5	$75,300	CPI Tables
Other	30	$1,895,700	CPI Tables / User-Defined
Total		**$6,270,100**	

Equipment, such as Audio-Visual materials and books, are pooled each year as the value of each book alone is insignificant but collectively provides a material value to the Level of Service provided.

Replacement costs are determined using industry knowledge and professional judgment based on recent market pricing where available. Where recent market data is not available, historical costs are inflated to present value using current inflation rates to reasonably estimate future replacement costs.

10.2 State of the Local Infrastructure

The following Table outlines the current state of the Library assets, including the average age (weighted average by replacement cost), useful life and average condition of assets by segment.

Table 10-2: Library Asset Age, Useful Life and Average Condition

Asset Segment	Average Age	Useful Life	Average Condition (%)
Fleet	6.5 years	6 years	30.9% (Poor)
Equipment – AV Materials & Books	4.2 years	7 years	41.1% (Fair)
Equipment - Other	7.2 years	5-12 years	41.2% (Fair)
Other	11.0 years	3-15 years	56.5% (Fair)

Asset conditions are assessed by management and based on professional judgement and knowledge of the asset's repair history, performance and reliability, regular maintenance activities and expectations for remaining service life.

Fleet vehicles have been held longer than their expected end of life as all vehicles are still in fair condition due to regular preventative maintenance. One fleet vehicle, in Very Poor condition at the end of 2023, has been replaced in 2024 while the other, in Fair condition, is tentatively scheduled for replacement in 2026.

AV Materials and Books are cycled regularly with new books and materials, both in print and electronic, being added to the collection annually. The determination to dispose of physical materials is based on condition, age, demand and space constraints.

Overall, the physical condition of most equipment is Fair to Good with signs of aging still within a reasonable margin. Since there is low risk associated with equipment failure, the determination has been made to wait until the very end of their useful life for replacement.

Other assets include office furniture, signs and technology-based assets such as IT servers, which tend to have a shorter estimated useful life.

Figure 10-1: Projected Library Asset Condition Summary

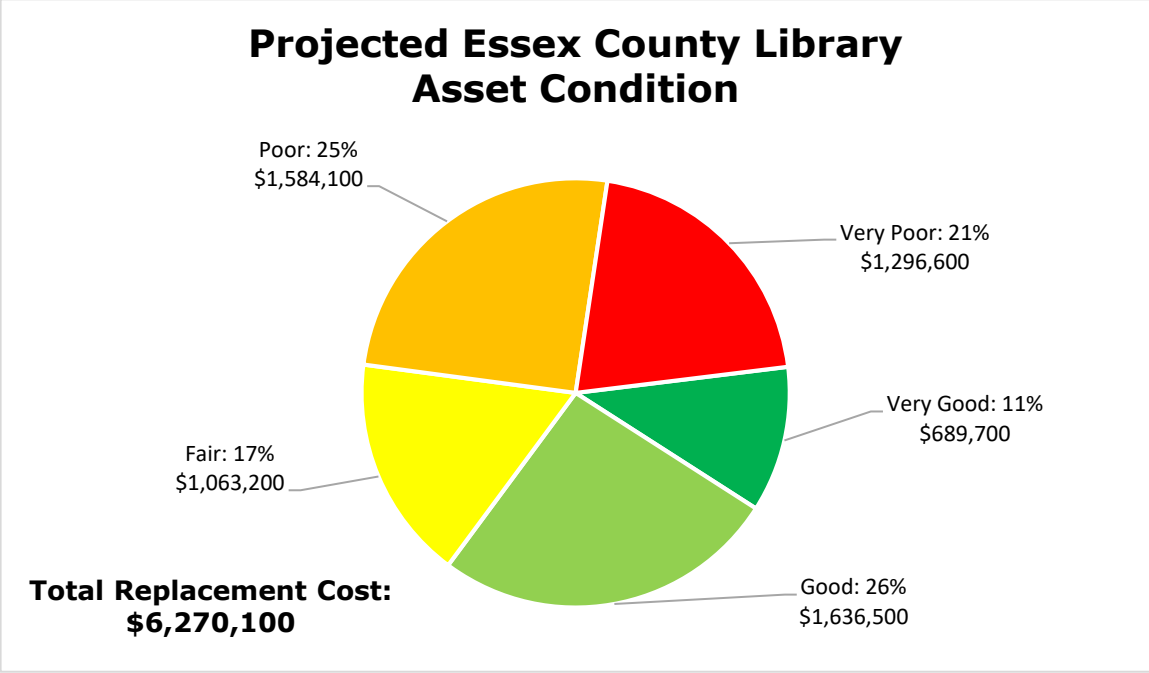
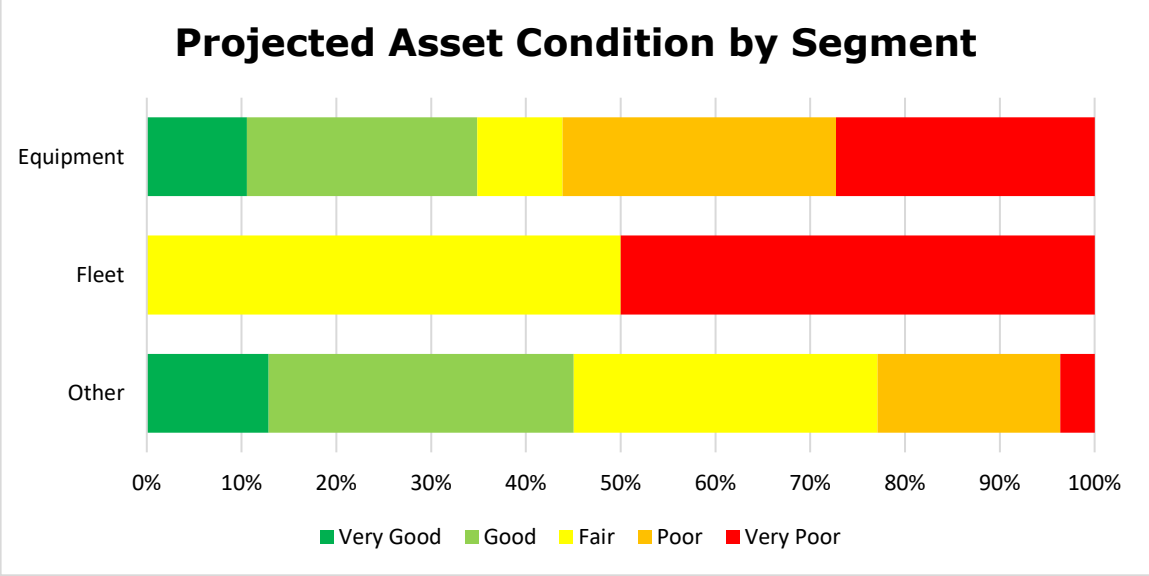


Figure 10-2: Projected Library Asset Condition by Segment



Overall, 54.1% of the Library's assets are in Fair to Very Good condition. Equipment in Poor or Very Poor condition such as AV materials and books will be replaced as part of the regular cycle. Other equipment, such as furniture, shelving and outdoor signs, are simply nearing the end of their useful life but have a low impact on the Levels of Service provided. Management will continue to monitor the condition of its assets and include a provision for replacement in future budget requests as necessary.

10.3 Levels of Services

The Essex County Library strives to connect residents to resources through our community branch locations, 24/7 online service centre, and outreach, partnerships and programming services. The Library provides welcoming spaces for its membership where knowledgeable staff are sensitive to the needs and aspirations of the community; innovative ideas and cutting-edge technology are embraced; engaging programs and current comprehensive collections are created; and creative partnerships encourage social interaction and cultural vitality.

The following tables illustrate the current Levels of Service for the non-core assets at the Library. These metrics include performance measures established by the Library that are relevant and reflective of the risk associated with the asset.

10.3.1 Community Levels of Service

The following Table outlines the qualitative descriptions that determine the community Levels of Service for non-core assets at the Library.

Table 10-3: Library Community Levels of Service

Community Levels of Service
Customers expect resources and materials to be current, relevant and available in a reasonable amount of time.

10.3.2 Technical Levels of Service

The following Table outlines the quantitative descriptions that determine the technical Levels of Service for non-core assets at the Library.

Table 10-4: Library Technical Levels of Service

Key Performance Indicator	2024 LOS	2025 LOS	Proposed LOS
Percentage change in annual circulation of tangible materials (2023 vs 2024)	8.8%	3.34%	⇧

Circulation and readership continue to increase as Library services rebound in a post-pandemic environment.

10.3.3 Proposed Levels of Service

The proposed LOS options considered by Administration include:

1. **Status Quo** – This approach will maintain current expenditure levels, negating the need for additional funding. With rising inflation, especially with recent tariffs, the volume of collections would decrease yet would still fit within the current space limitations at the branches (since there have been no indications of expansion of the physical space at the branches). While this option is affordable, it would result in fewer resources, lower circulation and an effectual decrease in Level of Service.

2. **Inflationary** – This approach seeks to increase expenditures in line with the Consumer Price Index for inflation to maintain current collection levels. While requiring a nominal increase, this option would maintain current purchasing levels to meet demand, and support the increasing circulation numbers, effectively maintaining current Levels of Service.

3. **Progressive** – This approach would increase expenditures such that collection volumes would be enhanced to support the growing demand and continue to support the rise in circulation numbers. As collections are at maximum capacity at many branches, this would also require a coordinated commitment from local municipalities to expand their facilities in order to support this increase in Level of Service.

Based on a balance of affordability and capacity constraints, Administration will pursue an inflationary approach which continues to support the services provided by the Essex County Library and reflects the growing demand of its readership. While this service has traditionally been "free" to residents, the Essex County Library Board could evaluate other sources of revenue, such as user fees, for example, should they wish to minimize the impact on the County levy.

10.4 Lifecycle Management Strategy

In order to maximize the estimated useful life of an asset, a lifecycle management strategy must be adopted to proactively maintain an asset's condition and prevent accelerated deterioration. The following lifecycle strategy was developed to provide timely repairs and enhancements to the asset and extend its EUL at a lower total lifecycle cost.

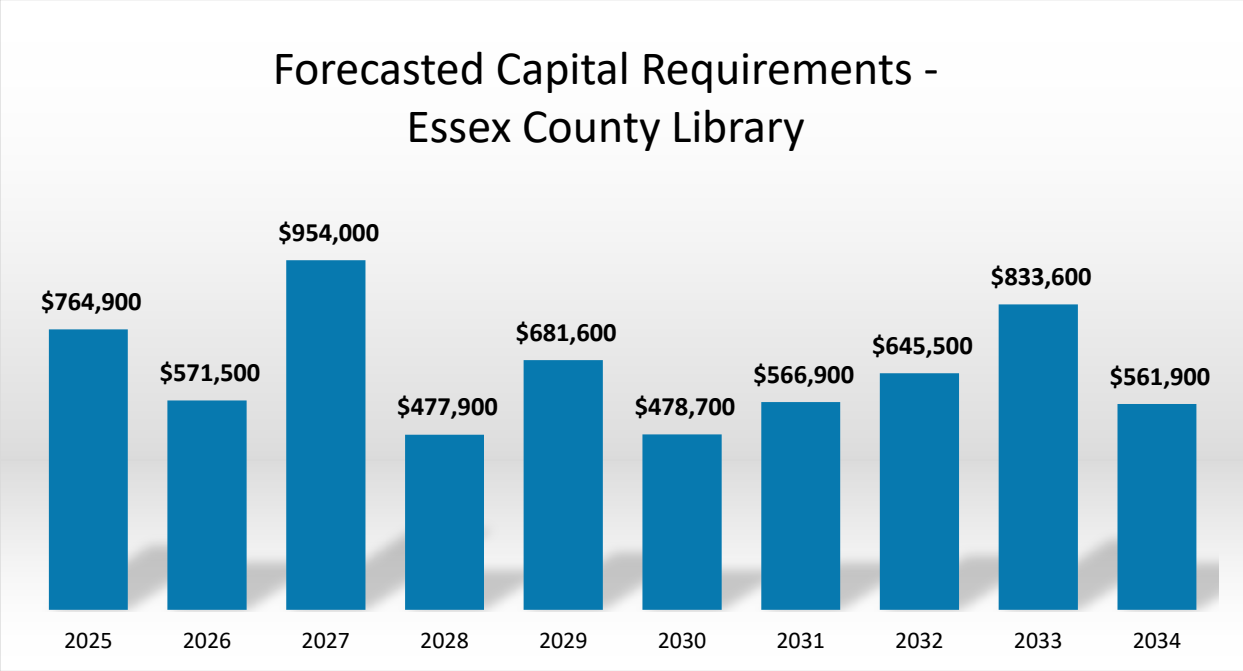
Table 10-5: Library Lifecycle Activities

Activity Type	Description of Strategy
Inspection	Inspection of library materials and equipment are performed regularly by staff to ensure resources are in good working condition. Inspection of fleet is carried out on a regular basis, with preventative maintenance and repairs performed by licensed staff, equipment manufacturers or third-party trained professionals.
Maintenance	Repairs to materials and equipment are made as appropriate, either by internal staff, or third-party specialists, depending on the nature of the repair. Fleet maintenance and repairs are performed by licensed staff, equipment manufacturers or third-party trained professionals.
Replacement	Materials that cannot be repaired to a reasonable condition are disposed and replaced with a new asset. Equipment that is at end of its EUL is budgeted for replacement. Fleet are generally maintained in a good state of repair, well beyond their EUL. When end of service life is approaching, the asset is disposed of, often by public auction where some residual value may be present, and fully replaced.

10.5 Forecasted Capital Requirements

The forecasted capital requirements for the Library assets for the next 10 years are outlined in the Chart on the following page. The annual capital requirements represent the average amount of funding per year that the Library should allocate towards future rehabilitation and replacement needs. The shortfall is based on the average capital expenditures over the last 4 years, and also considers the annual amount contributed to reserve for future replacement.

Figure 10-3: Forecasted Capital Requirements - Library



Annual Capital Requirement: $635,500 per year

Target Reinvestment Rate: 10.14%

Actual Reinvestment Rate: 8.75%

Shortfall: $41,200

In addition, the Library has forecasted that $2,775,000 will be required over the next 10 years to finance the significant operating costs relating to the lifecycle activities identified in Section 10.4 *Lifecycle Management Strategy*. This estimate includes a 3% annual inflationary adjustment.

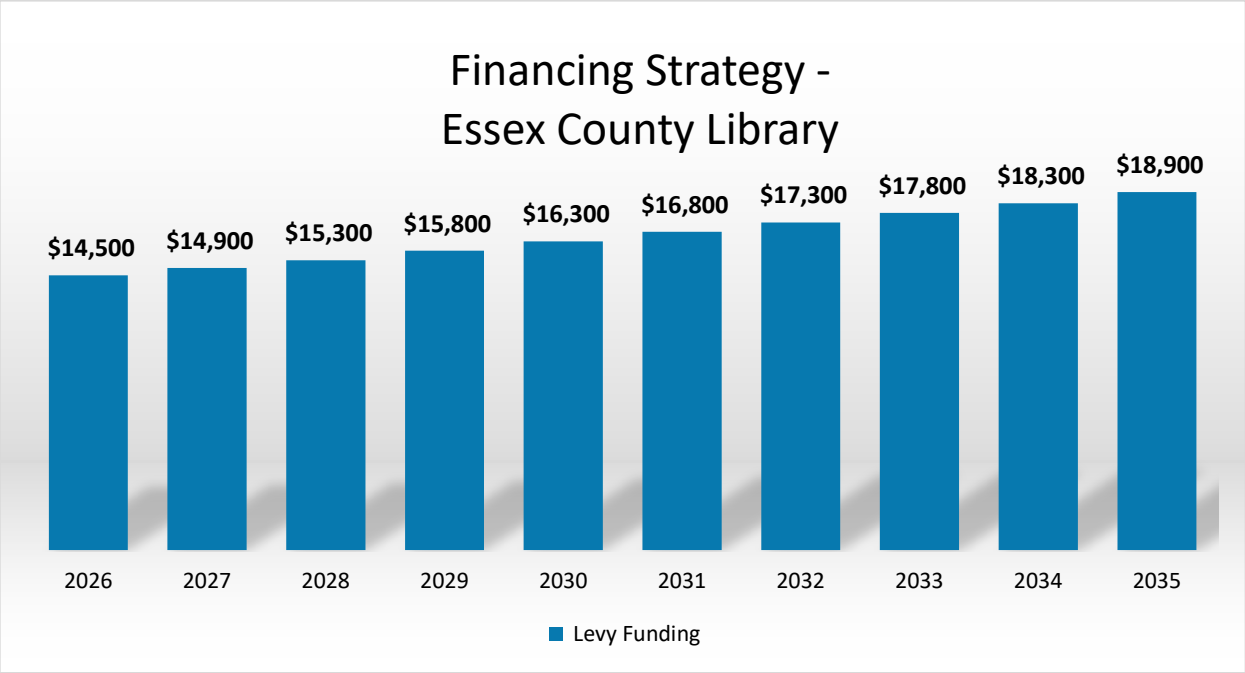
10.6 Financing Strategy

The Proposed LOS seeks an inflationary increase in spending on tangible resources that make up the Library's physical collections. A 3% increase in spending each year would translate to an additional $165,900 over the next 10-years, or an average increase of $16,590 per year. Traditionally, books and audio video materials have not been funded from reserve; the sole funding source has been taxpayer levy dollars. An annual contribution to reserve has only been made for the future replacement of fleet vehicles. The Library does receive a grant from the Public Libraries of Ontario, however this grant is currently fully used to offset operating expenses.

While the expenditures on books are not tied directly to their condition, it is difficult to determine the average annual requirement under the Proposed LOS. Any shortfall in funding will simply impact the ability to maintain a sufficient supply of collections with current, relevant materials, potentially resulting in a decline in circulation and usage of services. The risk associated with any funding shortfall would relate solely to a decrease in the Level of Service provided to the residents of Essex County.

The following Chart outlines the annual increase required under the Proposed LOS.

Figure 10-4: Financing Strategy - Library



Any decisions made regarding the desired spending level and financing strategy will be approved by the Essex County Library Board during the annual budget process. For this reason, the financing strategy has not been included in the overall financing strategy as discussed in Section 10.6 *Financing Strategy.*

10.7 Risk Management

When determining the priority of attention to asset management, the County utilizes a risk-based approach focused on probability and consequence.

The assessment of risk is determined based on the asset segment, with consideration for the asset's criticality to operations. In all cases, the probability of failure is based 100% on the condition of the asset, on a scale

of 1 to 5, where 1 is a rare likelihood of failure and 5 represents an almost certain failure. The consequence of failure is based 100% on the replacement cost of the asset, on a scale of 1 to 5, where 1 is an insignificant consequence of failure and 5 represents severe consequences.

The Figure below summarizes the overall risk assessment for each asset and categorizes them according to the level of risk they carry. The assessment is determined by multiplying the probability of failure by the consequences of failure.

Figure 10-5: Library Asset Risk Matrix

Assets identified as carrying the highest risk include a fleet vehicle which is nearing the end of its useful life. This asset will be included in a future Budget request.

10.8 Projected Growth

It is unknown at this time what impact the projected growth in the region will have on the demand for Library services. Currently, all 14 branches are operating with tangible collections at maximum capacity. A Library Facilities Space Review administrative report was presented to the Essex County Library Board in July 2024 for discussion. The report indicated that the Essex County Library does not meet the minimum recommended standard of 0.7 square feet per capita at all of its branches. The decision to expand the Library facilities must be made at the local municipal level, as the buildings are not owned by the County of Essex. Once a local municipality has indicated that an expansion is being planned, the Essex County Library Board can seek to expand its tangible collections accordingly. As no expansion plans have been indicated by the local municipalities, this plan does not include any provision for the growth or expansion of the tangible collections at the Library branches.

Appendix A: Acronyms and Definitions

"AMP" means the Asset Management Plan of the Corporation of the County of Essex.

"BCI" means Bridge Condition Index, a quantitative valuation of the condition of a bridge.

"CCI" means Culvert Condition Index, a quantitative valuation of the condition of a culvert.

"CCTV" means Closed Circuit Television, a video surveillance network utilized to monitor the condition of underground infrastructure.

"County" means the Corporation of the County of Essex.

"CWATS" means the County Wide Active Transportation System, which consists of multi-use paths, multi-use trails, one-way and two-way cycle paths, paved shoulders and buffered paved shoulders.

"EMS" means the Essex-Windsor Emergency Medical Services department of the County of Essex.

"EUL" means Estimated Useful Life of an asset, or the length of time in which an asset is expected to be used in the ongoing activities of the County.

"EWSWA" means the Essex Windsor Solid Waste Authority, a Board of Management established in 1994 by the County of Essex and the City of Windsor through an agreement.

"IPS" means the Infrastructure and Planning Services department of the County of Essex.

"Library" means the Essex County Library, an agency funded by Essex County Council and governed by the Essex County Library Board, members of whom are appointed every four years in accordance with the Public Libraries Act.

"LOS" means Level of Service provided by the asset.

"O. Reg 588/17" means Ontario Regulation 588/17 made under the Infrastructure for Jobs and Prosperity Act, 2015: Asset Management Planning for Municipal Infrastructure.

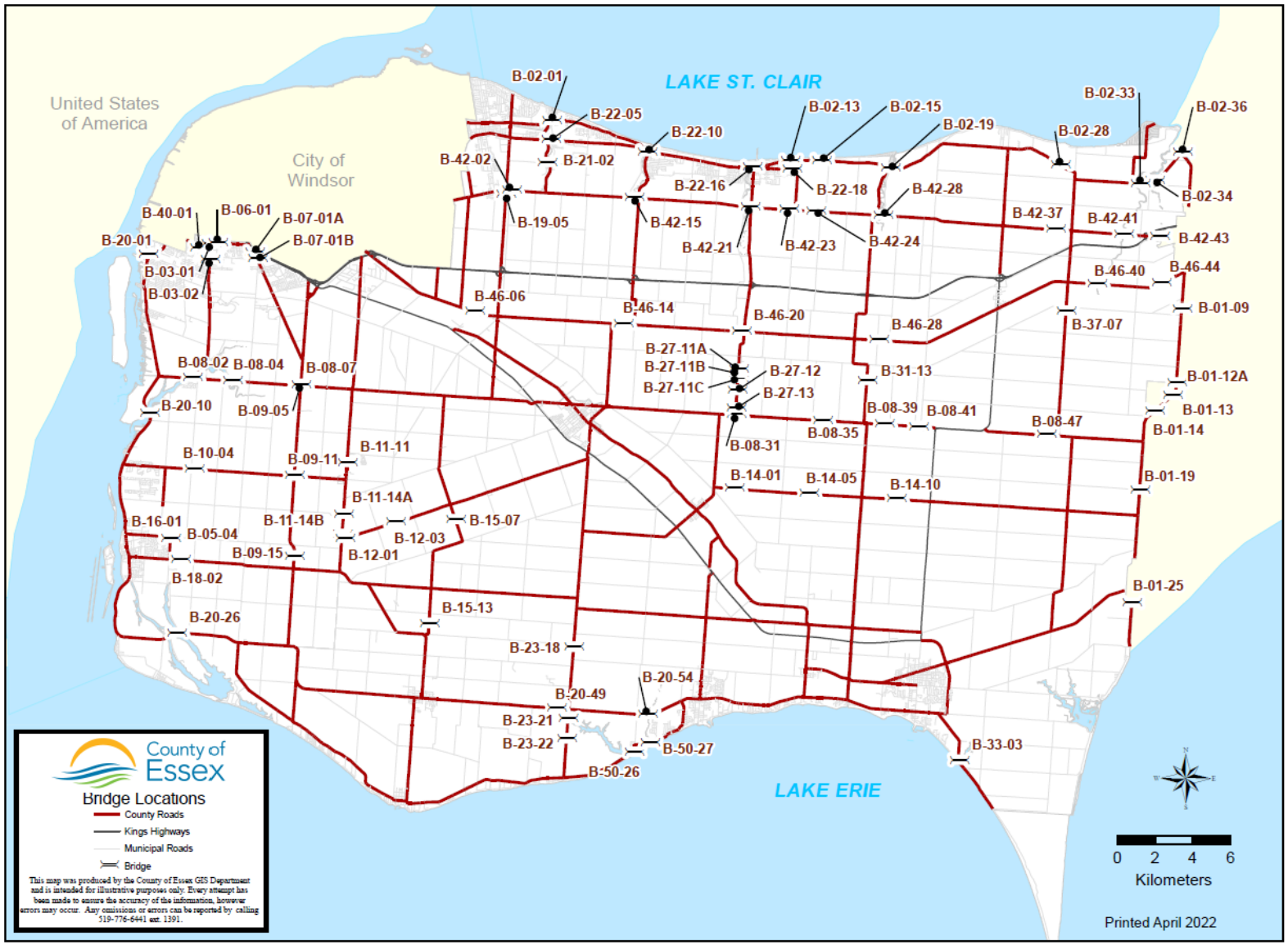
"PCI" means Pavement Condition Index, a quantitative valuation of the condition of a hard road surface based on several factors, including pavement distress and rideability.

"OSIM" means the Ontario Structure Inspection Manual, published by the Ministry of Transportation and dated October 2000 (revised November 2003 and April 2008).

"SPH" means the Sun Parlor Home for Senior Citizens, a Long-Term Care Home owned and operated by the County and located in the Municipality of Leamington.

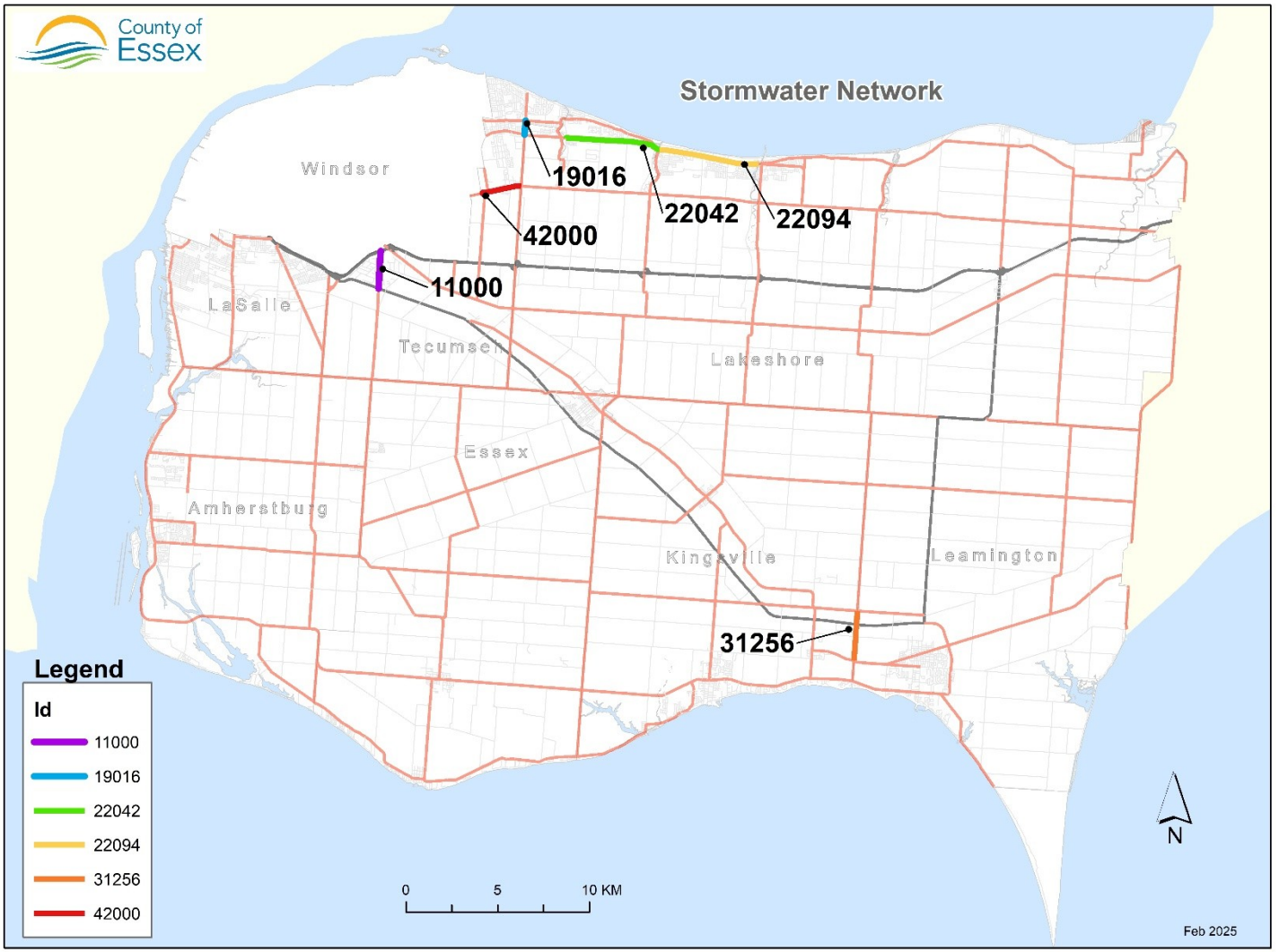
Appendix B: Map of Road Segments

Appendix C: Map of Bridges



Appendix D: Map of Culverts

Appendix E: Map of Stormwater Network



Appendix F: Condition Indexes

Images of various Road Network Condition Levels

Very Good	Good	Fair	Poor	Very Poor
				
PCI = 80-100	PCI = 60-79	PCI = 40-59	PCI = 20-39	PCI = 0-19

Images of various Bridge Condition Index Levels

Very Good	Good	Fair	Poor	Very Poor
				
BCI = 80-100	BCI = 60-79	BCI = 40-59	BCI = 20-39	BCI = 0-19

Image of various Culvert Condition Index Levels

Very Good	Good	Fair	Poor	Very Poor
				
CCI = 80-100	CCI = 60-79	CCI = 40-59	CCI = 20-39	CCI = 0-19

Appendix G: 5-Year Rehabilitation Program

Appendix H: Essex Windsor Solid Waste Authority

2025 ESSEX-WINDSOR SOLID WASTE AUTHORITY ASSET MANAGEMENT PLAN (AMP)

1.0 Current State of the Infrastructure for the Asset Portfolio

The Essex-Windsor Solid Waste Authority ("EWSWA") is the governmental agency charged with the responsibility of providing an economical and environmentally conscious integrated solid waste management system for the seven local communities of the County of Essex and the City of Windsor. EWSWA provides programs to manage the solid non-hazardous waste generated in the County of Essex and the City of Windsor in an environmentally sound manner through processes which include, but are not necessarily limited to, reduction, reuse, recycling, composting, and landfilling.

The EWSWA owns and operates an array of solid waste disposal and diversion assets. The tables highlight the current state of the infrastructure for the EWSWA asset portfolio.

EWSWA Administration has separated the asset portfolio into two categories:

1) All EWSWA Assets, excluding the Essex-Windsor Regional Landfill; and
2) Essex-Windsor Regional Landfill

The reasoning is that the methodology used to assess the asset's useful life differs from one another.

1.1.1 Summary of the Infrastructure for the Asset Portfolio, excluding Regional Landfill

The section provides a summary of the current condition of EWSWA's asset portfolio, excluding the Regional Landfill. Financial figures and funding gaps expressed in this section exclude the Regional Landfill, as the Regional Landfill asset will be discussed separately in the following section.

The chart below illustrates the 2025 asset condition profile and categorizes the assets by condition, providing an estimated value based on their current replacement cost.

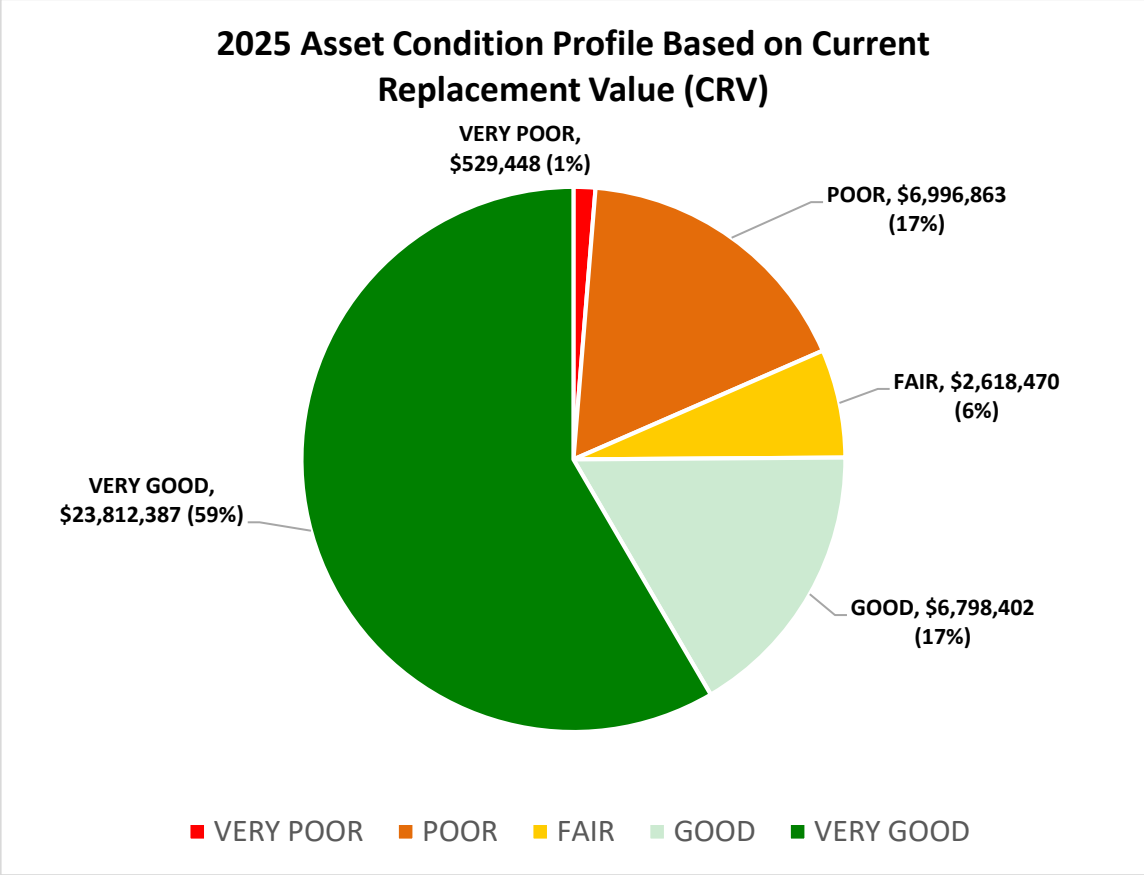


Table 1: Summary from the 2025 Asset Condition Profile Based on Current Replacement Value (CRV) From Graph Above

2025 Replacement Value $40,755,570	2025 Average Asset Condition "Good"	2025 CRV in "Good to Very Good" Condition 76%

As part of the 2025 Asset Management Plan (AMP) update, the replacement value of assets has been reassessed to reflect more accurate and current information. The 2025 replacement value has been revised from $32,649,400, the total replacement cost reported in the 2024 AMP, to $40,755,570. This increase is due to new information provided by the consultant 'Facility Risk Solutions,' who conducted building condition assessments on all EWSWA facilities, and due to a revision in the replacement cost methodology for the building asset segment. In the 2024

AMP, the replacement cost of EWSWA's buildings was calculated using the regular Consumer Price Index (CPI). However, the 2025 AMP was revised using the Non-Residential Building Construction Price Index (NRBCPI), which more accurately reflects current construction tender prices. As a result, the updated replacement costs for the buildings better align with actual market conditions.

Table 2: Summary of EWSWA Annual Infrastructure Funding Gap

Average Current Level of Annual Infrastructure Spending	Average Annual Infrastructure Gap to Maintain Current Levels of Service	Annual Infrastructure Funding Gap
$899,300	**$1,799,130**	**($899,830)**

Average Current Level of Annual Infrastructure Spending: The figure represents the future spending towards replacing EWSWA assets, which is formed from the 15-year forecast included in the 2025 Operating Plan and Budget.

Average Annual Infrastructure Gap to Maintain Current Levels of Service: This figure is the annual sum of dollars needed to replace **all** existing assets (excluding the Regional Landfill and including only the assets which formed the 2024 AMP) at the end of their respective lives.

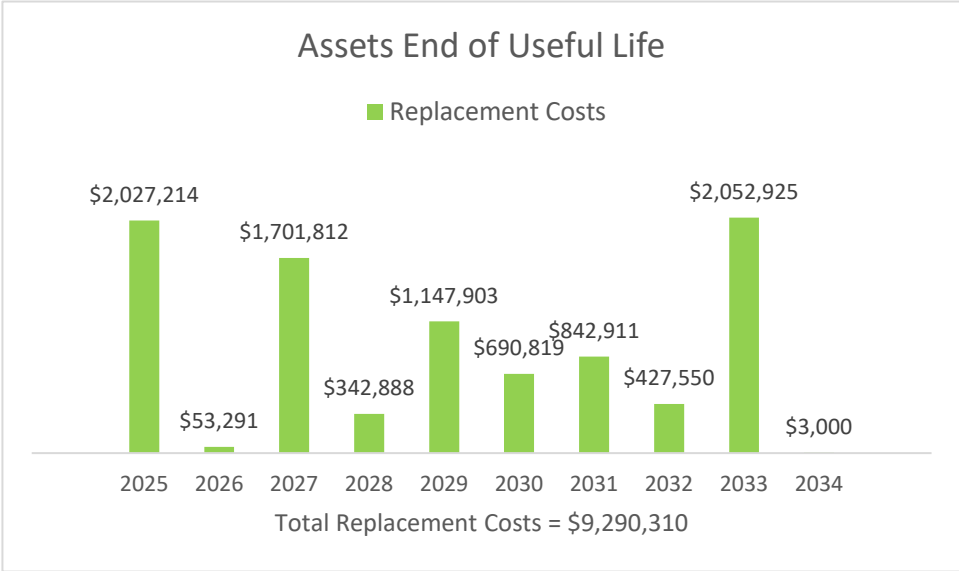
Annual Infrastructure Funding Gap: The figure represents the funding gap between what EWSWA anticipates spending to replace existing EWSWA assets, less the sum of dollars needed to replace all existing assets at the end of their useful life.

The infrastructure gap does not reflect assets that are added to the asset portfolio due to new programs or varying operational needs. Additionally, the value represents the funding of 100% of the replacement cost of all assets (excluding the Regional Landfill) over their respective useful lives.

Table 3: 10-Year Summary of Replacement Costs for Assets That Have Reached the End of Their Useful Life

The following graph provides a summary of the estimated replacement costs over the next 10 years for assets that are projected to reach the end of their useful life, based on current condition assessments and updated replacement cost methodologies. The assets represent only EWSWA's

existing assets that require replacement, which are formed based on the 2024 AMP asset listings.



Average Current Level of Annual Infrastructure Spending	Average Annual Infrastructure Capital Spending over a 10-year period	Annual Infrastructure Funding Gap
$899,300	**$929,030**	**($29,730)**

The average annual infrastructure capital spending over a 10-year period figure represents the minimum spending to replace the existing assets over the next 10-years. It does not account for assets purchased as part of the launch of the Green Bin program and/or spending for future assets beyond the 10-year period.

1.1.2 Summary of the Regional Landfill Infrastructure (excluding all other assets in the portfolio)

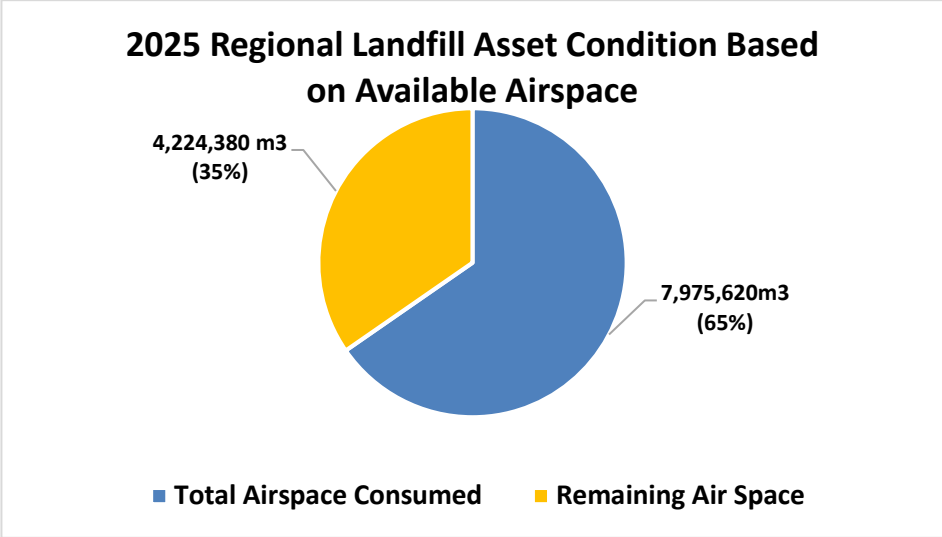
This section specifically highlights the financial figures and condition assessments related to the Regional Landfill asset.

The EWSWA owns and operates the Essex-Windsor Regional Landfill (Regional Landfill). The Regional Landfill is subdivided into 10 approximately

equal-sized Cells. The replacement cost of the Regional Landfill represents the costs associated with the construction of the three (3) remaining unconstructed Cells (Cell 4 South, Cell 5 North and South). The replacement cost does not consider the costs associated with the siting and construction of a new Landfill site, such as acquiring or procuring land, legal, engineering and approval costs, and infrastructure costs associated with the construction of buildings, leachate and lagoon systems, cell development, and other related costs.

The Regional Landfill was created to accept a total of 12,200,000 m3 of waste. The Regional Landfill condition was revised in the 2025 AMP to reflect the remaining airspace available for waste over the total available airspace. This approach better illustrates the annual condition as airspace is consumed. The table below (Table 4) illustrates the available airspace of the Regional Landfill in a pie graph.

Table 4: Regional Landfill Condition Based on the Available Airspace

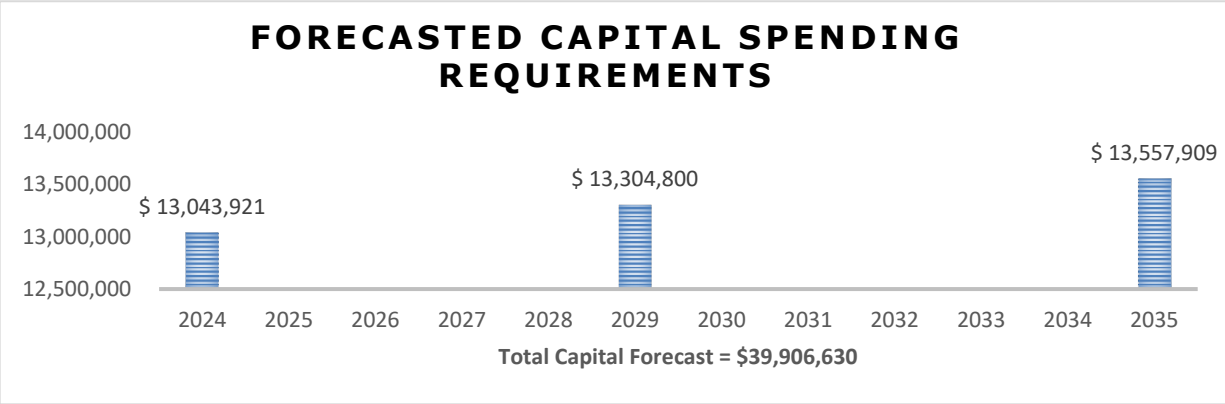


2025 Average Asset Condition "Poor"

Table 5: Forecasted Capital Requirements of the EWSWA Regional Landfill

The bar graph below illustrates the total estimated costs to construct the remaining three (3) unconstructed cells at the Regional Landfill and the anticipated construction timelines based on current annual tonnage

estimates. Note that Cell 5 construction began in 2024 and is anticipated to be completed in 2025.



2025 Capital Forecast
$39,906,630

Table 6: Summary of EWSWA Annual Infrastructure Funding Gap for the Regional Landfill

Average Annual Regional Landfill Capital Requirement	Annual Contribution from the Future Cell Reserve	Revised Average Capital Spending Gap	Average Current Level of Annual Capital Spending	Annual Funding Gap
$3,325,550	**($1,083,350)**	**$2,242,200**	**$1,441,100**	**($873,955)**

Average Annual Regional Landfill Capital Requirement – This figure represents the sum of dollars needed to be spent to construct the remaining three (3) cells at the Regional Landfill over the total number of years of capital spending (2024 to 2035 - 12 years)

Annual Contribution from the Future Cell Reserve – The figure represents the remaining funds in the Future Cell Reserve (preconstruction of Cell 5) over the total number of years of capital spending.

Revised Average Capital Spending Gap – This figure is the difference between the total annual capital requirement less the Future Cell Reserve contribution.

Average Current Level of Annual Capital Spending – The figure represents the funds EWSWA anticipates spending over the total number of years of capital spending.

The funding mechanism established by EWSWA for cell construction at the Regional Landfill is through internal financing and contributions from the Future Cell Development Reserve. The internal loan portion is paid back via operations, over the anticipated life of the asset, rather than at the time capital funds are needed. The funding mechanism creates a gap between when the EWSWA anticipates outlaying funds for cell construction versus over the anticipated life of the asset. In addition, the funding gap only represents a timing difference and does not reflect the gap between what EWSWA would need to raise to site and construct a new landfill once the Regional Landfill reaches the end of its useful life. Given the challenges in quantifying the replacement costs of siting and constructing a new landfill, the funding gap was left out of the 2025 AMP.

1.1 Levels of Service

Level of Service (LOS) metrics are a key component of the EWSWA's Asset Management Program, enabling the assessment of performance, identification of improvement areas, and informed decision making to better serve the community while optimizing resources and supporting accountability and transparency. O. Reg. 588/17 mandates the understanding of the Current Level of Service (CLOS) and the development of Proposed Levels of Services (PLOS).

1.1.1 2024 Current Levels of Service

The EWSWA identified both the Current Community Level of Service (CCLOS) and the Technical Levels of Service (TLOS) in the 2024 AMP. No changes or revisions were performed to the existing 2024 CCLOS.

The 2024 Community Levels of Service are included in the table below for reference:

Core Values	Community Levels of Service
Environmental Stewardship	Solid waste services are provided in a manner that has a minimal impact on the environment.
Reliable	The provision of solid waste disposal and recycling collection services are reliable and meet the public needs.

Core Values	Community Levels of Service
Efficiency	Solid waste and diversion services are provided in a cost-efficient manner to maximize the value of the taxpayers' dollars.

The 2024 Technical Levels of Service are included in the table below for reference:

Core Values	Key Performance Indicator
Environmental Stewardship	% of facilities operating within Environmental Compliance Approval ("ECA")
Environmental Stewardship	% of residential waste diverted from the Landfill
Reliability	% of assets in Good to Very Good condition
Reliability	Average tonnes of household waste landfilled

The proposed level of service per the O. Reg 588/17 is formed using the existing current TLOS from the 2024 AMP. The challenge with using the existing key performance indicators (formed in the 2024 AMP) is that each TLOS requires Administration to assess whether EWSWA can afford the PLOS and whether the PLOS is achievable. Many key performance metrics established in the 2024 AMP may not be feasible in establishing a PLOS due to factors such as: EWSWA not having the authority to impose changes to municipal garbage contracts, EWSWA's inability to directly impose municipal by-laws which could directly affect key performance indicators and/or a general financial challenge in quantifying the necessary funds needed to impact the existing technical service levels. Therefore, through consultation with both County of Essex and the City of Windsor Administration, EWSWA Administration has revised the current TLOS for the 2025 AMP to be based

on the average asset condition weighted by the current replacement value (CRV).

1.1.2 2025 Current Levels of Service

The level of service metric included in the 2025 AMP is the Average Asset Condition Weighted by the asset's current replacement cost. The 2025 Technical Level of Service is included in the table below and showcases the current performance (excluding the Regional Landfill):

Level of Service: Metric Description	Current Performance (CLOS)
Average Asset Condition Weighted by CRV	**"Good"**

1.1.3 Methodology of Establishing the Proposed Levels of Service (PLOS)

The PLOS are long-term targets that serve as performance goals, designed to align services with community expectations and corporate priorities while minimizing risk and long-term costs. To clearly understand the impact of establishing PLOS targets, a thorough review of the original work completed under the 2024 AMP, inclusive of the development of the initial LOS metrics and the Life Cycle Management (LCM) scenarios, was undertaken. The scenarios illustrate risks associated with changes to the current levels of services. The scenarios include:

- Risks of Reducing CLOS (Scenario 1): Current Funding modelled the condition of the assets over the forecast period, should EWSWA continue to fund the asset portfolio.
- Risks of Maintaining CLOS (Scenario 2): Maintain Current Performance (CLOS) model cost over the forecast period to maintain the asset portfolio's current condition.
- Risk of Increasing the CLOS (Scenario 3): Infrastructure Needs as Per Lifecycle Strategies modelled the cost over the forecast period to perform the planned inspection, maintenance, renewal and replacements as scheduled per the lifecycle strategy model developed for each sub-segment of the asset portfolio.

Risks of Reducing CLOS (Scenario 1)	Risks of Maintaining CLOS (Scenario 2)	Risks of Increasing CLOS (Scenario 3)
• Potential for increased breakdown of assets • Potential reduction in available services and/or programs offered to customers/residents • Essential services may be impacted or halted • Potential increase in the environmental impact if assets are not properly maintained/replaced.	• Similar risks as Scenario 1, but with a lesser degree of impact • Forecasted funding to maintain CLOS may be understated and may fail to capture the true replacement cost	• Increased short-term cost to the municipalities, residents and or customers • Additional staff/operational needs are required to implement the increase • Forecasted funding needs may be understated or overstated

1.1.4 Proposed Level of Service and Targets

EWSWA included the current performance and the proposed performance level of service in the table below:

Level of Service: Metric Description	Current Performance (CLOS)	Proposed Performance (PLOS)	Proposed Change
Average Asset Condition Weighted by CRV	**"Good"**	**"Good"**	→

The proposed level of service is to maintain EWSWA Average Asset Condition (Weighted by CRV) in "Good" condition (excluding the Regional Landfill). The current condition of EWSWA assets remains in "Good" condition however, maintaining the current annual capital spending (represented in Table 2) may result in a decline in the CLOS due to a spending gap. A risk-based replacement approach and lifecycle activity spending have kept EWSWA's current level of service in "Good" condition. The financial strategies surrounding the costs of the proposed service level will form part of the 2026 Operating Plan and Budget.

1.2 Lifecycle Investment Scenarios & Estimated Significant Annual Operating Costs

The 2024 AMP required that lifecycle activities be identified and strategies be formed using qualitative measures. To maximize the estimated useful life of an asset, a lifecycle management strategy must be adopted to proactively maintain an asset's condition and prevent accelerated deterioration. The 2024 AMP lifecycle activities have been restated in the table below:

Activity Type	Description of Strategy
Inspection & Monitoring	Inspection of buildings and equipment are performed regularly by EWSWA staff. The EWSWA scales and fire suppression systems require regular inspection and are performed by licensed inspectors. The Landfill requires regular monitoring and maintenance per its ECA. The monitoring and reporting requirement of the Landfill are conducted by contracted environment engineers. Heavy equipment used at the Landfill are inspected daily by EWSWA's contracted operators. Fleet vehicles are inspected by EWSWA staff and major repairs are performed by their respective dealers.
Maintenance	General repairs and maintenance are completed as necessary by EWSWA staff or contracted staff while significant repairs are completed by equipment manufacturers, or third-party contractors. Maintenance procedures at the Landfill are conducted by third-party contractors which would be as a result of EWSWA's staff inspection processes or through the recommendations made by EWSWA's contracted environmental engineers. Some maintenance tasks performed at the Landfill include, but are not limited to, the cleaning and scraping of roads, performing litter and dust control and maintaining the leachate collection system. Fleet vehicles are serviced regularly by their EWSWA staff and major repairs are performed by their respective dealers.
Replacement / Construction Activities	Heavy equipment is generally held until end of its service maintenance contract, and replaced with new equipment. The equipment manufacturers regularly

Activity Type	Description of Strategy
	service the heavy equipment and perform all major repairs per their contract. The Landfill Cells have a finite amount of space in which waste can be disposed. Once a Cell is nearing capacity, a new Cell is designed using EWSWA's environmental engineer and construction is conducted by a third-party contractor.

The financial figures in the table below (Table 7) represent the cumulative effect of the lifecycle costs over a 10-year forecasting period.

Table 7: Combined Average Annual Budget and Lifecycle Investment Scenarios

Lifecycle Activity	Average Budget	Average Annual Cost to Maintain Current Performance (Condition)	Average Annual Identified Infrastructure Spending Requirements
Inspection & Monitoring	$314,900	$361,000	$361,000
Maintenance	$2,132,030	$2,386,750	$2,386,750
Replacement / Construction Activities	$240,000	$275,130	$275,130
Total	**$2,686,930**	**$3,022,880**	**$3,022,880**

Average Budget - Represents the average lifecycle activity budget if no inflationary rate were applied over the 10 years.

Average Annual Cost to Maintain Current Performance (Condition) – Represents the Average Budget multiplied over a 10-year forecast using specific inflationary rates for each lifecycle activity, divided over 10 years.

Average Annual Identified Infrastructure Spending Requirements – Represents the annual sum of spending needed to maintain the current performance (condition).

It is estimated that to maintain the current performance, a 3% inflationary rate year-over-year over a 10-year cycle is needed to maintain the current performance of the lifecycle activities. The exception is that energy costs were inflated using a 1.5% year-over-year rate over the 10 years.

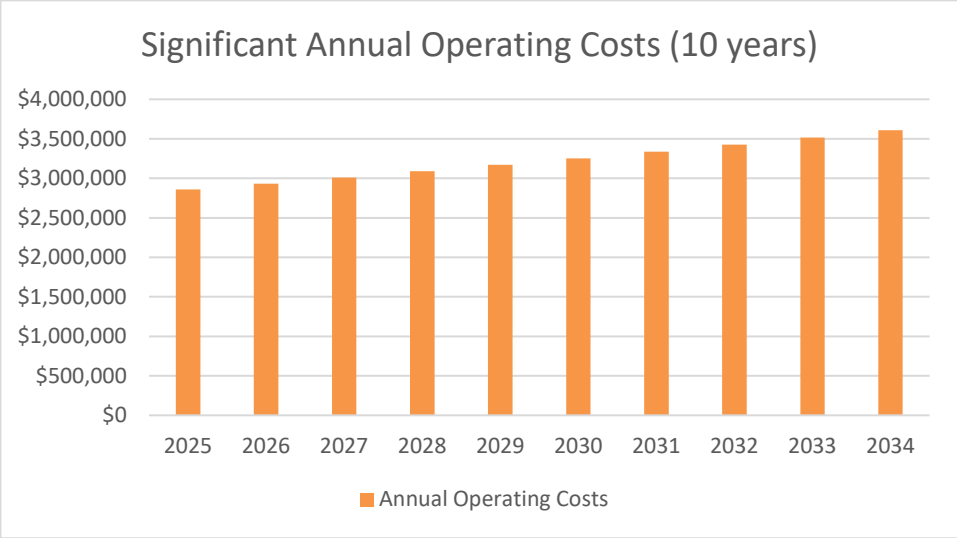
The EWSWA has remained prudent with spending relating to lifecycle activities. EWSWA lifecycle activity spending is primarily driven using a risk-based approach. This approach has kept EWSWA assets in overall "Good" condition. Lifecycle management scenarios are provided below to illustrate the risks associated with modifying current performance. The scenarios include:

- Risks of reducing current performance (Scenario 1): Maintain Average Budget
- Risks of maintaining current performance (Scenario 2): Include inflationary factors in the funding for lifecycle activities

Risks of reducing current performance (Scenario 1)	Risks of maintaining current performance (Scenario 2)
• Potential for increased breakdown of assets • Potential reduction in available services and/or programs offered to customers/residents • Essential services may be impacted or halted • Potential increase in the environmental impact if assets are not properly maintained/replaced.	• Similar risks as Scenario 1, but with a lesser degree of impact • Forecasted funding to maintain current performance may be understated and may fail to capture the true lifecycle cost

The included bar graph below (Table 8) illustrates the estimated operating costs for 10 years. The operating costs consider inflationary impacts and/or potential growth.

Table 8: Significant Annual Operating Costs



1.2.1 **Risk Mitigation Strategies**

The EWSWA has included financial and non-financial strategies tailored to help mitigate the risks associated with not performing specific lifecycle activities. Some strategies include:

- Conducting improved condition assessments and studies to better prioritize high-risk assets and areas
- Prioritizing asset replacements based on risk assessment
- Exploring cost-effective alternatives to extend asset lifespan
- Enhancing asset management practices for more efficient decision-making
- Identify and leverage grant or other funding opportunities
- Implementing advanced technologies to improve efficiencies
- Promoting community education and encouraging resident participation

Recommendations

- THAT the EWSWA Board approve the Essex-Windsor Solid Waste Authority 2025 Asset Management Plan (AMP) and;
- THAT the proposed funding strategy for the 2025 AMP be considered during the development of the 2026 Operating Plan and Budget and be brought forward to the Board for their consideration.

Acknowledgements

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