ASSET MANAGEMENT PLAN

2025

THE CITY OF WINDSOR
ONTARIO, CANADA

Acknowledgements

We would like to acknowledge the efforts of all City staff, our partnering consultant GEI Consultants, and our agencies, boards and committees who were involved in the development of this updated Plan. Their expertise and dedication were invaluable in refining both the quantitative and qualitative data required to inform this comprehensive Corporate Plan.

The collaboration achieved in the development of this document remains noteworthy, reinforcing the importance of Asset Management by continual integration of best practices into the Corporation's regular business processes. As we advance, the Plan continues to serve as a foundation for informed decision-making and sustainable asset stewardship.

Without the strategic guidance provided by Council, the oversight of the Asset Management Steering Committee, the dedication of the Asset Planning team, and the support of all staff responsible for managing the City's extensive network of assets, this document would not have been possible. Their ongoing commitment ensures that Asset Management remains a key priority in fostering resilience and efficiency across municipal operations.

City of Windsor Asset Planning Department

Executive Summary

Asset Management Plan Overview

The City of Windsor's 2025 Corporate Asset Management Plan (2025 AMP) builds on the approved 2024 Corporate Asset Management Plan (2024 AMP) to address the additional requirements of O. Reg. 588/17. It is intended to be read alongside the 2024 AMP, which offers further context on the state of the infrastructure, current levels of service and lifecycle management strategies for the assets considered under each asset category.

The City has a robust Asset Management Program in place to ensure that the City is able to continue with sustainable asset management practices. The Asset Management Policy (last updated in 2022), along with other corporate documents and plans informs this AMP. Upon endorsement by Council, the 2025 AMP will meet O. Reg. 588/17 2025 requirements.

The City owns approximately $16.4 billion in infrastructure assets that are identified in this plan, spanning across eight different asset categories and six Agencies, Boards and Commissions (ABCs). Figure 0-1 shows the valuation breakdown by asset category for the City of Windsor assets in relation to their replacement value. Environmental Protection represents the largest asset category with assets totalling a replacement value of $6.4 billion. Transportation is the second biggest category with close to $5.8 billion in assets. While the replacement values and assets are widely different across the asset categories, all are critical for the City's ability to provide services to the community.

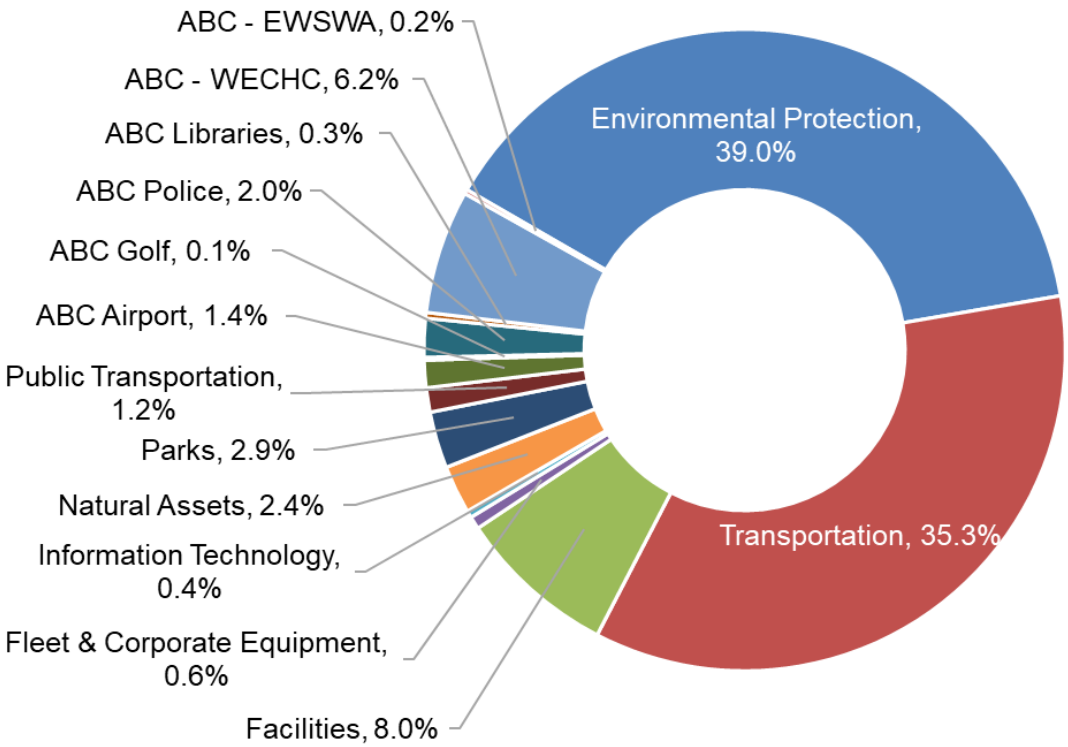


Figure 0-1. Asset Category Valuation as a Percentage of Total Replacement Value

This 2025 AMP is divided into chapters for each asset category, detailing the asset inventory and valuation, asset condition, asset age, and proposed levels of service, as well as key considerations of the infrastructure gap including risk mitigation strategies, recommendations for improvement and growth considerations.

Levels of Service

Level of Service (LOS) metrics provide key performance information that supports the provision of the respective services for the asset categories and segments. They support the organization's strategic goals and are derived from customer needs, Council objectives, City Policies, legislative and regulatory requirements, and the financial capacity of the municipality to deliver those LOS.

2024 and 2025 Asset Management Plan Levels of Service

The 2024 AMP reported on the City's Current Level of Service (CLOS) performance and documented all lifecycle activities and strategies to maintain the City's assets, in the support of services to the community. The costs of these strategies were assessed through three different scenarios to determine the forecasted cost of these strategies over a 20-year forecast period:

- **Current Funding (Scenario 1):** This model considered the impact to the overall performance of the assets over the forecast period should the asset portfolio continue to be funded as planned in the approved 2024 10-year Capital Budget.
- **Maintain Current Performance (CLOS) (Scenario 2):** This model considered the unconstrained cost over the forecast period to maintain the asset portfolio's current (2024 AMP) performance (i.e. condition) based on expert developed/planned lifecycle activities.
- **Infrastructure Needs as Per Lifecycle Strategies (Scenario 3):** This model considered the cost over the forecast period to perform the planned rehabilitation, renewals, and replacements as scheduled per the lifecycle strategy models developed for each sub-segment of the asset portfolio to maintain assets in a state where the intended LOS can be delivered.

A new scenario was developed and is brought forward under this 2025 AMP to meet the O. Reg. 588/17 2025 requirements for the City to set Proposed Levels of Service:

- **Performance Forecast with Proposed Level of Service Target (PLOS) (Scenario 4):** This model considered the estimated cost over the forecast period need to support select renewal, rehabilitation, and replacement activities based on analysis of risk, sustainability and affordability.

Proposed Level of Service (PLOS) Targets

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. In order to clearly understand the impact in 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. From this review, it was determined that the City-Defined LOS metrics brought forward under the 2024 AMP will continue to be monitored and reported annually as Key Performance Indicators (KPI) and a new LOS metric for each asset

category was developed. This LOS, the 'Average Overall Asset Condition Weighted by CRV', is calculated by weighing the average condition of all assets in the category by their replacement value over the forecast period.

This approach smooths out annual fluctuations in condition, providing a more accurate representation of the assets' long-term outlook. Through the condition profiles provided in this report, expected peaks and valleys in asset conditions are representative of assets going through their typical lifecycle stages ('Very Good' at the beginning of life, and 'Very Poor' near the end of life). All LOS and KPI metrics established in this 2025 report will be captured and reported annually to provide updates on the current status of asset performance. Over time, this will provide a data set from which the City will be able to identify performance trends across the asset portfolio. The City intends to conduct a full assessment of the PLOS targets in the years leading up to the next regulated publication of the AMP, which is currently mandated for every 5 years. Regular review and monitoring of both the PLOS targets and related KPI metrics will help to ensure that appropriate asset management practices are being implemented and followed in an effort to meet stated service needs.

This 2025 AMP communicates the City's commitment to providing and sustaining services to the community now, and in the future, through the responsible management of its infrastructure. It also provides the options that were considered for the PLOS, the cost for the PLOS lifecycle activities that would be undertaken to reach the City's PLOS targets over the next 20 years, the funding identified to be available, and the associated gap. The risks associated with the options considered to set the PLOS, and the risk mitigation strategies in consideration of the infrastructure gap are documented within the asset category chapters.

Financial Strategy

The financial strategy provided within this 2025 AMP is a critical component that outlines the infrastructure needs of the City over a 20-year planning period based on the forecasted needs of the PLOS scenarios of each asset category.

Projected Expenditures for Proposed Levels of Service

The 2025 AMP has identified an annual overall PLOS funding gap of $113.9 million. This figure includes the City's Airport, Golf Course, Police and Libraries, WECHC, and EWSWA. Figure 0-2 presents the funding gap by asset category.

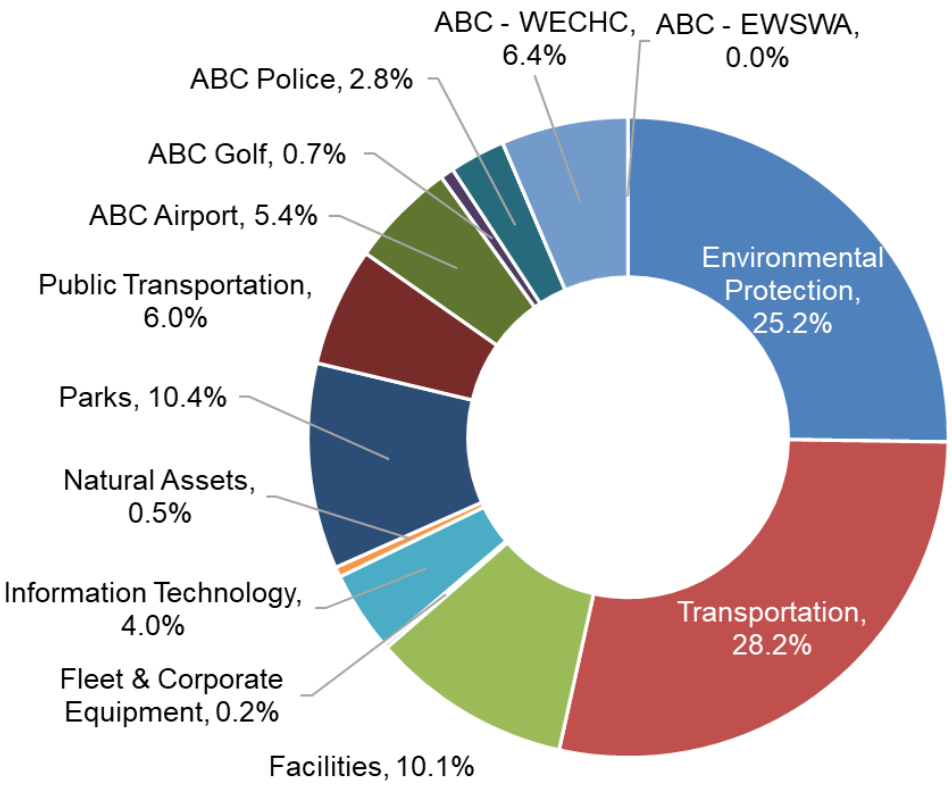


Figure 0-2. PLOS Gap by Asset Category as a Percentage of the Total PLOS Gap [1]

While in general, asset categories with the highest asset value have the highest PLOS infrastructure gap, there are some notable exceptions. For example, Information Technology accounts for just 0.4% of the City's total CRV but represents 4% of the overall funding gap. Similarly, Parks, Public Transportation, and the Airport contribute relatively small proportions to the City's total CRV but represent disproportionately large shares of the funding gap. This suggests that, relative to their replacement value, these asset groups have a higher funding shortfall than others, indicating they have likely experienced greater underfunding over time. These findings are further explored in Table 0-1 below, which details the funding gap by asset category.

[1] The City of Windsor Libraries PLOS has been set at $0 and therefore, is not depicted in Figure 0-2.

Table 0-1. Asset Category Overview & PLOS Funding Gap (All Asset Categories)

Asset Category	CRV	Average Annual Budget	Average Annual Cost for PLOS	Average Annual PLOS Funding Gap	Gap as Percent of CRV
Environmental Protection	$6,394,924,186	$84,969,005	$113,714,017	$28,745,012	0.4%
Transportation	$5,799,422,968	$83,088,133	$115,241,114	$32,152,981	0.6%
Facilities	$1,317,801,242	$36,487,050	$48,019,915	$11,532,864	0.9%
Fleet & Corporate Equipment	$105,226,002	$26,693,368	$26,922,067	$228,699	0.2%
Information Technology	$58,455,863	$14,925,959	$19,527,170	$4,601,211	7.9%
Natural Assets	$396,780,386	$5,217,944	$5,797,727	$579,784	0.1%
Parks	$467,941,316	$30,149,344	$41,982,074	$11,832,730	2.5%
Public Transportation	$201,188,899	$48,620,970	$55,460,927	$6,839,957	3.4%
ABC – Airport	$225,764,275	$7,532,000	$13,632,802	$6,100,802	2.7%
ABC – Golf	$23,055,540	$2,700,938	$3,471,447	$770,509	3.3%
ABC – Police	$320,338,489	$105,919,204	$109,136,148	$3,216,944	1.0%
ABC – Libraries	$47,871,161	$10,685,080	$10,685,080	$0	0.0%
ABC – WECHC[2]	$1,024,180,749	$11,200,000	$18,500,000	$7,300,000	0.7%
ABC – EWSWA[2, 3]	$34,971,800	$821,550[4]	$824,400[4]	$2,850[4]	0.0%
Total	**$16,417,922,876**	**$469,010,545**	**$582,914,888**	**$113,904,343**	**0.7%**

[2] WECHC and EWSWA have updated their CRV, LCM activities and forecast modelling reported in their 2025 AMPs, the City has elected to use the figures, as reported under their 2024 AMPs to maintain a consistent approach to the Financial Analysis of the total Average Annual PLOS Funding Gap. Both the 2024 and 2025 figures were determined through forecast models independent from those used by GEI and therefore have not been validated by the City or by GEI. 2025 updated information can be found in each ABC's respective AMP chapter.

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

[4] These figures do not include the needs for the Regional Landfill.

Figure 0-3 provides an overall view of the forecasted lifecycle expenditures for all asset categories. Although WECHC and EWSWA conducted the analysis for their chapter independently for their annual expenditures, the numbers provided by their independent analysis have been included. This figure details the average lifecycle expenditures required for the scenarios for Current Funding and Proposed LOS. The lifecycle expenditures include disposal, growth, non-infrastructure, operations & maintenance, renewal, rehabilitation, replacements and service improvements.

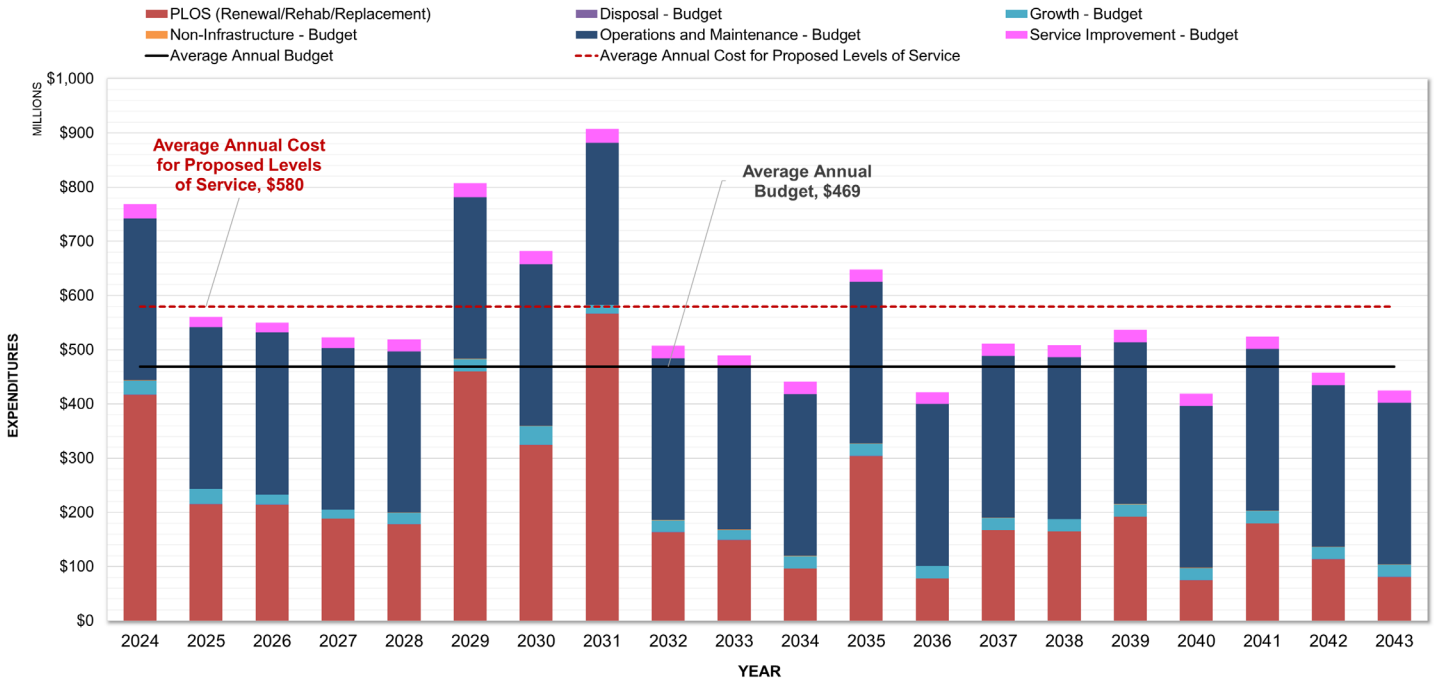


Figure 0-3. Overall Scenario Comparison

As identified, the Average Annual Budget for lifecycle expenditures is $469 million, and the City would require an additional $113.9 million annually to reach the PLOS target. While this is a significant gap, it represents only 0.7% of the City's current replacement value for their assets. It is recommended that the City implement incremental financial strategies to address the gap, while also implementing the non-financial strategies recommended within this 2025 AMP. These strategies are detailed in section 16.4.

If left unaddressed, the cumulative infrastructure gap, factoring in inflation, is projected to amount to $5.0 billion by the end of the 20-year forecast period, which can be seen in Figure 0-4. It is crucial for the City to consider ways in which to address this gap through strategic investments and planning to ensure sustainable and resilient infrastructure for the future.

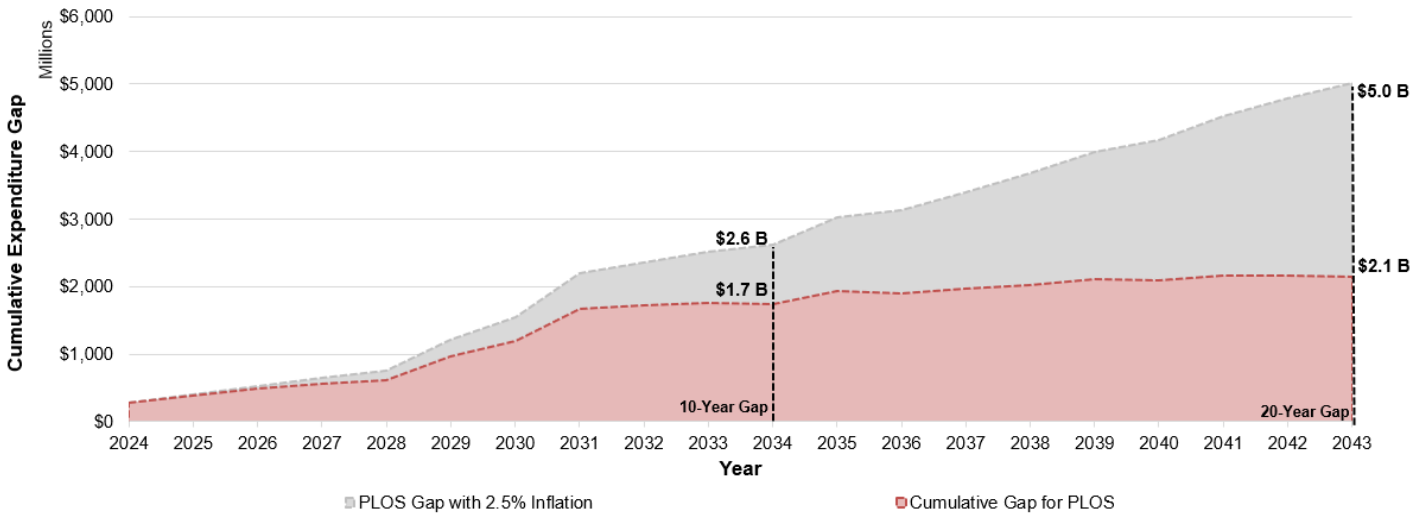


Figure 0-4. Cumulative Infrastructure Gap with 2.5% Inflation

Funding Strategies and Recommendations

There is a significant gap between the currently projected infrastructure needs and the current funding levels. To address this gap, the City will need to explore options to increase funding, reduce the projected infrastructure costs or a combination of the two. Addressing such a substantial gap will require careful consideration and a combination of strategies, including non-financial and financial, some of which are outlined below. Many of the non-financial strategies align with AM best practice. Incremental financial strategies are recommended and will provide a significant impact on reducing the City's infrastructure gap, but it is also recommended to invest in the non-financial strategies that assist in reducing the gap without financial measures.

Non-Financial strategies include a review of the asset hierarchy, improved data accuracy and governance, standardizing condition assessments, enhancing lifecycle planning, aligning budgeting with asset management, and the development of risk and criticality frameworks.

Financial strategies include a number of financial management tools available that can be employed to increase funding for assets, as shown in Figure 0-5. By adopting a comprehensive and balanced combination of financial and non-financial strategies, the City can more effectively address the growing infrastructure gap.

Through proactive planning and strategic investment, the City can maintain and enhance service delivery standards, ensuring that infrastructure continues to meet the needs of current residents while accommodating future growth. Importantly, this strategy supports fiscal sustainability by balancing affordability for residents with the need for ongoing infrastructure renewal and replacement. It encourages responsible stewardship of public assets by integrating financial planning, risk management, and performance monitoring into daily operations and long-term planning processes.

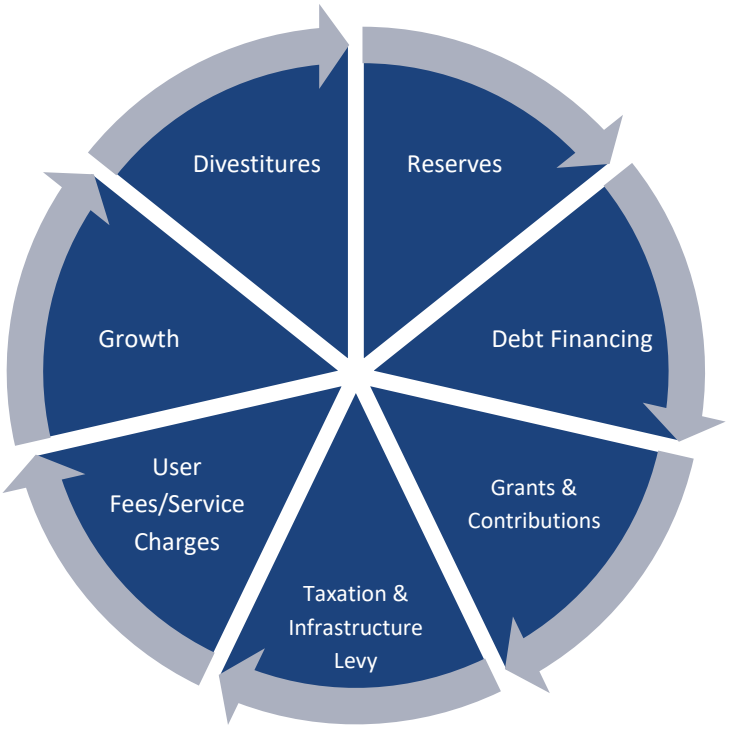


Figure 0-5. Financial Management Tools

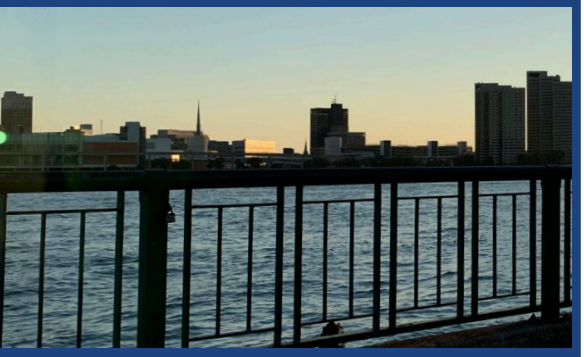
Ultimately, this approach positions the City to remain resilient in the face of economic, environment, and demographic challenges, ensuring its infrastructure systems continue to support a safe, livable, and thriving community for generations to come. This financial strategy offers key insights to inform future City budgets, helping to establish appropriate funding levels that support the delivery of municipal services.

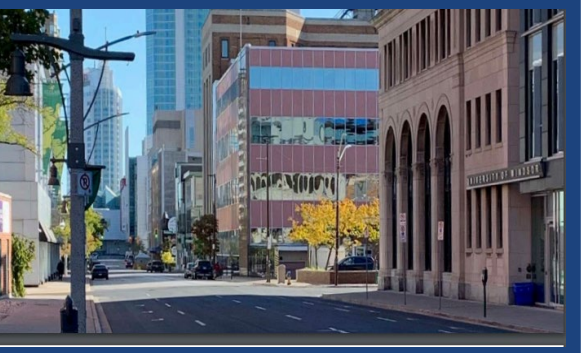
Risks Associated with Lifecycle Management

The financial overview highlights the potential risks associated with not addressing infrastructure needs. These risks include increased costs, safety hazards, regulatory non-compliance, and negative impacts to quality of life for the community. By assessing expenditure requirements and addressing funding gaps, the City can mitigate risks, and ensure effective management and stewardship of its infrastructure to meet the needs of current and future generations.

Improvement & Monitoring Plan

Continual improvement in asset management is essential for the City to enhance efficiency, effectiveness, and sustainability of the infrastructure management practices over time. This AMP provides an overview of the opportunities for improvements and the current work plan that has been developed throughout the compilation of this plan. As data, systems, and strategies are enhanced, so will future forecasts and iterations of this 2025 AMP.





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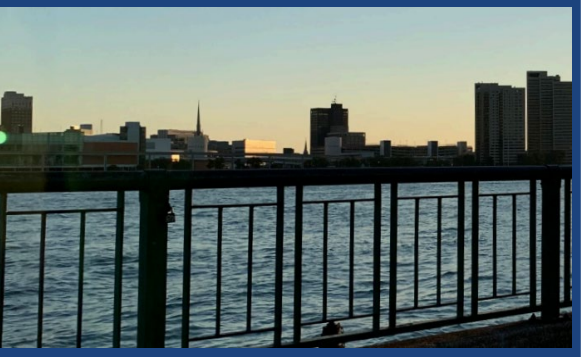
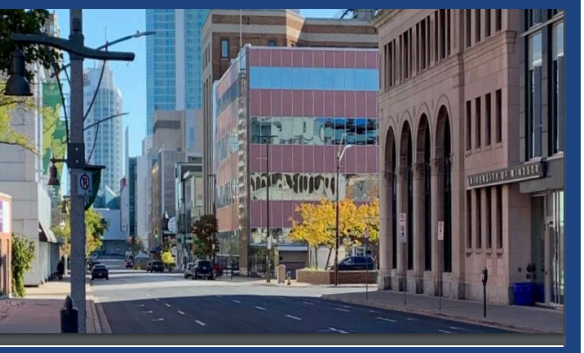
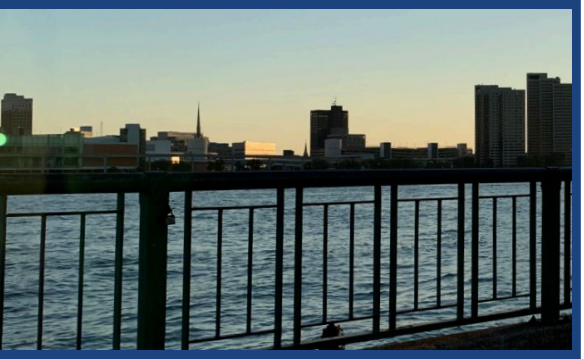
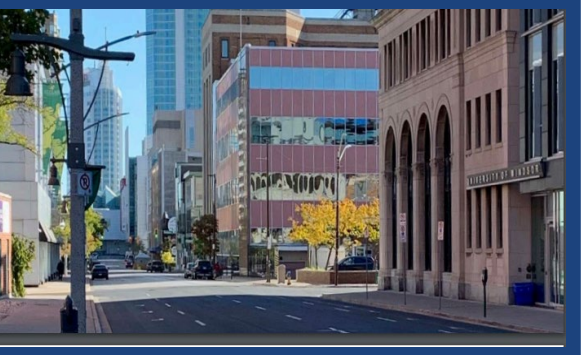
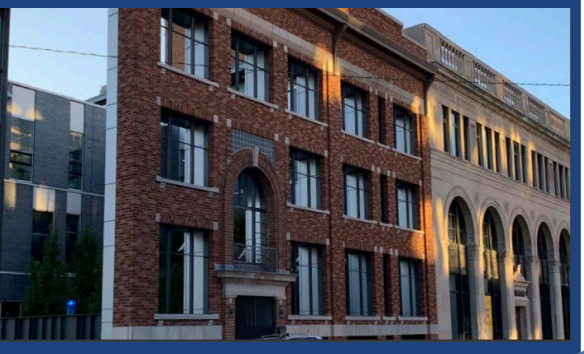










1 Introduction

1 Introduction

The City of Windsor's (the City)'s infrastructure supports a variety of municipal services that residents and businesses rely on everyday. The City's Corporate Asset Management Plan (AMP) supports the municipality's strategic goals, as outlined in the Windsor Official Plan and other corporate strategic plans and documents. By maintaining both existing and new infrastructure in a sustainable, orderly, and coordinated manner, the City continues to prioritize the provision of safe, efficient, and effective infrastructure systems. Furthermore, the AMP ensures compliance with Ontario Regulation 588/17 (O. Reg. 588/17) while optimizing available resources and meeting levels of service at an acceptable level of risk. This 2025 Corporate Asset Management Plan (2025 AMP) is an update to the 2024 Corporate Asset Management Plan (2024 AMP), which brings forward the Proposed Levels of Service (PLOS) for the City's infrastructure assets as well as a financial strategy to support the City's progression towards meeting these targets. The data analysis presented in this 2025 AMP is based on the same data which informed the 2024 AMP, which was current as of 2023. These two documents are intended to be used together, with the 2025 AMP being an extension of the 2024 AMP. The data in this 2025 AMP, and by extension, the data in the 2024 AMP will remain current until its scheduled update in 2030. The 2025 AMP, the 2024 AMP, and additional information on the various other plans informing the AMPs, are available on the City's website. Information not found online may be requested through the City's Asset Planning Department.

1.1 Purpose and Regulation

1.1.1 Asset Management Plan Purpose

The objective of formal Asset Management (AM) is to outline and establish a set of planned actions, based on AM best practice that will enable the City's assets to provide a sustainable Level of Service (LOS), while managing risk at the lowest Lifecycle Cost (LCC).

As reviewed in the 2024 AMP, as the City further develops and integrates asset management strategies and practices into everyday operations, the City can become more strategic about how it manages its assets and spending by:

- Minimizing total costs of acquiring, operating, maintaining, and renewing assets;
- While operating within an environment of limited resources;
- Continuously delivering the service levels customers need and regulators require; and
- At an acceptable level of risk to the organization.

This balancing of Service, Cost, and Risk is depicted in Figure 1-1, below.

Figure 1-1. Relationship between Service, Cost, and Risk informing asset management strategies (Climate Risk Institute)

The objective of the 2025 AMP is to assess how City assets are performing and to establish a PLOS, along with an estimate of the funding levels required, to advance the City's progress towards meeting PLOS performance goals. The 2025 AMP also brings forward strategies and recommendations, both financial and non-financial, for how the City should address the PLOS funding gap while considering both risk and the projected increases in demand caused by population and employment growth. More details regarding the purpose of asset management and the implementation of AM best practice, along with information regarding the data and various assumptions used in the development of the 2024 AMP, can be found in section 1.1 of the 2024 AMP.

1.1.2 Ontario Regulation 588/17 Overview

O. Reg. 588/17: Asset Management Planning for Municipal Infrastructure, requires municipalities to develop an asset management policy and provides guidance and the regulatory requirements and timelines for the development of a municipal AMP. Further, O. Reg. 588/17 requires municipalities to review annually the municipality's progress in implementing its AMP. A copy of the City's current Asset Management Policy (2022) can be found on the City's website.

Beginning in 2025, an update to the City's AMP will be required every 5 years. A summary of O. Reg. 588/17 timelines and requirements is shown in Figure 1-2, below.

This 2025 Corporate AMP satisfies the requirements for July 1, 2025, and provides recommendations on PLOS and the forecasted funding levels required to achieve them based on the data and analysis brought forward in the 2024 AMP.

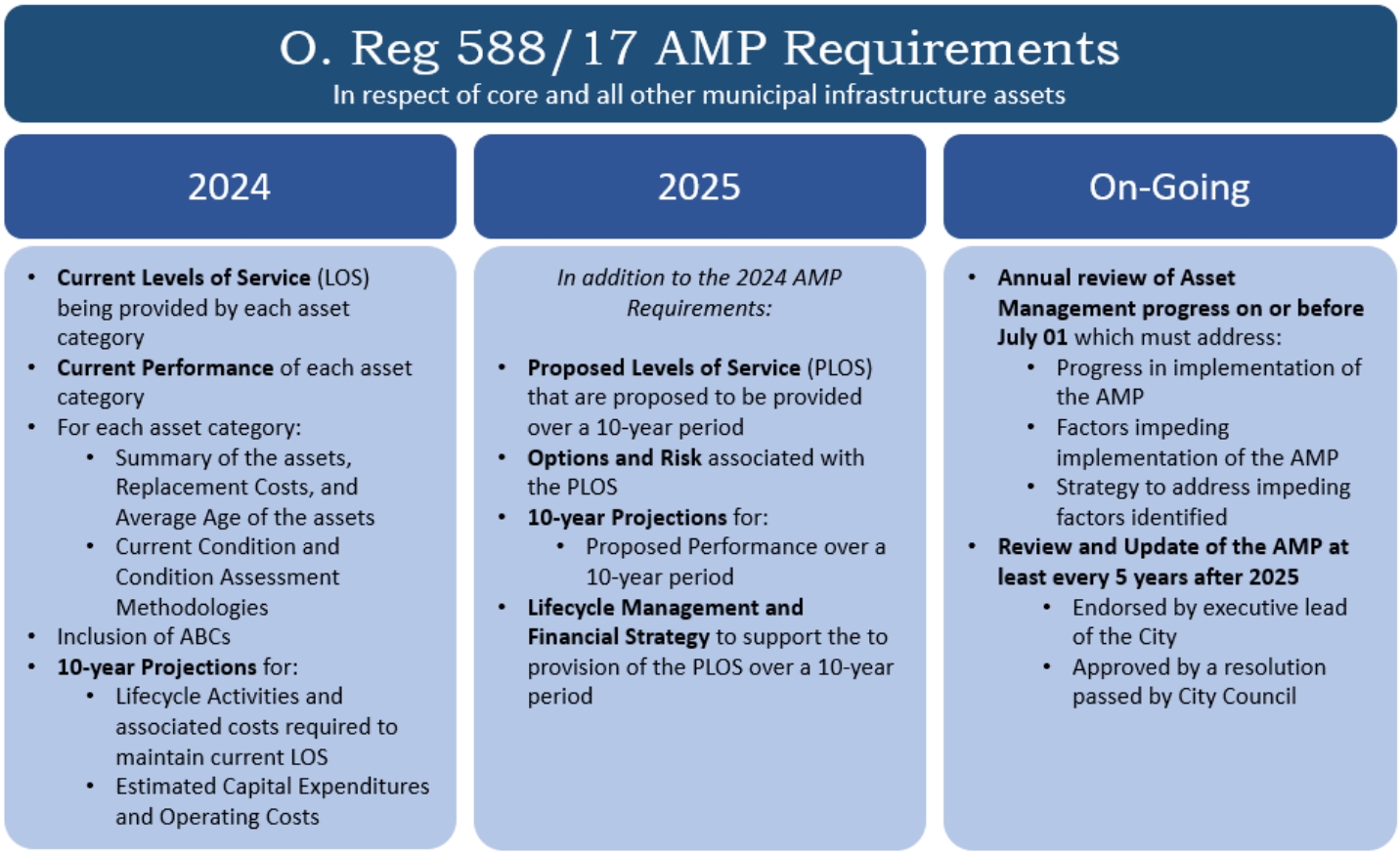


Figure 1-2. Ontario Regulation 588/17 Timelines and Requirements

1.2 Asset Management Program in Windsor

1.2.1 Corporate Asset Management Overview

The City has been working to adopt and implement asset management strategies and principles since 2011, when Administration formally established the City's Asset Planning division to initiate an Asset Management Program to facilitate sustainable asset management practices throughout the Corporation. Since then, the City has developed three AMPs, all superseding the last, in the total dollar value of assets captured and in the maturity level of the asset management practices being applied.

The City's first AMP was released in 2013 and reported on mostly core infrastructure assets such as roads, wastewater and storm assets, bridges and culverts. The assets captured in the first AMP were valued at that time, to be worth $5.2 billion. The City's 2018-2019 AMP updated the condition and the replacement value of the aforementioned core assets and reported on select additional non-core assets such as facilities, corporate fleet and fuel sites, various parks assets, Transit Windsor fleet and equipment, IT, and other corporate equipment. At that time, the total replacement cost for those captured assets was valued at $6.12 billion.

The 2018-2019 AMP also considered a financial strategy to address the identified infrastructure gap of over $33 million per year and identified services provided by the following assets that were at risk

of decline: Transportation, Parks, Environmental Protection, Facilities, Equipment and IT Infrastructure. This resulted in an annual infrastructure levy increase of 1.16% from 2020 to 2025 to be spent on the identified asset types. In 2023 this levy was further extended to 2026 to address level of service needs related to homelessness and housing initiatives. That same year, an additional levy of 0.25% per year for the years 2023 - 2026 was approved to specifically address deficiencies in Local Residential Roads. This brought the combined, Council-approved AMP levy to 1.41%.

The 2024 AMP considered all core and non-core corporate infrastructure assets. This included those owned by the City and those managed through various City Agencies, Boards and Committees (ABCs). In defining the threshold for the inclusion of specific infrastructure asset types in this AMP, factors such as asset type, Estimated Useful Life (EUL), purchase price, and tangible capital asset (TCA) thresholds were considered. The 2024 AMP was also reformatted to allow for a grouping of asset segments and sub-segments with similar asset characteristics and lifecycle activities. This 2025 AMP update continues to follow the asset hierarchy established in the 2024 AMP document to allow for comparison and trend analysis.

1.2.2 Asset Management Governance

The City's Asset Management Governance remains the same, as detailed in the 2024 AMP. For a detailed overview, consult section 1.2.2 of the 2024 AMP.

1.2.3 Asset Management Stakeholders' Roles & Responsibilities

The City's Asset Management Stakeholders' Roles & Responsibilities remains the same, as detailed in the 2024 AMP. For a detailed overview, consult section 1.2.3 of the 2024 AMP.

1.2.4 General Asset Management Strategies

This section includes an overview of the City's approach to managing assets including condition assessment techniques, the identification of the optimal life cycle interventions required based on the lowest Lifecycle Cost (LCC), and various prioritization techniques, including the consideration of risk.

1.2.4.1 Condition Assessment Programs

A key building block of good AM best practice is to have comprehensive and reliable information on the current condition of the infrastructure. Municipalities need to have a clear understanding of the performance and condition of their assets, as management decisions for future expenditures and field activities should be based on this knowledge. An incomplete understanding about an asset may lead to an asset's premature failure or premature replacement.

Benefits of objective condition assessment programs within the overall AM process are as follows:

- It allows for the establishment of rehabilitation programs;
- When utilized in risk frameworks, it assists in the identification and avoidance of future failures and provides liability protection;
- It can be utilized to inform proactive repair schedules and preventative maintenance programs;

- It improves the understanding of asset useful life therefore contributing towards improving LOS;
- It enables accurate asset reporting which, in turn, enables better decision making.

Condition assessments can involve different forms of analysis such as subjective opinion, legislated methods, mathematical models, or variations thereof, and can be completed through a very detailed or very cursory approach. Various objective condition assessment programs are in place to assess the City's assets. The methodology of assessing condition for the assets included in this 2025 AMP is explained in each chapter of the 2024 AMP.

1.2.4.2 Lifecycle Costing

The goal of asset management is to minimize the LCC of an asset, while maximizing services to the community and managing associated risk. This involves a comprehensive approach to asset management, illustrated in Figure 1-3. Proper management of assets throughout their lifecycle enables the City to make better decisions, at the right time, in order to manage assets at their lowest LCC.

Source: Climate Risk Institute

Figure 1-3. The Asset Lifecycle (Climate Risk Institute)

It is important to note that the construction of new capital assets, in general, only accounts for 10-20% of their total cost of ownership. As shown in Figure 1-4, below, 80% of asset ownership costs are spent on the asset's operation, maintenance, renewal, and eventual disposal.

Determining all costs associated with an assets lifecycle is called Whole Lifecycle Costing (WLC). Administration is working to integrate this type of analysis into its decision-making and analysis when rehabilitating or replacing aging infrastructure, or when developing costs for new or acquired assets.

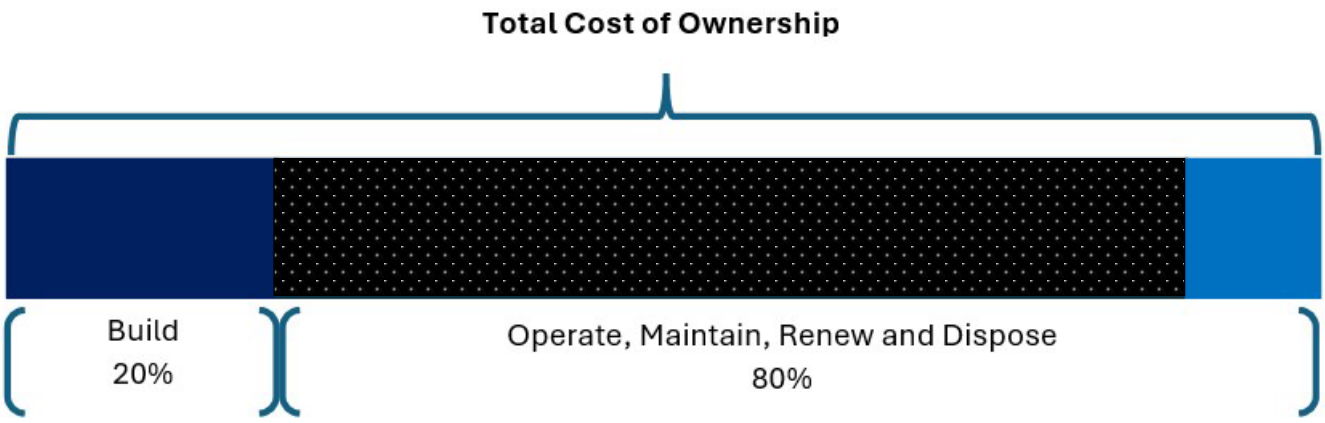


Figure 1-4. Cost of Ownership (City of Windsor, Asset Planning)

1.2.4.3 Optimized Decision Making

Integrating asset management strategies into the way assets are managed has the ability to better inform decision makers when making asset related decisions. This informed approach contributes to balanced service levels, decreased risks to the community, and sustainable asset cost. AM decisions occur at a number of different stages including, project selection, project prioritization both across and within service areas, and at operational and maintenance levels.

Optimized decision making, either within or across service areas, is currently based on a range of approaches. These approaches utilize the available asset data, such as condition assessment information, and is supplemented with expert knowledge from City staff and outside agencies. For high-value or complex projects, the decision-making process includes assessing a broad range of capital solutions, such as renewal, rehabilitation, and replacement options in addition to the investigation of operational solutions such as enhanced maintenance regimes. A similar approach has been taken for the selection of rehabilitation work for assets such as roads, sewers, and structures, where staff have assessed various alternative solutions and developed a range of intervention options that are most appropriate to the City's needs.

As a part of the Corporate Asset Management Program, the strategies outlined below are considered and continue to be strengthened to better facilitate decision making:

- **Risk Based Analysis:** This approach focuses on maximizing risk reduction for minimum cost. The Corporation quantifies the risk, identifies mitigation measures and risk tolerance, and then sets out to reduce the risks in the most cost-effective manner.
- **Cost-Benefit Analysis:** Involves identifying the financial impacts of various alternatives within a business case. This includes both benefits and costs over the entire analysis period with the goal of assessing which alternative presents the greatest value of benefits compared to costs.
- **Business Case Evaluation:** The development of business cases to evaluate alternatives and select a preferred solution that provides the best value when evaluated against specific weighted criteria.

1.2.4.4 Integrated Solutions

Asset management is a change management process that involves a holistic approach across municipal departments. It is not something that occurs at a fixed time in an annual cycle but rather, it should be regarded as a key part of the City's culture.

Integrating asset management and social and environmental goals is becoming critical for municipalities. When infrastructure is due for renewal or rehabilitation, updating the infrastructure to meet accessibility, equity and environmental goals can contribute to multiple corporate objectives, as well as enhance services to the community. This is becoming increasingly important as most Federal and Provincial funding opportunities are requiring social and environmental objectives be met to receive infrastructure renewal funding.

In addition, many municipalities are incorporating public input on services levels in their community. How residents rate the services provided, and whether or not they are willing to pay more to sustain service levels, can be valuable information to include into an AMP.

1.3 Alignment to the City's Strategic Goals

The AMP is a key component of the City's planning process linking with multiple other corporate plans and documents, for example:

- **The Official Plan** – The AMP will both utilize and influence the land use policy directions for long-term growth and development as provided through the Official Plan.
- **Capital Budget** – The decision framework and infrastructure needs identified in the AMP form the basis on which future capital budgets are prepared.
- **Operating Budget** – Ensures funding is available for day-to-day asset management activities which allow assets to continue operating at their original or current performance levels.
- **Infrastructure Master Plans** – The AMP aims to align with the goals and projections from infrastructure master plans and in turn will influence future master plan recommendations. All City Master Plans can be found on the City Website at https://www.citywindsor.ca. Such plans include, but are not limited to:
    - Active Transportation Master Plan
    - Sewer and Coastal Flood Protection Plan
    - Rediscover Our Parks – Parks and Outdoor Recreation Master Plan
    - Recreation Master Plan
    - More than Transit – Transit Master Plan
    - Corporate Climate Action Plan (CCAP)
    - Energy Management Plan
    - Corporate Technology and Strategic Plan (CTSP)

- **By-Laws, standards, and policies** – The AMP will influence and utilize policies and by-laws related to infrastructure management practices and standards.
- **Regulations** – The AMP must recognize and abide by industry and senior government regulations, where applicable.
- **Business Plans** – The service levels, policies, processes, and budgets defined in the AMP are incorporated into business plans as activity budgets, management strategies, and performance measures.

1.4 Development & Methodology of the Asset Management Plan

The 2025 AMP builds on the 2024 AMP to address the additional requirements of O. Reg. 588/17. It is intended to be read alongside the 2024 AMP, which offers further context on the state of the infrastructure, levels of service (LOS) and Lifecycle Management (LCM) strategies. The following section outlines the updated methodology to meet these requirements.

1.4.1 Asset Management Plan Scope

This AMP includes the following asset categories:

Details regarding the types of assets included within each chapter of the AMP can be found in the opening section of each chapter.

1.4.2 Asset Management Plan Structure & Methodology

The 2025 AMP Structure & Methodology is the same as that which was provided in the 2024 AMP. Sections that have been updated, or added, in this AMP are explained below.

1.4.2.1 State of the Infrastructure

This section summarizes the inventory of assets, their replacement values, their estimated useful life, average age, and condition information for each asset category. This section has been condensed to

become a single-page dashboard that includes a summary of the information listed above in addition to the values for Average Annual Infrastructure Gap to Maintain Current Level of Service, Average Annual Infrastructure Gap for Proposed Level of Service, and the Average Annual Growth Expenditures.

For definitions and additional detail in reference to the following terms, refer to section 1.4.2.1 of the City of Windsor 2024 AMP:

- Asset Register, Current Replacement Value, Estimated Useful Life, Asset Condition

The condition rating scale remains un-changed from the 2024 AMP; however, it is being re-stated here (Table 1-1) for clarity and ease of reference in reading this 2025 AMP.

Table 1-1. Condition Rating Scale

Condition	Definition	Description
Very Good	Fit for the Future	The asset is fit for the future. It is well maintained, in good condition, new or recently rehabilitated.
Good	Adequate for Now	The asset is adequate. It is acceptable and generally within the mid-stage of its expected useful life.
Fair	Requires Attention	The asset requires attention. The asset shows signs of deterioration, and some elements exhibit deficiencies.
Poor	At Risk	There is an increasing potential for the asset condition to affect the service it provides. The asset is approaching the end of its useful life, the condition is below the standard and a large portion of the system exhibits significant deterioration.
Very Poor	Unfit for Sustained Service	The asset is unfit for sustained service. It is near or beyond its expected useful life and shows widespread signs of advanced deterioration. Some assets may be unusable.
Unknown	Unknown	Not enough data exists to determine condition.

1.4.2.2 Levels of Service

The LOS metrics provide key performance information that support the provision of the respective services for each asset category. They support the organization's strategic goals and are derived from customer needs, Council objectives, City Policies, legislative and regulatory requirements, and the financial capacity of the municipality to deliver those LOS. The O. Reg. 588/17 establishes prescribed LOS for core assets, while all other LOS have been independently developed by City staff.

For definitions and additional detail in reference to the following terms, refer to section 1.4.2.2 of the City of Windsor 2024 AMP:

- Level of Service Statement, Level of Service Metric

New terminology used under the Levels of Service section of the 2025 AMP are the following:

Current LOS Performance (CLOS): The current results of the LOS metric described as a value or statements supporting the service delivery outcomes.

Proposed LOS Target (PLOS): O. Reg. 588/17 mandates the development of proposed LOS which represents a performance goal, designed to align services with community expectations and corporate priorities, while minimizing risk and long-term costs.

Key Performance Indicators (KPIs): Statements or metrics that allow the City to monitor progress in implementing the AMP.

The CLOS and KPI metrics provide a way to track and monitor the performance of the infrastructure and the services they provide. They may include metrics such as infrastructure condition performance, efficiency, compliance with regulatory standards, and operational costs. The 2025 AMP sets targets for the LOS metrics that are required by O. Reg. 588/17 and for the LOS metrics that were developed internally by asset managers and supported by the Corporate Leadership Team (CLT).

1.4.2.2.1 Process to Set Proposed LOS Targets

The process for establishing the original LOS brought forward under the 2024 AMP, and the subsequent development of the CLOS and PLOS that are reported in this 2025 AMP is illustrated in Figure 1-5.

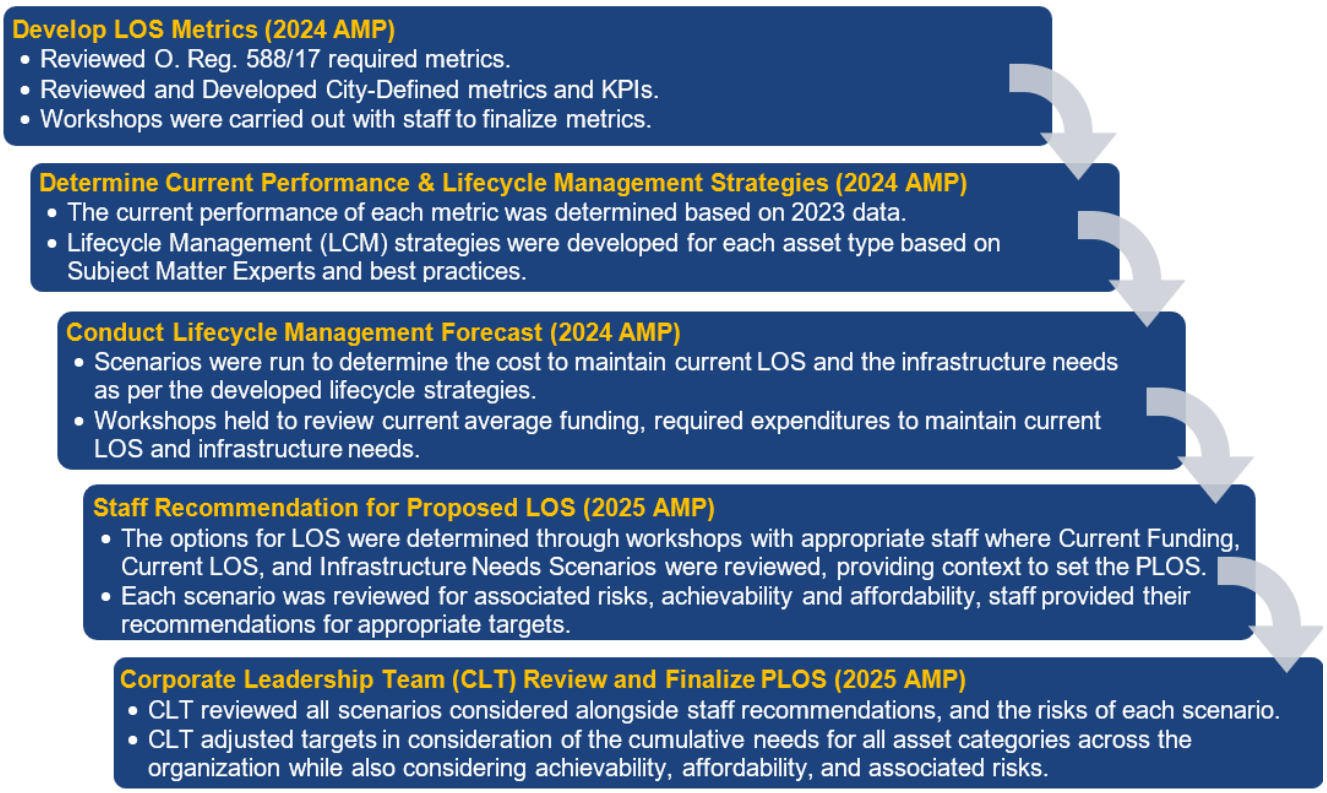


Figure 1-5. City of Windsor's Process to Set PLOS Targets

It is recommended that the City conduct an annual review and update of the CLOS metrics to assess progress in implementing the AMP. This review will help determine whether the City is meeting its service delivery goals, financial commitments, and infrastructure performance expectations. This will ensure that the effectiveness of planned asset management strategies is evaluated and any changes in asset conditions, funding availability, or service demands are accounted for. The City is required, after the 2025 AMP, to provide Council with annual updates on the progress in implementing the AMP, allowing for an opportunity to adjust targets, investment strategies, and risk mitigation measures if needed. By conducting this review annually, the City can proactively address emerging challenges, optimize resource allocation, and continuously refine its asset management approach to ensure long-term sustainability and service reliability.

1.4.2.2.2 Lifecycle Management Strategy

LCM strategies identified in the 2024 AMP aim to establish planned actions, based on AM best practice, to ensure the City's assets can sustainably serve its citizens at the lowest possible LCC, while managing risk. Lifecycle activities are important as they work together to extend the asset life, reduce overall LCC, and achieve other objectives such as environmental and social goals. The goal of defining these lifecycle strategies is to capture the activities that are required to sustain the service deliver of the assets within each asset category. The City is continuously improving its asset management approach by reviewing processes and procedures and implementing AM best practice where possible. The lifecycle management activity categories used in the development of the various lifecycle models, along with the lifecycle activities for each asset segment are detailed in the 2024 AMP.

1.4.2.2.3 Lifecycle Strategies and Forecast Scenarios Assumptions

O. Reg. 588/17 requires a 10-year assessment which selects the lowest cost life cycle activities that are projected to maintain service levels over the assessment period. Keeping in line with the 2018-2019 AMP, the 2024 and 2025 AMP provides a 20-year forecast and assessment. This extended analysis period provides a more comprehensive look at the City's projected infrastructure needs over the medium term.

As part of the LCM strategy, the 2024 AMP undertook an assessment of various lifecycle activities in order to understand not only the costs associated with these activities, but to also forecast the performance (condition) of the City's assets over the next 20 years should all of the identified lifecycle activities be undertaken. In determining an appropriate PLOS as part of the 2025 AMP, the scenarios developed for the 2024 AMP (Scenarios 1, 2, and 3, as noted above) were evaluated, and a new scenario (Scenario 4) was developed to model the impact of the PLOS.

1.4.2.2.4 Assessing Risks Associated with PLOS Options to Long Term Sustainability

Various options were considered when setting the PLOS target for the LOS metrics to balance achievability, affordability, risk and the strategic priorities of the City. The 2024 AMP LCM Scenarios were evaluated to determine the appropriate targets and performance goals established in this 2025 AMP. The scenarios that were evaluated to set the PLOS included:

- **Current Funding (Scenario 1):** This model considered the impact to the overall performance of the assets over the forecast period should the asset portfolio continue to be funded as planned in the approved 2024 10-year Capital Budget.
- **Maintain Current Performance (CLOS) (Scenario 2):** This model considered the unconstrained cost over the forecast period to maintain the asset portfolio's current (2024 AMP) performance (i.e. condition) based on expert developed/planned lifecycle activities.
- **Infrastructure Needs as Per Lifecycle Strategies (Scenario 3):** This model considered the cost over the forecast period to perform the planned rehabilitation, renewals, and replacements as scheduled per the lifecycle strategy models developed for each sub-segment of the asset portfolio to maintain assets in a state where the intended LOS can be delivered.

For full details regarding inputs, assumptions and other key considerations in developing each of the above scenarios, refer to section 1.4.2.3 and section 1.4.2.4 of the 2024 AMP.

1.4.2.2.5 Proposed Level of Service Scenarios (Scenario 4)

In establishing the PLOS targets, a fourth Scenario was developed to model the estimated costs required to support select renewal, rehabilitation and replacement lifecycle activities. This approach involved two workshops, lead by the City of Windsor's Asset Planning Department and the consultant (GEI), which involved the necessary key staff and Subject Matter Experts to develop the new information required to define the parameters of the PLOS.

The first workshop was focused on the risks associated with adopting a level of service for the various asset categories that is reduced, maintained, or increased when compared to the current level of service being provided by the City assets. This involved a full review of the work undertaken in the development of the 2024 AMP scenarios, inclusive of the State of the Infrastructure data, the LCM scenarios, the LOS metrics, the results of the 20-year forecast Scenarios 1, 2, and 3, and the conclusions and recommendations that were drawn from this work. Workshop participants then participated in open-table conversations regarding their assessments of the possible risks associated under all three of the proposed level of service – reduced, maintained, increased as compared to the current level of service (CLOS) of the asset portfolio. Results from this workshop were reviewed, and consolidated into data that would inform the next workshop with the Corporate Leadership Team (CLT).

The second workshop, again lead by the City of Windsor's Asset Planning Department and GEI and attended by the City's CLT, was intended to digest the information extracted from the first workshop within the larger context of the City's capital and operational capacities against the immediate and forecasted needs of the assets and their functional roles in providing levels of service. The primary objectives of this workshop were the identification of a PLOS target for each asset category of this AMP and the development of a financial strategy or framework that could support the Organization's progression towards the PLOS targets that would be set.

1.4.2.2.6 The Average Annual Funding Gap Required to Achieve the PLOS Targets

Based on the review of the scenarios listed above, appropriate targets were set, and Scenario 4 – Proposed LOS Target was run to determine the costs associated with the PLOS.

The Financial Strategy (Chapter 16) is one of the key components within the AMP and provides a way for municipalities to integrate asset management planning with financial budgeting. In this chapter, the scenarios for each asset category are combined to assess the City's forecasted expenditures to understand the full cost of maintaining service levels and meeting infrastructure needs over the 20-year forecast period. Forecasts for expenditures are compared to current capital budget forecasts to determine if an infrastructure gap is present. Strategies to address this gap will also be discussed.

The forecasts for major capital works including renewal, rehabilitation and replacement activities are derived from analysis of the data provided by the City, the LOS metrics developed with City staff, and the lifecycle strategies developed with SMEs, based on AM best practice. For other lifecycle activities such as non-infrastructure, operations and maintenance, disposal, service improvement and growth, it is assumed that current funding levels are adequate to meet customer's expectations.

1.4.2.3 PLOS Infrastructure Gap Considerations

Administration conducted an impact analysis of the anticipated funding sources that may be leveraged to address the PLOS funding gap for each asset portfolio, and specific considerations are listed within each chapter.

1.4.2.4 Risk Mitigation Strategies and Recommendations

As the City matures in through its asset management journey, the processes for asset management planning will continue to evolve and improve. Within each chapter, there are specific recommendations for the asset category to improve data confidence, improve forecasting, and address the infrastructure gap. Additionally, the Improvement and Monitoring Plan (Chapter 17) will speak to the opportunities for maturity on a city-wide or program level and includes a work plan for the City's Asset Management Program.

1.4.2.5 Growth Considerations

O. Reg. 588/17 mandates that the City report major capital and operating costs related to growth as part of its expenditure analysis. Growth-related activities were identified during the budget review to determine capital growth expenditures, which are then incorporated into the lifecycle activity costs for each asset category. To determine the ongoing operating expenditures required for growth, these capital expenditures were added to the asset category's current replacement value. The percentage of replacement value currently allocated to operations and maintenance (O&M) was then applied to the updated current replacement value with growth expenditures to project the potential future O&M funding needed to manage growth. This assessment assumes that the current amount being spent on operations and maintenance is adequate to meet the needs of the assets and does not provide an assessment if this value is appropriate. This approach allowed for an assessment of potential gaps in operations and maintenance funding to accommodate growth over a 10-year period.

1.5 Asset Management Plan Assumptions and Limitations

The 2024 and 2025 AMPs have been developed based on the best available information and by employing professional judgement and assumptions to address gaps where necessary. There are, however, key assumptions that should be considered when reading through the AMP:

- **Scope:** The scope of this AMP covers the assets directly owned by the City of Windsor. Assets managed by the City's ABCs have also been incorporated where required under the O. Reg. 588/17.
- **Replacement Value:** All replacement values are reported in 2023 dollars, unless specified otherwise. Service improvement to an asset is generally not included in the CRV, however in some instances exceptions have been made where it is standard practice to upgrade infrastructure at the time of replacement, such as replacing a combined sewer with two separated sewers.
- **Risk:** The City has not fully implemented a formal asset risk management strategy that goes beyond legislative requirements for all assets, however using risk to prioritize investment is currently being used for Roads infrastructure. As part of ongoing improvement, Administration will work to add risk optimized decision making tools to more asset types.
- **Climate Change:** The cost of climate change has not been included in the CRVs identified in this AMP. Unexpected events such as severe storms attributed to climate change can cause immediate infrastructure replacement/renewal needs not identified in this AMP. Also not included are the likely effects climate change will have on the EUL of the City's assets.
- **Capital Budget:** Current funding for the Average Annual Budget amounts is based on the budgets identified in the City's 10-year Capital Plan covering the 2024-2033 fiscal years. The average of the first 10 years were then applied to the following ten-year period covering 2034 – 2043 to allow for a 20-year forecast amount to be determined. For the purposes of this AMP, the model does not assume any increases in current funding over the forecast period. It is assumed that the projected capital budgets will occur as planned over the analysis period. This AMP assumes that the current budgets are sufficient to meet current needs for non-infrastructure, growth, service improvement, and disposal activities.
- **Operating Budget:** Operating budget amounts have been provided to support the full LCC of the assets and to assess growth impacts on the asset base. For asset categories where operating costs fully align with the assets presented in that chapter, the full, approved operating budget has been included in the figures presented. For asset categories where there are several departments represented, only the operating costs related to direct repairs and maintenance have been captured. As a result, it should be noted that the values presented for Operations and Maintenance (O&M) may be over-stated or under-stated, accordingly. The cost of these activities does not form part of the infrastructure needs modeling but is being presented to provide a more comprehensive look at the full LCC of asset ownership. It should further be noted that the forecast does not assume any increases in current operating funding over the forecast period for these activities.

- **Lifecycle Costs**: Costs associated for non-infrastructure, service improvement, disposal, and growth activities, and in particular the costs for operations and maintenance (both operating and capital), are presented to provide additional information on the cost of lifecycle asset use and ownership. These amounts are not included in the calculation of the infrastructure gap. The 2024 and 2025 AMPs assume that non-infrastructure, operations and maintenance, service improvement, disposal and growth funding levels are adequate to meet the assets needs. As the City continues to mature its Asset Management Program, it is recommended that efforts be made to quantify the true cost and need of operations and maintenance to ensure that appropriate funding levels are available for the maintenance of the assets in this category. Optimizing maintenance and leveraging new technologies can enhance operational efficiency and extend the lifespan of assets, ensuring that assets are being provided and maintained at the lowest possible cost.
- **Lifecycle Management Scenarios Forecast:** The forecast scenarios within this AMP relies on CRV which could be over/understated. The strategies developed for the AMP were developed based on expert staff opinion on when the Lifecycle Management (LCM) activities take place and how much is spent for each of the LCM activities but are still considered high-level estimates. For assets with an LCM strategy based on age and not condition, EUL was used which may result in a larger outstanding infrastructure needs assessment and more frequent replacements.

1.6 Asset Management Pressures

The management of public assets faces various pressures that can impact its operations, strategies, and overall success. Some of these pressures include:

- **Market Volatility:** Asset managers must navigate constantly changing market conditions, including fluctuations in asset prices, and interest rates. Market volatility can make it challenging to appropriately plan for future asset needs.
- **Regulatory Changes:** Municipalities are often subject to a wide range of regulations that can vary by jurisdiction. Changes in regulations, such as those related to reporting requirements, can require asset managers to adapt their processes and systems.
- **Budget Constraints & Funding Options:** Municipalities often operate within tight budget constraints, requiring the balancing of a number of competing priorities. Municipalities must explore various funding and financing options to support asset management initiatives, and other infrastructure needs. Identifying sustainable funding sources and securing financing on favourable terms can be challenging.
- **Population Growth and Urbanization:** Growing populations and urbanization place increased strain on municipal infrastructure and services. Municipalities must manage the demands for housing, transportation, utilities, and public amenities while ensuring sustainable development, and balancing the current asset portfolios.

- **Aging Infrastructure:** Many municipalities face aging infrastructure. Maintaining and upgrading this infrastructure requires significant investment, but funding may be insufficient to address all needs.
- **Environmental Regulations:** Municipalities must comply with environmental regulations related to air, water quality, waste management and land use. Meeting these regulations often requires investment in infrastructure upgrades and environmental mitigation measures. There is also significant staff time required for data tracking and reporting to ensure compliance.
- **Climate Change and Natural Disasters:** Climate change poses significant challenges for municipal asset management, including increased risk of extreme weather events such as floods and storms. Municipalities must invest in resilience measures to protect infrastructure and communities from climate-related risks.
- **Limited Human Resources:** Municipalities may face challenges in recruiting and retaining qualified staff with expertise.
- **Political and Public Pressure:** Asset management decisions are often subject to political and public scrutiny. Balancing the needs and preferences of various stakeholders, including elected officials, residents, and businesses can be complex and contentious.
- **Data Management and Technology Adoption:** Effective asset management relies on accurate data collection, analysis, and decision-making. This requires reliable asset data and implementing systems and processes that leverage technology to optimize asset performance.
- **Resilience and Sustainability Goals:** There are increasingly greater pressures to prioritize resilience and sustainability in asset management practices. This includes incorporating green infrastructure, renewable energy, and sustainable transportation solutions into asset planning and management.

Overall, municipal asset management requires navigating a complex landscape of financial, regulatory, environmental, and social pressures to effectively manage infrastructure and deliver services to residents.

1.7 Risk to the Asset Management Strategy

An assessment of the risks to the delivery of the City's asset management strategy has identified a number of areas that will require close monitoring in the future. These risks are not specifically associated with failing assets, project delivery or LOS but are rather focused on large scale, corporate enterprise risks. These risk factors could ultimately impact the ability of the City to deliver established LOS and must be monitored and addressed throughout the life of the plan.

Table 1-2 reflects risks outside of the asset-specific operations and maintenance, that could pose a threat to the implementation of the Corporation's various asset management strategies.

Table 1-2. Summary of Potential Risks and Mitigation Strategies

Identified Risk	Potential Mitigating Actions
Ability to retain/attract staff ensuring accurate and timely information is being collected and analyzed	Establish proper training and recruitment programs with particular emphasis on positions within Computerized Management System (CMMS) network
Funding levels lower than those projected	Look into alternative funding strategies
Funding not allocated to asset management improvement initiatives such as further condition assessment work	Develop a robust business case that sets out the benefits versus the risks of “doing nothing”
Occurrence of climate change/adverse weather/unforeseen events resulting in funds being diverted to assets that were not originally planned for	Establish alternative funding methodologies to ensure all essential projects can be funded without allowing others to be pushed back beyond a reasonable timeframe
Growth projections/population movements not as planned	Conduct annual needs studies across all service areas and tie to most recent census data
Construction/Inflation prices not as assumed	Ensure all service areas tie funding requests to most up to date construction price index

1.8 Growth

The analysis done with respect to population growth projections and the impact this has on the City’s approach to asset management remains the same as detailed in the 2024 AMP. For a detailed overview, consult section 1.8 of the 2024 AMP.

1.9 Climate Change

Analysis of the impacts of climate change on municipal infrastructure, the observed impact to the City of Windsor, and the City’s approach to Climate Change Adaptation Planning, and Climate Change Mitigation Planning remain the same as detailed in the 2024 AMP. For a detailed overview, consult section 1.9 of the 2024 AMP.

2 Environmental Protection

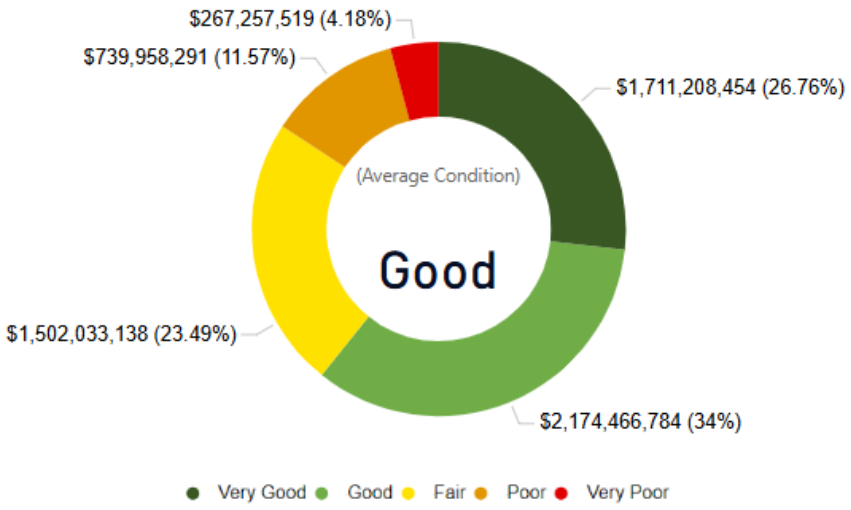
2.1 Current State of the Infrastructure for the Asset Portfolio

2024 Replacement Value	
$6.4B	
2024 AMP Average Asset Condition	**2024 AMP CRV in 'Good to Very Good' Condition**
Good	60.7%

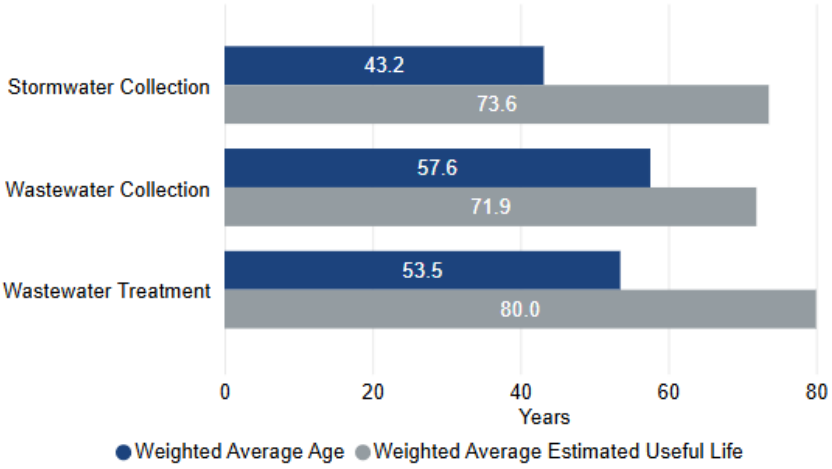
The City's Environmental Protection services play a crucial role in managing and maintaining the infrastructure necessary for handling both wastewater and stormwater. This includes a wide range of assets which are collectively valued at over $6 billion. This asset category includes:

- Stormwater Collection: Municipal Drains and Roadside Ditches, Storm Sewers, Stormwater Management Ponds & Underground Storage, Stormwater Pumping Stations & Interceptors
- Wastewater Collection: Combined Sewers, Sanitary Sewers, Wastewater Pumping Stations & Interceptors
- Wastewater Treatment: Wastewater Treatment Plants & Biosolids Facility

2024 Asset Condition Profile based on CRV



Average Age



Infrastructure Gap & Anticipated Growth

Average Annual Infrastructure Gap to Maintain Current Level of Service	Average Annual Infrastructure Gap for Proposed Level of Service	Average Annual Capital Growth Expenditures
$10.0M	$28.7M	$5.1M

2.2 Levels of Service

The levels of service information in this section are based on the data brought forward under the approved City of Windsor 2024 Corporate Asset Management Plan (2024 AMP). This section will discuss two distinct types of levels of service metrics - the Current Levels of Service (CLOS) metrics which represent how the portfolio's infrastructure assets are performing today; and the Proposed Levels of Service (PLOS) metrics which represent a desired future performance goal that the City feels is appropriate in consideration of affordability, achievability, sustainability and risk to the levels of service provided by the assets to the residents of the City.

2.2.1 Level of Service Statement

Environmental Protection infrastructure enables the City to deliver stormwater collection, wastewater collection, and wastewater treatment services to the community and surrounding municipalities. The City protects its citizens, and the natural and built environments through the management and treatment of wastewater and stormwater collections and biosolids remediation.

2.2.2 Current Levels of Service

Level of Service (LOS) metrics are a key component of the City'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 CLOS and the development of PLOS.

Under the Environmental Protection chapter of the 2024 AMP, the City reported on the current performance for thirteen LOS metrics that are regulated by the O. Reg. 588/17, and thirteen LOS metrics that were developed by key staff responsible for assets in the Environmental Protection infrastructure asset portfolio. For full details on the development of the 2024 AMP LOS metrics, consult section 2.2 of the 2024 AMP. The City-defined metrics support the Regulated LOS and provide valuable insight into the current performance of their associated assets and support the LOS they provide. These City-defined LOS will continue to be monitored as supporting Key Performance Indicator (KPI) metrics for each asset portfolio. While proposed targets are not required to be set for KPI metrics, they do provide valuable information and insight into the efficacy of the strategies being implemented to support the asset portfolio's PLOS metric being brought forward under this 2025 AMP. The current performance for all KPIs (see Appendix G, Table G-1) will be reported annually and should be taken into consideration when setting future PLOS targets.

2.2.3 Methodology of Establishing the Proposed Levels of Service

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. In order to clearly understand the impact in 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 LCM scenarios, which modeled cost of condition over a 20-year forecast period, include:

- **Current Funding (Scenario 1):** This model considered the impact to the overall performance of the assets over the forecast period should the asset portfolio continue to be funded as planned in the approved 2024 10-year Capital Budget.
- **Maintain Current Performance (CLOS) (Scenario 2):** This model considered the unconstrained cost over the forecast period to maintain the asset portfolio's current (2024 AMP) performance (i.e. condition) based on expert developed/planned lifecycle activities.
- **Infrastructure Needs as Per Lifecycle Strategies (Scenario 3):** This model considered the cost over the forecast period to perform the planned rehabilitation, renewals, and replacements as scheduled per the lifecycle strategy models developed for each sub-segment of the asset portfolio to maintain assets so that they are able to deliver their intended LOS.

For full details on the development of these scenarios, refer to section 2.3 and section 2.4 of the 2024 AMP.

The City has developed a Level of Service (LOS) metric for each asset category, known as the 'Average Overall Asset Condition Weighted by CRV', which is calculated by weighting the average condition of all assets in the category by their replacement value over the forecast period. This approach smooths out annual fluctuations in condition, providing a more accurate representation of the assets' long-term outlook. Through the condition profiles provided in this report, expected peaks and valleys in asset condition are representative of assets going through their typical lifecycle stages ('Very Good' at the beginning of life, and 'Very Poor' near the end of life).

All LOS and KPI metrics established in this 2025 report will be captured and reported annually to provide updates on the current status of asset performance. Over time, this will provide a data set from which the City will be able to identify performance trends across the asset portfolio. The City intends to conduct a full assessment of the PLOS targets in the years leading up to the next regulated publication of the AMP, which is currently mandated for every 5 years. Regular review and monitoring of both the PLOS targets and related KPI metrics will help to ensure that appropriate asset management practices are being implemented and followed in an effort to meet stated service needs. The LCM scenarios, the LOS metrics, and the KPI metrics were taken into account when establishing the PLOS metric with consideration given to the risks affecting long-term sustainability, as outlined below.

2.2.3.1 Assessing Risks Associated with PLOS Options to Long Term Sustainability

Using the information provided in the afore-mentioned scenarios, an assessment of risk, asset performance, financial impact, level of sustainability and alternate life cycle activities that could (or would) need to be undertaken was developed in order to achieve a level of service that was: (1) reduced, (2) maintained, or (3) increased when compared to the current level of service offered by Environmental Protection infrastructure assets. The results, summarized in Table 2-1, were developed by key asset stakeholders and reviewed by the Corporate Leadership Team (CLT) in a workshop lead by Asset Planning and GEI. The data was assessed in its totality, with further consideration given to

the City's ability to support internal process changes as well as financial and non-financial strategies to support the PLOS targets that were ultimately set in this workshop. The identification and assessment of the scenario risks noted below played a critical role in the assessment of both CLOS and in the establishing of PLOS for each asset category.

Table 2-1. Environmental Protection – Risk Assessment of the Level of Service Scenarios

Risks of Reducing CLOS (Scenario 1)	Risks of Maintaining CLOS (Scenario 2)	Risks of Increasing CLOS (Scenario 3)
• Potential for increased basement flooding • Higher treatment costs due to increased inflow and infiltration to the sewers • Increased environmental impacts due to inefficient infrastructure can have adverse environmental impacts such as increased emissions from old facility assets, or sewage reaching the environment through leaks in pipes. • Increased risk of not meeting regulations • Increased risk of litigation • Reputational risks to the City • Inability to keep up with growth or to meet capacity needs • Increased risk of higher operational costs to keep assets operational as asset conditions decrease • Higher than anticipated costs for reactionary maintenance • Higher future costs (inflation, etc.)	• Similar risks as Reducing CLOS, but to a lesser degree • Remaining in reactionary vs. planned maintenance and rehab/replacement activities • May not be most cost effective in the long-term • Forecasts may be understated	• Increased short term cost to the tax/rate payer • Additional staff/operational needs are required to implement the increase • Increased construction activities within the City • Forecasts may be understated, or overstated

2.2.3.2 Proposed Level of Service (Scenario 4)

In establishing the PLOS target for Environmental Protection, a fourth scenario was developed to model the estimated costs required to support select renewal, rehabilitation and replacement lifecycle activities. Administration conducted their analysis by including an assessment of the forecast models from Scenarios 1, 2 and 3 against the variance in associated risk identified by staff and Subject Matter Experts. The impact to the condition of the Environmental Protection infrastructure assets under this scenario is provided in Figure 2-1, which compares the condition of the assets in the City's Current Funding Scenario (Scenario 1) that was brought forward under the 2024 AMP to the expected condition under the PLOS (Scenario 4). The PLOS scenario (Scenario 4) provides an average percent of assets (based on CRV) of 60% in 'Good to Very Good' condition over the 20-year forecast, in comparison to 56% under the Current Funding Scenario (Scenario 1).

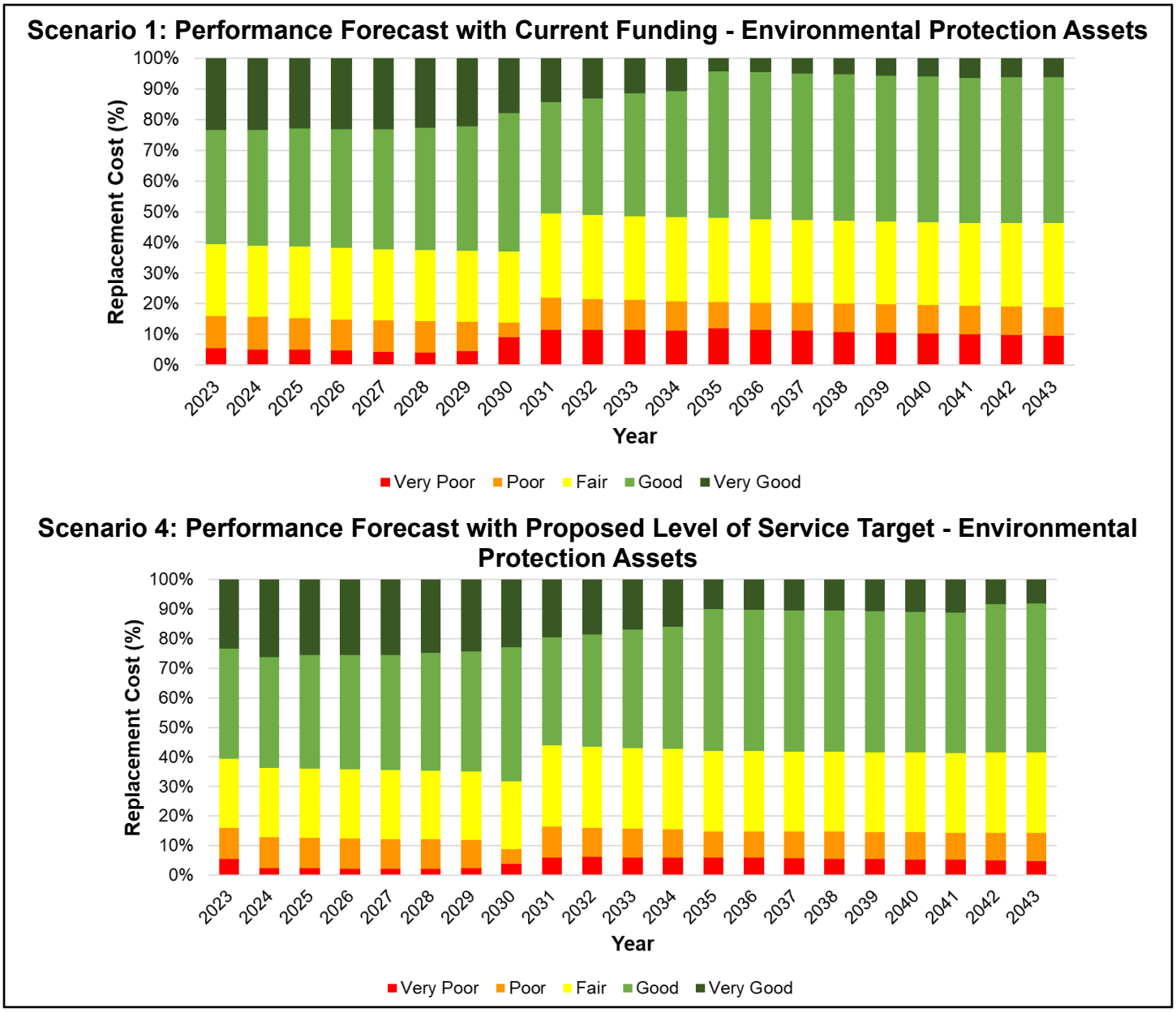


Figure 2-1. Environmental Protection – Scenario Comparison (Condition)

2.2.4 Proposed Level of Service Targets

When taking into consideration the overall current asset condition and CLOS, along with the risks associated with the various LOS scenarios, the PLOS chosen for the Environmental Protection infrastructure assets is to maintain an average asset condition of 'Good', which is achieved in Scenario 4. CLOS and PLOS values are captured for this metric in Table 2-2.

Table 2-2. Environmental Protection – Corporate Levels of Service

LOS: Metric Description	Current (2024 AMP) Performance (CLOS)	Proposed Performance (PLOS)	Proposed Change
Average Asset Condition Weighted by CRV for Environmental Protection Infrastructure Assets	Good	Good	NO CHANGE

In addition to the above Corporate LOS, those LOS metrics that are mandated by O. Reg. 588/17 for Environmental Protection infrastructure assets, along with their CLOS and designated PLOS values, are captured in Table 2-3 and Table 2-4.

Table 2-3. Environmental Protection – O. Reg. 588/17 Community Levels of Service

LOS: Metric Description	Current (2024 AMP) Performance (CLOS)	Proposed Performance (PLOS)	Proposed Change
Description, which may include maps, of the user groups or areas of the municipality that are protected from flooding, including the extent of the protection provided by the municipal stormwater management system.	See map provided in the 2024 AMP (Appendix G)	MAINTAIN	NO CHANGE
Description, which may include maps, of the user groups or areas of the municipality that are connected to the municipal wastewater system.	See map provided in the 2024 AMP (Appendix G)	MAINTAIN	NO CHANGE
Description of how combined sewers in the municipal wastewater system are designed with overflow structures in place which allow overflow during storm events to prevent backups into homes.	See Table G-1 in Appendix G	MAINTAIN	NO CHANGE
Description of the frequency and volume of overflows in combined sewers in the municipal wastewater system that occur in habitable areas or beaches.	See Table G-1 in Appendix G	MAINTAIN	NO CHANGE

LOS: Metric Description	Current (2024 AMP) Performance (CLOS)	Proposed Performance (PLOS)	Proposed Change
Description of how stormwater can get into sanitary sewers in the municipal wastewater system, causing sewage to overflow into streets or backup into homes.	See Table G-1 in Appendix G	MAINTAIN	NO CHANGE
Description of how sanitary sewers in the municipal wastewater system are designed to be resilient to avoid events described in paragraph 3 of O. Reg. 588/17, S5(2).	See Table G-1 in Appendix G	MAINTAIN	NO CHANGE
Description of the effluent that is discharged from sewage treatment plants in the municipal wastewater system.	See Table G-1 in Appendix G	MAINTAIN	NO CHANGE

Table 2-4. Environmental Protection – O. Reg. 588/17 Technical Levels of Service

LOS: Metric Description	Current (2024 AMP) Performance (CLOS)	Proposed Performance (PLOS)	Proposed Change
Percentage of properties in municipality resilient to a 100-year storm.	See Table G-1 in Appendix G	MAINTAIN	NO CHANGE
Percentage of the municipal stormwater management system resilient to a 5-year storm.	See Table G-1 in Appendix G	MAINTAIN	NO CHANGE
Percentage of properties connected to the municipal wastewater system.	See Table G-1 in Appendix G	MAINTAIN	NO CHANGE
The number of events per year where combined sewer flow in the municipal wastewater system exceeds system capacity compared to the total number of properties connected to the municipal wastewater system.	See Table G-1 in Appendix G	MAINTAIN	NO CHANGE
The number of connection-days per year due to wastewater backups compared to the total number of properties connected to the municipal wastewater system.	See Table G-1 in Appendix G	MAINTAIN	NO CHANGE

LOS: Metric Description	Current (2024 AMP) Performance (CLOS)	Proposed Performance (PLOS)	Proposed Change
The number of effluent violations per year due to wastewater discharge compared to the total number of properties connected to the municipal wastewater system.	See Table G-1 in Appendix G	MAINTAIN	NO CHANGE

2.2.5 The Average Annual Funding Gap Required to Achieve the PLOS

The Average Annual Funding Gap Required to Achieve the PLOS is calculated by comparing the forecasted total lifecycle activity costs under the PLOS Scenario (Scenario 4) against the Current Funding (Scenario 1). Similar to the analysis prepared in the 2024 AMP, the gap also considers Outstanding Infrastructure Needs in its calculation, which was included in the 2024 expenditure amount. Outstanding Infrastructure Needs represent the outstanding renewal, rehabilitation and replacement activities that have been identified and deemed necessary but have not yet been completed due to budget constraints and other limitations.

The recommended PLOS scenario shows that an average annual investment of $28.7 million, incremental to the approved funding provided for in the 2024 10-year Capital Plan, would be required to maintain overall asset condition as ‘Good’ and would see the percentage of assets in ‘Good to Very Good’ condition increase by 4%. The breakdown of asset condition under the Current Funding Scenario and PLOS Scenario and the associated investments is shown in Table 2-5.

Table 2-5. Environmental Protection – Scenario Comparison Data

Scenario Data	Current Funding (Scenario 1)	PLOS (Scenario 4)
Average Annual Budget/Cost of the Scenario	$84,969,005	$113,714,017
Average Percent of Assets in ‘Good to Very Good’ Condition (Based on CRV) over the 20-year Scenario	56%	60%
Average Annual Funding Gap Required to Achieve the PLOS	N/A	$28,745,012

2.3 PLOS Infrastructure Gap Considerations

Administration conducted an impact analysis of the anticipated funding sources that may be leveraged to address the PLOS funding gap for Environmental Protection infrastructure assets. Key aspects that were considered when determining an appropriate PLOS target for this asset portfolio that balances affordability and achievability included:

- The recent separation for the Sewer and Stormwater Collection budgets allowed for enhanced tracking of capital repair, rehabilitation and renewal costs for Stormwater Collection assets, which will allow for more accurate data capture.

- While Wastewater Collection assets are currently, on average, in 'Good' condition, there are significant anticipated costs that have been forecast that are required to be addressed. There is a high level of reliability in the data for these assets, and in consideration of these overall replacement value of these assets, it is expected that they are the costliest to maintain.

- Wastewater Treatment assets include specialized pieces of equipment that must perform reliability to meet regulatory requirements. It is expected, with improved data quality, this area's investment requirements could increase.

The Financial Strategy (Chapter 16) addresses the funding gap for Environmental Protection assets, consolidated with all asset categories. It identifies potential solutions for the City to bridge this gap and ensure long-term financial sustainability. A key recommendation is to gradually increase financial contributions to these assets over time. In parallel, the City should pursue non-financial strategies which include the implementation of AM best practice, improved lifecycle management, and annual reviews of service level targets to prevent the gap from widening further. These recommendations can be reviewed in section 2.3.1.

Failure to address the funding gap in a timely manner will lead to increasingly severe consequences, such as reduced service levels, higher future costs, and the accelerated decline of critical infrastructure and possible financial penalties from the MECP for non-compliance to licensing requirements. Proactive planning and a balanced approach between financial investment and operational efficiency are essential to mitigating these risks.

2.3.1 Risk Mitigation Strategies

The City is required by O. Reg. 588/17 to outline how the risks associated with not performing the lifecycle activities identified in the PLOS scenario will be managed. As noted, continuing to fund assets at the current level presents inherent risks. However, the City has been proactively mitigating the impacts of the infrastructure gap through various strategies. For Environmental Protection infrastructure assets, risks are mitigated using the following strategies:

- 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
- Coordinating work with other utilities and assets to optimize resources
- Enhancing asset management practices for more efficient decision-making
- Identifying and leverage grant opportunities
- Aligning sewer upgrades with the Sewer Master Plan to maximize impact
- Implementing advanced technologies, such as trenchless solutions, to improve efficiency
- Utilizing local improvement opportunities, to fund critical projects

- Strengthening capital planning and public communication to manage expectations
- Promoting community education and encouraging resident participation
- Expanding downspout disconnection programs to improve stormwater management
- Implementing a stormwater levy to fund infrastructure improvements
- Proactively conducting studies and preparing for project to take advantage of future funding opportunities.

By prioritizing these strategies, the City continues to mitigate risks related to the infrastructure gap. While efforts are ongoing to address the funding gap, these strategies will be continuously implemented and refined to manage the risks of not achieving the PLOS. The City plans to implement an asset risk strategy to improve prioritization across asset categories, ensuring critical assets receive focused attention and minimizing risks to prevent service disruptions for the community.

2.3.2 Recommendations

The 2025 AMP has identified the PLOS infrastructure gap using current and best available information however, it acknowledges that further work is needed to explore various strategies for reducing the PLOS gap. To enhance forecasting accuracy for this asset category, it is recommended that the City implement the necessary improvements outlined in the 2024 AMP.

The implementation of appropriate asset management practices is essential for the City to help ensure sustainable, efficient, and cost-effective service delivery. Developing improved asset management practices can ensure long-term financial sustainability, optimize service delivery, enable risk management and resilience, and ensure regulatory compliance, accountability, and service delivery. These actions are important to minimize the infrastructure gap by minimizing lifecycle expenditures by prolonging an asset's life. By adopting strong asset management practices to make informed, data-driven decisions that balance affordability, service levels and long-term sustainability, the City can improve service reliability, reduce costs, mitigate risks, and plan in a way that benefits the entire community.

It is recommended that the City explore options to fund the anticipated Environmental Protection PLOS gap through a combination of both financial and non-financial strategies. Updated Building Condition Assessments (BCA's) for the Wastewater Treatment Plants and Biosolids Facility assets at the component level, are a critical first step in confirming existing asset conditions. To further improve data accuracy and the reliability of infrastructure gap forecasts, it is also recommended that asset registries for pumping stations, interceptors, be reassessed at the component level to better reflect the complexity of these facilities. The resulting enhancements to the forecasting accuracy of these assets, along with the implementation of the necessary improvements outlined in the 2024 AMP are recommended. Additionally, consideration should also be given to splitting the Sewer Surcharge into Sustainability and Growth components. Table 2-6 reviews the specific recommended non-financial strategies that the City can leverage to address the infrastructure gap, prior to implementing any financial strategies. These strategies are part of AM best practice and ensure that services are provided at the lowest possible cost.

Table 2-6. Environmental Protection – Recommended Strategies

Recommendation	Explanation	Potential Impact
Facility-wide, Component Level Condition Assessments	Enhancing component level condition assessment data for these facilities will refine expenditure forecasts for greater accuracy and help the City identify targeted areas for improvement.	Increase/Decrease to Infrastructure Gap
Leverage Computerized Maintenance Management System (CMMS) Data	CMMS improves asset management by providing accurate, real-time data that enhances decision-making, optimizes maintenance strategies, and extends asset life. By leveraging the CMMS data, the City can improve asset tracking and condition monitoring, develop data-driven maintenance strategies and support preventative maintenance programs.	Ability to optimize allocation of available funding.
Asset Risk Management Strategy	The risk posed by asset failure varies by asset type, location, supported services, etc. Understanding the risk associated with each asset and developing mitigation strategies allows for the prioritization of work based on minimizing risk.	Allow to prioritize expenditures related to high-risk assets.
Implement AM System for Facilities	Selecting an appropriate Asset Management System (AMS) for tracking facilities assets and maintenance activities requires a system that is centralized, accessible, and user-friendly for both field staff and decision-makers. Priority components of a system would include asset register and inventory management, maintenance and work order management, mobile accessibility, condition assessment and lifecycle tracking, GIS integration, and reporting and decision support.	Real-time data access that will improve decision-making and more accurate analysis for AM planning.
Develop Data Management Processes and Annual Review of Register, Condition, and Replacement Values	Develop appropriate processes to ensure asset register remains up to date, in an appropriate system that allows staff within the organization to access the information required to make decisions on assets. Develop appropriate processes to complete an annual data review to update condition, replacement costs, for all assets.	Improved forecast reliability.

Recommendation	Explanation	Potential Impact
Asset Failure Definition/Asset Management Forecasts (Decision Support System)	By improving asset failure definitions and asset management forecasts, the City can reduce risks, improve financial sustainability, extend asset life, and ensure reliable service delivery. These improvements enable the City to make more proactive, data-driven decisions that enhance long-term infrastructure resilience.	Provides more accurate risk management, enhanced financial planning and budgeting, optimized maintenance strategies, better service level management and informed decision-making and long-term planning.

2.3.3 Growth Considerations

In addition to addressing the infrastructure gap noted above, it is important to consider how growth impacts ongoing Operations and Maintenance (O&M) costs. Growth occurs through increases to the asset base as a result of population growth, increased economic activity, and through the addition and expansion of new or existing services. While the capital costs associated with infrastructure growth are well integrated into the City's capital budget, and typically funded through development charges, the long-term operational impacts of these new assets must be considered as well.

Currently, the City spends approximately 0.60% of the current replacement value of its Environmental Protection infrastructure assets on O&M. Figure 2-2 illustrates the projected O&M spending alongside anticipated growth over the next 10 years. This growth has been factored into the future replacement value to estimate the additional O&M costs needed to maintain the current spending level of 0.60%.

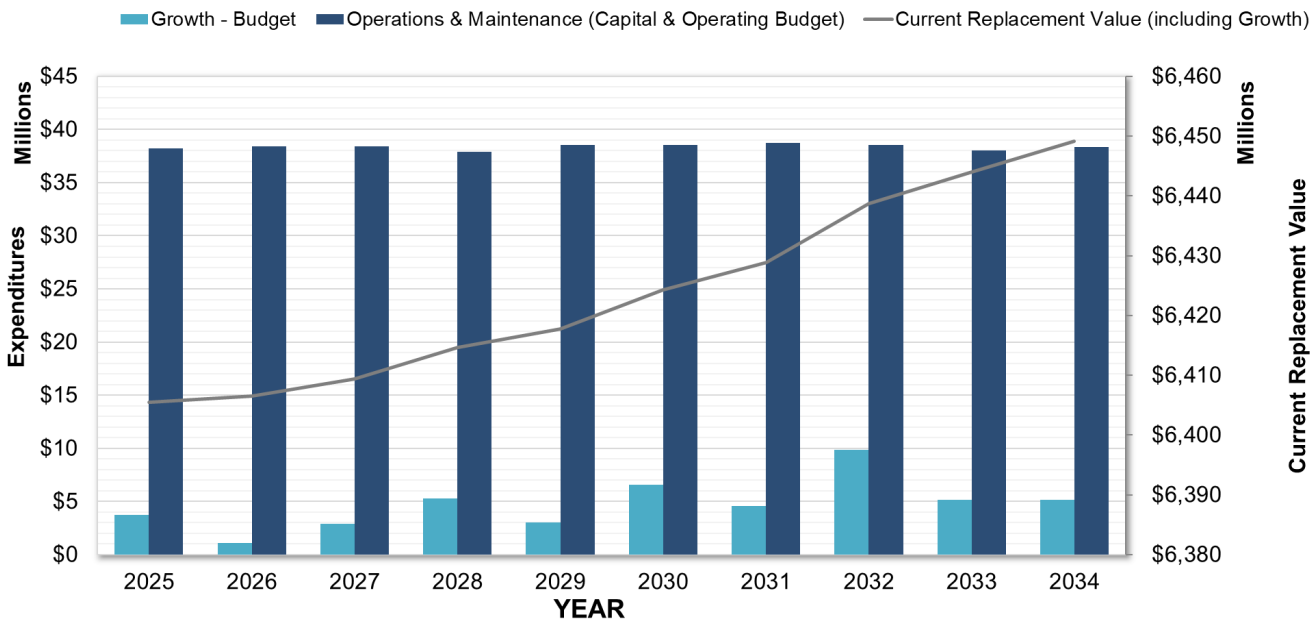


Figure 2-2. Environmental Protection – Operations & Maintenance Considerations for Growth

Although the projection shows an average annual shortfall in O&M funding of approximately $100 thousand, this is relatively aligned with the average annual O&M budget needed to sustain the 0.60% investment in operations and maintenance. The City should continue to track and update O&M requirements related to growth and further assess whether current spending is sufficient to keep assets in a state where the intended LOS can be delivered. As infrastructure ages, there will be increasing pressure to carry out appropriate maintenance and is imperative to extend the life of existing assets to provide assets at the lowest possible costs.

3 Transportation

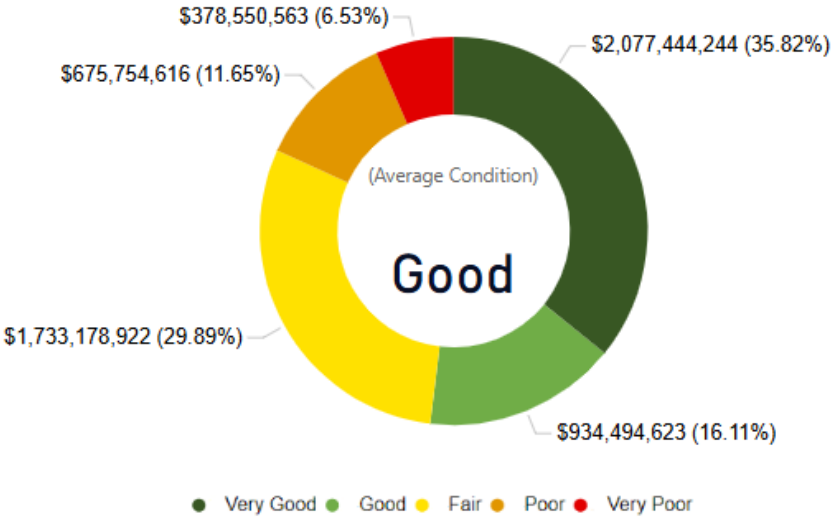
3.1 Current State of the Infrastructure for the Asset Portfolio

2024 Replacement Value	
$5.8B	
2024 AMP Average Asset Condition	**2024 AMP CRV in 'Good to Very Good' Condition**
Good	51.9%

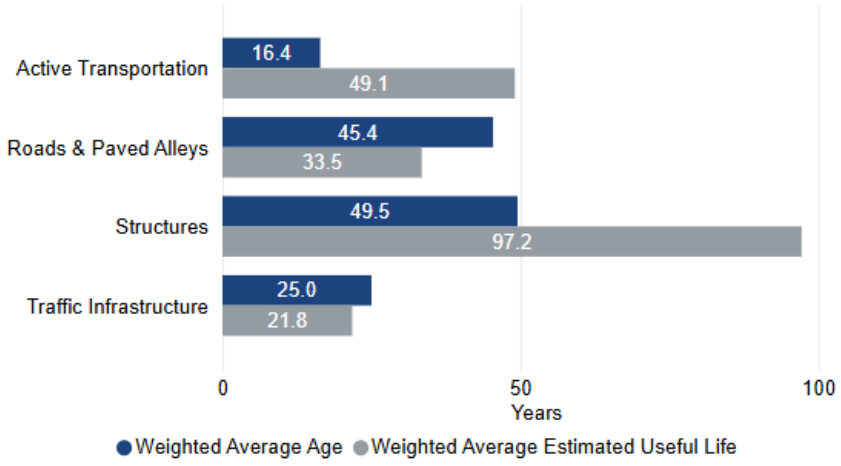
The City's network of Transportation infrastructure consists of a wide range of assets that provide various services essential for facilitating the movement of people, goods, and services within and between communities. This asset category includes:

- Active Transportation: On-Road Bike Facilities and Sidewalks
- Roads & Paved Alleys: Class 1 & 2 Arterial, Class 1 & 2 Collector, Expressway, Local Commercial & Industrial, Local Residential, Paved Alleys, Scenic Parkway
- Structures: Bridges & Subways, Major Culverts (3m), Noise Barrier Walls, and Pedestrian Bridges (ROW)
- Traffic Infrastructure: Parking Garages, Pay & Display Parking Lots, Street Lighting (ROW) Luminaries & Poles, Traffic Signals, and Pedestrian Crossings (PXO)

2024 Asset Condition Profile based on CRV



Average Age



Infrastructure Gap & Anticipated Growth

Average Annual Infrastructure Gap to Maintain Current Level of Service	Average Annual Infrastructure Gap for Proposed Level of Service	Average Annual Capital Growth Expenditures
$38.2M	$32.2M	$11.4M

3.2 Levels of Service

The levels of service information in this section are based on the data brought forward under the approved City of Windsor 2024 Corporate Asset Management Plan (2024 AMP). This section will discuss two distinct types of levels of service metrics - the Current Levels of Service (CLOS) metrics which represent how the portfolio's infrastructure assets are performing today; and the Proposed Levels of Service (PLOS) metrics which represent a desired future performance goal that the City feels is appropriate in consideration of affordability, achievability, sustainability and risk to the levels of service provided by the assets to the residents of the City.

3.2.1 Level of Service Statement

Transportation infrastructure enables the City to deliver multi-modal transportation services and give people a range of options for moving about in a safe and efficient manner. This allows residents to contribute to the economy, provides social opportunities and encourages travel to the region. Efficient transportation is essential to building a strong economy and improving the quality of life for Windsor citizens.

3.2.2 Current Levels of Service

Level of Service (LOS) metrics are a key component of the City'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 CLOS and the development of PLOS.

Under the Transportation chapter of the 2024 AMP, the City reported on the current performance for eleven LOS metrics that are regulated by the O. Reg. 588/17, and fifteen LOS metrics that were developed by key staff responsible for assets in the Transportation infrastructure asset portfolio. For full details on the development of the 2024 AMP LOS metrics, consult section 3.2 of the 2024 AMP. The City-defined metrics support the Regulated LOS and provide valuable insight into the current performance of their associated assets and support the LOS they provide. These City-defined LOS will continue to be monitored as supporting Key Performance Indicator (KPI) metrics for each asset portfolio. While proposed targets are not required to be set for KPI metrics, they do provide valuable information and insight into the efficacy of the strategies being implemented to support the asset portfolio's PLOS metric being brought forward under this 2025 AMP. The current performance for all KPIs (see Appendix G, Table G-2) will be reported annually and should be taken into consideration when setting future PLOS targets.

3.2.3 Methodology of Establishing the Proposed Levels of Service

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. In order to clearly understand the impact in 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 LCM scenarios, which modeled cost of condition over a 20-year forecast period, include:

- **Current Funding (Scenario 1):** This model considered the impact to the overall performance of the assets over the forecast period should the asset portfolio continue to be funded as planned in the approved 2024 10-year Capital Budget.
- **Maintain Current Performance (CLOS) (Scenario 2):** This model considered the unconstrained cost over the forecast period to maintain the asset portfolio's current (2024 AMP) performance (i.e. condition) based on expert developed/planned lifecycle activities.
- **Infrastructure Needs as Per Lifecycle Strategies (Scenario 3):** This model considered the cost over the forecast period to perform the planned rehabilitation, renewals, and replacements as scheduled per the lifecycle strategy models developed for each sub-segment of the asset portfolio to maintain assets so that they are able to deliver their intended LOS.

For full details on the development of these scenarios, refer to section 3.3 and section 3.4 of the 2024 AMP.

The City has developed a Level of Service (LOS) metric for each asset category, known as the 'Average Overall Asset Condition Weighted by CRV', which is calculated by weighting the average condition of all assets in the category by their replacement value over the forecast period. This approach smooths out annual fluctuations in condition, providing a more accurate representation of the assets' long-term outlook. Through the condition profiles provided in this report, expected peaks and valleys in asset condition are representative of assets going through their typical lifecycle stages ('Very Good' at the beginning of life, and 'Very Poor' near the end of life).

All LOS and KPI metrics established in this 2025 report will be captured and reported annually to provide updates on the current status of asset performance. Over time, this will provide a data set from which the City will be able to identify performance trends across the asset portfolio. The City intends to conduct a full assessment of the PLOS targets in the years leading up to the next regulated publication of the AMP, which is currently mandated for every 5 years. Regular review and monitoring of both the PLOS targets and related KPI metrics will help to ensure that appropriate asset management practices are being implemented and followed in an effort to meet stated service needs. The LCM scenarios, the LOS metrics, and the KPI metrics were taken into account when establishing the PLOS metric with consideration given to the risks affecting long-term sustainability, as outlined below.

3.2.3.1 Assessing Risks Associated with PLOS Options to Long Term Sustainability

Using the information provided in the afore-mentioned scenarios, an assessment of risk, asset performance, financial impact, level of sustainability and alternate life cycle activities that could (or would) need to be undertaken was developed in order to achieve a level of service that was: (1) reduced, (2) maintained, or (3) increased when compared to the current level of service offered by Transportation infrastructure assets. The results, summarized in Table 3-1, were developed by key asset stakeholders and reviewed by the Corporate Leadership Team (CLT) in a workshop lead by Asset Planning and the consultant (GEI). The data was assessed in its totality, with further

consideration given to the City's ability to support internal process changes as well as financial and non-financial strategies to support the PLOS targets that were ultimately set in this workshop. The identification and assessment of the scenario risks noted below played a critical role in the assessment of both CLOS and in the establishing of PLOS for each asset category.

Table 3-1. Transportation – Risk Assessment of the Level of Service Scenarios

Risks of Reducing CLOS (Scenario 1)	Risks of Maintaining CLOS (Scenario 2)	Risks of Increasing CLOS (Scenario 3)
• Increased service disruptions due to higher rate of reactionary maintenance as asset conditions decrease • Increased environmental impacts due to increased traffic congestion • Increased risk to the safety of residents using roads and active transportation network as conditions decrease • Increased risk of not meeting regulations • Increased risk of litigation • Reputational risks to the City • Inability to keep up with growth or to meet capacity needs • Increased risk of higher operational costs to keep assets operational as asset conditions decrease • Higher than anticipated costs for reactionary maintenance • Higher future costs (inflation, etc.)	• Similar risks as Reducing CLOS, but to a lesser degree • Remaining in reactionary vs. planned maintenance and rehab/replacement activities • Increased construction activities within the City • Challenges in completing all the large volume of work under this scenario with current staff/contractor availability • May not be most cost effective in the long-term • Forecasts may be understated	• Increased short term cost to the tax/rate payer • Additional staff/operational needs are required to implement the increase (current staff/contractor availability would be insufficient) • Increased construction activities within the City • Forecasts may be understated, or overstated

3.2.3.2 Proposed Level of Service (Scenario 4)

In establishing the PLOS target for Transportation infrastructure assets, a fourth Scenario was developed to model the estimated costs required to support select renewal, rehabilitation and replacement lifecycle activities. Administration conducted their analysis by including an assessment of the forecast models from Scenarios 1, 2 and 3 against the variance in associated risk identified by

staff and Subject Matter Experts. The impact to the condition of the Transportation infrastructure assets under this scenario is provided in Figure 3-1, which compares the condition of the assets in the City's Current Funding Scenario (Scenario 1) that was brought forward under the 2024 AMP to the expected condition under the PLOS (Scenario 4). The PLOS scenario (Scenario 4) provides an average percent of assets (based on CRV) of 61% in 'Good to Very Good' condition over the 20-year forecast, in comparison to 46% under the Current Funding Scenario (Scenario 1).

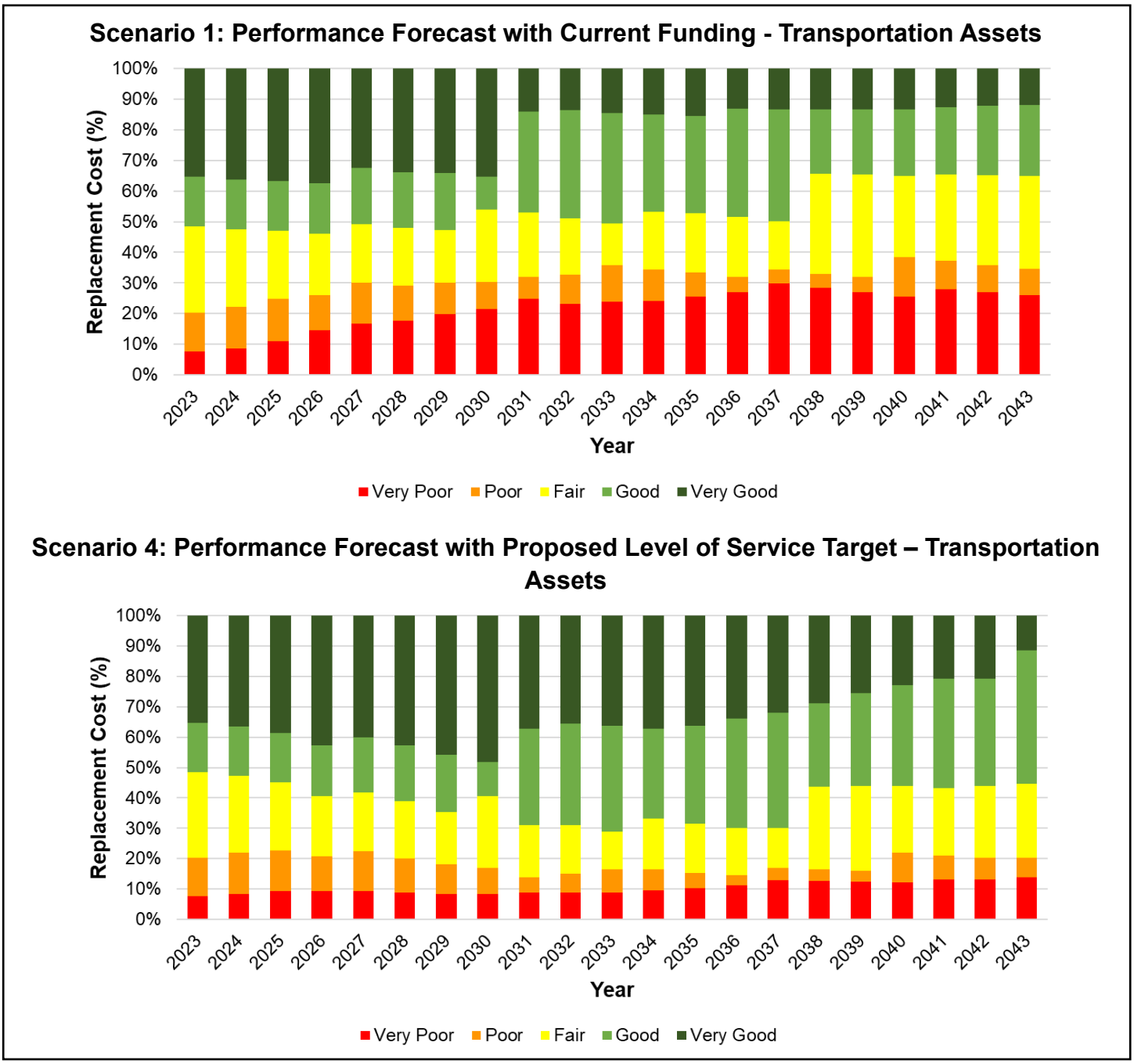


Figure 3-1. Transportation – Scenario Comparison (Condition)

3.2.4 Proposed Level of Service Targets

When taking into consideration the overall current asset condition and CLOS, along with the risks associated with the various LOS scenarios, the PLOS chosen for the Transportation infrastructure assets is to maintain an average asset condition of 'Good' which is achieved in Scenario 4. CLOS and PLOS values are captured for this metric in Table 3-2.

Table 3-2. Transportation – Corporate Levels of Service

LOS: Metric Description	Current (2024 AMP) Performance (CLOS)	Proposed Performance (PLOS)	Proposed Change
Average Asset Condition weighted by CRV for Transportation Infrastructure Assets	Good	Good	NO CHANGE

In addition to the above Corporate LOS, those LOS metrics that are mandated by O. Reg. 588/17 for Transportation infrastructure assets, along with their CLOS and designated PLOS values, are captured in Table 3-3 and Table 3-4.

Table 3-3. Transportation – O. Reg. 588/17 Community Levels of Service

LOS: Metric Description	Current (2024 AMP) Performance (CLOS)	Proposed Performance (PLOS)	Proposed Change
Description, which may include maps, of the road network in the municipality and its level of connectivity.	See map provided in the 2024 AMP (Appendix G)	MAINTAIN	NO CHANGE
Description or images that illustrate the different levels of road class pavement condition.	See map provided in the 2024 AMP (Appendix G)	MAINTAIN	NO CHANGE
Description or images of the condition of bridges and how this would affect use of the bridges.	See Table G-2 in Appendix G	MAINTAIN	NO CHANGE
Description or images of the condition of culverts and how this would affect use of the culverts.	See Table G-2 in Appendix G	MAINTAIN	NO CHANGE

LOS: Metric Description	Current (2024 AMP) Performance (CLOS)	Proposed Performance (PLOS)	Proposed Change
Description of the traffic that is supported by municipal bridges (e.g., heavy transport vehicles, motor vehicles, emergency vehicles, pedestrians, cyclists).	See Table G-2 in Appendix G	MAINTAIN	NO CHANGE

Table 3-4. Transportation – O. Reg. 588/17 Technical Levels of Service

LOS: Metric Description	Current (2024 AMP) Performance (CLOS)	Proposed Performance (PLOS)	Proposed Change
Number of lane-kilometers of each of arterial roads, collector roads and local roads as a proportion of square kilometers of land area of the municipality	See Table G-2 in Appendix G	MAINTAIN	NO CHANGE
For paved roads in the municipality, the average pavement condition index value.	See Table G-2 in Appendix G	MAINTAIN	NO CHANGE
For unpaved roads in the municipality, the average surface condition (e.g. excellent, good, fair, poor)	See Table G-2 in Appendix G	MAINTAIN	NO CHANGE
Percentage of bridges in the municipality with loading or dimensional restrictions	See Table G-2 in Appendix G	MAINTAIN	NO CHANGE
For bridges in the municipality, the average bridge condition index value	See Table G-2 in Appendix G	MAINTAIN	NO CHANGE
For structural culverts in the municipality, the average bridge condition index value	See Table G-2 in Appendix G	MAINTAIN	NO CHANGE

3.2.5 The Average Annual Funding Gap Required to Achieve the PLOS

The Average Annual Funding Gap Required to Achieve the PLOS is calculated by comparing the forecasted total lifecycle activity costs under the PLOS Scenario (Scenario 4) against the Current Funding (Scenario 1). Similar to the analysis prepared in the 2024 AMP, the gap also considers Outstanding Infrastructure Needs in its calculation, which was included in the 2024 expenditure

amount. Outstanding Infrastructure Needs represent the outstanding renewal, rehabilitation and replacement activities that have been identified and deemed necessary but have not yet been completed due to budget constraints and other limitations.

The recommended PLOS scenario shows that an average annual investment of $32.2 million, incremental to the approved funding provided for in the 2024 10-year Capital Plan, would be required to maintain overall asset condition as 'Good' and would see the percentage of assets in 'Good to Very Good' condition increase by 15%. The breakdown of asset condition under the Current Funding Scenario and PLOS Scenario and the associated investments is shown in Table 3-5.

Table 3-5. Transportation – Scenario Comparison Data

Scenario Data	Current Funding (Scenario 1)	PLOS (Scenario 4)
Average Annual Budget/Cost of the Scenario	$83,088,133	$115,241,114
Average Percent of Assets in 'Good to Very Good' Condition (Based on CRV) over the 20-year Scenario	46%	61%
Average Annual Funding Gap Required to Achieve the PLOS	N/A	$32,152,981

3.3 PLOS Infrastructure Gap Considerations

Administration conducted an impact analysis of the anticipated funding sources that may be leveraged to address the PLOS funding gap for Transportation infrastructure assets. Key aspects that were considered when determining an appropriate PLOS target for this asset portfolio that balances affordability and achievability included:

- With respect to Roads & Paved Alleys assets, consideration needs to be given to current increases in future funding provided as part of the 2025 Capital Budget, and the assumptions used to evaluate total CRV where increased granularity could yield increased accuracy in reported CRV.
- Active Transportation and Structures assets are, on average, in 'Very Good' condition. While the condition and required maintenance of some of these assets are highly regulated, such as bridges, there may be some ability to accept a lower level of service for select assets which could create an opportunity to re-direct the associated funding through the Capital Budget process to other assets within this portfolio in need.
- Traffic Infrastructure assets are in 'Fair' condition and would benefit from increased funding.

The Financial Strategy (Chapter 16) addresses the funding gap for Transportation infrastructure assets, consolidated with all asset categories. It identifies potential solutions for the City to bridge this gap and ensure long-term financial sustainability. A key recommendation is to gradually increase financial contributions to these assets over time. In parallel, the City should pursue non-financial

strategies which include the implementation of AM best practice, improved lifecycle management, and annual reviews of service level targets to prevent the gap from widening further. These recommendations can be reviewed in section 3.3.1.

Failure to address the funding gap in a timely manner will lead to increasingly severe consequences, such as reduced service levels, higher future costs, and the accelerated decline of critical infrastructure. Proactive planning and a balanced approach between financial investment and operational efficiency are essential to mitigating these risks.

3.3.1 Risk Mitigation Strategies

The City is required by O. Reg. 588/17 to outline how the risks associated with not performing the lifecycle activities identified in the PLOS scenario will be managed. As noted, continuing to fund assets at the current level presents inherent risks. However, the City has been proactively mitigating the impacts of the infrastructure gap through various strategies. For Transportation infrastructure assets, risks are mitigated using the following strategies:

- 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
- Coordinating work with other utilities and assets to optimize resources
- Enhancing asset management practices for more efficient decision-making
- Identifying and leverage grant opportunities
- Aligning road upgrades with other assets to maximize impact
- Assess new technologies and more cost-effective lifecycle strategies to improve asset life/condition
- Strengthening capital planning and public communication to manage expectations
- Promoting community education and encouraging resident participation
- Proactively conducting studies and preparing for project to take advantage of future funding opportunities.

By prioritizing these strategies, the City continues to mitigate risks related to the infrastructure gap. While efforts are ongoing to address the funding gap, these strategies will be continuously implemented and refined to manage the risks of not achieving the PLOS. The City plans to implement an asset risk strategy to improve prioritization across asset categories, ensuring critical assets receive focused attention and minimizing risks to prevent service disruptions for the community.

3.3.2 Recommendations

The 2025 AMP has identified the PLOS infrastructure gap using current and best available information however, it acknowledges that further work is needed to explore various strategies for reducing the PLOS gap. To enhance forecasting accuracy for this asset category, it is recommended that the City implement the necessary improvements outlined in the 2024 AMP.

The implementation of appropriate asset management practices is essential for the City to help ensure sustainable, efficient, and cost-effective service delivery. Developing improved asset management practices can ensure long-term financial sustainability, optimize service delivery, enable risk management and resilience, and ensure regulatory compliance, accountability, and service delivery. These actions are important to minimize the infrastructure gap by minimizing lifecycle expenditures by prolonging an asset's life. By adopting strong asset management practices to make informed, data-driven decisions that balance affordability, service levels and long-term sustainability, the City can improve service reliability, reduce costs, mitigate risks, and plan in a way that benefits the entire community.

The 2024 AMP found that Active Transportation, Roads and Paved Alleys had a higher data confidence rating compared to Structures and Traffic Infrastructure. Structures data is generally highly reliable and accurate; however, noise barriers have minimal information for financial reporting purposes, and the data is less reliable. In addition, most traffic infrastructure is tracked as pooled assets rather than individually, leading to lower accuracy and reliability of asset data. To improve the data quality for these assets, a full, centralized register should be developed and maintained to track these assets. Further non-financial and financial considerations and recommendations can be found in Chapter 16.

Table 3-6 reviews the specific recommended non-financial strategies that the City can leverage to address the infrastructure gap, prior to implementing any financial strategies. These strategies are part of AM best practice and ensure that services are provided at the lowest possible cost.

Table 3-6. Transportation – Recommended Strategies

Recommendation	Explanation	Potential Impact
Asset Register Development & Improvements	Some transportation assets are tracked in different locations or as pooled assets. Developing a centralized asset register of all transportation assets will ensure that information is accurate and accessible. In addition, maintaining a single registry location for all service areas will allow for alignment of related asset classes (e.g. between right-of-way sidewalks and maintained recreation trails in parks).	Improved decision-making capabilities to manage inventory more efficiently.

Recommendation	Explanation	Potential Impact
Asset Risk Management Strategy	The risk posed by asset failure varies by asset type, location, supported services, etc. Understanding the risk associated with each asset and developing mitigation strategies allows for the prioritization of work based on minimizing risk.	Allow to prioritize expenditures related to high-risk assets.
Leverage Computerized Maintenance Management System (CMMS) Data	CMMS improves asset management by providing accurate, real-time data that enhances decision-making, optimizes maintenance strategies, and extends asset life. By leveraging the CMMS data, the City can improve asset tracking and condition monitoring, develop data-driven maintenance strategies and support preventative maintenance programs.	Ability to optimize allocation of available funding.
Develop Data Management Processes and Annual Review of Register, Condition, and Replacement Values	Develop appropriate processes to ensure asset register remains up to date, in an appropriate system that allows staff within the organization to access the information required to make decisions on assets. Develop appropriate processes to complete an annual data review to update condition, replacement costs, for all assets.	Improved forecast reliability.

3.3.3 Growth Considerations

In addition to addressing the infrastructure gap noted above, it is important to consider how growth impacts ongoing Operations and Maintenance (O&M) costs. Growth occurs through increases to the asset base as a result of population growth, increased economic activity, and through the addition and expansion of new or existing services. While the capital costs associated with infrastructure growth are well integrated into the City's capital budget, and typically funded through development charges, the long-term operational impacts of these new assets must be considered as well.

Currently, the City spends approximately 0.46% of the current replacement value of its Transportation infrastructure assets on O&M. Figure 3-2 illustrates the projected O&M spending alongside anticipated growth over the next 10 years. This growth has been factored into the future replacement value to estimate the additional O&M costs needed to maintain the current spending level of 0.46%.

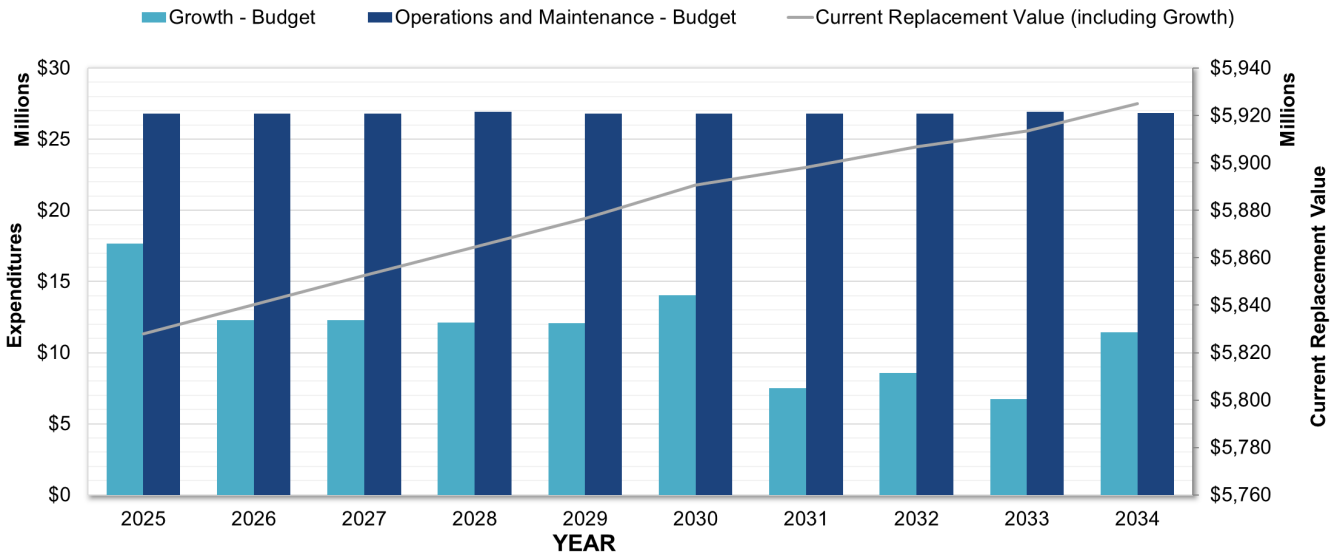


Figure 3-2. Transportation – Operations & Maintenance Considerations for Growth

Although the projection shows an average annual shortfall in O&M funding of approximately $450 thousand, this is relatively aligned with the average annual O&M budget needed to sustain the 0.46% investment in operations and maintenance. The City should continue to track and update O&M requirements related to growth and further assess whether current spending is sufficient to keep assets in a state where the intended LOS can be delivered. As infrastructure ages, there will be increasing pressure to carry out appropriate maintenance and is imperative to extend the life of existing assets to provide assets at the lowest possible costs.

4 Facilities

4.1 Current State of the Infrastructure for the Asset Portfolio

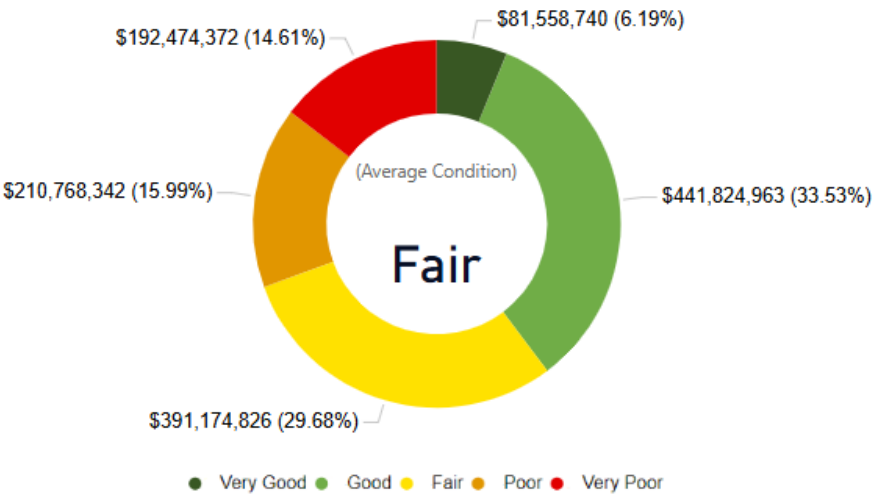
2024 Replacement Value
$1.3B

2024 AMP Average Asset Condition	2024 AMP CRV in 'Good to Very Good' Condition
Fair	49.7%

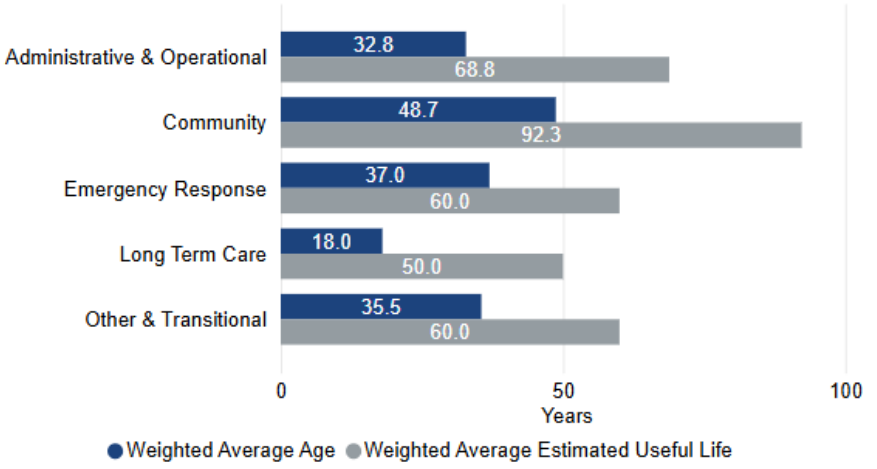
The City of Windsor recognizes the importance of its municipal facilities in serving the public and supporting the operations of all City departments. The Facilities service area encompasses a very wide network of diverse buildings and is therefore quite unique in its purpose and function. Facilities included in this asset category support the provision of administrative, operational, recreational, health and emergency services to the community. This category does not include facilities managed by Transit Windsor or the City's ABCs. This asset category includes the following types of City-Owned Facilities:

- Administrative, Operations, Community Centres, Heritage & Culture, Multi-Use Recreation, Outdoor Pools, Outdoor Rink, Parks, Recreation, Fire, Huron Lodge, Other Long-Term, and Transitional

2024 Asset Condition Profile based on CRV



Average Age



Infrastructure Gap & Anticipated Growth

Average Annual Infrastructure Gap to Maintain Current Level of Service	Average Annual Infrastructure Gap for Proposed Level of Service	Average Annual Capital Growth Expenditures
$8.4M	$11.5M	$2.8M

4.2 Levels of Service

The levels of service information in this section are based on the data brought forward under the approved City of Windsor 2024 Corporate Asset Management Plan (2024 AMP). This section will discuss two distinct types of levels of service metrics - the Current Levels of Service (CLOS) metrics which represent how the portfolio's infrastructure assets are performing today; and the Proposed Levels of Service (PLOS) metrics which represent a desired future performance goal that the City feels is appropriate in consideration of affordability, achievability, sustainability and risk to the levels of service provided by the assets to the residents of the City.

4.2.1 Level of Service Statement

Facilities infrastructure enables the City to deliver a wide range of services to the community. Corporate facilities support municipal service delivery by providing safe and efficient workspaces for City staff. Community facilities deliver safe and welcoming environments for the members of the community to gather, facilitate social connection and promote community vibrancy.

4.2.2 Current Levels of Service

Level of Service (LOS) metrics are a key component of the City'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 CLOS and the development of PLOS.

Under the Facilities chapter of the 2024 AMP, the City reported on the current performance for six LOS metrics that were developed by key staff responsible for assets in the Facilities infrastructure asset portfolio. For full details on the development of the 2024 AMP LOS metrics, consult section 4.2 of the 2024 AMP. The City-defined metrics provide valuable insight into the current performance of their associated assets and support the LOS they provide. These City-defined LOS will continue to be monitored as supporting Key Performance Indicator (KPI) metrics for each asset portfolio. While proposed targets are not required to be set for KPI metrics, they do provide valuable information and insight into the efficacy of the strategies being implemented to support the asset portfolio's PLOS metric being brought forward under this 2025 AMP. The current performance for all KPIs (see Appendix G, Table G-3) will be reported annually and should be taken into consideration when setting future PLOS targets.

4.2.3 Methodology of Establishing the Proposed Levels of Service

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. In order to clearly understand the impact in 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 LCM scenarios, which modeled cost of condition over a 20-year forecast period, include:

- **Current Funding (Scenario 1):** This model considered the impact to the overall performance of the assets over the forecast period should the asset portfolio continue to be funded as planned in the approved 2024 10-year Capital Budget.
- **Maintain Current Performance (CLOS) (Scenario 2):** This model considered the unconstrained cost over the forecast period to maintain the asset portfolio's current (2024 AMP) performance (i.e. condition) based on expert developed/planned lifecycle activities.
- **Infrastructure Needs as Per Lifecycle Strategies (Scenario 3):** This model considered the cost over the forecast period to perform the planned rehabilitation, renewals, and replacements as scheduled per the lifecycle strategy models developed for each sub-segment of the asset portfolio to maintain assets so that they are able to deliver their intended LOS.

For full details on the development of these scenarios, refer to section 4.3 and section 4.4 of the 2024 AMP.

The City has developed a Level of Service (LOS) metric for each asset category, known as the 'Average Overall Asset Condition Weighted by CRV,' which is calculated by weighting the average condition of all assets in the category by their replacement value over the forecast period. This approach smooths out annual fluctuations in condition, providing a more accurate representation of the assets' long-term outlook. Through the condition profiles provided in this report, expected peaks and valleys in asset condition are representative of assets going through their typical lifecycle stages ('Very Good' at the beginning of life, and 'Very Poor' near the end of life).

All LOS and KPI metrics established in this 2025 report will be captured and reported annually to provide updates on the current status of asset performance. Over time, this will provide a data set from which the City will be able to identify performance trends across the asset portfolio. The City intends to conduct a full assessment of the PLOS targets in the years leading up to the next regulated publication of the AMP, which is currently mandated for every 5 years. Regular review and monitoring of both the PLOS targets and related KPI metrics will help to ensure that appropriate asset management practices are being implemented and followed in an effort to meet stated service needs. The LCM scenarios, the LOS metrics, and the KPI metrics were taken into account when establishing the PLOS metric with consideration given to the risks affecting long-term sustainability, as outlined below.

4.2.3.1 Assessing Risks Associated with PLOS Options to Long Term Sustainability

Using the information provided in the afore-mentioned scenarios, an assessment of risk, asset performance, financial impact, level of sustainability and alternate life cycle activities that could (or would) need to be undertaken was developed in order to achieve a level of service that was: (1) reduced, (2) maintained, or (3) increased when compared to the current level of service offered by Facilities infrastructure assets. The results, summarized in Table 4-1, were developed by key asset stakeholders and reviewed by the Corporate Leadership Team (CLT) in a workshop lead by Asset Planning and the consultant (GEI). The data was assessed in its totality, with further consideration

given to the City's ability to support internal process changes as well as financial and non-financial strategies to support the PLOS targets that were ultimately set in this workshop. The identification and assessment of the scenario risks noted below played a critical role in the assessment of both CLOS and in the establishing of PLOS for each asset category.

Table 4-1. Facilities – Risk Assessment of the Level of Service Scenarios

Risks of Reducing CLOS (Scenario 1)	Risks of Maintaining CLOS (Scenario 2)	Risks of Increasing CLOS (Scenario 3)
• Increased service disruptions due to higher rate of reactionary maintenance as asset conditions decrease • Potential loss in services/programs provided to residents • Potential loss of funding, partnerships, business if service levels decrease • Increased risk to the health and safety of residents requiring Emergency Services • Decrease in compliance with environmental targets (energy consumption) • Increased risk of not meeting regulations • Increased risk of litigation • Reputational risks to the City • Inability to keep up with growth or to meet capacity needs • Increased risk of higher operational costs to keep assets operational as asset conditions decrease • Higher than anticipated costs for reactionary maintenance • Higher future costs (inflation, etc.)	• Similar risks as Reducing CLOS, but to a lesser degree • Remaining in reactionary vs. planned maintenance and rehab/replacement activities • May not be most cost effective in the long-term • Forecasts may be understated	• Increased short term cost to the tax/rate payer • Additional staff/operational needs are required to implement the increase • More renewal and replacement work within Facilities which potentially will disrupt services in the short term • Forecasts may be understated, or overstated

4.2.3.2 Proposed Level of Service (Scenario 4)

In establishing the PLOS target for Facilities infrastructure assets, a fourth Scenario was developed to model the estimated costs required to support select renewal, rehabilitation and replacement lifecycle activities. Administration conducted their analysis by including an assessment of the forecast models from Scenarios 1, 2 and 3 against the variance in associated risk identified by staff and Subject Matter Experts. The impact to the condition of the Facilities infrastructure assets under this scenario is provided in Figure 4-1, which compares the condition of the assets in the City's Current Funding Scenario (Scenario 1) that was brought forward under the 2024 AMP to the expected condition under the PLOS (Scenario 4). The PLOS scenario (Scenario 4) provides an average percent of assets (based on CRV) of 32% in 'Good to Very Good' condition over the 20-year forecast, in comparison to 22% under the Current Funding Scenario (Scenario 1).

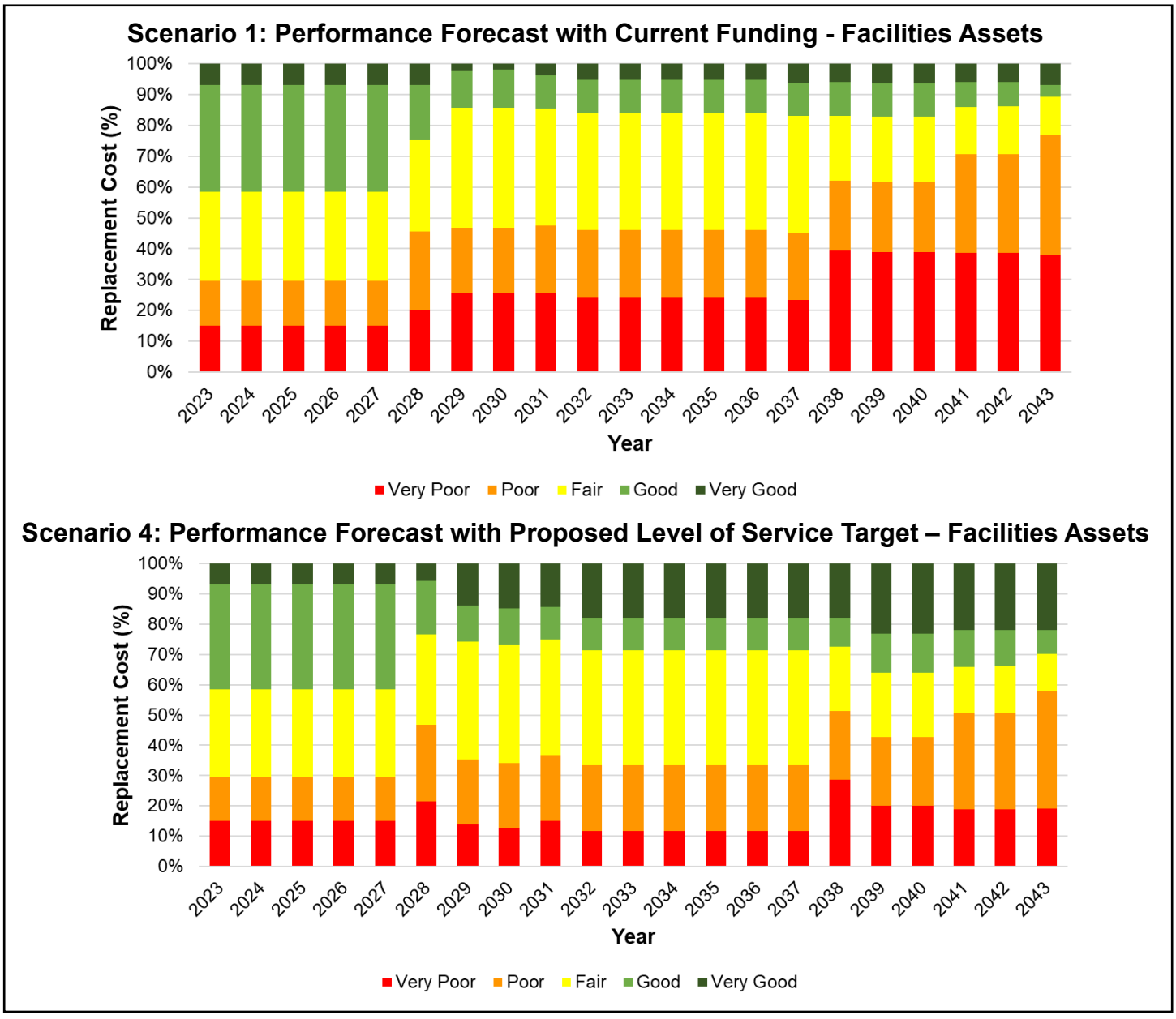


Figure 4-1. Facilities – Scenario Comparison (Condition)

4.2.4 Proposed Level of Service Targets

When taking into consideration the overall current asset condition and CLOS, along with the risks associated with the various LOS scenarios, the PLOS chosen for the Facilities infrastructure assets is to maintain an average asset condition of 'Fair' which is achieved in Scenario 4. CLOS and PLOS values are captured for this metric in Table 4-2.

Table 4-2. Facilities – Corporate Levels of Service

LOS: Metric Description	Current (2024 AMP) Performance (CLOS)	Proposed Performance (PLOS)	Proposed Change
Average Asset Condition weighted by CRV for Facilities Infrastructure Assets	Fair	Fair	NO CHANGE

4.2.5 The Average Annual Funding Gap Required to Achieve the PLOS

The Average Annual Funding Gap Required to Achieve the PLOS is calculated by comparing the forecasted total lifecycle activity costs under the PLOS Scenario (Scenario 4) against the Current Funding (Scenario 1). Similar to the analysis prepared in the 2024 AMP, the gap also considers Outstanding Infrastructure Needs in its calculation, which was included in the 2024 expenditure amount. Outstanding Infrastructure Needs represent the outstanding renewal, rehabilitation and replacement activities that have been identified and deemed necessary but have not yet been completed due to budget constraints and other limitations.

The recommended PLOS scenario shows that an average annual investment of $11.5 million, incremental to the approved funding provided for in the 2024 10-year Capital Plan, would be required to maintain overall asset condition as 'Fair', however this additional investment would see the percentage of assets in 'Good to Very Good' condition increase by 10%. The breakdown of asset condition under the Current Funding Scenario and PLOS Scenario and the associated investments is shown in Table 4-3.

Table 4-3. Facilities – Scenario Comparison Data

Scenario Data	Current Funding (Scenario 1)	PLOS (Scenario 4)
Average Annual Budget/Cost of the Scenario	$36,487,051	$48,019,915
Average Percent of Assets in 'Good to Very Good' Condition (Based on CRV) over the 20-year Scenario	22%	32%
Average Annual Funding Gap Required to Achieve the PLOS	N/A	$11,532,864

4.3 PLOS Infrastructure Gap Considerations

Administration conducted an impact analysis of the anticipated funding sources that may be leveraged to address the PLOS funding gap for Facilities infrastructure assets. Key aspects that were considered when determining an appropriate PLOS target for this asset portfolio that balances affordability and achievability included:

- The current modeled forecasts for the infrastructure needs of the Facilities portfolio should be considered cautiously as they are based on only average data confidence levels due to the lack of data granularity available for Facilities infrastructure assets, which are currently modeled at a single-asset level. The resulting modeled forecast shows large jumps in condition which reflects the entire asset moving from one condition state to another. Building Condition Assessment (BCA) information at the component level (HVAC, Roof, Electrical Systems, etc.) for Facilities is required for Facilities infrastructure asset condition to be re-modeled at the component level, which will significantly increase the data confidence for these assets and is expected to change the portfolio's infrastructure gap.

- A significant portion of the CRV for Facilities assets are attributed to the Emergency Response assets, which are in Poor Condition, and brings the overall average condition performance of this asset portfolio down. The approach to funding the gap must be balanced against the uncertainty in the modelling due to lack of component level data, and the immediate funding need for the Poor Condition assets.

The Financial Strategy (Chapter 16) addresses the funding gap for Facilities assets, consolidated with all asset categories. It identifies potential solutions for the City to bridge this gap and ensure long-term financial sustainability. A key recommendation is to gradually increase financial contributions to these assets over time. In parallel, the City should pursue non-financial strategies which include the implementation of AM best practice, improved lifecycle management, and annual reviews of service level targets to prevent the gap from widening further. These recommendations can be reviewed in section 4.3.1.

Failure to address the funding gap in a timely manner will lead to increasingly severe consequences, such as reduced service levels, higher future costs, and the accelerated decline of critical infrastructure. Proactive planning and a balanced approach between financial investment and operational efficiency are essential to mitigating these risks.

4.3.1 Risk Mitigation Strategies

The City is required by O. Reg. 588/17 to outline how the risks associated with not performing the lifecycle activities identified in the PLOS scenario will be managed. As noted, continuing to fund assets at the current level presents inherent risks. However, the City has been proactively mitigating the impacts of the infrastructure gap through various strategies. For Facilities infrastructure assets, risks are mitigated using the following strategies:

- Increasing maintenance activities

- 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
- Identifying and leveraging grant opportunities
- Strengthening capital planning and public communication to manage expectations
- Promoting community education and encouraging resident participation
- Proactively conducting studies and preparing for project to take advantage of future funding opportunities
- Identify where services are no longer viable with current infrastructure and funding

By prioritizing these strategies, the City continues to mitigate risks related to the infrastructure gap. While efforts are ongoing to address the funding gap, these strategies will be continuously implemented and refined to manage the risks of not achieving the PLOS. The City plans to implement an asset risk strategy to improve prioritization across asset categories, ensuring critical assets receive focused attention and minimizing risks to prevent service disruptions for the community.

4.3.2 Recommendations

The 2025 AMP has identified the PLOS infrastructure gap using current and best available information however, it acknowledges that further work is needed to explore various strategies for reducing the PLOS gap. To enhance forecasting accuracy for this asset category, it is recommended that the City implement the necessary improvements outlined in the 2024 AMP.

The implementation of appropriate asset management practices is essential for the City to help ensure sustainable, efficient, and cost-effective service delivery. Developing improved asset management practices can ensure long-term financial sustainability, optimize service delivery, enable risk management and resilience, and ensure regulatory compliance, accountability, and service delivery. These actions are important to minimize the infrastructure gap by minimizing lifecycle expenditures by prolonging an asset's life. By adopting strong asset management practices to make informed, data-driven decisions that balance affordability, service levels and long-term sustainability, the City can improve service reliability, reduce costs, mitigate risks, and plan in a way that benefits the entire community.

It is recommended that the City explore options to fund the anticipated Facilities infrastructure assets PLOS gap through a combination of both financial and non-financial strategies. Additionally, it is recommended that a portion of this funding is placed in a Facilities Reserve for future asset repair and renewal activities for Facilities infrastructure assets.

Table 4-4 reviews the specific recommended non-financial strategies that the City can leverage to address the infrastructure gap, prior to implementing any financial strategies. These strategies are part of AM best practice and ensure that services are provided at the lowest possible cost.

Table 4-4. Facilities – Recommended Strategies

Recommendation	Explanation	Potential Impact
Facility-wide, Component Level Condition Assessments	Enhancing component level condition assessment data for these facilities will refine expenditure forecasts for greater accuracy and help the City identify targeted areas for improvement.	Increase/Decrease to Infrastructure Gap
CMMS and Asset Register Reconciliation	FAMIS360 CMMS software is used to track and maintain work order data only, whereas the majority of the asset infrastructure data is housed in PSD Citywide CMMS software. Work is currently underway to reconcile these databases, which will improve asset tracking and condition monitoring, supporting the development of data-driven maintenance strategies and preventative maintenance programs.	Ability to optimize allocation of available funding.
Asset Risk Management Strategy	The risk posed by asset failure varies by asset type, location, supported services, etc. Understanding the risk associated with each asset and developing mitigation strategies allows for the prioritization of work based on minimizing risk.	Allow to prioritize expenditures related to high-risk assets.
Implement AM System	Selecting an appropriate Asset Management System (AMS) for tracking assets and maintenance activities requires a system that is centralized, accessible, and user-friendly for both field staff and decision-makers. Priority components of a system would include asset register and inventory management, maintenance and work order management, mobile accessibility, condition assessment and lifecycle tracking, GIS integration, and reporting and decision support.	Real-time data access that will improve decision-making and more accurate analysis for AM planning.
Develop Data Management Processes and Annual Review of Register, Condition, and Replacement Values	Develop appropriate processes to ensure asset register remains up to date, in an appropriate system that allows staff within the organization to access the information required to make decisions on assets. Develop appropriate processes to complete an annual data review to update condition, replacement costs, for all assets.	Improved forecast reliability.

4.3.3 Growth Considerations

In addition to addressing the infrastructure gap noted above, it is important to consider how growth impacts ongoing Operations and Maintenance (O&M) costs. Growth occurs through increases to the asset base as a result of population growth, increased economic activity, and through the addition and expansion of new or existing services. While the capital costs associated with infrastructure growth are integrated into the City's capital budget, and typically funded through development charges, the long-term operational impacts of these new assets must be considered as well.

Currently, the City spends approximately 1.39% of the current replacement value of its Facilities infrastructure assets on O&M. Figure 4-2 illustrates the projected O&M spending alongside anticipated growth over the next 10 years. This growth has been factored into the future replacement value to estimate the additional O&M costs needed to maintain the current spending level of 1.39%.

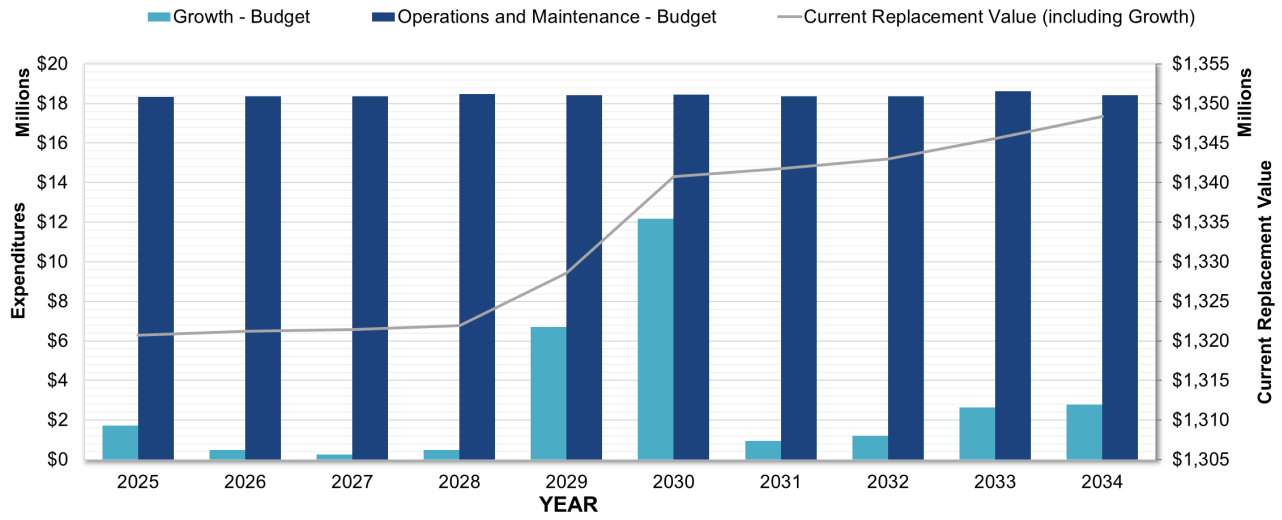


Figure 4-2. Facilities – Operations & Maintenance Considerations for Growth

Although the projection shows an average annual shortfall in O&M funding of approximately $125 thousand, this is relatively aligned with the average annual O&M budget needed to sustain the 1.39% investment in operations and maintenance. The City should continue to track and update O&M requirements related to growth and further assess whether current spending is sufficient to keep assets in a state where the intended LOS can be delivered. As infrastructure ages, there will be increasing pressure to carry out appropriate maintenance and is imperative to extend the life of existing assets to provide assets at the lowest possible costs.

5 Fleet and Corporate Equipment

5.1 Current State of the Infrastructure for the Asset Portfolio

2024 Replacement Value

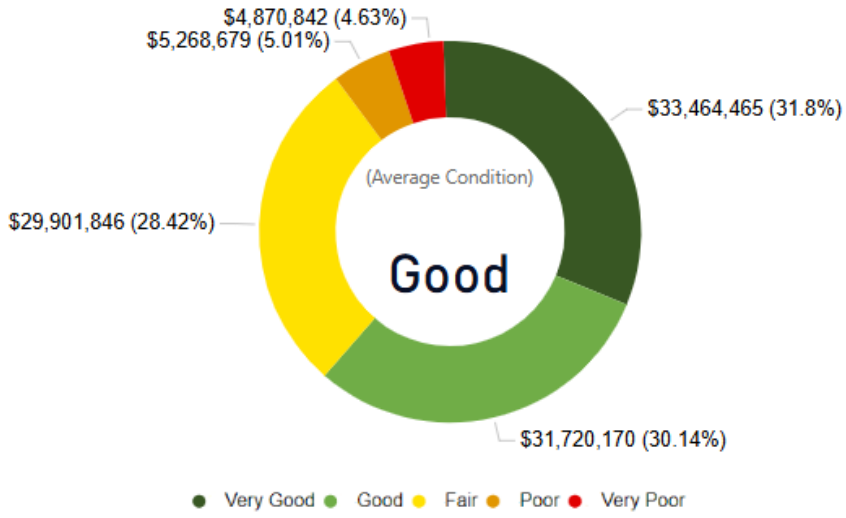
$105.2M

2024 AMP Average Asset Condition	2024 AMP CRV in 'Good to Very Good' Condition
Good	61.9%

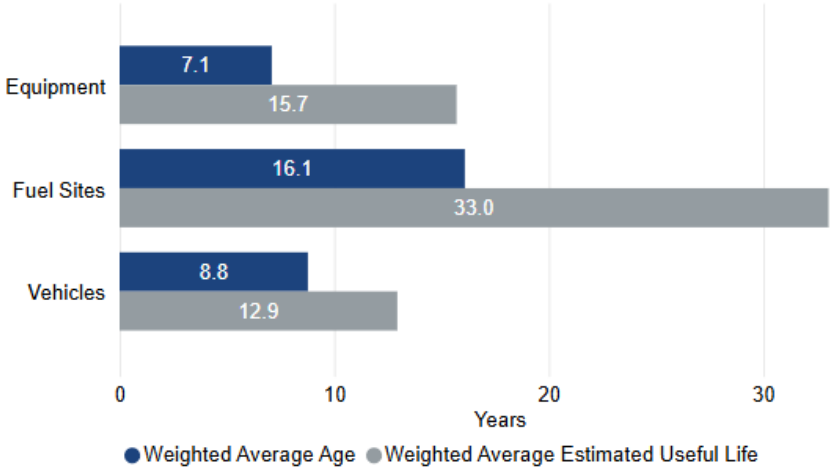
Fleet and Corporate Equipment infrastructure assets support the needs of the City departments themselves, as well as the delivery of services to the public. These are important assets for the City as they play a crucial role in delivering essential services, maintaining infrastructure, and supporting municipal operations. This asset category includes:

- Equipment: Corporate Radio System, Energy Systems, Fire Equipment, Huron Lodge Equipment, Parks Equipment, Public Works Equipment, and Recreation Equipment
- Fuel Sites: EV Charging Stations, and Fuel Sites
- Vehicles: Corporate Fleet, Fire Fleet, Fire Support Vehicles, and Off-Road Fleet

2024 Asset Condition Profile based on CRV



Average Age



Infrastructure Gap & Anticipated Growth

Average Annual Infrastructure Gap to Maintain Current Level of Service	Average Annual Infrastructure Gap for Proposed Level of Service	Average Annual Capital Growth Expenditures
$1.4M	$229K	$154K

5.2 Levels of Service

The levels of service information in this section are based on the data brought forward under the approved City of Windsor 2024 Corporate Asset Management Plan (2024 AMP). This section will discuss two distinct types of levels of service metrics - the Current Levels of Service (CLOS) metrics which represent how the portfolio's infrastructure assets are performing today; and the Proposed Levels of Service (PLOS) metrics which represent a desired future performance goal that the City feels is appropriate in consideration of affordability, achievability, sustainability and risk to the levels of service provided by the assets to the residents of the City.

5.2.1 Level of Service Statement

Fleet and Corporate Equipment infrastructure provides the necessary vehicles and equipment to enable various City departments to deliver much needed services to the public. Services include Corporate Vehicles and Fuel Sites, as well as specialized corporate equipment for Fire, Huron Lodge, Energy Systems, Parks, Public Works and Recreation.

5.2.2 Current Levels of Service

Level of Service (LOS) metrics are a key component of the City'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 CLOS and the development of PLOS.

Under the Fleet & Corporate Equipment chapter of the 2024 AMP, the City reported on the current performance for eight LOS metrics that were developed by key staff responsible for assets in the Fleet & Corporate Equipment infrastructure asset portfolio. For full details on the development of the 2024 AMP LOS metrics, consult section 5.2 of the 2024 AMP. The City-defined metrics provide valuable insight into the current performance of their associated assets and support the LOS they provide. These City-defined LOS will continue to be monitored as supporting Key Performance Indicator (KPI) metrics for each asset portfolio. While proposed targets are not required to be set for KPI metrics, they do provide valuable information and insight into the efficacy of the strategies being implemented to support the asset portfolio's PLOS metric being brought forward under this 2025 AMP. The current performance for all KPIs (see Appendix G, Table G-4) will be reported annually and should be taken into consideration when setting future PLOS targets.

5.2.3 Methodology of Establishing the Proposed Levels of Service

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. In order to clearly understand the impact in 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 LCM scenarios, which modeled cost of condition over a 20-year forecast period, include:

- **Current Funding (Scenario 1):** This model considered the impact to the overall performance of the assets over the forecast period should the asset portfolio continue to be funded as planned in the approved 2024 10-year Capital Budget.
- **Maintain Current Performance (CLOS) (Scenario 2):** This model considered the unconstrained cost over the forecast period to maintain the asset portfolio's current (2024 AMP) performance (i.e. condition) based on expert developed/planned lifecycle activities.
- **Infrastructure Needs as Per Lifecycle Strategies (Scenario 3):** This model considered the cost over the forecast period to perform the planned rehabilitation, renewals, and replacements as scheduled per the lifecycle strategy models developed for each sub-segment of the asset portfolio to maintain assets so that they are able to deliver their intended LOS.

For full details on the development of these scenarios, refer to section 5.3 and section 5.4 of the 2024 AMP.

The City has developed a Level of Service (LOS) metric for each asset category, known as the 'Average Overall Asset Condition Weighted by CRV,' which is calculated by weighting the average condition of all assets in the category by their replacement value over the forecast period. This approach smooths out annual fluctuations in condition, providing a more accurate representation of the assets' long-term outlook. Through the condition profiles provided in this report, expected peaks and valleys in asset condition are representative of assets going through their typical lifecycle stages ('Very Good' at the beginning of life, and 'Very Poor' near the end of life).

All LOS and KPI metrics established in this 2025 report will be captured and reported annually to provide updates on the current status of asset performance. Over time, this will provide a data set from which the City will be able to identify performance trends across the asset portfolio. The City intends to conduct a full assessment of the PLOS targets in the years leading up to the next regulated publication of the AMP, which is currently mandated for every 5 years. Regular review and monitoring of both the PLOS targets and related KPI metrics will help to ensure that appropriate asset management practices are being implemented and followed in an effort to meet stated service needs. The LCM scenarios, the LOS metrics, and the KPI metrics were taken into account when establishing the PLOS metric with consideration given to the risks affecting long-term sustainability, as outlined below.

5.2.3.1 Assessing Risks Associated with PLOS Options to Long Term Sustainability

Using the information provided in the afore-mentioned scenarios, an assessment of risk, asset performance, financial impact, level of sustainability and alternate life cycle activities that could (or would) need to be undertaken was developed in order to achieve a level of service that was: (1) reduced, (2) maintained, or (3) increased when compared to the current level of service offered by Fleet & Corporate Equipment infrastructure assets. The results, summarized in Table 5-1, were developed by key asset stakeholders and reviewed by the Corporate Leadership Team (CLT) in a workshop lead by Asset Planning and the consultant (GEI). The data was assessed in its totality with

further consideration given to the City's ability to support internal process changes as well as financial and non-financial strategies to support the PLOS targets that were ultimately set in this workshop. The identification and assessment of the scenario risks noted below played a critical role in the assessment of both CLOS and in the establishing of PLOS for each asset category.

Table 5-1. Fleet & Corporate Equipment – Risk Assessment of the Level of Service Scenarios

Risks of Reducing CLOS (Scenario 1)	Risks of Maintaining CLOS (Scenario 2)	Risks of Increasing CLOS (Scenario 3)
• Potential loss in services provided to residents due to decreased availability and/or condition of Fleet and Equipment assets • Potential loss of funding, partnerships, business if service levels decrease • Increased risk to the health and safety of residents requiring Huron Lodge assets • Increased risk of not meeting regulations • Increased risk of litigation • Reputational risks to the City • Inability to keep up with growth or to meet capacity needs • Increased risk of higher operational costs to keep assets operational • Higher than anticipated costs for reactionary maintenance • Higher future costs (inflation, etc.)	• Similar risks as Reducing CLOS, but to a lesser degree • Remaining in reactionary vs. planned maintenance and Rehab/Replacement activities • May not be most cost effective in the long-term • Forecasts may be understated	• Increased short term cost to the tax/rate payer • Additional staff/operational needs are required to implement the increase • Forecasts may be understated, or overstated

5.2.3.2 Proposed Level of Service (Scenario 4)

In establishing the PLOS target for Fleet & Corporate Equipment infrastructure assets, a fourth Scenario was developed to model the estimated costs required to support select renewal, rehabilitation and replacement lifecycle activities. Administration conducted their analysis by including an assessment of the forecast models from Scenarios 1, 2 and 3 against the variance in associated risk identified by staff and Subject Matter Experts. The impact to the condition of the Fleet & Corporate Equipment infrastructure assets under this scenario is provided in Figure 5-1, which

compares the condition of the assets in the City's Current Funding Scenario (Scenario 1) that was brought forward under the 2024 AMP to the expected condition under the PLOS (Scenario 4). The PLOS scenario (Scenario 4) provides an average percent of assets (based on CRV) of 41% in 'Good to Very Good' condition over the 20-year forecast, in comparison to 37% under the Current Funding Scenario (Scenario 1).

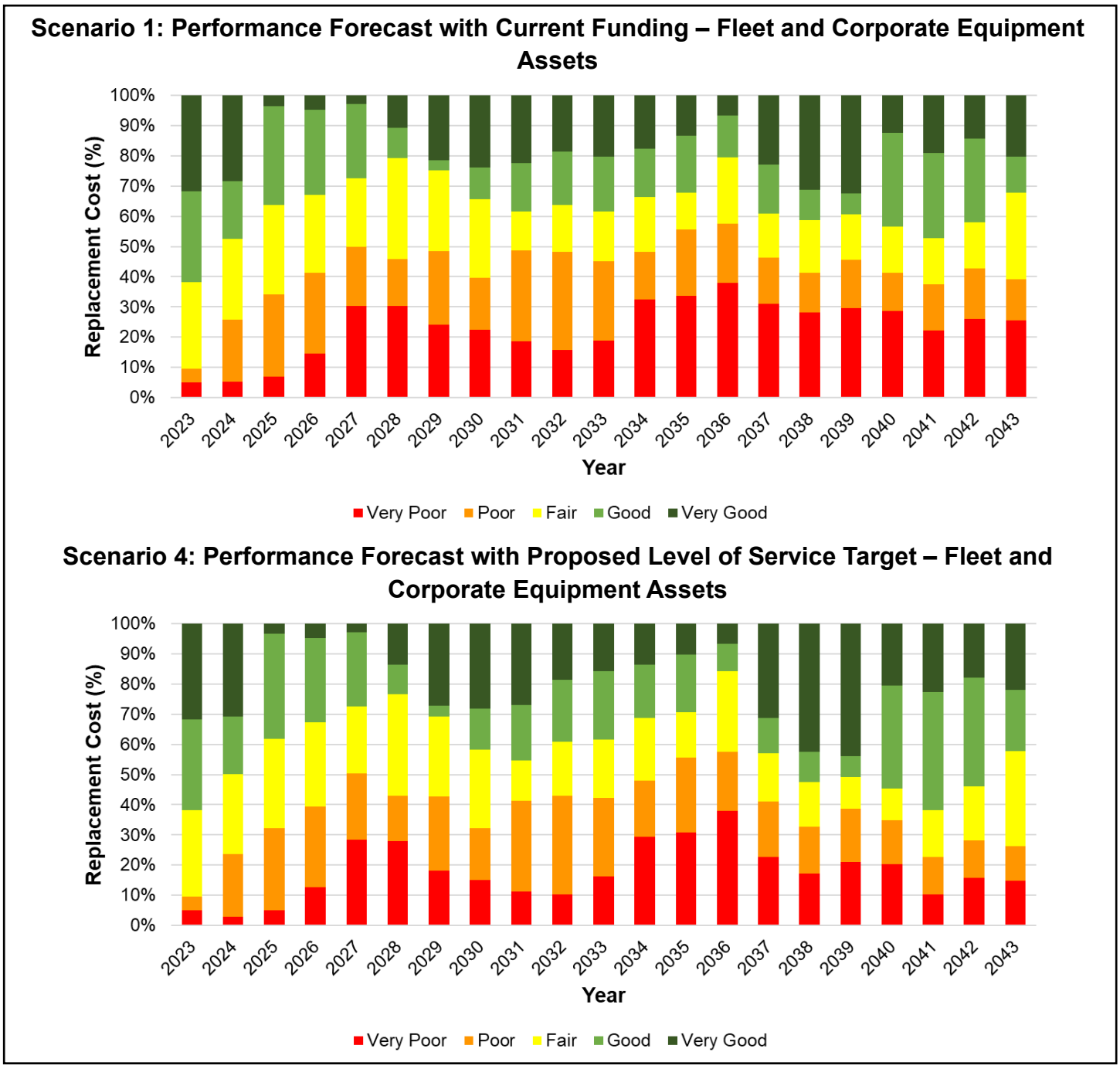


Figure 5-1. Fleet & Corporate Equipment – Scenario Comparison (Condition)

5.2.4 Proposed Levels of Service Targets

When taking into consideration the overall current asset condition and CLOS, along with the risks associated with the various LOS scenarios, the PLOS chosen for the Fleet & Corporate Equipment infrastructure assets is to maintain an average asset condition of 'Good' which is achieved in Scenario 4. CLOS and PLOS values are captured for this metric in Table 5-2.

Table 5-2. Fleet & Corporate Equipment – Corporate Levels of Service

LOS: Metric Description	Current (2024 AMP) Performance (CLOS)	Proposed Target (PLOS)	Proposed Change
Average Asset Condition weighted by CRV for Fleet & Corporate Equipment Infrastructure Assets	Good	Good	NO CHANGE

5.2.5 The Average Annual Funding Gap Required to Achieve the PLOS

The Average Annual Funding Gap Required to Achieve the PLOS is calculated by comparing the forecasted total lifecycle activity costs under the PLOS Scenario (Scenario 4) against the Current Funding (Scenario 1). Similar to the analysis prepared in the 2024 AMP, the gap also considers Outstanding Infrastructure Needs in its calculation, which was included in the 2024 expenditure amount. Outstanding Infrastructure Needs represent the outstanding renewal, rehabilitation and replacement activities that have been identified and deemed necessary but have not yet been completed due to budget constraints and other limitations.

The recommended PLOS scenario shows that an average annual investment of $229 thousand, incremental to the approved funding provided for in the 2024 10-year Capital Plan, would be required to maintain overall asset condition as 'Good' and would see the percentage of assets in 'Good to Very Good' condition increase by 4%. The breakdown of asset condition under the Current Funding Scenario and PLOS Scenario and the associated investments is shown in Table 5-3.

Table 5-3. Fleet & Corporate Equipment – Scenario Comparison Data

Scenario Data	Current Funding (Scenario 1)	PLOS (Scenario 4)
Average Annual Budget/Cost of the Scenario	$26,693,368	$26,922,067
Average Percent of Assets in 'Good to Very Good' Condition (Based on CRV) over the 20-year Scenario	37%	41%
Average Annual Funding Gap Required to Achieve the PLOS	N/A	$228,699

5.3 PLOS Infrastructure Gap Considerations

Administration conducted an impact analysis of the anticipated funding sources that may be leveraged to address the PLOS funding gap for Fleet & Corporate Equipment infrastructure assets. Key aspects that were considered when determining an appropriate PLOS target for this asset portfolio that balances affordability and achievability included:

- Corporate Equipment assets have an overall 'Fair' condition rating, and would benefit from some additional funding support
- Fuel Sites assets are currently in 'Good' condition, however there is little dedicated funding to support these assets in the coming years as they age.
- Vehicles assets are in 'Good' condition and have a strongly established replacement plan to keep these assets at an LOS of 'Good'
- The overall condition of this asset portfolio could be more easily maintained if some of the current funding for these assets were to be re-directed to target specific assets in need of repair or renewal.

The Financial Strategy (Chapter 16) addresses the funding gap for Fleet & Corporate Equipment infrastructure assets, consolidated with all asset categories. It identifies potential solutions for the City to bridge this gap and ensure long-term financial sustainability. A key recommendation is to gradually increase financial contributions to these assets over time. In parallel, the City should pursue non-financial strategies which include the implementation of AM best practice, improved lifecycle management, and annual reviews of service level targets to prevent the gap from widening further. These recommendations can be reviewed in section 5.3.1.

Failure to address the funding gap in a timely manner will lead to increasingly severe consequences, such as reduced service levels, higher future costs, and the accelerated decline of critical infrastructure. Proactive planning and a balanced approach between financial investment and operational efficiency are essential to mitigating these risks.

5.3.1 Risk Mitigation Strategies

The City is required by O. Reg. 588/17 to outline how the risks associated with not performing the lifecycle activities identified in the PLOS scenario will be managed. As noted, continuing to fund assets at the current level presents inherent risks. However, the City has been proactively mitigating the impacts of the infrastructure gap through various strategies. For Fleet & Corporate Equipment infrastructure assets, risks are mitigated using the following strategies:

- Extend preventative maintenance intervals
- Extend service lives
- Limit seasonal vehicles

- Reduced hours of operation
- Review other options for procurement
- Prioritizing asset replacements based on risk assessment
- Exploring cost-effective alternatives to extend asset lifespan
- Enhancing asset management practices for more efficient decision-making
- Identifying and leverage grant opportunities
- Strengthening capital planning and public communication to manage expectations
- Increase in staff to address increase in reactive and planned maintenance

By prioritizing these strategies, the City continues to mitigate risks related to the infrastructure gap. While efforts are ongoing to address the funding gap, these strategies will be continuously implemented and refined to manage the risks of not achieving the PLOS. The City plans to implement an asset risk strategy to improve prioritization across asset categories, ensuring critical assets receive focused attention and minimizing risks to prevent service disruptions for the community.

5.3.2 Recommendations

The 2025 AMP has identified the PLOS infrastructure gap using current and best available information however, it acknowledges that further work is needed to explore various strategies for reducing the PLOS gap. To enhance forecasting accuracy for this asset category, it is recommended that the City implement the necessary improvements outlined in the 2024 AMP.

The implementation of appropriate asset management practices is essential for the City to help ensure sustainable, efficient, and cost-effective service delivery. Developing improved asset management practices can ensure long-term financial sustainability, optimize service delivery, enable risk management and resilience, and ensure regulatory compliance, accountability, and service delivery. These actions are important to minimize the infrastructure gap by minimizing lifecycle expenditures by prolonging an asset's life. By adopting strong asset management practices to make informed, data-driven decisions that balance affordability, service levels and long-term sustainability, the City can improve service reliability, reduce costs, mitigate risks, and plan in a way that benefits the entire community.

It is recommended that the City explore options to fund the anticipated Fleet & Corporate Equipment infrastructure assets PLOS gap through a combination of both financial and non-financial strategies.

Table 5-4 reviews the specific recommended non-financial strategies that the City can leverage to address the infrastructure gap, prior to implementing any financial strategies. These strategies are part of AM best practice and ensure that services are provided at the lowest possible cost.

Table 5-4. Fleet & Corporate Equipment – Recommended Strategies

Recommendation	Explanation	Potential Impact
Asset Register Improvements	Fuel Sites are tracked as pooled assets for financial reporting purposes. Breaking out into components and tracking individual EUL, condition and replacement costs will allow for more efficient management of Fuel Sites. Annual reviews of the TCA register will also help to keep information up to date.	Improved decision-making capabilities to manage inventory more efficiently.
Asset Risk Management Strategy	The risk posed by asset failure varies by asset type, location, supported services, etc. Understanding the risk associated with each asset and developing mitigation strategies allows for the prioritization of work based on minimizing risk.	Allow to prioritize expenditures related to high-risk assets.
Leverage Computerized Maintenance Management System (CMMS) Data	CMMS improves asset management by providing accurate, real-time data that enhances decision-making, optimizes maintenance strategies, and extends asset life. By leveraging the CMMS data, the City can improve asset tracking and condition monitoring, develop data-driven maintenance strategies and support preventative maintenance programs.	Ability to optimize allocation of available funding.
Develop Data Management Processes and Annual Review of Register, Condition, and Replacement Values	Develop appropriate processes to ensure asset register remains up to date, in an appropriate system that allows staff within the organization to access the information required to make decisions on assets. Develop appropriate processes to complete an annual data review to update condition, replacement costs, for all assets.	Improved forecast reliability.

5.3.3 Growth Considerations

In addition to addressing the infrastructure gap noted above, it is important to consider how growth impacts ongoing Operations and Maintenance (O&M) costs. Growth occurs through increases to the asset base as a result of population growth, increased economic activity, and through the addition and expansion of new or existing services. While the capital costs associated with infrastructure growth are integrated into the City's capital budget, and typically funded through development charges, the long-term operational impacts of these new assets must be considered as well.

Currently, the City spends approximately 17.9% of the current replacement value of its Fleet & Corporate Equipment infrastructure assets on O&M. Figure 5-2 illustrates the projected O&M spending alongside anticipated growth over the next 10 years. This growth has been factored into the

future replacement value to estimate the additional O&M costs needed to maintain the current spending level of 17.9%.

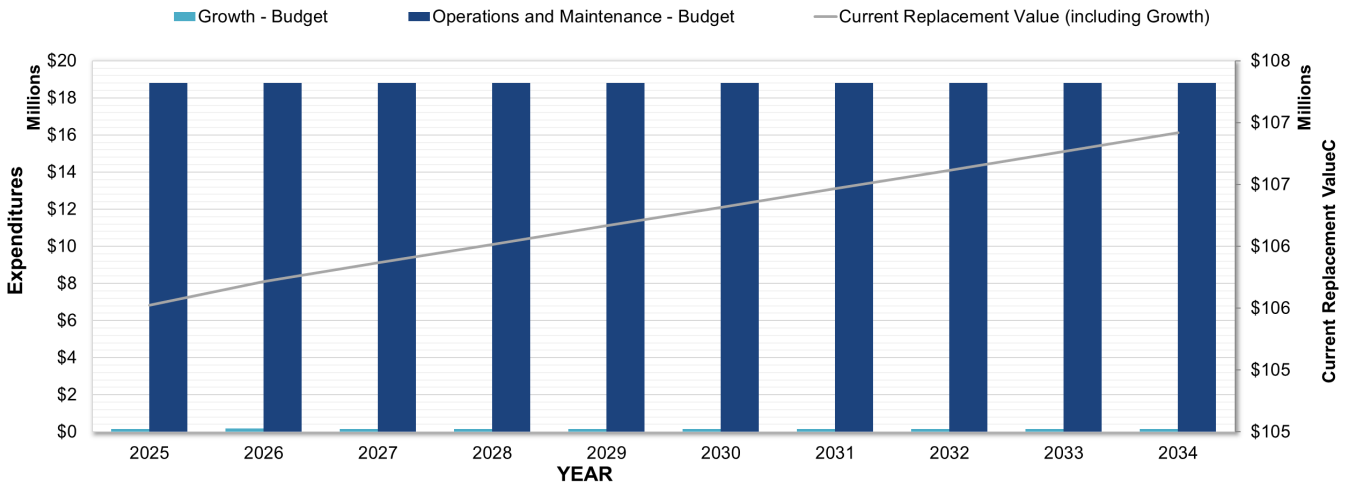


Figure 5-2. Fleet & Corporate Equipment – Operations & Maintenance Considerations for Growth

Although the projection shows an average annual shortfall in O&M funding of approximately $167 thousand, this is relatively aligned with the average annual O&M budget needed to sustain the 17.9% investment in operations and maintenance. The City should continue to track and update O&M requirements related to growth and further assess whether current spending is sufficient to keep in a state where the intended LOS can be delivered. As infrastructure ages, there will be increasing pressure to carry out appropriate maintenance and is imperative to extend the life of existing assets to provide assets at the lowest possible costs.

6 Information Technology

6.1 Current State of the Infrastructure for the Asset Portfolio

2024 Replacement Value

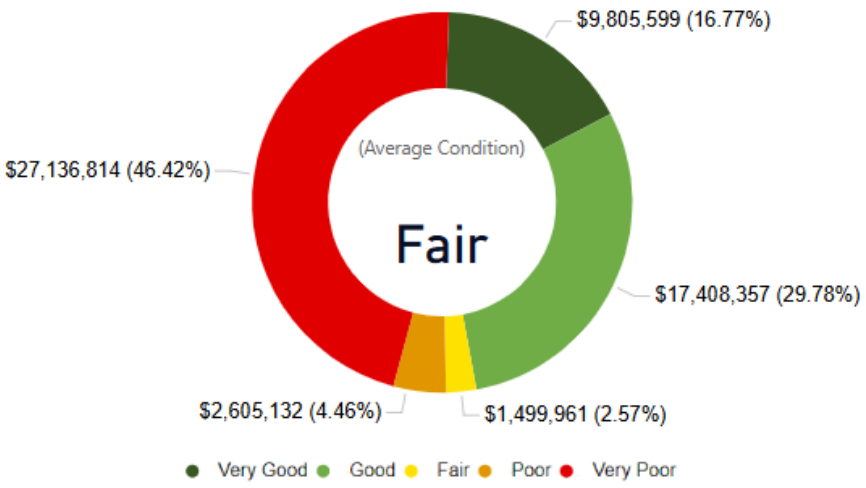
$58.5M

2024 AMP Average Asset Condition	2024 AMP CRV in 'Good to Very Good' Condition
Fair	46.5%

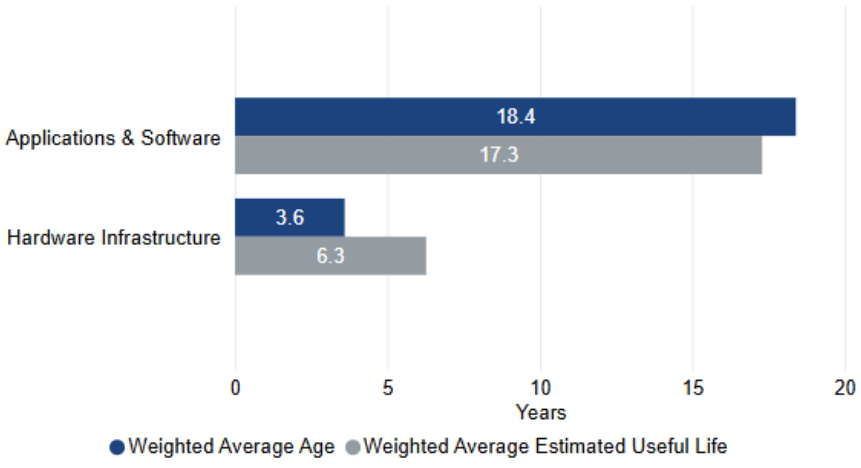
Technology is essential for the City to operate efficiently, deliver services effectively, engage with residents, manage resources, and respond to various challenges and opportunities in the modern urban environment. The Enterprise-wide applications and software systems in this category enable City departments to provide improved communication and collaboration between City departments and the public. The City's Information Technology (IT) department also carries the responsibility of keeping employee City assets, as well as the data therein, secured. This asset category includes:

- Applications and Software assets: Enterprise Application & Software, Other Applications & Software
- Hardware Infrastructure assets: Communications Equipment, Computers, Firewalls, Other Corporate IT Equipment, Servers, Switches & Wireless Access Points, and Virtual Servers

2024 Asset Condition Profile based on CRV



Average Age



Infrastructure Gap & Anticipated Growth

Average Annual Infrastructure Gap to Maintain Current Level of Service	Average Annual Infrastructure Gap for Proposed Level of Service	Average Annual Capital Growth Expenditures
$1.4M	$4.6M	$45K

6.2 Levels of Service

The levels of service information in this section are based on the data brought forward under the approved City of Windsor 2024 Corporate Asset Management Plan (2024 AMP). This section will discuss two distinct types of levels of service metrics - the Current Levels of Service (CLOS) metrics which represent how the portfolio's infrastructure assets are performing today; and the Proposed Levels of Service (PLOS) metrics which represent a desired future performance goal that the City feels is appropriate in consideration of affordability, achievability, sustainability and risk to the levels of service provided by the assets to the residents of the City.

6.2.1 Level of Service Statement

IT infrastructure enables City departmental systems to function effectively and efficiently to deliver critical services to all municipal workers and community members. These services include advising on the proper maintenance, refurbishment and acquisition of all corporate hardware and software, as well as all infrastructure assets including computer servers (digital and cloud), security systems and communications systems.

6.2.2 Current Levels of Service

Level of Service (LOS) metrics are a key component of the City'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 CLOS and the development of PLOS.

Under the Information Technology chapter of the 2024 AMP, the City reported on the current performance for three LOS metrics that were developed by key staff responsible for assets in the IT infrastructure asset portfolio. For full details on the development of the 2024 AMP LOS metrics, consult section 6.2 of the 2024 AMP. The City-defined metrics provide valuable insight into the current performance of their associated assets and support the LOS they provide. These City-defined LOS will continue to be monitored as supporting Key Performance Indicator (KPI) metrics for each asset portfolio. While proposed targets are not required to be set for KPI metrics, they do provide valuable information and insight into the efficacy of the strategies being implemented to support the asset portfolio's PLOS metric being brought forward under this 2025 AMP. The current performance for all KPIs (see Appendix G, Table G-5) will be reported annually and should be taken into consideration when setting future PLOS targets.

6.2.3 Methodology of Establishing the Proposed Levels of Service

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. In order to clearly understand the impact in 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 LCM scenarios, which modeled cost of condition over a 20-year forecast period, include:

- **Current Funding (Scenario 1):** This model considered the impact to the overall performance of the assets over the forecast period should the asset portfolio continue to be funded as planned in the approved 2024 10-year Capital Budget.
- **Maintain Current Performance (CLOS) (Scenario 2):** This model considered the unconstrained cost over the forecast period to maintain the asset portfolio's current (2024 AMP) performance (i.e. condition) based on expert developed/planned lifecycle activities.
- **Infrastructure Needs as Per Lifecycle Strategies (Scenario 3):** This model considered the cost over the forecast period to perform the planned rehabilitation, renewals, and replacements as scheduled per the lifecycle strategy models developed for each sub-segment of the asset portfolio to maintain assets so that they are able to deliver their intended LOS.

For full details on the development of these scenarios, refer to section 6.3 and section 6.4 of the 2024 AMP.

The City has developed a Level of Service (LOS) metric for each asset category, known as the 'Average Overall Asset Condition Weighted by CRV,' which is calculated by weighting the average condition of all assets in the category by their replacement value over the forecast period. This approach smooths out annual fluctuations in condition, providing a more accurate representation of the assets' long-term outlook. Through the condition profiles provided in this report, expected peaks and valleys in asset condition are representative of assets going through their typical lifecycle stages ('Very Good' at the beginning of life, and 'Very Poor' near the end of life).

All LOS and KPI metrics established in this 2025 report will be captured and reported annually to provide updates on the current status of asset performance. Over time, this will provide a data set from which the City will be able to identify performance trends across the asset portfolio. The City intends to conduct a full assessment of the PLOS targets in the years leading up to the next regulated publication of the AMP, which is currently mandated for every 5 years. Regular review and monitoring of both the PLOS targets and related KPI metrics will help to ensure that appropriate asset management practices are being implemented and followed in an effort to meet stated service needs. The LCM scenarios, the LOS metrics, and the KPI metrics were taken into account when establishing the PLOS metric with consideration given to the risks affecting long-term sustainability, as outlined below.

6.2.3.1 Assessing Risks Associated with PLOS Options to Long Term Sustainability

Using the information provided in the afore-mentioned scenarios, an assessment of risk, asset performance, financial impact, level of sustainability and alternate life cycle activities that could (or would) need to be undertaken was developed in order to achieve a level of service that was: (1) reduced, (2) maintained, or (3) increased when compared to the current level of service offered by IT infrastructure assets. The results, summarized in Table 6-1, were developed by key asset stakeholders and reviewed by the Corporate Leadership Team (CLT) in a workshop lead by Asset Planning and the consultant (GEI). The data was assessed in its totality, with further consideration

given to the City's ability to support internal process changes as well as financial and non-financial strategies to support the PLOS targets that were ultimately set in this workshop. The identification and assessment of the scenario risks noted below played a critical role in the assessment of both CLOS and in the establishing of PLOS for each asset category.

Table 6-1. Information Technology – Risk Assessment of the Level of Service Scenarios

Risks of Reducing CLOS (Scenario 1)	Risks of Maintaining CLOS (Scenario 2)	Risks of Increasing CLOS (Scenario 3)
• Inability to keep up with rapidly changing technologies • Increased risk to security of data and systems for assets that are in use beyond end of life • Increased risk of litigation • Reputational risks to the City • Inability to keep up with growth or to meet capacity needs • Increased risk of higher operational costs to keep assets operational as asset conditions decrease • Higher than anticipated costs for reactionary maintenance • Higher future costs (inflation, etc.)	• Similar risks as Reducing CLOS, but to a lesser degree • Remaining in reactionary vs. planned maintenance and rehab/replacement activities • May not be most cost effective in the long-term • High difficulty of forecasting, may be understated due to constantly changing landscape in IT infrastructure	• Increased short term cost to the tax/rate payer • Additional staff/operational needs are required to implement the increase • High difficulty of forecasting, may be understated due to constantly changing landscape in IT infrastructure

6.2.3.2 Proposed Level of Service (Scenario 4)

In establishing the PLOS target for IT, a fourth Scenario was developed to model the estimated costs required to support select renewal, rehabilitation and replacement lifecycle activities. Administration conducted their analysis by including an assessment of the forecast models from Scenarios 1, 2 and 3 against the variance in associated risk identified by staff and Subject Matter Experts. The impact to the condition of the IT infrastructure assets under this scenario is provided in Figure 6-1, which compares the condition of the assets in the City's Current Funding Scenario (Scenario 1) that was brought forward under the 2024 AMP to the expected condition under the PLOS (Scenario 4). The PLOS scenario (Scenario 4) provides an average percent of assets (based on CRV) of 30% in 'Good to Very Good' condition over the 20-year forecast, in comparison to 10% under the Current Funding Scenario (Scenario 1). There were some assets that did not have enough information for inclusion in the forecasts, as a result of this the condition profiles are slightly different than the state of the

infrastructure. The City is working to continue to expand and improve the asset register for future asset planning purposes.

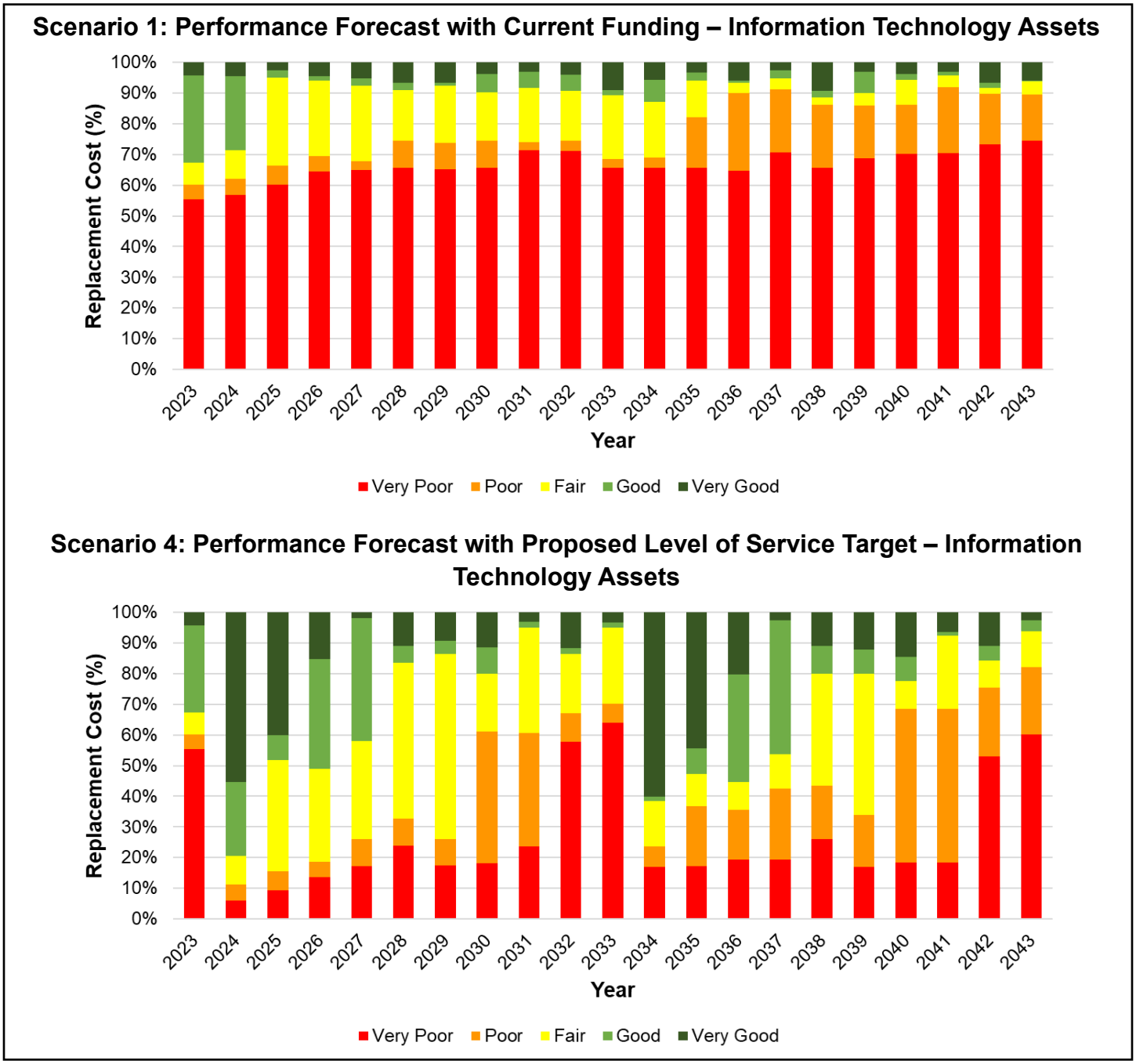


Figure 6-1. Information Technology – Scenario Comparison (Condition)

6.2.4 Proposed Level of Service Targets

When taking into consideration the overall current asset condition and CLOS, along with the risks associated with the various LOS scenarios, the PLOS chosen for the IT infrastructure assets is to maintain an average asset condition of 'Fair' which is achieved in Scenario 4. CLOS and PLOS values are captured for this metric in Table 6-2 below.

Table 6-2. Information Technology – Corporate Levels of Service

LOS: Metric Description	Current (2024 AMP) Performance (CLOS)	Proposed Target (PLOS)	Proposed Change
Average Asset Condition weighted by CRV for Information Technology Infrastructure Assets	Fair	Fair	NO CHANGE

6.2.5 The Average Annual Funding Gap Required to Achieve the PLOS

The Average Annual Funding Gap Required to Achieve the PLOS is calculated by comparing the forecasted total lifecycle activity costs under the PLOS Scenario (Scenario 4) against the Current Funding (Scenario 1). Similar to the analysis prepared in the 2024 AMP, the gap also considers Outstanding Infrastructure Needs in its calculation, which was included in the 2024 expenditure amount. Outstanding Infrastructure Needs represent the outstanding renewal, rehabilitation and replacement activities that have been identified and deemed necessary but have not yet been completed due to budget constraints and other limitations.

The recommended PLOS scenario shows that an average annual investment of $4.6 million, incremental to the approved funding provided for in the 2024 10-year Capital Plan, would be required to maintain overall asset condition as ‘Fair’, however this incremental investment would see the percentage of assets in ‘Good to Very Good’ condition increase by 20%. The breakdown of asset condition under the Current Funding Scenario and PLOS Scenario and the associated investments is shown in Table 6-3.

Table 6-3. Information Technology – Scenario Comparison Data

Scenario Data	Current Funding (Scenario 1)	PLOS (Scenario 4)
Average Annual Budget/Cost of the Scenario	$14,925,959	$19,527,170
Average Percent of Assets in ‘Good to Very Good’ Condition (Based on CRV) over the 20-year Scenario	10%	30%
Average Annual Funding Gap Required to Achieve the PLOS	N/A	$4,601,211

6.3 PLOS Infrastructure Gap Considerations

Administration conducted an impact analysis of the anticipated funding sources that may be leveraged to address the PLOS funding gap for IT infrastructure assets. Key aspects that were considered when determining an appropriate PLOS target for this asset portfolio that balances affordability and achievability included:

- The PLOS Scenario (Scenario 4) demonstrates that investment in IT is critical, however the way the service will be delivered in the years to come is changing, therefore identifying a high-confidence PLOS funding gap is challenging. In consideration of the current needs against the PLOS funding needs.

The Financial Strategy (Chapter 16) addresses the funding gap for IT assets, consolidated with all asset categories. It identifies potential solutions for the City to bridge this gap and ensure long-term financial sustainability. A key recommendation is to gradually increase financial contributions to these assets over time. In parallel, the City should pursue non-financial strategies which include the implementation of AM best practice, improved lifecycle management, and annual reviews of service level targets to prevent the gap from widening further. These recommendations can be reviewed in section 6.3.1.

Failure to address the funding gap in a timely manner will lead to increasingly severe consequences, such as reduced service levels, higher future costs, and the accelerated decline of critical infrastructure. Proactive planning and a balanced approach between financial investment and operational efficiency are essential to mitigating these risks.

6.3.1 Risk Mitigation Strategies

The City is required by O. Reg. 588/17 to outline how the risks associated with not performing the lifecycle activities identified in the PLOS scenario will be managed. As noted, continuing to fund assets at the current level presents inherent risks. However, the City has been proactively mitigating the impacts of the infrastructure gap through various strategies. For IT infrastructure assets, risks are mitigated using the following strategies:

- Training staff to reduce security risks
- Engaging with consultants on cyber security risks
- Increase service life (keeping assets longer)
- Develop workarounds to keep hardware/software functioning
- Procurement changes to buy in bulk to reduce costs, negotiate contracts, leveraging IT roster to fast-track assistance
- Implementation of Corporate Technology Plan
- Increasing staff to be able to react to expanding needs for software and hardware
- Prioritizing asset replacements based on risk assessment
- Enhancing asset management practices for more efficient decision-making
- Implementing advanced technologies to improve efficiency

By prioritizing these strategies, the City continues to mitigate risks related to the infrastructure gap. While efforts are ongoing to address the funding gap, these strategies will be continuously implemented and refined to manage the risks of not achieving the PLOS. The City plans to implement

an asset risk strategy to improve prioritization across asset categories, ensuring critical assets receive focused attention and minimizing risks to prevent service disruptions for the community.

6.3.2 Recommendations

The 2025 AMP has identified the PLOS infrastructure gap using current and best available information however, it acknowledges that further work is needed to explore various strategies for reducing the PLOS gap. To enhance forecasting accuracy for this asset category, it is recommended that the City implement the necessary improvements outlined in the 2024 AMP.

The implementation of appropriate asset management practices is essential for the City to help ensure sustainable, efficient, and cost-effective service delivery. Developing improved asset management practices can ensure long-term financial sustainability, optimize service delivery, enable risk management and resilience, and ensure regulatory compliance, accountability, and service delivery. These actions are important to minimize the infrastructure gap by minimizing lifecycle expenditures by prolonging an asset's life. By adopting strong asset management practices to make informed, data-driven decisions that balance affordability, service levels and long-term sustainability, the City can improve service reliability, reduce costs, mitigate risks, and plan in a way that benefits the entire community.

It is recommended that the City explore options to fund the anticipated IT infrastructure assets PLOS gap through a combination of both financial and non-financial strategies while conducting an all-inclusive review of all IT Reserves and Capital Projects and how they align with the IT Strategic Plan.

Table 6-4 reviews the specific recommended non-financial strategies that the City can leverage to address the infrastructure gap, prior to implementing any financial strategies. These strategies are part of AM best practice and ensure that services are provided at the lowest possible cost.

Table 6-4. Information Technology – Recommended Strategies

Recommendation	Explanation	Potential Impact
Asset Register Improvements	Not all IT assets are currently in the asset register. Communications Equipment and Computers are managed as pooled assets for financial reporting purposes. Developing a full, centralized asset register of all IT assets will ensure that information is accurate and accessible.	Improved decision-making capabilities to manage inventory more efficiently.

Recommendation	Explanation	Potential Impact
Implement AM System	Selecting an appropriate Asset Management System (AMS) for tracking assets and maintenance activities requires a system that is centralized, accessible, and user-friendly for both field staff and decision-makers. Priority components of a system would include asset register and inventory management, maintenance and work order management, mobile accessibility, condition assessment and lifecycle tracking, GIS integration, and reporting and decision support.	Real-time data access that will improve decision-making and more accurate analysis for AM planning.
Develop Data Management Processes and Annual Review of Register, Condition, and Replacement Values	Develop appropriate processes to ensure asset register remains up to date, in an appropriate system that allows staff within the organization to access the information required to make decisions on assets. Develop appropriate processes to complete an annual data review to update condition, replacement costs, for all assets.	Improved forecast reliability.
Asset Risk Management Strategy	The risk posed by asset failure varies by asset type, location, supported services, etc. Understanding the risk associated with each asset and developing mitigation strategies allows for the prioritization of work based on minimizing risk.	Allow to prioritize expenditures related to high-risk assets.

6.3.3 Growth Considerations

In addition to addressing the infrastructure gap noted above, it is important to consider how growth impacts ongoing Operations and Maintenance (O&M) costs. Growth occurs through increases to the asset base as a result of population growth, increased economic activity, and through the addition and expansion of new or existing services. While the capital costs associated with infrastructure growth are integrated into the City's capital budget, and typically funded through development charges, the long-term operational impacts of these new assets must be considered as well.

Currently, the City spends approximately 16.9% of the current replacement value of its IT infrastructure assets on O&M. Figure 6-2 illustrates the projected O&M spending alongside anticipated growth over the next 10 years. This growth has been factored into the future replacement value to estimate the additional O&M costs needed to maintain the current spending level of 16.9%.

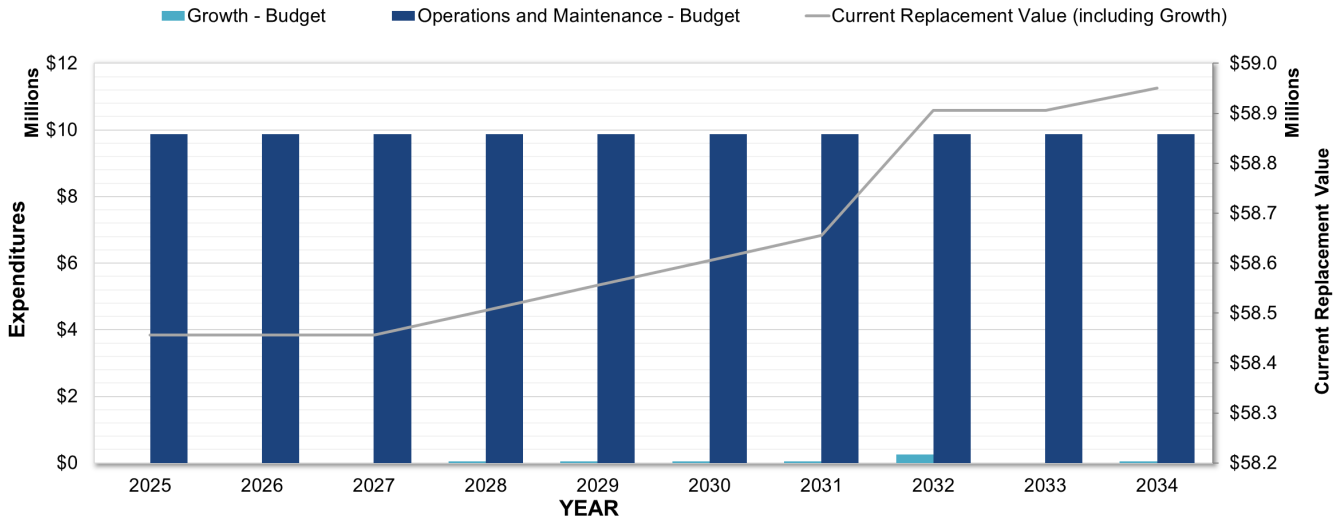


Figure 6-2. Information Technology – Operations & Maintenance Considerations for Growth

The projection shows an average annual shortfall in O&M funding of approximately $29 thousand, this is closely aligned with the average annual O&M budget needed to sustain the 16.9% investment in operations and maintenance. The City should continue to track and update O&M requirements related to growth and further assess whether current spending is sufficient to keep in a state where the intended LOS can be delivered. As infrastructure ages, there will be increasing pressure to carry out appropriate maintenance and is imperative to extend the life of existing assets to provide assets at the lowest possible costs.

IT has experienced rapid change in services over the last few years, and it is anticipated that operating costs will increase over the next 10 years, as on prem services transition to Software-as-a-Service (SAAS).

7 Natural Assets

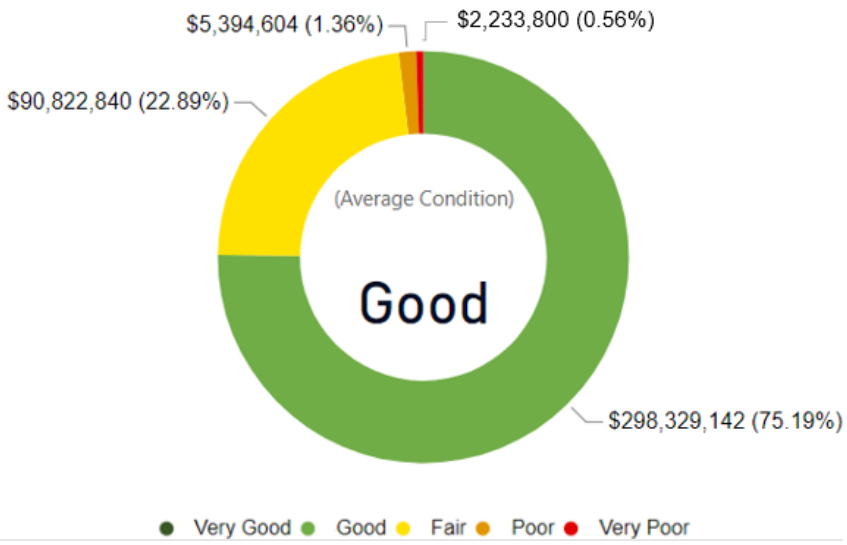
7.1 Current State of the Infrastructure for the Asset Portfolio

2024 Replacement Value	
$396.8M	
2024 AMP Average Asset Condition	**2024 AMP CRV in 'Good to Very Good' Condition**
Good	75.1%

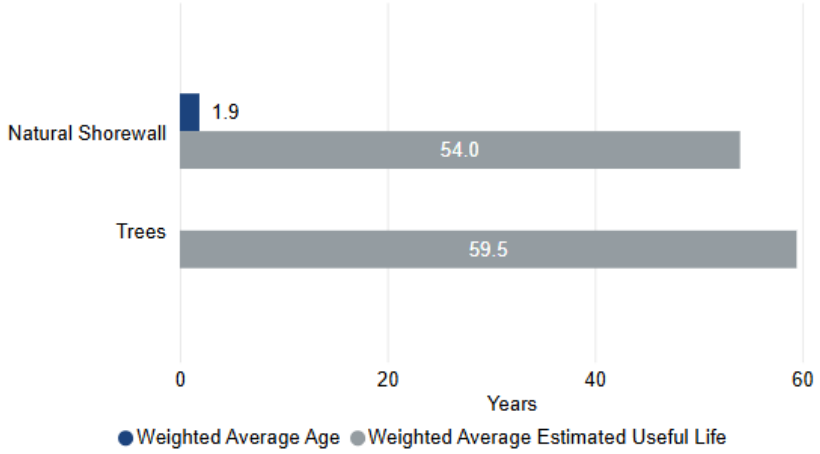
Integrating natural assets into city planning promotes environmental sustainability, enhances the quality of life for residents, and creates resilient urban landscapes that can withstand the challenges of climate change and urban development. Incorporating the city's trees and natural shorelines into city planning and development is a sustainable approach that offers various benefits for both the environment and the community. This asset category includes:

- Natural Shore Wall
- Trees: Park Trees, and Street Trees

Asset Condition Profile based on CRV



Average Age



Infrastructure Gap & Anticipated Growth

Average Annual Infrastructure Gap to Maintain Current Level of Service	Average Annual Infrastructure Gap for Proposed Level of Service	Average Annual Capital Growth Expenditures
$579K	$579K	$0

7.2 Levels of Service

The levels of service information in this section are based on the data brought forward under the approved City of Windsor 2024 Corporate Asset Management Plan (2024 AMP). This section will discuss two distinct types of levels of service metrics - the Current Levels of Service (CLOS) metrics which represent how the portfolio's infrastructure assets are performing today; and the Proposed Levels of Service (PLOS) metrics which represent a desired future performance goal that the City feels is appropriate in consideration of affordability, achievability, sustainability and risk to the levels of service provided by the assets to the residents of the City.

7.2.1 Level of Service Statement

Natural Assets infrastructure provides equitable access to nature that meets recreational, and leisure needs, supports health and well-being, protects the environment and offers opportunities to connect to the environment and others in the community. The City's natural assets such as trees, wetlands, prairie and green infrastructure contribute to increased biodiversity, avoided infrastructure costs, pollution reduction and climate action.

7.2.2 Current Levels of Service

Level of Service (LOS) metrics are a key component of the City'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 CLOS and the development of PLOS.

Under the Natural Assets chapter of the 2024 AMP, the City reported on the current performance for eight LOS metrics that were developed by key staff responsible for assets in the Natural Assets Infrastructure asset. For full details on the development of the 2024 AMP LOS metrics, consult section 7.2 of the 2024 AMP. The City-defined metrics provide valuable insight into the current performance of their associated assets and support the LOS they provide. These City-defined LOS will continue to be monitored as supporting Key Performance Indicator (KPI) metrics for each asset portfolio. While proposed targets are not required to be set for KPI metrics, they do provide valuable information and insight into the efficacy of the strategies being implemented to support the asset portfolio's PLOS metric being brought forward under this 2025 AMP. The current performance for all KPIs (see Appendix G, Table G-6) will be reported annually and should be taken into consideration when setting future PLOS targets.

7.2.3 Methodology of Establishing the Proposed Levels of Service

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. In order to clearly understand the impact in 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 LCM scenarios, which modeled cost of condition over a 20-year forecast period, include:

- **Current Funding (Scenario 1):** This model considered the impact to the overall performance of the assets over the forecast period should the asset portfolio continue to be funded as planned in the approved 2024 10-year Capital Budget.
- **Maintain Current Performance (CLOS) (Scenario 2):** This model considered the unconstrained cost over the forecast period to maintain the asset portfolio's current (2024 AMP) performance (i.e. condition) based on expert developed/planned lifecycle activities.
- **Infrastructure Needs as Per Lifecycle Strategies (Scenario 3):** This model considered the cost over the forecast period to perform the planned rehabilitation, renewals, and replacements as scheduled per the lifecycle strategy models developed for each sub-segment of the asset portfolio to maintain assets so that they are able to deliver their intended LOS.

For full details on the development of these scenarios, refer to section 7.3 and section 7.4 of the 2024 AMP.

The City has developed a Level of Service (LOS) metric for each asset category, known as the 'Average Overall Asset Condition Weighted by CRV,' which is calculated by weighting the average condition of all assets in the category by their replacement value over the forecast period. This approach smooths out annual fluctuations in condition, providing a more accurate representation of the assets' long-term outlook. Through the condition profiles provided in this report, expected peaks and valleys in asset condition are representative of assets going through their typical lifecycle stages ('Very Good' at the beginning of life, and 'Very Poor' near the end of life).

All LOS and KPI metrics established in this 2025 report will be captured and reported annually to provide updates on the current status of asset performance. Over time, this will provide a data set from which the City will be able to identify performance trends across the asset portfolio. The City intends to conduct a full assessment of the PLOS targets in the years leading up to the next regulated publication of the AMP, which is currently mandated for every 5 years. Regular review and monitoring of both the PLOS targets and related KPI metrics will help to ensure that appropriate asset management practices are being implemented and followed in an effort to meet stated service needs. The LCM scenarios, the LOS metrics, and the KPI metrics were taken into account when establishing the PLOS metric with consideration given to the risks affecting long-term sustainability, as outlined below.

7.2.3.1 Assessing Risks Associated with PLOS Options to Long Term Sustainability

Using the information provided in the afore-mentioned scenarios, an assessment of risk, asset performance, financial impact, level of sustainability and alternate life cycle activities that could (or would) need to be undertaken was developed in order to achieve a level of service that was: (1) reduced, (2) maintained, or (3) increased when compared to the current level of service offered by Natural Assets infrastructure. The results, summarized in Table 7-1, were developed by key asset stakeholders and reviewed by the Corporate Leadership Team (CLT) in a workshop lead by Asset

Planning and the consultant (GEI). The data was assessed in its totality, with further consideration given to the City's ability to support internal process changes as well as financial and non-financial strategies to support the PLOS targets that were ultimately set in this workshop. The identification and assessment of the scenario risks noted below played a critical role in the assessment of both CLOS and in the establishing of PLOS for each asset category.

Table 7-1. Natural Assets – Risk Assessment of the Level of Service Scenarios

Risks of Reducing CLOS (Scenario 1)	Risks of Maintaining CLOS (Scenario 2)	Risks of Increasing CLOS (Scenario 3)
• Increased environmental impacts to air quality, natural environment, etc. • Loss in ecological functions • Decrease in compliance with environmental targets (increased residential energy consumption due to higher urban temperatures) • Increased risk of litigation • Reputational risks to the City • Increased risk of higher operational costs to keep assets operational as asset conditions decrease • Higher than anticipated costs for reactionary maintenance • Higher future costs (inflation, etc.)	• Similar risks as Reducing CLOS, but to a lesser degree • Remaining in reactionary vs. planned maintenance and rehab/replacement activities • Increased risk of higher capital/operational costs due to impacts of climate change • May not be most cost effective in the long-term • Forecasts may be understated	• Increased short term cost to the tax/rate payer • Additional staff/operational needs are required to implement the increase • Forecasts may be understated, or overstated

7.2.3.2 Proposed Level of Service (Scenario 4)

In establishing the PLOS target for Natural Assets, a fourth Scenario was developed to model the estimated costs required to support select renewal, rehabilitation and replacement lifecycle activities. Administration conducted their analysis by including an assessment of the forecast models from Scenarios 1, 2 and 3 against the variance in associated risk identified by staff and Subject Matter Experts. The impact to the condition of the Natural Assets infrastructure assets under this scenario is provided in Figure 7-1 which compares the condition of the assets in the City's Current Funding Scenario (Scenario 1) that was brought forward under the 2024 AMP to the expected condition under the PLOS (Scenario 4). The PLOS scenario (Scenario 4) provides an average percent of assets (based on CRV) of 72% in 'Good to Very Good' condition over the 20-year forecast, in comparison to 12% under the Current Funding Scenario (Scenario 1).

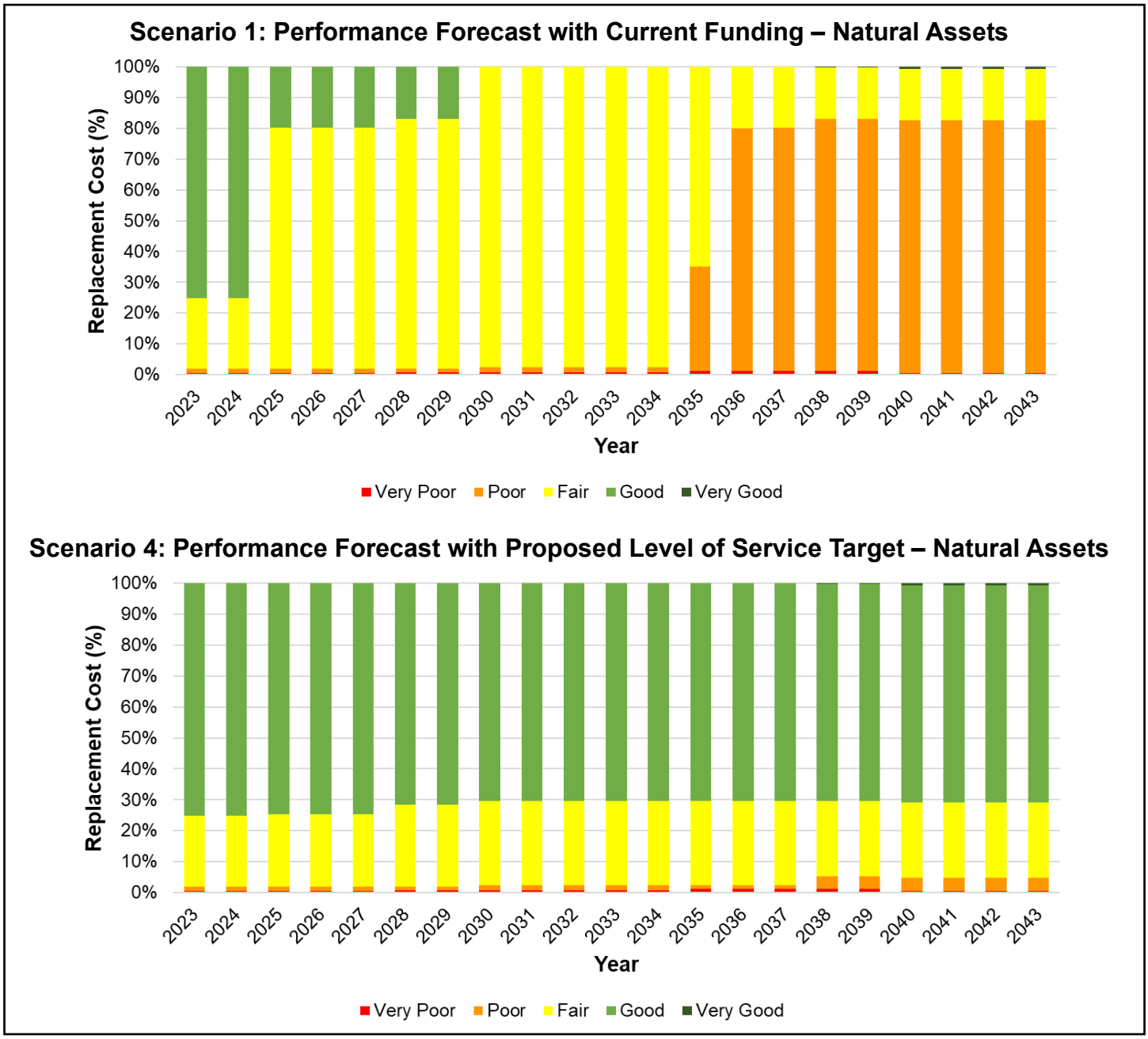


Figure 7-1. Natural Assets – Scenario Comparison (Condition)

7.2.4 Proposed Levels of Service Targets

When taking into consideration the overall current asset condition and CLOS, along with the risks associated with the various LOS scenarios, the PLOS chosen for Natural Assets infrastructure is to maintain an average asset condition of 'Good' which is achieved in Scenario 4. CLOS and PLOS values are captured for this metric in Table 7-2.

Table 7-2. Natural Assets – Corporate Levels of Service

LOS: Metric Description	Current (2024 AMP) Performance (CLOS)	Proposed Target (PLOS)	Proposed Change
Average Asset Condition weighted by CRV for Natural Assets Infrastructure Assets	Good	Good	NO CHANGE

7.2.5 The Average Annual Funding Gap Required to Achieve the PLOS

The Average Annual Funding Gap Required to Achieve the PLOS is calculated by comparing the forecasted total lifecycle activity costs under the PLOS Scenario (Scenario 4) against the Current Funding (Scenario 1). Similar to the analysis prepared in the 2024 AMP, the gap also considers Outstanding Infrastructure Needs in its calculation, which was included in the 2024 expenditure amount. Outstanding Infrastructure Needs represent the outstanding renewal, rehabilitation and replacement activities that have been identified and deemed necessary but have not yet been completed due to budget constraints and other limitations.

The recommended PLOS scenario shows that an average annual investment of $580 thousand, incremental to the approved funding provided for in the 2024 10-year Capital Plan, would be required to maintain overall asset condition as ‘Good’ and would see the percentage of assets in ‘Good to Very Good’ condition increasing by 60%. The percent increase in condition is much larger here than in other chapters, this is a function two factors in the scenario model. The first is that 74% of the current tree inventory have the same EUL and are currently in the same condition (Good), therefore condition of this 74% of tree assets decrease at the same time causing a significant decrease in overall condition at the same intervals throughout the 20-year model and this result is illustrated in Scenario 1. The second factor is derived from how the renewal strategy was specifically developed for trees which resulted in a slight improvement in the overall condition each year through the scenario and this result is illustrated in Scenario 4. The net result of these two factors is what results in the 60% increase in condition improvement when comparing both scenarios. The breakdown of asset condition under the Current Funding Scenario and PLOS Scenario and the associated investments is shown in Table 7-3.

Table 7-3. Natural Assets – Scenario Comparison Data

Scenario Data	Current Funding (Scenario 1)	PLOS (Scenario 4)
Average Annual Budget/Cost of the Scenario	$5,217,944	$5,797,727
Average Percent of Assets in ‘Good to Very Good’ Condition (Based on CRV) over the 20-year Scenario	12%	72%
Average Annual Funding Gap Required to Achieve the PLOS	N/A	$579,784

7.3 PLOS Infrastructure Gap Considerations

Administration conducted an impact analysis of the anticipated funding sources that may be leveraged to address the PLOS funding gap for Natural Assets infrastructure. Key aspects that were considered when determining an appropriate PLOS target for this asset portfolio that balances affordability and achievability included:

- When considering the modeled forecasts, it appears as though current funding for the Natural Shorewall assets is adequate.
- Additional funding for trees is required to support the renewal efforts to address trees that are in poor condition are addressed.

The Financial Strategy (Chapter 16) addresses the funding gap for Natural Assets infrastructure, consolidated with all asset categories. It identifies potential solutions for the City to bridge this gap and ensure long-term financial sustainability. A key recommendation is to gradually increase financial contributions to these assets over time. In parallel, the City should pursue non-financial strategies which include the implementation of AM best practice, improved lifecycle management, and annual reviews of service level targets to prevent the gap from widening further. These recommendations can be reviewed in section 7.3.1.

Failure to address the funding gap in a timely manner will lead to increasingly severe consequences, such as reduced service levels, higher future costs, and the accelerated decline of critical infrastructure. Proactive planning and a balanced approach between financial investment and operational efficiency are essential to mitigating these risks.

7.3.1 Risk Mitigation Strategies

The City is required by O. Reg. 588/17 to outline how the risks associated with not performing the lifecycle activities identified in the PLOS scenario will be managed. As noted, continuing to fund assets at the current level presents inherent risks. However, the City has been proactively mitigating the impacts of the infrastructure gap through various strategies. For Natural Assets infrastructure, risks are mitigated using the following strategies:

- Conducting condition assessments and studies to better prioritize high-risk assets and areas
- Increased preventative maintenance
- Leveraging partnerships to improve assets and find other sources of funding
- Leveraging community partners and encouraging public participation in maintaining public spaces
- Leveraging alternative staffing options (seasonal students)
- Standardization and economies of scale to lower overall costs of replacement
- Renting equipment instead of ownership
- Outsourcing activities to decrease risk

- Masterplan development
- Enhancing asset management practices for more efficient decision-making
- Identifying and leveraging grant opportunities
- Strengthening capital planning and public communication to manage expectations

By prioritizing these strategies, the City continues to mitigate risks related to the infrastructure gap. While efforts are ongoing to address the funding gap, these strategies will be continuously implemented and refined to manage the risks of not achieving the PLOS. The City plans to implement an asset risk strategy to improve prioritization across asset categories, ensuring critical assets receive focused attention and minimizing risks to prevent service disruptions for the community.

7.3.2 Recommendations

The 2025 AMP has identified the PLOS infrastructure gap using current and best available information however, it acknowledges that further work is needed to explore various strategies for reducing the PLOS gap. To enhance forecasting accuracy for this asset category, it is recommended that the City implement the necessary improvements outlined in the 2024 AMP.

The implementation of appropriate asset management practices is essential for the City to help ensure sustainable, efficient, and cost-effective service delivery. Developing improved asset management practices can ensure long-term financial sustainability, optimize service delivery, enable risk management and resilience, and ensure regulatory compliance, accountability, and service delivery. These actions are important to minimize the infrastructure gap by minimizing lifecycle expenditures by prolonging an asset's life. By adopting strong asset management practices to make informed, data-driven decisions that balance affordability, service levels and long-term sustainability, the City can improve service reliability, reduce costs, mitigate risks, and plan in a way that benefits the entire community.

It is recommended that the City explore options to fund the anticipated Natural Assets PLOS gap through a combination of both financial and non-financial strategies.

Table 7-4 reviews the specific recommended non-financial strategies that the City can leverage to address the infrastructure gap, prior to implementing any financial strategies. These strategies are part of AM best practice and ensure that services are provided at the lowest possible cost.

Table 7-4. Natural Assets – Recommended Strategies

Recommendation	Explanation	Potential Impact
Asset Register Improvements	Mapping and adding natural assets to the register (e.g. green infrastructure, forests, riparian areas, etc.) and ensuring processes are in place to update the inventory on an annual basis will ensure that decision makers have access to complete and accurate information.	Improved decision-making capabilities to manage inventory more efficiently.

Recommendation	Explanation	Potential Impact
Natural Assets Valuation & Costing	Developing a better understanding of the value of natural assets and the costs to maintain and grow them can help to inform decision-making around required expenditures and potential trade-offs.	Improved decision-making capabilities to manage inventory more efficiently.
Asset Risk Management Strategy	The risk posed by asset failure varies by asset type, location, supported services, etc. Understanding the risk associated with each asset and developing mitigation strategies allows for the prioritization of work based on minimizing risk.	Allow to prioritize expenditures related to high-risk assets.

7.3.3 Growth Considerations

The City has not determined any required expenditures for growth for Natural Assets. For new developments and areas of growth within the municipality, it is the responsibility of the developer to plant trees to accommodate these areas. It is recommended that the City review other areas that may accommodate more trees to continue to follow their strategic priorities of increasing the tree canopy.

Although the City currently does not track growth requirements for natural assets in the same way as other asset categories, there are efforts to grow this asset category. Currently the City spends approximately 1.17% of the current replacement value of natural assets on operations and maintenance. As the City continues to expand its natural asset portfolio, the demand for operations and maintenance is also expected to increase. Operations and maintenance are important for natural assets because they help ensure these assets continue to deliver their intended environmental, social and economic benefits over the long term, and to avoid risks associated with poorly maintained assets.

8 Parks

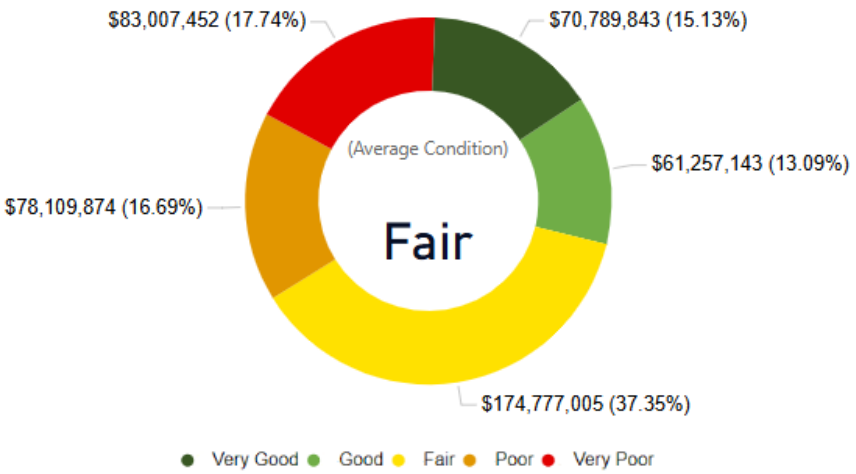
8.1 Current State of the Infrastructure for the Asset Portfolio

2024 Replacement Value	
$467.9M	
2024 AMP Average Asset Condition	**2024 AMP CRV in 'Good to Very Good' Condition**
Fair	28.2%

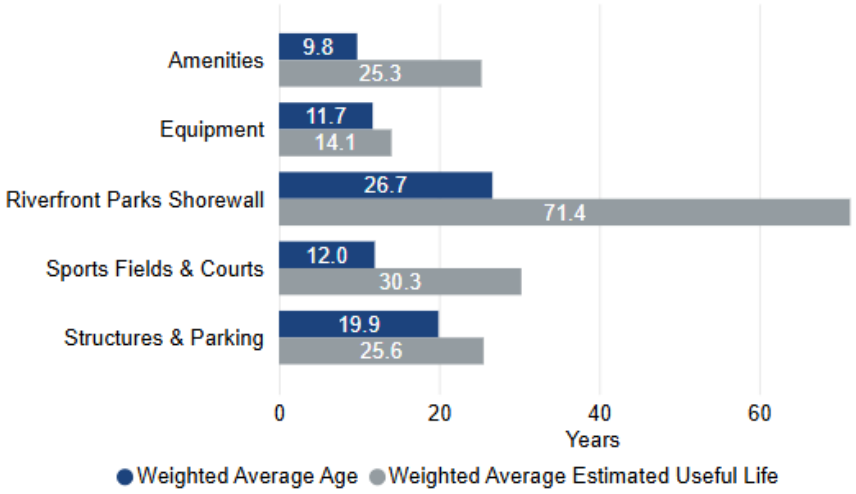
The City's Park assets encompass a wide range of natural and built features within public parks which contribute to the quality of life and well-being of residents and visitors in the community. Park infrastructure assets included in this category are built infrastructure contained within parks. This asset category includes:

- Amenities: Benches, Bike Facilities, Community Gardens, Dog Parks, Lights, Maintained Recreation Trails, Ornamental and Drinking Fountains, Picnic Shelters, Playgrounds, Skateboard Parks, and Splash Pads
- Equipment: Off-road Equipment, and Other Equipment
- Riverfront Parks Shorewall assets
- Sports Fields & Court assets
- Structures & Parking assets

2024 Asset Condition Profile based on CRV



Average Age



Infrastructure Gap & Anticipated Growth

Average Annual Infrastructure Gap to Maintain Current Level of Service	Average Annual Infrastructure Gap for Proposed Level of Service	Average Annual Capital Growth Expenditures
$10.9M	$11.8	$1.9M

8.2 Levels of Service

The levels of service information in this section are based on the data brought forward under the approved City of Windsor 2024 Corporate Asset Management Plan (2024 AMP). This section will discuss two distinct types of levels of service metrics - the Current Levels of Service (CLOS) metrics which represent how the portfolio's infrastructure assets are performing today; and the Proposed Levels of Service (PLOS) metrics which represent a desired future performance goal that the City feels is appropriate in consideration of affordability, achievability, sustainability and risk to the levels of service provided by the assets to the residents of the City.

8.2.1 Level of Service Statement

Parks infrastructure enables the City to provide overall beautification, active lifestyle and well-being services to its residents and visitors. Parks services help engage residents and visitors of all ages and abilities to improve quality of life and contribute to healthy and safe neighbourhoods.

8.2.2 Current Levels of Service

Level of Service (LOS) metrics are a key component of the City'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 CLOS and the development of PLOS.

Under the Parks chapter of the 2024 AMP, the City reported on the current performance for seven LOS metrics that were developed by key staff responsible for assets in the Parks Infrastructure asset portfolio. For full details on the development of the 2024 AMP LOS metrics, refer to section 8.2 of the approved City of the 2024 AMP. The City-defined metrics provide valuable insight into the current performance of their associated assets and support the LOS they provide. These City-defined LOS will continue to be monitored as supporting Key Performance Indicator (KPI) metrics for each asset portfolio. While proposed targets are not required to be set for KPI metrics, they do provide valuable information and insight into the efficacy of the strategies being implemented to support the asset portfolio's PLOS metric being brought forward under this 2025 AMP. The current performance for all KPIs (see Appendix G, Table G-7) will be reported annually and should be taken into consideration when setting future PLOS targets.

8.2.3 Methodology of Establishing the Proposed Levels of Service

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. In order to clearly understand the impact in 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 LCM scenarios, which modeled cost of condition over a 20-year forecast period, include:

- **Current Funding (Scenario 1):** This model considered the impact to the overall performance of the assets over the forecast period should the asset portfolio continue to be funded as planned in the approved 2024 10-year Capital Budget.
- **Maintain Current Performance (CLOS) (Scenario 2):** This model considered the unconstrained cost over the forecast period to maintain the asset portfolio's current (2024 AMP) performance (i.e. condition) based on expert developed/planned lifecycle activities.
- **Infrastructure Needs as Per Lifecycle Strategies (Scenario 3):** This model considered the cost over the forecast period to perform the planned rehabilitation, renewals, and replacements as scheduled per the lifecycle strategy models developed for each sub-segment of the asset portfolio to maintain assets so that they are able to deliver their intended LOS.

For full details on the development of these scenarios, refer to section 8.3 and section 8.4 of the 2024 AMP.

The City has developed a Level of Service (LOS) metric for each asset category, known as the 'Average Overall Asset Condition Weighted by CRV,' which is calculated by weighting the average condition of all assets in the category by their replacement value over the forecast period. This approach smooths out annual fluctuations in condition, providing a more accurate representation of the assets' long-term outlook. Through the condition profiles provided in this report, expected peaks and valleys in asset condition are representative of assets going through their typical lifecycle stages ('Very Good' at the beginning of life, and 'Very Poor' near the end of life).

All LOS and KPI metrics established in this 2025 report will be captured and reported annually to provide updates on the current status of asset performance. Over time, this will provide a data set from which the City will be able to identify performance trends across the asset portfolio. The City intends to conduct a full assessment of the PLOS targets in the years leading up to the next regulated publication of the AMP, which is currently mandated for every 5 years. Regular review and monitoring of both the PLOS targets and related KPI metrics will help to ensure that appropriate asset management practices are being implemented and followed in an effort to meet stated service needs. The LCM scenarios, the LOS metrics, and the KPI metrics were taken into account when establishing the PLOS metric with consideration given to the risks affecting long-term sustainability, as outlined below.

8.2.3.1 Assessing Risks Associated with PLOS Options to Long Term Sustainability

Using the information provided in the afore-mentioned scenarios, an assessment of risk, asset performance, financial impact, level of sustainability and alternate life cycle activities that could (or would) need to be undertaken was developed in order to achieve a level of service that was: (1) reduced, (2) maintained, or (3) increased when compared to the current level of service offered by Parks infrastructure assets. The results, summarized in Table 8-1, were developed by key asset stakeholders and reviewed by the Corporate Leadership Team (CLT) in a workshop lead by Asset Planning and the consultant (GEI). The data was assessed in its totality, with further consideration given to the City's ability to support internal process changes as well as financial and non-financial strategies to support the PLOS targets that were ultimately set in this workshop. The identification

and assessment of the scenario risks noted below played a critical role in the assessment of both CLOS and in the establishing of PLOS for each asset category.

Table 8-1. Parks – Risk Assessment of the Level of Service Scenarios

Risks of Reducing CLOS (Scenario 1)	Risks of Maintaining CLOS (Scenario 2)	Risks of Increasing CLOS (Scenario 3)
• Potential loss in services/programs provided to residents (Parks, Sports Fields) • Potential loss of funding, partnerships, business if service levels decrease • Increased risk of not meeting regulations • Increased risk of litigation • Reputational risks to the City • Inability to keep up with growth or to meet capacity needs • Increased risk of higher operational costs to keep assets operational as asset conditions decrease • Higher than anticipated costs for reactionary maintenance • Higher future costs (inflation, etc.)	• Similar risks as Reducing CLOS, but to a lesser degree • Remaining in reactionary vs. planned maintenance and rehab/replacement activities • Challenges in completing all the large volume of work under this scenario with current staff/contractor availability • May not be most cost effective in the long-term • Forecasts may be understated	• Increased short term cost to the tax/rate payer • Additional staff/operational needs are required to implement the increase • Forecasts may be understated, or overstated

8.2.3.2 Proposed Level of Service (Scenario 4)

In establishing the PLOS target for Parks infrastructure assets, a fourth Scenario was developed to model the estimated costs required to support select renewal, rehabilitation and replacement lifecycle activities. Administration conducted their analysis by including an assessment of the forecast models from Scenarios 1, 2 and 3 against the variance in associated risk identified by staff and Subject Matter Experts. The impact to the condition of the Parks infrastructure assets under this scenario is provided in Figure 8-1 which compares the condition of the assets in the City's Current Funding Scenario (Scenario 1) that was brought forward under the 2024 AMP to the expected condition under the PLOS (Scenario 4). The PLOS scenario (Scenario 4) provides an average percent of assets (based on CRV) of 45% in 'Good to Very Good' condition over the 20-year forecast, in comparison to 17% under the Current Funding Scenario (Scenario 1). Although the asset category remains on average in Fair condition by the end of the scenario, with 45% in good to very good condition, it is nearing an average of Good condition for this asset category. Figure 8-1 shows the significant

improvement to the condition profiles of Parks assets under the proposed scenario compared to the current funding scenario.

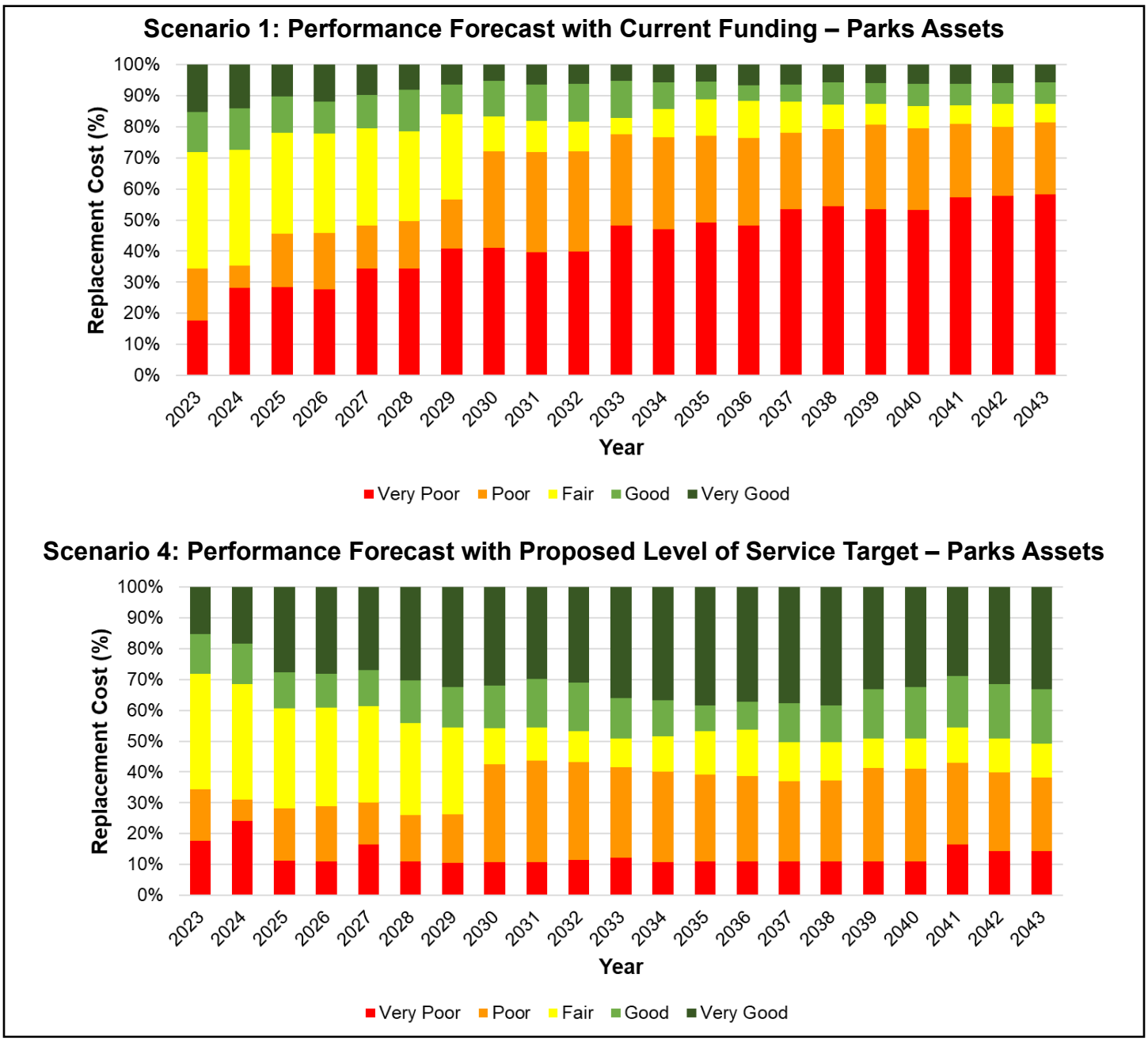


Figure 8-1. Parks – Scenario Comparison (Condition)

8.2.4 Proposed Level of Service Targets

When taking into consideration the overall current asset condition and CLOS, along with the risks associated with the various LOS scenarios, the PLOS chosen for the Parks infrastructure assets is to maintain an average asset condition of 'Fair', which is achieved in Scenario 4. CLOS and PLOS values are captured for this metric in which Table 8-2.

Table 8-2. Parks – Corporate Levels of Service

LOS: Metric Description	Current (2024 AMP) Performance (CLOS)	Proposed Target (PLOS)	Proposed Change
Average Asset Condition weighted by CRV for Parks Infrastructure Assets	Fair	Fair	NO CHANGE

8.2.5 The Average Annual Funding Gap Required to Achieve the PLOS

The Average Annual Funding Gap Required to Achieve the PLOS is calculated by comparing the forecasted total lifecycle activity costs under the PLOS Scenario (Scenario 4) against the Current Funding (Scenario 1). Similar to the analysis prepared in the 2024 AMP, the gap also considers Outstanding Infrastructure Needs in its calculation, which was included in the 2024 expenditure amount. Outstanding Infrastructure Needs represent the outstanding renewal, rehabilitation and replacement activities that have been identified and deemed necessary but have not yet been completed due to budget constraints and other limitations.

The recommended PLOS scenario shows that an average annual investment of $11.8 million, incremental to the approved funding provided for in the 2024 10-year Capital Plan, would be required to maintain overall asset condition as ‘Fair’ and would see the percentage of assets in ‘Good to Very Good’ condition increase by 28%. The breakdown of asset condition under the Current Funding Scenario and PLOS Scenario and the associated investments is shown in Table 8-3.

Table 8-3. Parks – Scenario Comparison Data

Scenario Data	Current Funding (Scenario 1)	PLOS (Scenario 4)
Average Annual Budget/Cost of the Scenario	$30,149,344	$41,982,074
Average Percent of Assets in ‘Good to Very Good’ Condition (Based on CRV) over the 20-year Scenario	17%	45%
Average Annual Funding Gap Required to Achieve the PLOS	N/A	$11,832,730

8.3 PLOS Infrastructure Gap Considerations

Administration conducted an impact analysis of the anticipated funding sources that may be leveraged to address the PLOS funding gap for Parks infrastructure assets. Key aspects that were considered when determining an appropriate PLOS target for this asset portfolio that balances affordability and achievability included:

- The nature of Parks assets is that their condition declines rapidly in comparison to most other infrastructure assets considered in this AMP. It is expected therefore, that additional funding is

required for renewal and replacement activities for these assets if current overall condition is to be maintained in 'Fair' condition over the forecast period.

- The Structures & Parking assets however, already in Poor condition, hold a high CRV and while increasing the condition of these assets is ideal, the cost will also be high. The City should give further consideration to the desired level of service that these assets should deliver to better understand the level of funding to provide to these assets.

The Financial Strategy (Chapter 16) addresses the funding gap for Parks assets, consolidated with all asset categories. It identifies potential solutions for the City to bridge this gap and ensure long-term financial sustainability. A key recommendation is to gradually increase financial contributions to these assets over time. In parallel, the City should pursue non-financial strategies which include the implementation of AM best practice, improved lifecycle management, and annual reviews of service level targets to prevent the gap from widening further. These recommendations can be reviewed in section 8.3.1.

Failure to address the funding gap in a timely manner will lead to increasingly severe consequences, such as reduced service levels, higher future costs, and the accelerated decline of critical infrastructure. Proactive planning and a balanced approach between financial investment and operational efficiency are essential to mitigating these risks.

8.3.1 Risk Mitigation Strategies

The City is required by O. Reg. 588/17 to outline how the risks associated with not performing the lifecycle activities identified in the PLOS scenario will be managed. As noted, continuing to fund assets at the current level presents inherent risks. However, the City has been proactively mitigating the impacts of the infrastructure gap through various strategies. For Parks infrastructure assets, risks are mitigated using the following strategies:

- 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
- Increased preventative maintenance
- Leveraging partnerships to improve assets and find other sources of funding
- Leveraging community partners and encouraging public participation in maintaining public spaces
- Leveraging alternative staffing options (seasonal students)
- Standardization and economies of scale to lower overall costs of replacement
- Renting equipment instead of ownership
- Finding spare parts to fix assets to keep assets operating longer than recommended useful life

- Outsourcing activities to decrease risk
- Enhancing asset management practices for more efficient decision-making
- Identifying and leverage grant opportunities
- Utilizing local improvement opportunities, including tax collection, to fund critical projects
- Strengthening capital planning and public communication to manage expectations
- Promoting community education and encouraging resident participation
- Proactively conducting studies and preparing for project to take advantage of future funding opportunities.

By prioritizing these strategies, the City continues to mitigate risks related to the infrastructure gap. While efforts are ongoing to address the funding gap, these strategies will be continuously implemented and refined to manage the risks of not achieving the PLOS. The City plans to implement an asset risk strategy to improve prioritization across asset categories, ensuring critical assets receive focused attention and minimizing risks to prevent service disruptions for the community.

8.3.2 Recommendations

The 2025 AMP has identified the PLOS infrastructure gap using current and best available information however, it acknowledges that further work is needed to explore various strategies for reducing the PLOS gap. To enhance forecasting accuracy for this asset category, it is recommended that the City implement the necessary improvements outlined in the 2024 AMP.

The implementation of appropriate asset management practices is essential for the City to help ensure sustainable, efficient, and cost-effective service delivery. Developing improved asset management practices can ensure long-term financial sustainability, optimize service delivery, enable risk management and resilience, and ensure regulatory compliance, accountability, and service delivery. These actions are important to minimize the infrastructure gap by minimizing lifecycle expenditures by prolonging an asset's life. By adopting strong asset management practices to make informed, data-driven decisions that balance affordability, service levels and long-term sustainability, the City can improve service reliability, reduce costs, mitigate risks, and plan in a way that benefits the entire community.

It is recommended that the City explore options to fund the anticipated Parks infrastructure assets PLOS gap through a combination of both financial and non-financial strategies.

Table 8-4 reviews the specific recommended non-financial strategies that the City can leverage to address the infrastructure gap, prior to implementing any financial strategies. These strategies are part of AM best practice and ensure that services are provided at the lowest possible cost.

Table 8-4. Parks – Recommended Strategies

Recommendation	Explanation	Potential Impact
Asset Register Improvements	Adding all Parks assets (e.g. drainage / sewers) to the asset register will ensure that decision makers have access to complete and accurate information. In addition, maintaining a single registry location for all service areas will allow for alignment of related asset classes (e.g. between right-of-way sidewalks and maintained recreation trails in parks).	Improved decision-making capabilities to manage inventory more efficiently.
Leverage Computerized Maintenance Management System (CMMS) Data	CMMS improves asset management by providing accurate, real-time data that enhances decision-making, optimizes maintenance strategies, and extends asset life. By leveraging the CMMS data, the City can improve asset tracking and condition monitoring, develop data-driven maintenance strategies and support preventative maintenance programs.	Ability to optimize allocation of available funding.
Develop Data Management Processes and Annual Review of Register, Condition, and Replacement Values	Develop appropriate processes to ensure asset register remains up to date, in an appropriate system that allows staff within the organization to access the information required to make decisions on assets. Develop appropriate processes to complete an annual data review to update condition, replacement costs, for all assets.	Improved forecast reliability.
Asset Risk Management Strategy	The risk posed by asset failure varies by asset type, location, supported services, etc. Understanding the risk associated with each asset and developing mitigation strategies allows for the prioritization of work based on minimizing risk.	Allow to prioritize expenditures related to high-risk assets.

8.3.3 Growth Considerations

In addition to addressing the infrastructure gap noted above, it is important to consider how growth impacts ongoing Operations and Maintenance (O&M) costs. Growth occurs through increases to the asset base as a result of population growth, increased economic activity, and through the addition and expansion of new or existing services. While the capital costs associated with infrastructure growth are integrated into the City's capital budget, and typically funded through development charges, the long-term operational impacts of these new assets must be considered as well.

Currently, the City spends approximately 4.5% of the current replacement value of Parks infrastructure assets on O&M. Figure 8-2 illustrates the projected O&M spending alongside anticipated growth over the next 10 years. This growth has been factored into the future replacement value to estimate the additional O&M costs needed to maintain the current spending level of 4.5%.

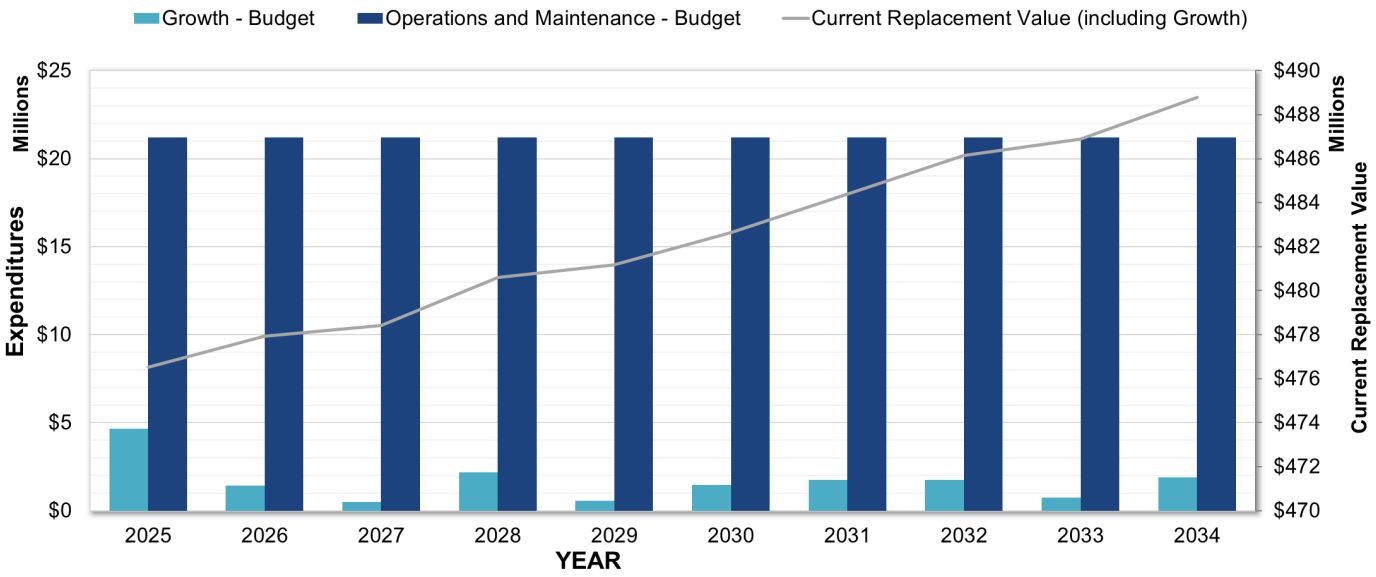


Figure 8-2. Parks – Operations & Maintenance Considerations for Growth

Although the projection shows an average annual shortfall in O&M funding of approximately $609 thousand, this is relatively aligned with the average annual O&M budget needed to sustain the 4.5% investment in operations and maintenance. The City should continue to track and update O&M requirements related to growth and further assess whether current spending is sufficient to keep assets in a state where the intended LOS can be delivered. As infrastructure ages, there will be increasing pressure to carry out appropriate maintenance and is imperative to extend the life of existing assets to provide assets at the lowest possible costs.

9 Public Transportation

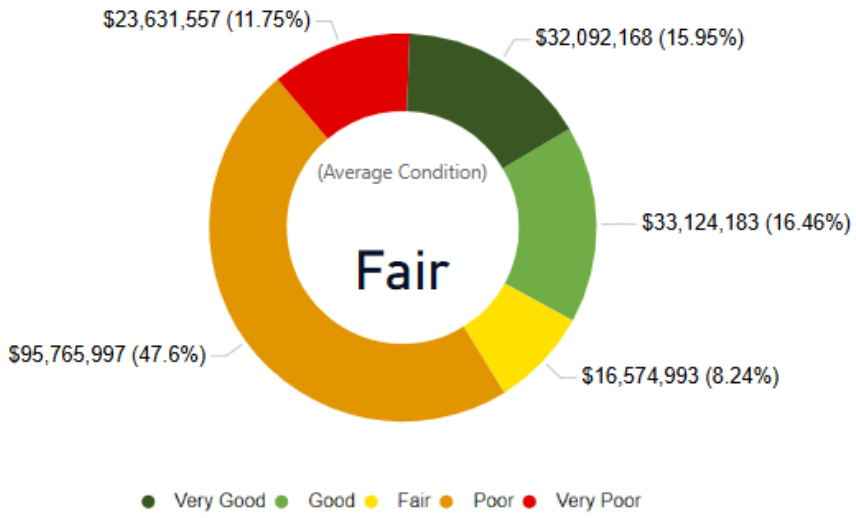
9.1 Current State of the Infrastructure for the Asset Portfolio

2024 Replacement Value	
$201.2M	
2024 AMP Average Asset Condition	**2024 AMP CRV in 'Good to Very Good' Condition**
Fair	32.4%

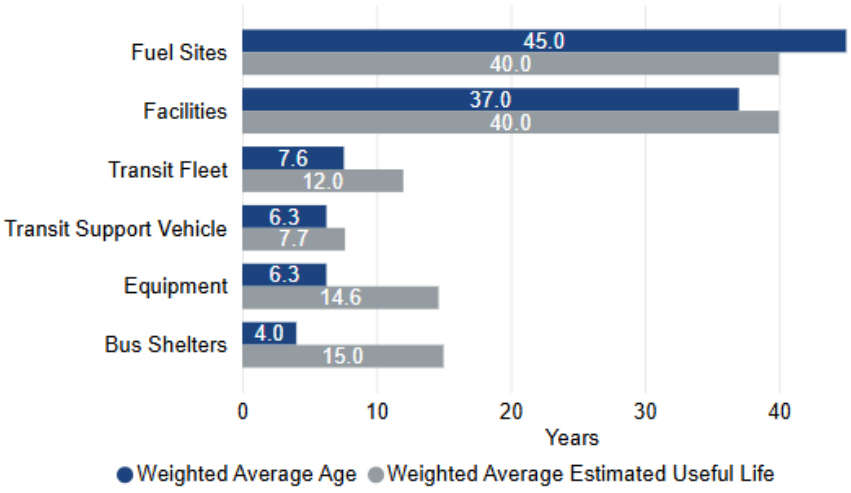
Public transportation is an essential component of the urban infrastructure in the City of Windsor and provides an accessible, efficient, and sustainable means of transportation for residents and visitors alike. Public Transportation infrastructure assets encompass a wide range of physical resources owned and operated by the City to provide public transportation services. These assets are vital for the efficient functioning of the transit system to ensure the mobility of residents and visitors. The City's Public Transportation assets are operated by Transit Windsor. This asset category includes:

- Transit Windsor assets: Bus Shelters, Equipment, Facilities, Fuel Sites, Transit Fleet, and Transit Support Vehicles

2024 Asset Condition Profile based on CRV



Average Age



Infrastructure Gap & Anticipated Growth

Average Annual Infrastructure Gap to Maintain Current Level of Service	Average Annual Infrastructure Gap for Proposed Level of Service	Average Annual Capital Growth Expenditures
$6.8M	$6.8M	$130K

9.2 Levels of Service

The levels of service information in this section are based on the data brought forward under the approved City of Windsor 2024 Corporate Asset Management Plan (2024 AMP). This section will discuss two distinct types of levels of service metrics - the Current Levels of Service (CLOS) metrics which represent how the portfolio's infrastructure assets are performing today; and the Proposed Levels of Service (PLOS) metrics which represent a desired future performance goal that the City feels is appropriate in consideration of affordability, achievability, sustainability and risk to the levels of service provided by the assets to the residents of the City.

9.2.1 Level of Service Statement

Public Transportation infrastructure enables the City to provide a reliable, safe and convenient mobility service option that is accessible to all. Transit Windsor provides services to residents and businesses in the community and connects Windsor to surrounding communities.

9.2.2 Current Levels of Service

Level of Service (LOS) metrics are a key component of the City'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 CLOS and the development of PLOS.

Under the Public Transportation chapter of the 2024 AMP, the City reported on the current performance for fifteen LOS metrics that were developed by key staff responsible for assets in the Public Transportation infrastructure asset portfolio. For full details on the development of the 2024 AMP LOS metrics, refer to section 9.2 of the 2024 AMP. The City-defined metrics provide valuable insight into the current performance of their associated assets and support the LOS they provide. These City-defined LOS will continue to be monitored as supporting Key Performance Indicator (KPI) metrics for each asset portfolio. While proposed targets are not required to be set for KPI metrics, they do provide valuable information and insight into the efficacy of the strategies being implemented to support the asset portfolio's PLOS metric being brought forward under this 2025 AMP. The current performance for all KPIs (see Appendix G, Table G-8) will be reported annually and should be taken into consideration when setting future PLOS targets.

9.2.3 Methodology of Establishing the Proposed Levels of Service

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. In order to clearly understand the impact in 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 LCM scenarios, which modeled cost of condition over a 20-year forecast period, include:

- **Current Funding (Scenario 1):** This model considered the impact to the overall performance of the assets over the forecast period should the asset portfolio continue to be funded as planned in the approved 2024 10-year Capital Budget.
- **Maintain Current Performance (CLOS) (Scenario 2):** This model considered the unconstrained cost over the forecast period to maintain the asset portfolio's current (2024 AMP) performance (i.e. condition) based on expert developed/planned lifecycle activities.
- **Infrastructure Needs as Per Lifecycle Strategies (Scenario 3):** This model considered the cost over the forecast period to perform the planned rehabilitation, renewals, and replacements as scheduled per the lifecycle strategy models developed for each sub-segment of the asset portfolio to maintain assets so that they are able to deliver their intended LOS.

For full details on the development of these scenarios, refer to section 9.3 and section 9.4 of the 2024 AMP.

The City has developed a Level of Service (LOS) metric for each asset category, known as the 'Average Overall Asset Condition Weighted by CRV,' which is calculated by weighting the average condition of all assets in the category by their replacement value over the forecast period. This approach smooths out annual fluctuations in condition, providing a more accurate representation of the assets' long-term outlook. Through the condition profiles provided in this report, expected peaks and valleys in asset condition are representative of assets going through their typical lifecycle stages ('Very Good' at the beginning of life, and 'Very Poor' near the end of life).

All LOS and KPI metrics established in this 2025 report will be captured and reported annually to provide updates on the current status of asset performance. Over time, this will provide a data set from which the City will be able to identify performance trends across the asset portfolio. The City intends to conduct a full assessment of the PLOS targets in the years leading up to the next regulated publication of the AMP, which is currently mandated for every 5 years. Regular review and monitoring of both the PLOS targets and related KPI metrics will help to ensure that appropriate asset management practices are being implemented and followed in an effort to meet stated service needs. The LCM scenarios, the LOS metrics, and the KPI metrics were taken into account when establishing the PLOS metric with consideration given to the risks affecting long-term sustainability, as outlined below.

9.2.3.1 Assessing Risks Associated with PLOS Options to Long Term Sustainability

Using the information provided in the afore-mentioned scenarios, an assessment of risk, asset performance, financial impact, level of sustainability and alternate life cycle activities that could (or would) need to be undertaken was developed in order to achieve a level of service that was: (1) reduced, (2) maintained, or (3) increased when compared to the current level of service offered by Public Transportation infrastructure assets. The results, summarized in Table 9-1, were developed by key asset stakeholders and reviewed by the Corporate Leadership Team (CLT) in a workshop lead by Asset Planning and the consultant (GEI). The data was assessed in its totality, with further consideration given to the City's ability to support internal process changes as well as financial and non-financial strategies to support the PLOS targets that were ultimately set in this workshop. The

identification and assessment of the scenario risks noted below played a critical role in the assessment of both CLOS and in the establishing of PLOS for each asset category.

Table 9-1. Public Transportation – Risk Assessment of the Level of Service Scenarios

Risks of Reducing CLOS (Scenario 1)	Risks of Maintaining CLOS (Scenario 2)	Risks of Increasing CLOS (Scenario 3)
• Increased service disruption due to decreasing asset conditions • Risk of reduction in ridership due to service disruptions and poor asset performance • Potential loss in services provided to residents • Potential loss of funding, partnerships, business if service levels decrease • Decrease in compliance with environmental targets (inability to update fleet to new fuel technologies) • Increased risk of not meeting regulations • Increased risk of litigation • Reputational risks to the City • Inability to keep up with growth or to meet capacity needs • Increased risk of higher operational costs to keep assets operational as asset conditions decrease • Higher than anticipated costs for reactionary maintenance • Higher future costs (inflation, etc.)	• Similar risks as Reducing CLOS, but to a lesser degree • Remaining in reactionary vs. planned maintenance and rehab/replacement activities • May not be most cost effective in the long-term • Forecasts may be understated	• Increased short term cost to the tax/rate payer • Additional staff/operational needs are required to implement the increase • Forecasts may be understated, or overstated

9.2.3.2 Proposed Level of Service (Scenario 4)

In establishing the PLOS target for Public Transportation infrastructure assets, a fourth Scenario was developed to model the estimated costs required to support select renewal, rehabilitation and replacement lifecycle activities. Administration conducted their analysis by including an assessment of the forecast models from Scenarios 1, 2 and 3 against the variance in associated risk identified by

staff and Subject Matter Experts. The impact to the condition of the Public Transportation infrastructure assets under this scenario is provided in Figure 9-1, which compares the condition of the assets in the City's Current Funding Scenario (Scenario 1) that was brought forward under the 2024 AMP to the expected condition under the PLOS (Scenario 4). The PLOS scenario (Scenario 4) provides an average percent of assets (based on CRV) of 51% in 'Good to Very Good' condition over the 20-year forecast, in comparison to 18% under the Current Funding Scenario (Scenario 1).

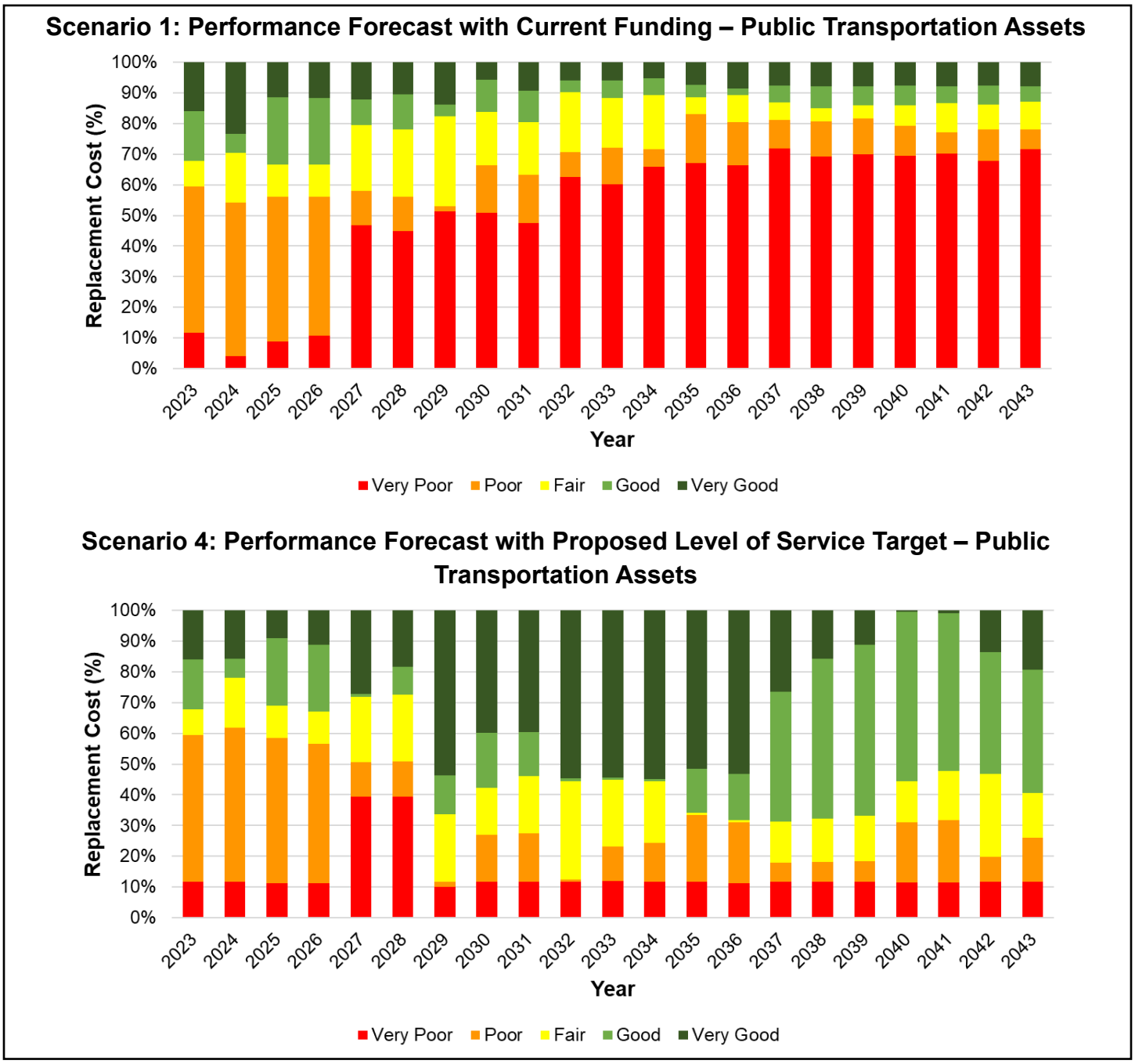


Figure 9-1. Public Transportation – Scenario Comparison (Condition)

9.2.4 Proposed Levels of Service Targets

When taking into consideration the overall current asset condition and CLOS, along with the risks associated with the various LOS scenarios, the PLOS chosen for the Public Transportation infrastructure assets is to increase the average asset condition to 'Good' which is achieved in Scenario 4. CLOS and PLOS values are captured for this metric in Table 9-2.

Table 9-2. Public Transportation – Corporate Levels of Service

LOS: Metric Description	Current (2024 AMP) Performance (CLOS)	Proposed Target (PLOS)	Proposed Change
Average Asset Condition weighted by CRV for Public Transportation Infrastructure Assets	Fair	Good	INCREASE

9.2.5 The Average Annual Funding Gap Required to Achieve the PLOS

The Average Annual Funding Gap Required to Achieve the PLOS is calculated by comparing the forecasted total lifecycle activity costs under the PLOS Scenario (Scenario 4) against the Current Funding (Scenario 1). Similar to the analysis prepared in the 2024 AMP, the gap also considers Outstanding Infrastructure Needs in its calculation, which was included in the 2024 expenditure amount. Outstanding Infrastructure Needs represent the outstanding renewal, rehabilitation and replacement activities that have been identified and deemed necessary but have not yet been completed due to budget constraints and other limitations.

The recommended PLOS scenario shows that an average annual investment of $6.8 million, incremental to the approved funding provided for in the 2024 10-year Capital Plan, would be required to increase overall asset condition to 'Good' and would see the percentage of assets in 'Good to Very Good' condition increase by 33%. The breakdown of asset condition under the Current Funding Scenario and PLOS Scenario and the associated investments is shown in Table 9-3.

Table 9-3. Public Transportation – Scenario Comparison Data

Scenario Data	Current Funding (Scenario 1)	PLOS (Scenario 4)
Average Annual Budget/Cost of the Scenario	$48,620,970	$55,460,927
Average Percent of Assets in 'Good to Very Good' Condition (Based on CRV) over the 20-year Scenario	18%	51%
Average Annual Funding Gap Required to Achieve the PLOS	N/A	$6,839,957

9.3 PLOS Infrastructure Gap Considerations

Administration conducted an impact analysis of the anticipated funding sources that may be leveraged to address the PLOS funding gap for Public Transportation infrastructure assets. Key aspects that were considered when determining an appropriate PLOS target for this asset portfolio that balances affordability and achievability included:

- Public Transportation assets are currently being supported by the Investing in Canada Infrastructure Plan (ICIP) funding to complete upgrades to the Facility, the equipment and the fleet. It can therefore reasonably be expected that condition will increase under the current funding available to these assets.
- The PLOS model contemplates renewal activities for the Garage. These should be taken under consideration against the future plans for the Garage before committing to an additional funding of $6.8 million to meet the PLOS.

The Financial Strategy (Chapter 16) addresses the funding gap for Public Transportation infrastructure assets, consolidated with all asset categories. It identifies potential solutions for the City to bridge this gap and ensure long-term financial sustainability. A key recommendation is to gradually increase financial contributions to these assets over time. In parallel, the City should pursue non-financial strategies which include the implementation of AM best practice, improved lifecycle management, and annual reviews of service level targets to prevent the gap from widening further. These recommendations can be reviewed in section 9.3.1.

Failure to address the funding gap in a timely manner will lead to increasingly severe consequences, such as reduced service levels, higher future costs, and the accelerated decline of critical infrastructure. Proactive planning and a balanced approach between financial investment and operational efficiency are essential to mitigating these risks.

9.3.1 Risk Mitigation Strategies

The City is required by O. Reg. 588/17 to outline how the risks associated with not performing the lifecycle activities identified in the PLOS scenario will be managed. As noted, continuing to fund assets at the current level presents inherent risks. However, the City has been proactively mitigating the impacts of the infrastructure gap through various strategies. For Public Transportation infrastructure assets, risks are mitigated using the following strategies:

- Use of spare buses to cover down time as a result of breakdowns of bus fleet
- Buying used buses (less expensive at start of life, but increased cost over time increases)
- Increased maintenance to extend life
- Review options to reduce services (frequency and number of routes)
- Fabricating parts that are obsolete to be able to keep fleet on the road
- Utilize the Transit Master Plan to assist in the rationalization of routes and service

- Preventative Maintenance Plan to develop appropriate maintenance and rehabilitation plans for specific assets to improve asset lifespan
- Reassessing and renegotiating of partnerships to ensure appropriate support from partners to accommodate the service.
- Improved condition assessments and studies to better prioritize high-risk assets and areas
- Prioritizing asset replacements based on risk assessment
- Enhancing asset management practices for more efficient decision-making
- Identifying and leverage grant opportunities
- Strengthening capital planning and public communication to manage expectations

By prioritizing these strategies, the City continues to mitigate risks related to the infrastructure gap. While efforts are ongoing to address the funding gap, these strategies will be continuously implemented and refined to manage the risks of not achieving the PLOS. The City plans to implement an asset risk strategy to improve prioritization across asset categories, ensuring critical assets receive focused attention and minimizing risks to prevent service disruptions for the community.

9.3.2 Recommendations

The 2025 AMP has identified the PLOS infrastructure gap using current and best available information however, it acknowledges that further work is needed to explore various strategies for reducing the PLOS gap. To enhance forecasting accuracy for this asset category, it is recommended that the City implement the necessary improvements outlined in the 2024 AMP.

The implementation of appropriate asset management practices is essential for the City to help ensure sustainable, efficient, and cost-effective service delivery. Developing improved asset management practices can ensure long-term financial sustainability, optimize service delivery, enable risk management and resilience, and ensure regulatory compliance, accountability, and service delivery. These actions are important to minimize the infrastructure gap by minimizing lifecycle expenditures by prolonging an asset's life. By adopting strong asset management practices to make informed, data-driven decisions that balance affordability, service levels and long-term sustainability, the City can improve service reliability, reduce costs, mitigate risks, and plan in a way that benefits the entire community.

It is recommended that the City explore options to fund the anticipated Public Transportation infrastructure assets PLOS gap through a combination of both financial and non-financial strategies.

Table 9-4 reviews the specific recommended non-financial strategies that the City can leverage to address the infrastructure gap, prior to implementing any financial strategies. These strategies are part of AM best practice and ensure that services are provided at the lowest possible cost.

Table 9-4. Public Transportation – Recommended Strategies

Recommendation	Explanation	Potential Impact
Facility-wide, Component Level Condition Assessments	Enhancing component level condition assessment data for facilities will refine expenditure forecasts for greater accuracy and help the City identify targeted areas for improvement.	Increase/Decrease to Infrastructure Gap
Implement AM System	Selecting an appropriate Asset Management System (AMS) for tracking assets and maintenance activities requires a system that is centralized, accessible, and user-friendly for both field staff and decision-makers. Priority components of a system would include asset register and inventory management, maintenance and work order management, mobile accessibility, condition assessment and lifecycle tracking, GIS integration, and reporting and decision support.	Real-time data access that will improve decision-making and more accurate analysis for AM planning.
Develop Data Management Processes and Annual Review of Register, Condition, and Replacement Values	Develop appropriate processes to ensure asset register remains up to date, in an appropriate system that allows staff within the organization to access the information required to make decisions on assets. Develop appropriate processes to complete an annual data review to update condition, replacement costs, for all assets.	Improved forecast reliability.
Computerized Maintenance Management System (CMMS)	Leverage CMMS data for fleet to enhance how decisions are made and how assets are prioritized. Implement CMMS for other assets for Public Transportation.	Improved forecasts and decision-making.

9.3.3 Growth Considerations

In addition to addressing the infrastructure gap noted above, it is important to consider how growth impacts ongoing Operations and Maintenance (O&M) costs. Growth occurs through increases to the asset base as a result of population growth, increased economic activity, and through the addition and expansion of new or existing services. While the capital costs associated with infrastructure growth are integrated into the City's capital budget, and typically funded through development charges, the long-term operational impacts of these new assets must be considered as well.

Currently, the City spends approximately 20.23% of the current replacement value of its Public Transportation infrastructure assets on O&M. Figure 9-2 illustrates the projected O&M spending alongside anticipated growth over the next 10 years. This growth has been factored into the future replacement value to estimate the additional O&M costs needed to maintain the current spending level of 20.23%.

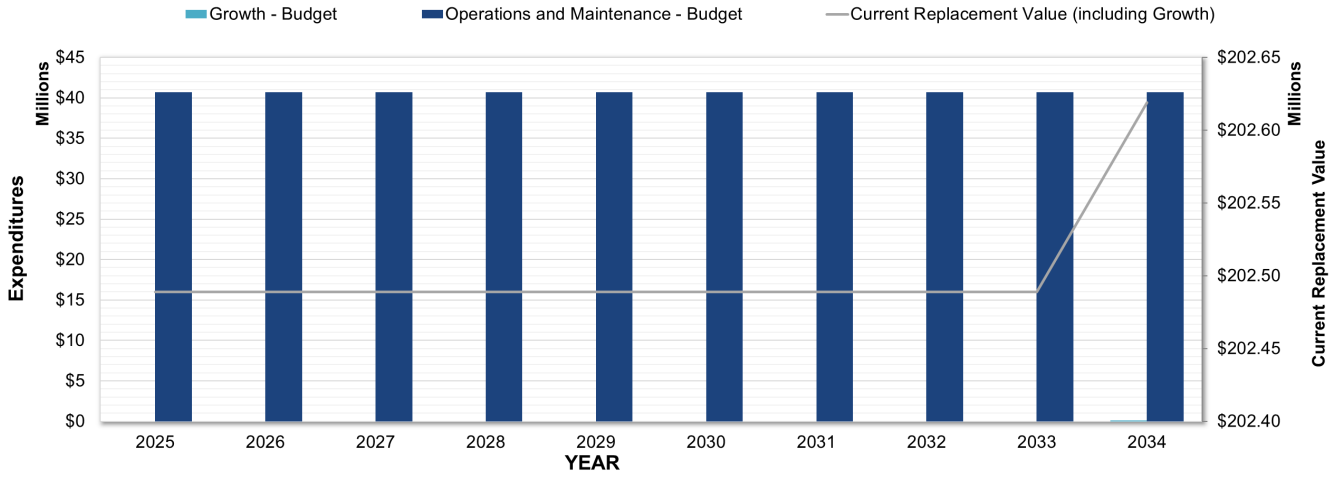


Figure 9-2. Public Transportation – Operations & Maintenance Considerations for Growth

Although the projection shows an average annual shortfall in O&M funding of approximately $265 thousand, this is relatively aligned with the average annual O&M budget needed to sustain the 20.23% investment in operations and maintenance. The City should continue to track and update O&M requirements related to growth and further assess whether current spending is sufficient to keep assets in a state where the intended LOS can be delivered. As infrastructure ages, there will be increasing pressure to carry out appropriate maintenance and is imperative to extend the life of existing assets to provide assets at the lowest possible costs.

10 City of Windsor Airport

10.1 Current State of the Infrastructure for the Asset Portfolio

2024 Replacement Value

$225.8M

2024 AMP Average Asset Condition	2024 AMP CRV in 'Good to Very Good' Condition
Fair	41.9%

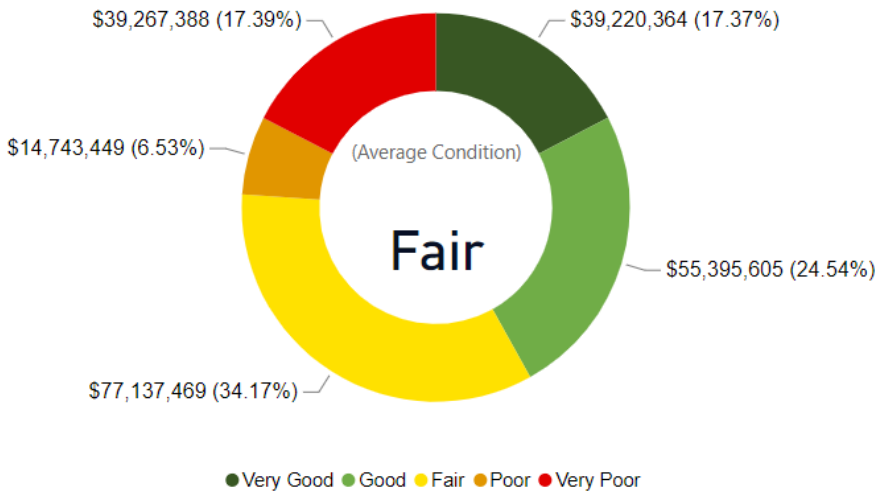
The Windsor International Airport functions as a critical asset within the region's transportation infrastructure. As the sole full-service commercial, business, and general aviation airport serving the area, it supports:

Mobility & Economic Development: facilitates the movement of people and goods, providing vital access to employment, education, healthcare, and travel to enhance regional competitiveness by connecting local businesses to national and international markets, supporting economic growth and attracting investment.

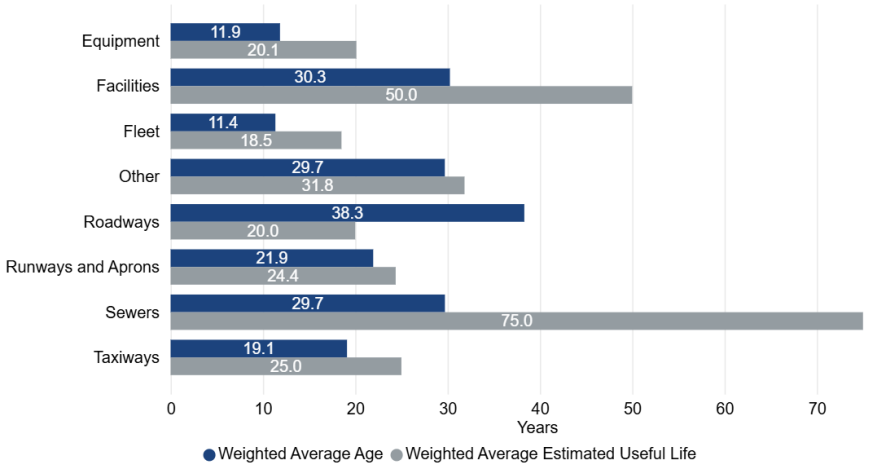
Accessibility & Connectivity: improves regional accessibility by linking communities with broader transportation networks. This connectivity is essential for supporting social inclusion, economic participation and service delivery across the region.

Safety: As a core priority, the airport's infrastructure is designed and maintained to minimize the risk of accidents and injuries, ensuring compliance with aviation safety standards and protecting both users and staff.

Asset Condition Profile based on CRV



Average Age



Infrastructure Gap & Anticipated Growth

Average Annual Infrastructure Gap to Maintain Current Level of Service	Average Annual Infrastructure Gap for Proposed Level of Service	Average Annual Capital Growth Expenditures
$6.1M	$6.1M	$0

10.2 Levels of Service

The levels of service information in this section are based on the data brought forward under the approved City of Windsor Airport 2024 Asset Management Plan (Airport 2024 AMP). This section will discuss two distinct types of levels of service metrics - the Current Levels of Service (CLOS) metrics which represent how the portfolio's infrastructure assets are performing today; and the Proposed Levels of Service (PLOS) metrics which represent a desired future performance goal that the feels are appropriate in consideration of affordability, achievability, sustainability, and risk to the levels of service provided by the assets.

10.2.1 Level of Service Statement

City of Windsor Airport infrastructure serves as a vital gateway, providing accessible travel options for both residents and visitors while also supporting the efficient movement of good and contributing to the development of stronger economic networks and activities, enhancing regional connectivity and growth.

10.2.2 Current Levels of Service

Level of Service (LOS) metrics are a key component of the City'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 CLOS and the development of PLOS.

Under the Airport 2024 AMP, the current performance was reported for seven LOS metrics that were developed by key staff responsible for assets in the Airport's infrastructure asset portfolio. For full details on the development of the 2024 AMP LOS metrics, refer to Appendix A, section 1.2, of the 2024 Airport AMP. These internally defined metrics provide valuable insight into the current performance of their associated assets, support the LOS they provide, and will continue to be monitored as supporting Key Performance Indicator (KPI) metrics for this asset portfolio. While proposed targets are not required to be set for KPI metrics, they do provide valuable information and insight into the efficacy of the strategies being implemented to support the asset portfolio's PLOS metric being brought forward under this 2025 AMP. The current performance for all KPIs (see Appendix G, Table G-9) will be reported annually and should be taken into consideration when setting future PLOS targets.

10.2.3 Methodology of Establishing the Proposed Levels of Service

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. In order to clearly understand the impact in establishing PLOS targets, a thorough review of the original work done to develop the initial LOS completed under the Airport 2024 AMP was undertaken. The lifecycle scenarios which modeled cost of condition over a 20-year forecast period, include:

- **Current Funding (Scenario 1):** This model considered the impact to the overall performance of the assets over the forecast period should the asset portfolio continue to be funded as planned in the approved 2024 10-year Capital Budget.
- **Maintain Current Performance (CLOS) (Scenario 2):** This model considered the unconstrained cost over the forecast period to maintain the asset portfolio's current (2024 AMP) performance (i.e. condition) based on expert developed/planned lifecycle activities.
- **Infrastructure Needs as Per Lifecycle Strategies (Scenario 3):** This model considered the cost over the forecast period to perform the planned rehabilitation, renewals, and replacements as scheduled per the lifecycle strategy models developed for each sub-segment of the asset portfolio to maintain assets so that they are able to deliver their intended LOS.

For full details on the development of these scenarios, refer to section 1.3 and section 1.4 of the Airport 2024 AMP.

The Airport is using the same Level of Service (LOS) metric as the City to closely align with the City's approach in analysing the forecasted model results, known as the 'Average Overall Asset Condition Weighted by CRV,' which is calculated by weighting the average condition of all assets in the portfolio by their replacement value over the forecast period. This approach smooths out annual fluctuations in condition, providing a more accurate representation of the assets' long-term outlook. Through the condition profiles provided in this report, expected peaks and valleys in asset condition are representative of assets going through their typical lifecycle stages ('Very Good' at the beginning of life, and 'Very Poor' near the end of life).

All LOS and KPI metrics established in this 2025 report will be captured and reported annually to provide updates on the current status of asset performance. Over time, this will provide a data set from which the Airport will be able to identify performance trends across the asset portfolio. The Airport intends to conduct a full assessment of the PLOS targets in the years leading up to the next regulated publication of the AMP, which is currently mandated for every 5 years. Regular review and monitoring of both the PLOS targets and related KPI metrics will help to ensure that appropriate asset management practices are being implemented and followed in an effort to meet stated service needs. The LCM scenarios, the LOS metrics, and the KPI metrics were taken into account when establishing the PLOS metric with consideration given to the risks affecting long-term sustainability, as outlined below.

10.2.3.1 Assessing Risks Associated with PLOS Options to Long Term Sustainability

Using the information provided in the afore-mentioned scenarios, an assessment of risk, asset performance, financial impact, level of sustainability and alternate life cycle activities that could (or would) need to be undertaken was developed in order to achieve a level of service that was: (1) reduced, (2) maintained, or (3) increased when compared to the current level of service offered by Airport infrastructure assets. The results, summarized in Table 10-1, were developed by key asset stakeholders and reviewed by the Corporate Leadership Team (CLT) in a workshop lead by Asset Planning and the consultant (GEI). The data was assessed in its totality, with further consideration given to the City's ability to support the financial and non-financial strategies to support the PLOS

targets that were ultimately set in this workshop. The identification and assessment of the scenario risks noted below played a critical role in the assessment of both CLOS and in the establishing of PLOS for this portfolio.

Table 10-1. City of Windsor Airport – Risk Assessment of the Level of Service Scenarios

Risks of Reducing CLOS (Scenario 1)	Risks of Maintaining CLOS (Scenario 2)	Risks of Increasing CLOS (Scenario 3)
• Potential loss in services if runways are not maintained to regulatory standards • Loss of revenue if services are disrupted • Increased service disruption due to decreasing asset conditions • Potential loss of funding, partnerships, business if service levels decrease • Loss of tenants – inability to attract new business • Increased risk of not meeting regulations • Increased risk of litigation • Reputational risks to the City • Inability to keep up with growth or to meet capacity needs • Increased risk of higher operational costs to keep assets operational as asset conditions decrease • Higher than anticipated costs for reactionary maintenance • Higher future costs (inflation, etc.)	• Similar risks as Reducing CLOS, but to a lesser degree • Remaining in reactionary vs. planned maintenance and rehab/replacement activities • May not be most cost effective in the long-term • Forecasts may be understated	• Increased short term cost – risk of increased financial dependency on the City for capital requirements • Additional staff/operational needs are required to implement the increase • Forecasts may be understated, or overstated • Longer lead time to respond operationally to increased service levels

10.2.3.2 Proposed Level of Service (Scenario 4)

In establishing the PLOS target for the Airport portfolio, a fourth Scenario was developed to model the estimated costs required to support select renewal, rehabilitation and replacement lifecycle activities. This analysis included an assessment of the forecast models from Scenarios 1, 2 and 3 against the variance in associated risk identified by staff and Subject Matter Experts. The impact to the condition of the Airport infrastructure assets under this scenario is provided in Figure 10-1, which compares the

condition of the assets in the Airport's Current Funding Scenario (Scenario 1) that was brought forward under the Airport 2024 AMP to the expected condition under the PLOS (Scenario 4). The PLOS scenario (Scenario 4) provides an average percent of assets (based on CRV) of 44% in 'Good to Very Good' condition over the 20-year forecast, in comparison to 16% under the Current Funding Scenario (Scenario 1).

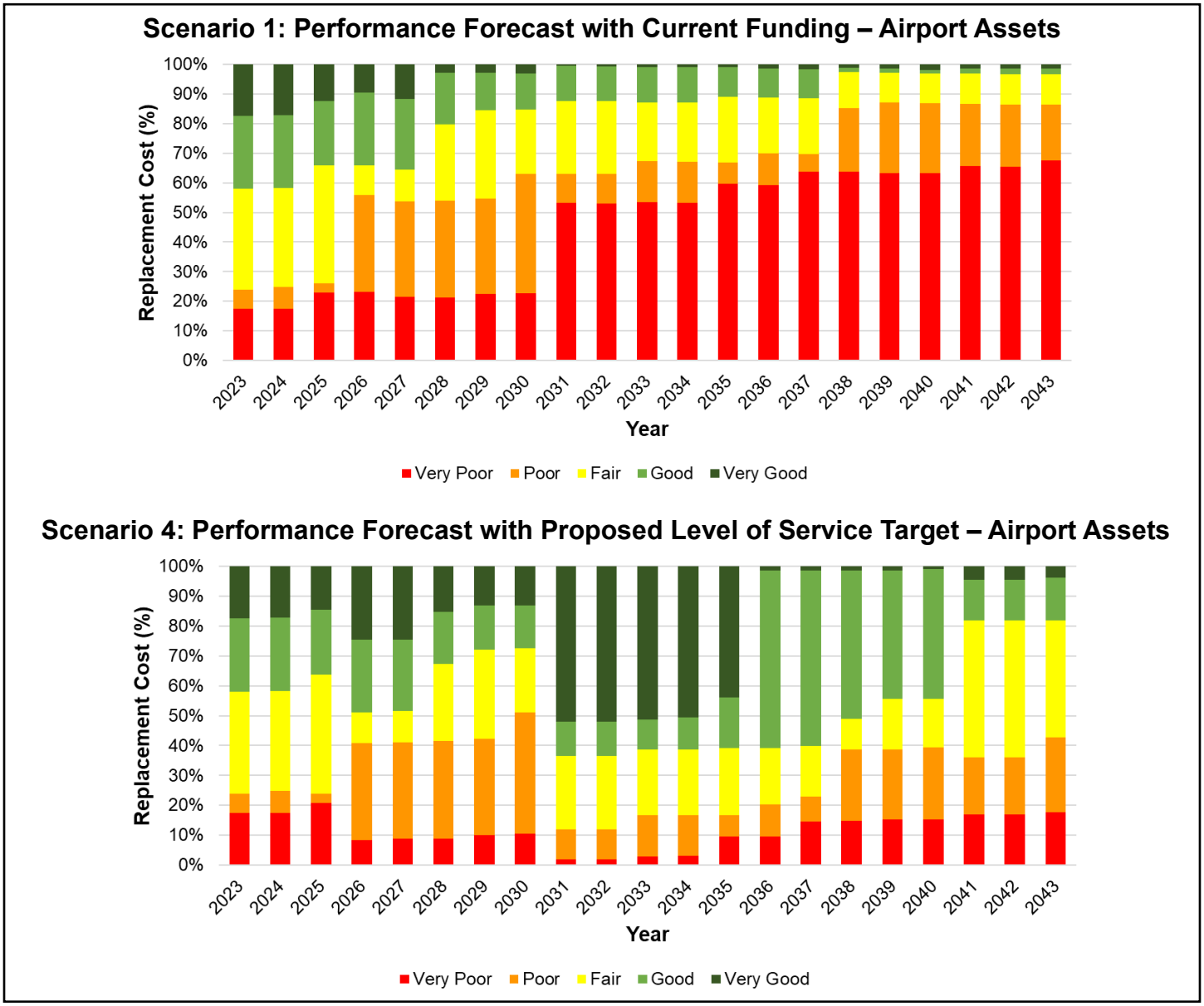


Figure 10-1. City of Windsor Airport – Scenario Comparison (Condition)

10.2.4 Proposed Levels of Service Targets

When taking into consideration the overall current asset condition and CLOS, along with the risks associated with the various LOS scenarios, the PLOS chosen for the Airport infrastructure assets is to increase the average asset condition to 'Fair' which is achieved in Scenario 4. CLOS and PLOS values are captured for this metric in Table 10-2.

Table 10-2. City of Windsor Airport – Corporate Levels of Service

LOS: Metric Description	Current (2024 AMP) Performance (CLOS)	Proposed Target (PLOS)	Proposed Change
Average Asset Condition weighted by CRV for Airport Infrastructure Assets	Fair	Fair	MAINTAIN

10.2.5 The Average Annual Funding Gap Required to Achieve the PLOS

The Average Annual Funding Gap Required to Achieve the PLOS is calculated by comparing the forecasted total lifecycle activity costs under the PLOS Scenario (Scenario 4) against the Current Funding (Scenario 1). Similar to the analysis prepared in the Airport 2024 AMP, the gap also considers Outstanding Infrastructure Needs in its calculation, which was included in the 2024 expenditure amount. Outstanding Infrastructure Needs represent the outstanding renewal, rehabilitation and replacement activities that have been identified and deemed necessary but have not yet been completed due to budget constraints and other limitations.

The recommended PLOS scenario shows that an average annual investment of $6.1 million, incremental to the approved funding provided for in the 2024 City of Windsor 10-year Capital Plan, would be required to increase the overall asset condition to 'Fair' and would see the percentage of assets in 'Good to Very Good' condition increase by 28%. The breakdown of asset condition under the Current Funding Scenario and PLOS Scenario and the associated investments is shown in Table 10-3.

Table 10-3. City of Windsor Airport – Scenario Comparison Data

Scenario Data	Current Funding (Scenario 1)	PLOS (Scenario 4)
Average Annual Budget/Cost of the Scenario	$7,532,0000	$13,632,802
Average Percent of Assets in 'Good to Very Good' Condition (Based on CRV) over the 20-year Scenario	16%	44%
Average Annual Funding Gap Required to Achieve the PLOS	N/A	$6,100,802

10.3 PLOS Infrastructure Gap Considerations

Administration conducted an impact analysis of the anticipated funding sources that may be leveraged to address the PLOS funding gap for Airport infrastructure assets. Key aspects that were considered when determining an appropriate PLOS target for this asset portfolio that balances affordability and achievability included:

- The Airport has a strong obligation to maintain the condition of many of their infrastructure assets according to regulatory requirements to ensure safety of operations, staff and passengers, including assets such as Runways, Taxiways and navigational equipment. Should the condition of these infrastructure assets fall below regulated standards, there may be a complete loss of services until regulatory standards can be met.

The Financial Strategy (Chapter 16) addresses the funding gap for Airport infrastructure assets, consolidated with all asset categories. It identifies potential solutions for the City to bridge this gap and ensure long-term financial sustainability. A key recommendation is to gradually increase financial contributions to these assets over time. In parallel, the City should pursue non-financial strategies which include the implementation of AM best practice, improved lifecycle management, and annual reviews of service level targets to prevent the gap from widening further. These recommendations can be reviewed in section 10.3.1.

Failure to address the funding gap in a timely manner will lead to increasingly severe consequences, such as reduced service levels, higher future costs, and the accelerated decline of critical infrastructure. Proactive planning and a balanced approach between financial investment and operational efficiency are essential to mitigating these risks.

10.3.1 Risk Mitigation Strategies

The City is required by O. Reg. 588/17 to outline how the risks associated with not performing the lifecycle activities identified in the proposed level of service scenario will be managed. As noted, continuing to fund assets at the current level presents inherent risks. However, the City has been proactively mitigating the impacts of the infrastructure gap through various strategies. For Airport infrastructure assets, risks are mitigated using the following strategies:

- Ensuring there are redundancies for assets that cannot be out of service
- Increase reactive maintenance to keep assets functioning
- Keep assets past their life expectancy, where appropriate
- Prioritize maintenance, repair and replacement of highest risk assets
- Accepting higher cost to replace/maintain because available funding cannot address all assets
- Finding alternative approaches to provide service within budget
- Apply for federal aviation and infrastructure grants (e.g., Transport Canada’s Airport Capital Assistance Program) to fund critical upgrades
- Perform regular internal audits and third-party reviews to ensure compliance with aviation regulations and mitigate liability

By prioritizing these strategies, the Airport continues to mitigate risks related to the infrastructure gap. While efforts are ongoing to address the funding gap, these strategies will be continuously implemented and refined to manage the risks of not achieving the PLOS. The City plans to implement

an asset risk strategy to improve prioritization across asset categories, ensuring critical assets receive focused attention and minimizing risks to prevent service disruptions for the community.

10.3.2 Recommendations

The 2025 AMP has identified the PLOS infrastructure gap using current and best available information however, it acknowledges that further work is needed to explore various strategies for reducing the PLOS gap. To enhance forecasting accuracy for this asset category, it is recommended that the Airport implement the necessary improvements outlined in the Airport 2024 AMP.

The implementation of appropriate asset management practices is essential for the Airport because they help ensure sustainable, efficient, and cost-effective service delivery. Developing improved asset management practices can ensure long-term financial sustainability, optimize service delivery, enable risk management and resilience, and ensure regulatory compliance, accountability, and service delivery. These actions are important to minimize the infrastructure gap by minimizing lifecycle expenditures by prolonging an asset's life. By adopting strong asset management practices to make informed, data-driven decisions that balance affordability, service levels and long-term sustainability, the Airport can improve service reliability, reduce costs, mitigate risks, and plan in a way that benefits the entire community.

It is recommended that the City explore options to fund the anticipated Airport PLOS gap through a combination of both financial and non-financial strategies.

Table 10-4 reviews the specific recommended non-financial strategies that the Airport can leverage to address the infrastructure gap, prior to implementing any financial strategies. These strategies are part of AM best practice and ensure that services are provided at the lowest possible cost.

Table 10-4. City of Windsor Airport – Recommended Strategies

Recommendation	Explanation	Potential Impact
Facility-wide, Component Level Condition Assessments	Enhancing component level condition assessment data for these facilities will refine expenditure forecasts for greater accuracy and help the City identify targeted areas for improvement.	Increase/Decrease to Infrastructure Gap
Implement AM System	Selecting an appropriate Asset Management System (AMS) for tracking assets and maintenance activities requires a system that is centralized, accessible, and user-friendly for both field staff and decision-makers. Priority components of a system would include asset register and inventory management, maintenance and work order management, mobile accessibility, condition assessment and lifecycle tracking, GIS integration, and reporting and decision support.	Real-time data access that will improve decision-making and more accurate analysis for AM planning.

Recommendation	Explanation	Potential Impact
Develop Data Management Processes and Annual Review of Register, Condition, and Replacement Values	Develop appropriate processes to ensure asset register remains up-to-date, in an appropriate system that allows staff within the organization to access the information required to make decisions on assets. Develop appropriate processes to complete an annual data review to update condition, replacement costs, for all assets.	Improved forecast reliability.

10.3.3 Growth Considerations

Passenger growth at Windsor International Airport (YQG) presents both opportunities and challenges that significantly influence the airport's financial health and long-term asset management strategy. As passenger traffic increases, it drives both revenue and cost considerations, necessitating a balanced approach to infrastructure planning, resource allocation, and financial sustainability.

Revenue Growth Opportunities

The rise in passenger volumes directly contributes to increased revenue across several key streams:

- **Aeronautical Revenue**: Higher passenger and aircraft movements lead to increased landing fees, passenger service charges, and air navigation revenues. These are essential for covering operational costs and funding future capital projects.
- **Non-Aeronautical Revenue**: More passengers translate to higher spending in airport concessions, advertising, parking, and car rentals. These non-aeronautical revenues help reduce dependence on government funding and are crucial for reinvestment into the airport's facilities and services.

Cost Implications of Growth

While passenger growth provides revenue opportunities, it also introduces additional costs that must be carefully managed:

- **Capital Infrastructure Investments**: As passenger volumes increase, so does the demand for expanded infrastructure, including terminal upgrades, additional parking capacity, and potentially extended runways. These investments represent a significant portion of capital expenditures and require thorough planning to align with long-term growth forecast.
- **Maintenance and Operational Costs**: More passengers mean greater utilization of existing assets, leading to an increase in the frequency and costs of maintenance for runways, terminals, baggage handling systems, and public amenities. This escalation of operational demands must be balanced with efficient asset management practices to minimize disruption and cost overruns.
- **Staffing and Training**: Increased passenger volumes necessitate additional staff in key areas, such as security, customer service, and ground handling. Ensuring that staffing levels align

with demand, while also providing ongoing training and development, is vital for maintaining high levels of service and safety.

Long-Term Asset Management Strategy

To effectively manage the financial impacts of passenger growth, a proactive and strategic asset management approach is essential. Key considerations include:

- **Scalable Infrastructure Investments**: New infrastructure should be designed with scalability in mind. Whether expanding terminal space, parking facilities, or other assets, the airport must invest in projects that can grow with passenger demand without requiring major redesigns in the near future.
- **Lifecycle Cost Management**: Each new asset must be evaluated for its total lifecycle cost, from initial capital outlay through ongoing maintenance and eventual renewal or replacement. This approach ensures financial sustainability and helps the airport avoid unanticipated expenses.

Risk Management and Financial Resilience

As passenger growth brings greater revenue, it also exposes the airport to financial risks that must be carefully managed:

- **Revenue Volatility**: Passenger traffic is vulnerable to external economic factors, such as downturns, fuel price fluctuations, and global events. To mitigate this, the airport should diversify its revenue streams to buffer against fluctuations in traffic and revenue.
- **Regulatory Compliance Costs**: Growth often leads to an increase in regulatory requirements. This may include enhanced security measures, compliance with environmental standards, and upgrades to accommodate larger volumes of passengers. These obligations can result in unexpected financial burdens if not planned for in advance.
- **Environmental Sustainability**: As the airport expands to meet growing demand, it will face increasing pressure to mitigate its environmental impact. This includes addressing noise pollution, emissions reduction, and adopting sustainable practices in infrastructure development. These initiatives may require additional investment, but they are essential for maintaining the airport's long-term viability.

Passenger growth at Windsor International Airport is a crucial factor in driving the airport's financial sustainability and regional economic development. However, it brings with it both revenue opportunities and financial challenges that require careful planning and proactive asset management.

By balancing capital investment with lifecycle cost management, leveraging diverse revenue streams, and anticipating future demands, YQG can ensure that it remains a competitive and resilient airport well-equipped to handle future growth.

11 City of Windsor Golf Courses

11.1 Current State of the Infrastructure for the Asset Portfolio

2024 Replacement Value

$23.1M

2024 AMP Average Asset Condition	2024 AMP CRV in 'Good to Very Good' Condition
Poor	21.8%

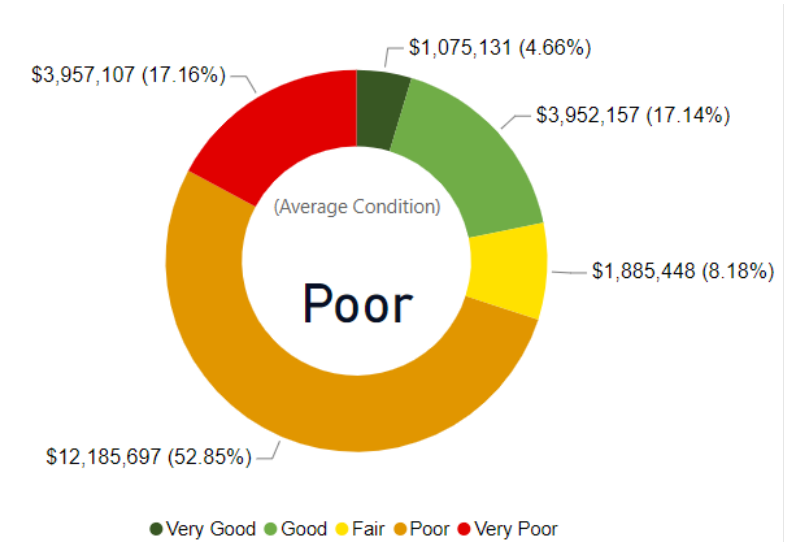
City of Windsor Golf Courses include the 18-hole championship Donald Ross-designed Roseland Golf Course including a Par 3 course and a driving range, and the 9-hole Little River golf course in East Windsor. The Golf Courses infrastructure assets deliver the following services:

Recreation: provide accessible opportunities for safe, healthy, affordable and fun lifestyle activity through golf for residents and visitors which also supports community connections.

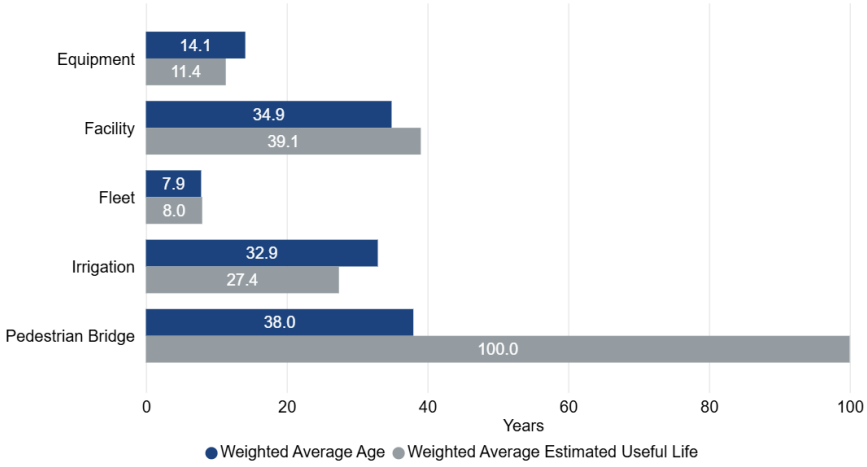
Support for Golf Courses Staff: facilities which provide essential workspaces for Golf Course staff.

Safety and efficient Work Environment: providing safe and functional work environment for the well-being of Golf Course Staff.

Asset Condition Profile based on CRV



Average Age



Infrastructure Gap & Anticipated Growth

Average Annual Infrastructure Gap to Maintain Current Level of Service	Average Annual Infrastructure Gap for Proposed Level of Service	Average Annual Capital Growth Expenditures
$770K	$770K	$0

11.2 Levels of Service

The levels of service information in this section are based on the data brought forward under the approved City Windsor Golf Courses 2024 Asset Management Plan (Golf Courses 2024 AMP). This section will discuss two distinct types of levels of service metrics - the Current Levels of Service (CLOS) metrics which represent how the portfolio's infrastructure assets are performing today; and the Proposed Levels of Service (PLOS) metrics which represent a desired future performance goal that the City feels are appropriate in consideration of affordability, achievability, sustainability, and risk to the levels of service provided by the assets.

11.2.1 Level of Service Statement

City of Windsor Golf Courses provide a place for friends and families to enjoy healthy active living. We will be successful through personalized, consistent and responsive service to our guests. We will achieve this through a highly motivated and committed team using innovative and creative ideas.

11.2.2 Current Levels of Service

Level of Service (LOS) metrics are a key component of the City'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 CLOS and the development of PLOS.

Under the Golf Courses 2024 AMP, the current performance was reported for seven LOS metrics that were developed by key staff responsible for assets in the Golf Courses infrastructure asset portfolio. For full details on the development of the 2024 AMP LOS metrics, refer to Appendix A, section 1.2, of the Golf Courses 2024 AMP. These internally defined metrics provide valuable insight into the current performance of their associated assets, support the LOS they provide, and will continue to be monitored as supporting Key Performance Indicator (KPI) metrics for this asset portfolio. While proposed targets are not required to be set for KPI metrics, they do provide valuable information and insight into the efficacy of the strategies being implemented to support the asset portfolio's PLOS metric being brought forward under this 2025 AMP. The current performance for all KPIs (see Appendix G, Table G-10) will be reported annually and should be taken into consideration when setting future PLOS targets.

11.2.3 Methodology of Establishing the Proposed Levels of Service

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. In order to clearly understand the impact in establishing PLOS targets, a thorough review of the original work completed under the Golf Courses 2024 AMP, inclusive of the development of the initial LOS metrics and the Life Cycle Management (LCM) scenarios, was undertaken. The LCM scenarios, which modeled cost of condition over a 20-year forecast period, include:

- **Current Funding (Scenario 1):** This model considered the impact to the overall performance of the assets over the forecast period should the asset portfolio continue to be funded as planned in the approved 2024 10-year Capital Budget.
- **Maintain Current Performance (CLOS) (Scenario 2):** This model considered the unconstrained cost over the forecast period to maintain the asset portfolio's current (2024 AMP) performance (i.e. condition) based on expert developed/planned lifecycle activities.
- **Infrastructure Needs as Per Lifecycle Strategies (Scenario 3):** This model considered the cost over the forecast period to perform the planned rehabilitation, renewals, and replacements as scheduled per the lifecycle strategy models developed for each sub-segment of the asset portfolio to maintain assets so that they are able to deliver their intended LOS.

For full details on the development of these scenarios, refer to section 1.3 and section 1.4 of the Golf Courses 2024 AMP.

The Golf Courses are using the same Level of Service (LOS) metric as the City to closely align with the City's approach in analysing the forecasted model results, known as the 'Average Overall Asset Condition Weighted by CRV', which is calculated by weighting the average condition of all assets in the portfolio by their replacement value over the forecast period. This approach smooths out annual fluctuations in condition, providing a more accurate representation of the assets' long-term outlook. Through the condition profiles provided in this report, expected peaks and valleys in asset condition are representative of assets going through their typical lifecycle stages ('Very Good' at the beginning of life, and 'Very Poor' near the end of life).

All LOS and KPI metrics established in this 2025 report will be captured and reported annually to provide updates on the current status of asset performance. Over time, this will provide a data set from which the Golf Course will be able to identify performance trends across the asset portfolio. The Golf Courses intends to conduct a full assessment of the PLOS targets in the years leading up to the next regulated publication of the AMP, which is currently mandated for every 5 years. Regular review and monitoring of both the PLOS targets and related KPI metrics will help to ensure that appropriate asset management practices are being implemented and followed in an effort to meet stated service needs. The LCM scenarios, the LOS metrics, and the KPI metrics were taken into account when establishing the PLOS metric with consideration given to the risks affecting long-term sustainability, as outlined below.

11.2.3.1 Assessing Risks Associated with PLOS Options to Long Term Sustainability

Using the information provided in the afore-mentioned scenarios, an assessment of risk, asset performance, financial impact, level of sustainability and alternate life cycle activities that could (or would) need to be undertaken was developed in order to achieve a level of service that was: (1) reduced, (2) maintained, or (3) increased when compared to the current level of service offered by Golf Courses infrastructure assets. The results, summarized in Table 11-1, were developed by key asset stakeholders and reviewed by the Corporate Leadership Team (CLT) in a workshop lead by Asset Planning and the consultant (GEI). The data was assessed in its totality, with further consideration given to the City's ability to support the financial and non-financial strategies to support

the PLOS targets that were ultimately set in this workshop. The identification and assessment of the scenario risks noted below played a critical role in the assessment of both CLOS and in the establishing of PLOS for this portfolio.

Table 11-1. City of Windsor Golf Courses – Risk Assessment of the Level of Service Scenarios

Risks of Reducing CLOS (Scenario 1)	Risks of Maintaining CLOS (Scenario 2)	Risks of Increasing CLOS (Scenario 3)
• Potential loss in services for the 18-hole Roseland Golf Course if irrigation systems are not maintained • Increased service disruption due to decreasing asset conditions • Potential loss of funding, partnerships, business if service levels decrease • Increased risk of asset failure • Increased risk of litigation • Reputational risks to the City • Increased risk of higher operational costs to keep assets operational as asset conditions decrease • Higher than anticipated costs for reactionary maintenance • Higher future costs (inflation, etc.)	• Similar risks as Reducing CLOS, but to a lesser degree • Remaining in Reactionary vs. Planned Maintenance and Rehab/Replacement activities • May not be most cost effective in the long-term • Forecasts may be understated	• Increased short term cost to the tax/rate payer • Staff/operational needs are required to implement the increase • Forecasts could be understated, or overstated

11.2.3.2 Proposed Level of Service (Scenario 4)

In establishing the PLOS target for the Golf Courses portfolio, a fourth Scenario was developed to model the estimated costs required to support select renewal, rehabilitation and replacement lifecycle activities. This analysis included an assessment of the forecast models from Scenarios 1, 2 and 3 against the variance in associated risk identified by staff and Subject Matter Experts. The impact to the condition of the Golf Courses infrastructure assets under this scenario is provided in Figure 11-1, which compares the condition of the assets in the Golf Courses Current Funding Scenario (Scenario 1) that was brought forward under the Golf Courses 2024 AMP to the expected condition under the PLOS (Scenario 4). The PLOS scenario (Scenario 4) provides an average percent of assets (based on CRV) of 50% in 'Good to Very Good' condition over the 20-year forecast, in comparison to 13% under the Current Funding Scenario (Scenario 1). The significant improvement in condition shown in years 2026 and 2027 of Scenario 4 are a result of some minor rehabilitation activities and the

replacement of a large portion of the Equipment and Irrigation assets (in 2026), and the Facilities (in 2027).

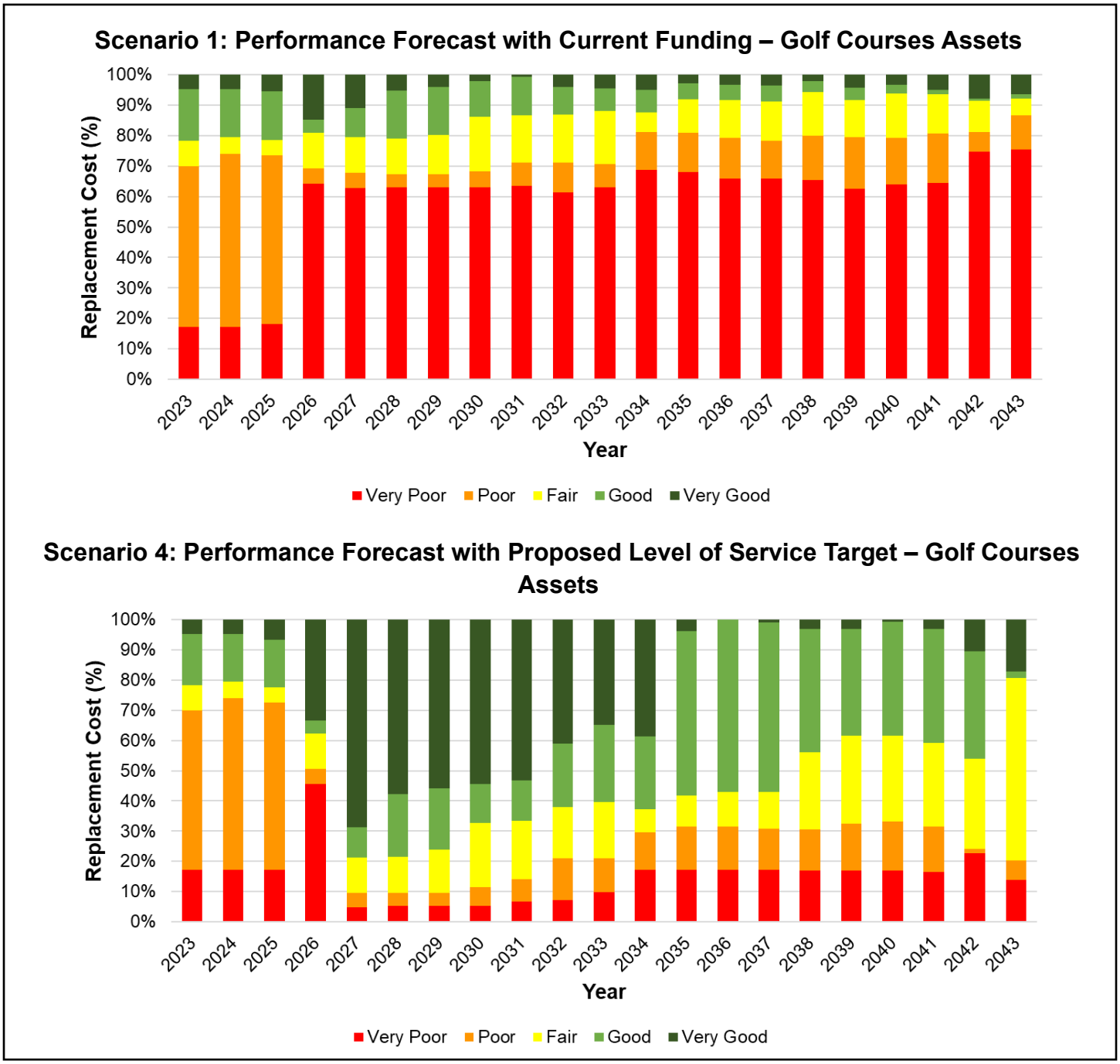


Figure 11-1. City of Windsor Golf Courses – Scenario Comparison (Condition)

11.2.4 Proposed Level of Service Targets

When taking into consideration the overall current asset condition and CLOS, along with the risks associated with the various LOS scenarios, the PLOS chosen for the Golf Courses infrastructure assets is to increase the average asset condition to 'Fair' which is achieved in Scenario 4. CLOS and PLOS values are captured for this metric in Table 11-2.

Table 11-2. City of Windsor Golf Courses – Corporate Levels of Service

LOS: Metric Description	Current (2024) Performance (CLOS)	Proposed Target (PLOS)	Proposed Change
Average Asset Condition weighted by CRV for Golf Courses Infrastructure Assets	Poor	Fair	INCREASE

11.2.5 The Average Annual Funding Gap Required to Achieve the PLOS

The Average Annual Funding Gap Required to Achieve the PLOS is calculated by comparing the forecasted total lifecycle activity costs under the PLOS Scenario (Scenario 4) against the Current Funding (Scenario 1). Similar to the analysis prepared in the Golf Courses 2024 AMP, the gap also considers Outstanding Infrastructure Needs in its calculation, which was included in the 2024 expenditure amount. Outstanding Infrastructure Needs represent the outstanding renewal, rehabilitation and replacement activities that have been identified and deemed necessary but have not yet been completed due to budget constraints and other limitations.

The recommended PLOS scenario shows that an average annual investment of $770 thousand would be required to increase the overall asset condition to 'Fair' and would see the percentage of assets in 'Good to Very Good' condition increase by 37%. The breakdown of asset condition under the Current Funding Scenario and PLOS Scenario and the associated investments is shown in Table 11-3.

Table 11-3. City of Windsor Golf Courses – Scenario Comparison Data

Scenario Data	Current Funding (Scenario 1)	PLOS (Scenario 4)
Average Annual Budget/Cost of the Scenario	$2,700,938	$3,471,447
Average Percent of Assets in 'Good to Very Good' Condition (Based on CRV) over the 20-year Scenario	13%	50%
Average Annual Funding Gap Required to Achieve the PLOS	N/A	$770,509

11.3 PLOS Infrastructure Gap Considerations

Administration conducted an impact analysis of the anticipated funding sources that may be leveraged to address the PLOS funding gap for Golf Courses infrastructure assets. Key aspects that were considered when determining an appropriate PLOS target for this asset portfolio that balances affordability and achievability included:

- Given the approaching redevelopment of this site related to the Roseland Facility, consideration to the PLOS Gap should be revisited to ensure adequate funding for the irrigation system, equipment, and fleet.

- The Roseland irrigation system, currently in 'Poor' and 'Very Poor' condition, requires special consideration as failure of this system could result in the loss of the Roseland course greens.

Under these considerations, Administration feels that current funding for this asset portfolio should be increased to support the PLOS Scenario (Scenario 4).

The Financial Strategy (Chapter 16) addresses the funding gap for Golf Courses assets, consolidated with all asset categories. It identifies potential solutions for the City to bridge this gap and ensure long-term financial sustainability. A key recommendation is to gradually increase financial contributions to these assets over time. In parallel, the City should pursue non-financial strategies which include the implementation of AM best practice, improved lifecycle management, and annual reviews of service level targets to prevent the gap from widening further. These recommendations can be reviewed in section 11.3.1.

Failure to address the funding gap in a timely manner will lead to increasingly severe consequences, such as reduced service levels, higher future costs, and the accelerated decline of critical infrastructure. Proactive planning and a balanced approach between financial investment and operational efficiency are essential to mitigating these risks.

11.3.1 Risk Mitigation Strategies

The City is required by O. Reg. 588/17 to outline how the risks associated with not performing the lifecycle activities identified in the proposed level of service scenario will be managed. As noted, continuing to fund assets at the current level presents inherent risks. However, the City has been proactively mitigating the impacts of the infrastructure gap through various strategies. For Golf Courses infrastructure assets, risks are mitigated using the following strategies:

- Finding alternate ways to complete projects on lower budgets
- Finding short term solutions to increase life of an asset
- Find ways to extend the life of assets after they should have been replaced
- Using reserves to save for expenses (i.e. for power carts)
- Prioritizing assets based on highest risk/need
- Finding spare parts to be able to repair assets
- Improved asset management practices - planning for specific replacements

By prioritizing these strategies, Golf Courses continue to mitigate risks related to the infrastructure gap. While efforts are ongoing to address the funding gap, these strategies will be continuously implemented and refined to manage the risks of not achieving the PLOS. The City plans to implement an asset risk strategy to improve prioritization across asset categories, ensuring critical assets receive focused attention and minimizing risks to prevent service disruptions for the community.

11.3.2 Recommendations

The 2025 AMP has identified the PLOS infrastructure gap using current and best available information however, it acknowledges that further work is needed to explore various strategies for reducing the PLOS gap. To enhance forecasting accuracy for this asset category, it is recommended that the Golf Courses implement the necessary improvements outlined in the Golf Courses 2024 AMP.

The implementation of appropriate asset management practices is essential for the Golf Courses because they help ensure sustainable, efficient, and cost-effective service delivery. Developing improved asset management practices can ensure long-term financial sustainability, optimize service delivery, enable risk management and resilience, and ensure regulatory compliance, accountability, and service delivery. These actions are important to minimize the infrastructure gap by minimizing lifecycle expenditures by prolonging an asset's life. By adopting strong asset management practices to make informed, data-driven decisions that balance affordability, service levels and long-term sustainability, Golf Courses can improve service reliability, reduce costs, mitigate risks, and plan in a way that benefits the entire community.

It is recommended that the Golf Courses explore options to fund the anticipated Golf Courses PLOS gap through a combination of both financial and non-financial strategies.

Table 11-4 reviews the specific recommended non-financial strategies that the Golf Courses can leverage to address the infrastructure gap, prior to implementing any financial strategies. These strategies are part of AM best practice and ensure that services are provided at the lowest possible cost.

Table 11-4. City of Windsor Golf Courses – Recommended Strategies

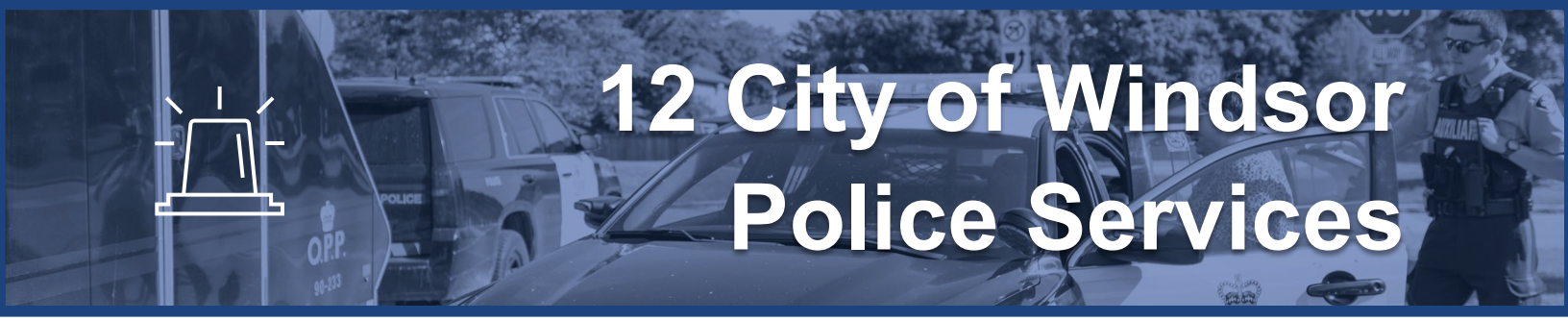
Recommendation	Explanation	Potential Impact
Facility-wide, Component Level Condition Assessments	Enhancing component level condition assessment data for these facilities will refine expenditure forecasts for greater accuracy and help the City identify targeted areas for improvement.	Increase/Decrease to Infrastructure Gap
Implement AM System	Selecting an appropriate Asset Management System (AMS) for tracking assets and maintenance activities requires a system that is centralized, accessible, and user-friendly for both field staff and decision-makers. Priority components of a system would include asset register and inventory management, maintenance and work order management, mobile accessibility, condition assessment and lifecycle tracking, GIS integration, and reporting and decision support.	Real-time data access that will improve decision-making and more accurate analysis for AM planning.

Recommendation	Explanation	Potential Impact
Develop Data Management Processes and Annual Review of Register, Condition, and Replacement Values	Develop appropriate processes to ensure asset register remains up-to-date, in an appropriate system that allows staff within the organization to access the information required to make decisions on assets. Develop appropriate processes to complete an annual data review to update condition, replacement costs, for all assets.	Improved forecast reliability.

11.3.3 Growth Considerations

In addition to addressing the infrastructure gap noted above, it is important to consider how growth impacts ongoing Operations and Maintenance (O&M) costs. Growth occurs through increases to the asset base as a result of population growth, increased economic activity, and through the addition and expansion of new or existing services.

Population growth could increase the demand for golf, thereby increasing both the operations and maintenance costs of the equipment assets, as well as the revenue generated by the Golf Courses. It is recommended that those revenue increases be reinvested into asset maintenance and operational support to ensure sustainable growth and service quality.



12 City of Windsor Police Services

12.1 Current State of the Infrastructure for the Asset Portfolio

2024 Replacement Value

$197.8M

2024 AMP Average Asset Condition	2024 AMP CRV in 'Good to Very Good' Condition
Good	95.7%

The City of Windsor Police Services (WPS) are essential to the City's residents' safety and well-being. The WPS infrastructure assets deliver the following services:

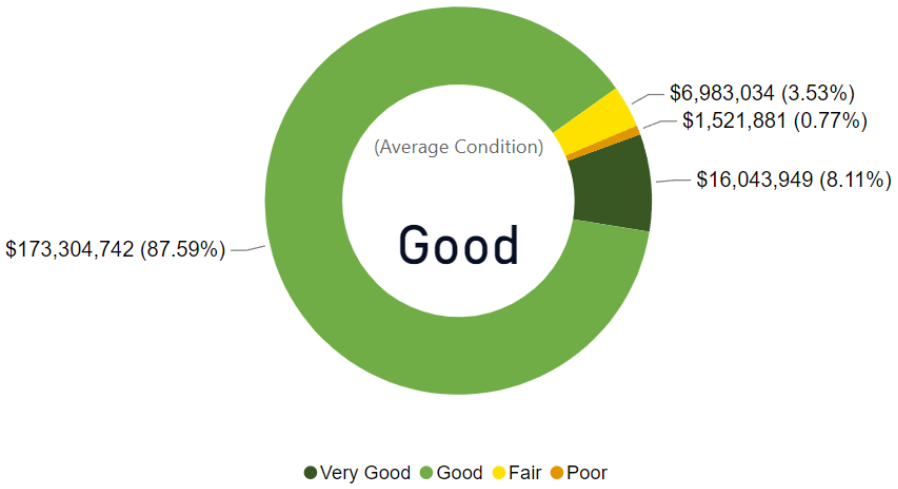
Facilities: providing essential workspaces for WPS Staff to carry out their duties efficiently and effectively, while creating a welcoming physical space where members of the public can interact and engage with WPS Staff.

Equipment: providing necessary and specialized equipment required for enabling WPS to deliver legislatively mandated public safety services to City's residents.

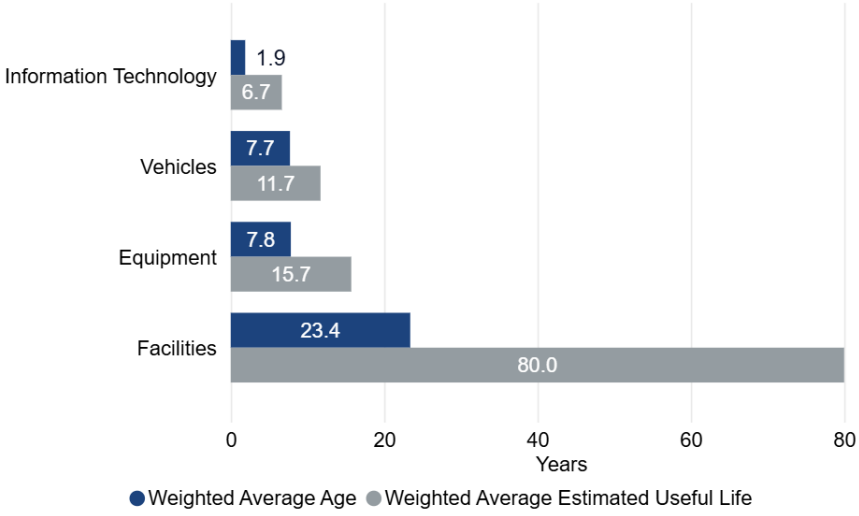
Vehicles: integral to supporting public safety operations, emergency response, and a prevention-oriented presence in the community.

Information Technology: provides key support for all emergency response and disaster management activities, communication, data analysis, and resource allocation.

Asset Condition Profile based on CRV



Average Age



Infrastructure Gap & Anticipated Growth

Average Annual Infrastructure Gap to Maintain Current Level of Service	Average Annual Infrastructure Gap for Proposed Level of Service	Average Annual Capital Growth Expenditures
$3.2M	$3.2M	$88K

12.2 Levels of Service

The levels of service information in this section are based on the data brought forward under the approved City of Windsor Police Services 2024 Asset Management Plan (WPS 2024 AMP). This section will discuss two distinct types of levels of service metrics - the Current Levels of Service (CLOS) metrics which represent how the portfolio's infrastructure assets are performing today; and the Proposed Levels of Service (PLOS) metrics which represent a desired future performance goal that the City feels are appropriate in consideration of affordability, achievability, sustainability, and risk to the levels of service provided by the assets.

12.2.1 Level of Service Statement

City of Windsor Police Services ensure that all police infrastructure assets are maintained and managed to support operational effectiveness, public safety, and the delivery of high-quality policing services to the community.

12.2.2 Current Levels of Service

Level of Service (LOS) metrics are a key component of the City'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 CLOS and the development of PLOS.

Under the WPS 2024 AMP, the current performance was reported for fourteen LOS metrics that were developed by key staff responsible for assets in the WPS's infrastructure asset portfolio. For full details on the development of the 2024 AMP LOS metrics, refer to Appendix A, section 1.2, of the WPS 2024 AMP. These internally defined metrics provide valuable insight into the current performance of their associated assets, support the LOS they provide, and will continue to be monitored as supporting Key Performance Indicator (KPI) metrics for this asset portfolio. While proposed targets are not required to be set for KPI metrics, they do provide valuable information and insight into the efficacy of the strategies being implemented to support the asset portfolio's PLOS metric being brought forward under this 2025 AMP. The current performance for all KPIs (see Appendix G, Table G-11) will be reported annually and should be taken into consideration when setting future PLOS targets.

12.2.3 Methodology of Establishing the Proposed Levels of Service

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. In order to clearly understand the impact in establishing PLOS targets, a thorough review of the original work done to develop the initial LOS completed under the WPS 2024 AMP was undertaken. The lifecycle scenarios which modeled cost of condition over a 20-year forecast period, include:

- **Current Funding (Scenario 1):** This model considered the impact to the overall performance of the assets over the forecast period should the asset portfolio continue to be funded as planned in the approved 2024 10-year Capital Budget.
- **Maintain Current Performance (CLOS) (Scenario 2):** This model considered the unconstrained cost over the forecast period to maintain the asset portfolio's current (2024 AMP) performance (i.e. condition) based on expert developed/planned lifecycle activities.
- **Infrastructure Needs as Per Lifecycle Strategies (Scenario 3):** This model considered the cost over the forecast period to perform the planned rehabilitation, renewals, and replacements as scheduled per the lifecycle strategy models developed for each sub-segment of the asset portfolio to maintain assets so that they are able to deliver their intended LOS.

For full details on the development of these scenarios, refer to section 1.3 and section 1.4 of the WPS 2024 AMP.

WPS is using the same Level of Service (LOS) metric as the City to closely align with the City's approach in analysing the forecasted model results, known as the 'Average Overall Asset Condition Weighted by CRV', which is calculated by weighting the average condition of all assets in the portfolio by their replacement value over the forecast period. This approach smooths out annual fluctuations in condition, providing a more accurate representation of the assets' long-term outlook. Through the condition profiles provided in this report, expected peaks and valleys in asset condition are representative of assets going through their typical lifecycle stages ('Very Good' at the beginning of life, and 'Very Poor' near the end of life).

All LOS and KPI metrics established in this 2025 report will be captured and reported annually to provide updates on the current status of asset performance. Over time, this will provide a data set from which the WPS will be able to identify performance trends across the asset portfolio. The WPS intends to conduct a full assessment of the PLOS targets in the years leading up to the next regulated publication of the AMP, which is currently mandated for every 5 years. Regular review and monitoring of both the PLOS targets and related KPI metrics will help to ensure that appropriate asset management practices are being implemented and followed in an effort to meet stated service needs. The LCM scenarios, the LOS metrics, and the KPI metrics were taken into account when establishing the PLOS metric with consideration given to the risks affecting long-term sustainability, as outlined below.

12.2.3.1 Assessing Risks Associated with PLOS Options to Long Term Sustainability

Using the information provided in the afore-mentioned scenarios, an assessment of risk, asset performance, financial impact, level of sustainability and alternate life cycle activities that could (or would) need to be undertaken was developed in order to achieve a level of service that was: (1) reduced, (2) maintained, or (3) increased when compared to the current level of service offered by WPS infrastructure assets was explored. The results are summarized in Table 12-1. The data was assessed in its totality, with further consideration given to the City's ability to support internal process changes as well as financial and non-financial strategies to support the PLOS targets that were ultimately set in this workshop. The identification and assessment of the scenario risks noted below

played a critical role in the assessment of both CLOS and in the establishing of PLOS for this portfolio.

Table 12-1. City of Windsor Police Services – Risk Assessment of the Level of Service Scenarios

Risks of Reducing CLOS (Scenario 1)	Risks of Maintaining CLOS (Scenario 2)	Risks of Increasing CLOS (Scenario 3)
• Potential loss in services provided to residents and communities or other agencies • Increased service disruption due to decreasing asset conditions • Increased risk to public health and safety due to potential decrease in services • Increased risk of not meeting regulations • Increased risk of litigation • Reputational risks to the City • Inability to keep up with growth or to meet capacity needs • Increased risk of higher operational costs to keep assets operational as asset conditions decrease • Higher than anticipated costs for reactionary maintenance • Higher future costs (inflation, etc.)	• Similar risks as Reducing CLOS, but to a lesser degree • Remaining in Reactionary vs. Planned Maintenance and Rehab/Replacement activities • May not be most cost effective in the long-term • High difficulty of forecasting for IT assets, may be understated due to constantly changing landscape in IT infrastructure	• Increased short term cost to the tax/rate payer • Staff/operational needs are required to implement the increase • High difficulty of forecasting for IT assets, may be understated due to constantly changing landscape in IT infrastructure

12.2.3.2 Proposed Level of Service (Scenario 4)

In establishing the PLOS target for the WPS portfolio, a fourth Scenario was developed to model the estimated costs required to support select renewal, rehabilitation and replacement lifecycle activities. This analysis included an assessment of the forecast models from Scenarios 1, 2, and 3 against the variance in associated risk identified by staff and Subject Matter Experts. The impact to the condition of the WPS infrastructure assets under this scenario is provided in Figure 12-1, which compares the condition of the assets in the WPS Current Funding Scenario (Scenario 1) that was brought forward under the WPS 2024 AMP to the expected condition under the PLOS (Scenario 4). The PLOS

scenario (Scenario 4) provides an average percent of assets (based on CRV) of 40% in 'Good to Very Good' condition over the 20-year forecast, in comparison to 36% under the Current Funding Scenario (Scenario 1).

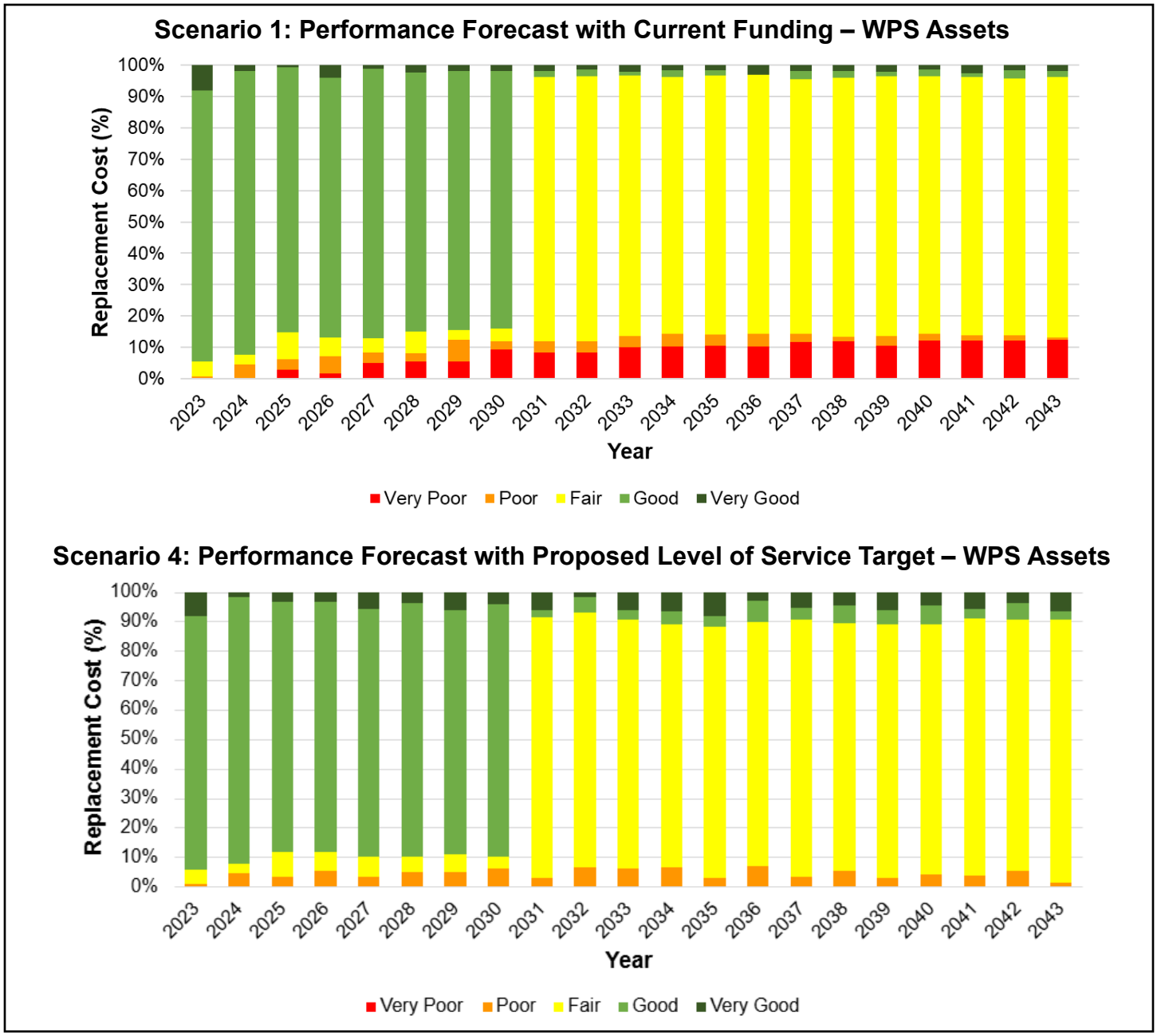


Figure 12-1. City of Windsor Police Services – Scenario Comparison (Condition)

Both scenarios see a large portion of the replacement value of assets drop into 'Fair' condition in year 2031, this significant change in the overall condition of this portfolio is driven by the Facilities, which represents the largest portion of the total CRV of the WPS assets. Since Facilities assets are currently modeled at a single-asset level, the overall condition profile modeled over the forecast should be considered cautiously as the Facilities data is based on only average data confidence levels due to the lack of data granularity available for Facilities infrastructure assets. The resulting modeled forecast shows large jumps in condition which reflects the entire facility asset moving from

one condition state to another. Building Condition Assessment (BCA) information at the component-level (HVAC, Roof, Electrical Systems, etc.) for WPS Facilities are required for the condition of these infrastructure assets to be re-modeled at the component level, which will significantly increase the data confidence for these assets and is expected to impact the portfolio's forecasted condition results.

12.2.4 Proposed Level of Service Targets

When taking into consideration the overall current asset condition and CLOS, along with the risks associated with the various LOS scenarios, and the consideration of the effect of the Facilities on the model, the PLOS chosen for the WPS infrastructure assets is to maintain an average asset condition of 'Good', which is achieved in Scenario 4. CLOS and PLOS values are captured for this metric in Table 12-2.

Table 12-2. City of Windsor Police Services – Corporate Levels of Service

LOS: Metric Description	Current (2024) Performance (CLOS)	Proposed Target (PLOS)	Proposed Change
Average Asset Condition weighted by CRV for Police Services Infrastructure Assets	Good	Good	NO CHANGE

12.2.5 The Average Annual Funding Gap Required to Achieve the PLOS

The Average Annual Funding Gap Required to Achieve the PLOS is calculated by comparing the forecasted total lifecycle activity costs under the PLOS Scenario (Scenario 4) against the Current Funding (Scenario 1). Similar to the analysis prepared in the WPS 2024 AMP, the gap also considers Outstanding Infrastructure Needs in its calculation, which was included in the 2024 expenditure amount. Outstanding Infrastructure Needs represent the outstanding renewal, rehabilitation and replacement activities that have been identified and deemed necessary but have not yet been completed due to budget constraints and other limitations.

The recommended PLOS scenario shows an average annual funding gap of $3.2 million, incremental to the approved funding provided for in the 2024 10-year Capital Plan, would be required to maintain overall asset condition as 'Good' and would see the percentage of assets in 'Good to Very Good' condition increase by 4%. The breakdown of asset condition under the Current Funding Scenario and PLOS Scenario and the associated investments is shown in Table 12-3 below.

Table 12-3. City of Windsor Police Services – Scenario Comparison Data

Scenario Data	Current Funding (Scenario 1)	PLOS (Scenario 4)
Average Annual Budget/Cost of the Scenario	$105,919,204	$109,136,148
Average Percent of Assets in 'Good to Very Good' Condition (Based on CRV) over the 20-year Scenario	36%	40%
Average Annual Funding Gap Required to Achieve the PLOS	N/A	$3,216,944

12.3 PLOS Infrastructure Gap Considerations

Administration conducted an impact analysis of the anticipated funding sources that may be leveraged to address the PLOS funding gap for WPS infrastructure assets. Key aspects that were considered when determining an appropriate PLOS target for this asset portfolio that balances affordability and achievability included:

- As discussed above, due to the lack of component level data for the Facilities assets, the overall condition profile modeled over the forecast should be considered cautiously.

The Financial Strategy (Chapter 16) addresses the funding gap for WPS assets, consolidated with all asset categories. It identifies potential solutions for the City to bridge this gap and ensure long-term financial sustainability. A key recommendation is to gradually increase financial contributions to these assets over time. In parallel, the City should pursue non-financial strategies which include the implementation of AM best practice, improved lifecycle management, and annual reviews of service level targets to prevent the gap from widening further. These recommendations can be reviewed in section 12.3.1.

Failure to address the funding gap in a timely manner will lead to increasingly severe consequences, such as reduced service levels, higher future costs, and the accelerated decline of critical infrastructure. Proactive planning and a balanced approach between financial investment and operational efficiency are essential to mitigating these risks.

12.3.1 Risk Mitigation Strategies

The City is required by O. Reg. 588/17 to outline how the risks associated with not performing the lifecycle activities identified in the proposed level of service scenario will be managed. As noted, continuing to fund assets at the current level presents inherent risks. However, WPS have been proactively mitigating the impacts of the infrastructure gap through various strategies. For WPS infrastructure assets, risks are mitigated using the following strategies:

- Condition assessments/improved data to understand needs and help prioritize expenditures
- Prioritize assets based on highest risk
- Improved preventative maintenance to extend life

- Redundancies to high risk/priority assets
- Keeping spares as backup
- Leverage reserves and trying to save appropriate funds for future needs
- Training of staff to improve decision making
- Work tracking and analyzing trends to improve decision making
- New technologies - to improve decision making (AI), new systems, etc. - to also automate alerts to issues so they are addressed sooner before becoming a bigger problem

By prioritizing these strategies, WPS continues to mitigate risks related to the infrastructure gap. While efforts are ongoing to address the funding gap, these strategies will be continuously implemented and refined to manage the risks of not achieving the PLOS. WPS plans to implement an asset risk strategy to improve prioritization across asset categories, ensuring critical assets receive focused attention and minimizing risks to prevent service disruptions for the community.

12.3.2 Recommendations

The 2025 AMP has identified the PLOS infrastructure gap using current and best available information however, it acknowledges that further work is needed to explore various strategies for reducing the PLOS gap. To enhance forecasting accuracy for this asset category, it is recommended that the WPS implement the necessary improvements outlined in the WPS 2024 AMP.

The implementation of appropriate asset management practices is essential for the WPS because they help ensure sustainable, efficient, and cost-effective service delivery. Developing improved asset management practices can ensure long-term financial sustainability, optimize service delivery, enable risk management and resilience, and ensure regulatory compliance, accountability, and service delivery. These actions are important to minimize the infrastructure gap by minimizing lifecycle expenditures by prolonging an asset's life. By adopting strong asset management practices to make informed, data-driven decisions that balance affordability, service levels and long-term sustainability, WPS can improve service reliability, reduce costs, mitigate risks, and plan in a way that benefits the entire community.

It is recommended that WPS explore options to fund the anticipated WPS PLOS gap through a combination of both financial and non-financial strategies.

Table 12-4 below, reviews the specific recommended non-financial strategies that WPS can leverage to address the infrastructure gap, prior to implementing any financial strategies. These strategies are part of AM best practice and ensure that services are provided at the lowest possible cost.

Table 12-4. City of Windsor Police Services – Recommended Strategies

Recommendation	Explanation	Potential Impact
Facility-wide, Component Level Condition Assessments	Enhancing component level condition assessment data for these facilities will refine expenditure forecasts for greater accuracy and help the City identify targeted areas for improvement.	Increase/Decrease to Infrastructure Gap
Implement AM System	Selecting an appropriate Asset Management System (AMS) for tracking assets and maintenance activities requires a system that is centralized, accessible, and user-friendly for both field staff and decision-makers. Priority components of a system would include asset register and inventory management, maintenance and work order management, mobile accessibility, condition assessment and lifecycle tracking, GIS integration, and reporting and decision support.	Real-time data access that will improve decision-making and more accurate analysis for AM planning.
Develop Data Management Processes and Annual Review of Register, Condition, and Replacement Values	Develop appropriate processes to ensure asset register remains up-to-date, in an appropriate system that allows staff within the organization to access the information required to make decisions on assets. Develop appropriate processes to complete an annual data review to update condition, replacement costs, for all assets.	Improved forecast reliability.
Computerized Maintenance Management System (CMMS)	Leverage CMMS data for fleet to enhance how decisions are made and how assets are prioritized. Implement CMMS for other assets for Police fleet.	Improved forecasts and decision-making.

12.3.3 Growth Considerations

Policing asset management, relating to growth, involves the strategic planning, acquisition, maintenance, and lifecycle oversight of physical and technological resources critical to law enforcement operations. With population growth and/or changing landscapes, police services must adapt to those changing demands, with effective asset management to support this growth. In terms of preparations and subsequent actions the Windsor Police Service (WPS) will take to address future growth as it relates to asset acquisitions and management, the following course of action is anticipated:

- Physical expansion of buildings/facilities will be assessed and implemented accordingly as growth occurs, to ensure adequate space remains available to perform police service delivery duties. This includes all facilities, inclusive of headquarters, Jefferson, Tilston, and Sandwich properties where staff work from and serve the public.

- Increases in the number of fleet vehicles and related equipment will be carefully assessed to meet needs triggered by increased growth. The nature of fleet equipment components required will also be factored into this decision-making process.
- All other operational support equipment needs, including information technology infrastructure and components, police officer equipment, etc. will be tracked and adjusted as growth dictates.

Strategic asset management aligns resource allocation with our WPS operational goals, enhances service delivery, and ensures effective budgeting responsibility as policing needs grow and evolve.

In terms of policing service delivery, growth-triggered changes to WPS asset inventories are typically driven by population increases. To maintain adequate service delivery standards, WPS will strive to maintain existing ratios of staff, vehicles, and building space per capita. To do this, WPS will leverage population forecasting information provided by either the Planning Department or from up-to-date published projections available from sources such as the most recent Development Charges study.

13 City of Windsor Public Library Board

13.1 Current State of the Infrastructure for the Asset Portfolio

2024 Replacement Value

$47.9M

2024 AMP Average Asset Condition	2024 AMP CRV in 'Good to Very Good' Condition
Good	99.7%

The Public Library Board (WPL) manages the City's Public Libraries and the important services they provide such as offering access to resources and providing a community gathering space. WPL's infrastructure assets deliver the following services:

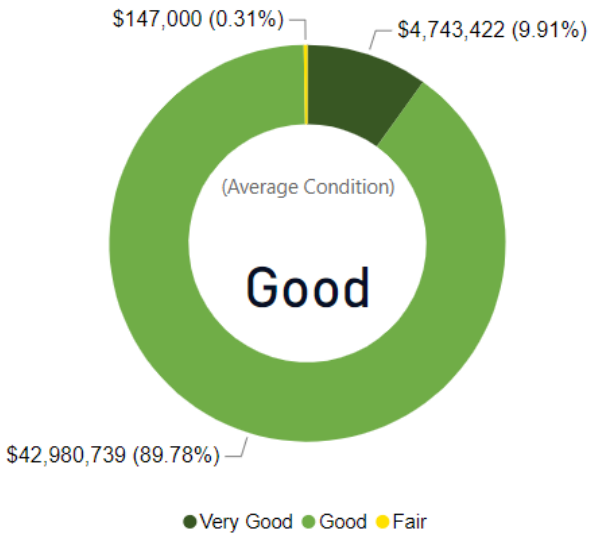
Social Connection and Engagement: providing public gathering places where community can socialize, participate in activities, attend events and engage in cultural or educational programs.

Livability: Maintaining municipal Library facilities contributes to the overall quality of life of the community.

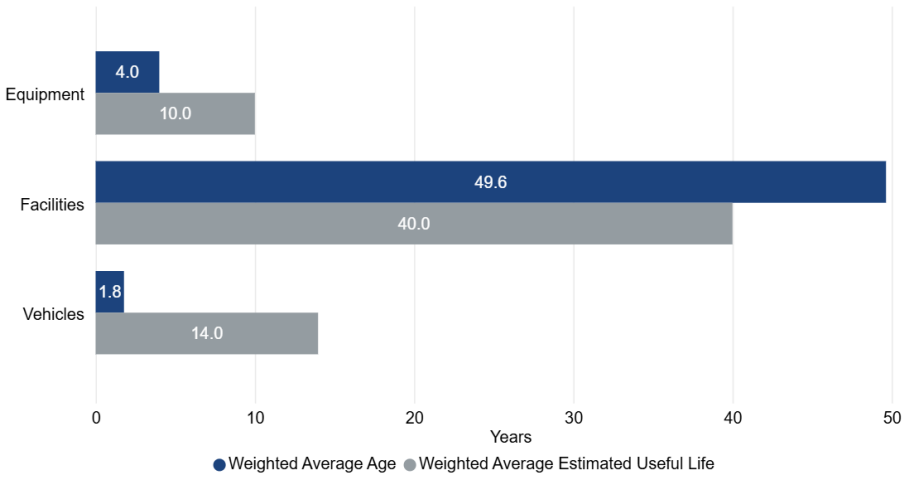
Promotion of Community Vibrancy: Public Libraries play a crucial role in fostering a sense of belonging and community pride.

Facilitation of Services: Public libraries holds program and support initiatives.

Asset Condition Profile based on CRV



Average Age



Infrastructure Gap & Anticipated Growth

Average Annual Infrastructure Gap to Maintain Current Level of Service	Average Annual Infrastructure Gap for Proposed Level of Service	Average Annual Capital Growth Expenditures
$2.1M	$0	$0

13.2 Levels of Service

The levels of service information in this section are based on the data brought forward under the approved City of Windsor Public Library Board 2024 Asset Management Plan (WPL 2024 AMP). This section will discuss two distinct types of levels of service metrics - the Current Levels of Service (CLOS) metrics which represent how the portfolio's infrastructure assets are performing today; and the Proposed Levels of Service (PLOS) metrics which represent a desired future performance goal that the City feels is appropriate in consideration of affordability, achievability, sustainability, and risk to the levels of service provided by the assets.

13.2.1 Level of Service Statement

Public Libraries are critical community hubs that help act as change agents to meet the diverse needs of individuals and the community - fostering literacy, lifelong learning, and discovery.

13.2.2 Current Levels of Service

Level of Service (LOS) metrics are a key component of the City'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 CLOS and the development of PLOS.

Under the WPL 2024 AMP, the current performance was reported for eight LOS metrics that were developed by key staff responsible for assets in WPL's infrastructure asset portfolio. For full details on the development of the 2024 AMP LOS metrics, refer to Appendix A, section 1.2, of the WPL 2024 AMP. These internally defined metrics provide valuable insight into the current performance of their associated assets and support the LOS they provide and will continue to be monitored as supporting Key Performance Indicator (KPI) metrics for this asset portfolio. While proposed targets are not required to be set for KPI metrics, they do provide valuable information and insight into the efficacy of the strategies being implemented to support the asset portfolio's PLOS metric being brought forward under this 2025 AMP. The current performance for all KPIs (see Appendix G, Table G-12) will be reported annually and should be taken into consideration when setting future PLOS targets.

13.2.3 Methodology of Establishing the Proposed Levels of Service

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. In order to clearly understand the impact in establishing PLOS targets, a thorough review of the original work done to develop the initial LOS completed under the 2024 AMP was undertaken. The lifecycle scenarios which modeled cost of condition over a 20-year forecast period, include:

- **Current Funding (Scenario 1):** This model considered the impact to the overall performance of the assets over the forecast period should the asset portfolio continue to be funded as planned in the approved 2024 10-year Capital Budget.

- **Maintain Current Performance (CLOS) (Scenario 2):** This model considered the unconstrained cost over the forecast period to maintain the asset portfolio's current (2024 AMP) performance (i.e. condition) based on expert developed/planned lifecycle activities.
- **Infrastructure Needs as Per Lifecycle Strategies (Scenario 3):** This model considered the cost over the forecast period to perform the planned rehabilitation, renewals, and replacements as scheduled per the lifecycle strategy models developed for each sub-segment of the asset portfolio to maintain assets so that they are able to deliver their intended LOS.

For full details on the development of these scenarios, refer to section 1.3 and section 1.4 of the WPL 2024 AMP.

WPL is using the same Level of Service (LOS) metric as the City to closely align with the City's approach in analysing the forecasted model results, known as the 'Average Overall Asset Condition Weighted by CRV', which is calculated by weighting the average condition of all assets in the portfolio by their replacement value over the forecast period. This approach smooths out annual fluctuations in condition, providing a more accurate representation of the assets' long-term outlook. Through the condition profiles provided in this report, expected peaks and valleys in asset condition are representative of assets going through their typical lifecycle stages ('Very Good' at the beginning of life, and 'Very Poor' near the end of life).

All LOS and KPI metrics established in this 2025 report will be captured and reported annually to provide updates on the current status of asset performance. Over time, this will provide a data set from which WPL will be able to identify performance trends across the asset portfolio. WPL intends to conduct a full assessment of the PLOS targets in the years leading up to the next regulated publication of the AMP, which is currently mandated for every 5 years. Regular review and monitoring of both the PLOS targets and related KPI metrics will help to ensure that appropriate asset management practices are being implemented and followed in an effort to meet stated service needs. The LCM scenarios, the LOS metrics, and the KPI metrics were taken into account when establishing the PLOS metric with consideration given to the risks affecting long-term sustainability, as outlined below.

13.2.3.1 Assessing Risks Associated with PLOS Options to Long Term Sustainability

Using the information provided in the afore-mentioned scenarios, an assessment of risk, asset performance, financial impact, level of sustainability and alternate life cycle activities that could (or would) need to be undertaken was developed in order to achieve a level of service that was: (1) reduced, (2) maintained, or (3) increased when compared to the current level of service offered by Facilities infrastructure assets. The results, summarized in Table 13-1, were developed by key asset stakeholders and reviewed by the Corporate Leadership Team (CLT) in a workshop lead by Asset Planning and the consultant (GEI). The data was assessed in its totality, with further consideration given to the City's ability to support the financial and non-financial strategies to support the PLOS targets that were ultimately set in this workshop. The identification and assessment of the scenario risks noted below played a critical role in the assessment of both CLOS and in the establishing of PLOS for this portfolio.

Table 13-1. City of Windsor Public Library – Risk Assessment of the Level of Service Scenarios

Risks of Reducing CLOS (Scenario 1)	Risks of Maintaining CLOS (Scenario 2)	Risks of Increasing CLOS (Scenario 3)
• Potential loss or disruption of services (programs, accessibility to technology, etc.) • Increased risk of not meeting regulations (accessibility, etc.) • Increased risk of litigation • Reputational risks to the City • Inability to keep up with growth or to meet capacity needs • Increased risk of higher operational costs to keep assets operational as asset conditions decrease • Higher than anticipated costs for reactionary maintenance • Higher future costs (inflation, etc.)	• Similar risks as Reducing CLOS, but to a lesser degree • Remaining in Reactionary vs. Planned Maintenance and Rehab/Replacement activities • May not be most cost effective in the long-term • Forecasts may be understated	• Increased short term cost to the tax/rate payer • Staff/operational needs are required to implement the increase • Forecasts could be understated, or overstated

13.2.3.2 Proposed Level of Service (Scenario 4)

In establishing the PLOS target for the WPL portfolio, a fourth Scenario was developed to model the estimated costs required to support select renewal, rehabilitation and replacement lifecycle activities. This analysis included an assessment of the forecast models from Scenarios 1, 2 and 3 against the variance in associated risk identified by staff and Subject Matter Experts. The impact to the condition of WPL infrastructure assets under this scenario is provided in Figure 13-1, which compares the condition of the assets in the WPL's Current Funding Scenario (Scenario 1) that was brought forward under the WPL 2024 AMP to the expected condition under the PLOS (Scenario 4). The PLOS scenario (Scenario 4) provides an average percent of assets (based on CRV) of 23% in 'Good to Very Good' condition over the 20-year forecast, which is the same as the Current Funding (Scenario 1). There currently is no gap for WPL.

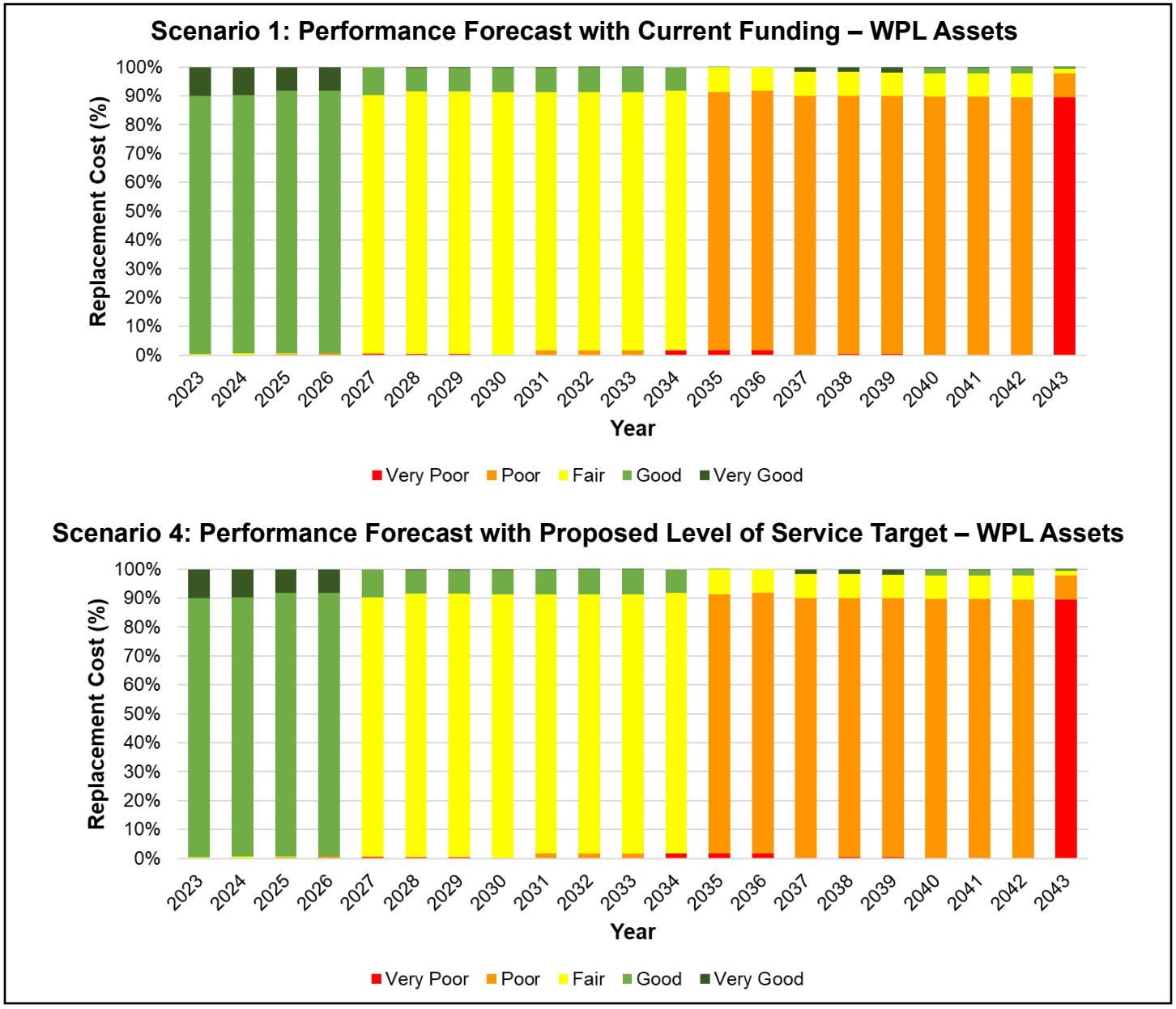


Figure 13-1. City of Windsor Public Library Board – Scenario Comparison (Condition)

13.2.4 Proposed Levels of Service Targets

When taking into consideration the overall current asset condition and CLOS, along with the risks associated with the various LOS scenarios, the PLOS chosen for WPL infrastructure assets is to maintain an average asset condition of 'Good' which is achieved in Scenario 4, despite the graph showing a significant deterioration in overall asset condition. The results of the forecast modeling for this portfolio are unique among all others in this AMP, this is due to the substantially large portion of total CRV that is represented by WPL facility assets overlaid by the effects of modelling Facility assets at a single-asset level. Combined, these Facility assets make up 97.6% of the total CRV for this portfolio and explains why there is not a variation in average overall condition between Scenario 1 and Scenario 4. The condition of the remaining assets, representing a combined total of only 2.4% of total CRV, do not have enough weight to influence the condition year over year. Due to this

imbalance, the modeled forecasts are showing what is essentially only the natural degradation in condition of the WPL Facilities as they move through their lifecycle, homogenously shifting from one condition state to another, towards end of life and eventual replacement. Compounding the effect of this unbalanced distribution in CRV, is that Facilities are currently modeled at a single-asset level which drives the large jumps in condition in years 2027, 2025 and 2043. For these reasons, the graphical interpretation of the forecast model Scenario 4 results is considered skewed and does not accurately depict the expected condition of the WPL facilities across the 20-year forecast scenario. The City is confident that once the City is able to update the forecast model parameters to reflect facilities at the component level through updated BCA's, which is a recommendation provided in this 2025 AMP, it is expected that the condition profile shown in both Scenarios 1 and 4 will change dramatically and will then visually represent the expected PLOS of Good for this asset portfolio. CLOS and PLOS values are captured for this metric in Table 13-2.

Table 13-2. City of Windsor Public Library – Corporate Levels of Service

LOS: Metric Description	Current (2024 AMP) Performance (CLOS)	Proposed Target (PLOS)	Proposed Change
Average Asset Condition weighted by CRV for Public Library Infrastructure Assets	Good	Good[5]	NO CHANGE

13.2.5 The Average Annual Funding Gap Required to Achieve the PLOS

The Average Annual Funding Gap Required to Achieve the PLOS is calculated by comparing the forecasted total lifecycle activity costs under the PLOS Scenario (Scenario 4) against the Current Funding (Scenario 1). Similar to the analysis prepared in the WPL 2024 AMP, the gap also considers Outstanding Infrastructure Needs in its calculation, which was included in the 2024 expenditure amount. Outstanding Infrastructure Needs represent the outstanding renewal, rehabilitation and replacement activities that have been identified and deemed necessary but have not yet been completed due to budget constraints and other limitations.

The recommended PLOS scenario shows no annual investment, incremental to the approved funding provided for in the 2024 City of Windsor 10-year Capital Plan, would be required to maintain overall asset condition as 'Good[1]' and would see the percentage of assets in 'Good to Very Good' condition maintained at the current performance. No additional investment is needed to support the lifecycle

[5] The graphical interpretation of the forecast model Scenario 4 results is considered skewed and does not reflect the actual expected PLOS of Good that is expected from these assets when averaged over a 20-year period. This is due to the combined effects of the WPL Facility assets modeled as a single-level asset rather than as a component-level asset, and that the Facility assets alone make up 97.6% of the total CRV for the entire WPL Portfolio. Once the City is able to update the LCM activities and the forecast model parameters to reflect facilities at the component level through updated BCA's, which is a recommendation provided in this AMP, it is expected that the condition profile shown in both Scenarios will change dramatically and will then then visually represent the expected PLOS of Good for this asset portfolio.

management activities to maintain the average percent of assets in 'Good to Very Good' condition. The breakdown of asset condition under the Current Funding Scenario and PLOS Scenario and the associated investments is shown in Table 13-3.

Table 13-3. City of Windsor Public Library – Scenario Comparison Data

Scenario Data	Current Funding (Scenario 1)	PLOS (Scenario 4)
Average Annual Budget/Cost of the Scenario	$10,685,080	$10,685,080
Average Percent of Assets in 'Good to Very Good' Condition (Based on CRV) over the 20-year Scenario	23%	23%
Average Annual Funding Gap Required to Achieve the PLOS	N/A	No Gap

13.3 PLOS Infrastructure Gap Considerations

Administration conducted an impact analysis of the anticipated funding sources that may be leveraged to address the PLOS funding gap for WPL infrastructure assets. Key aspects that were considered when determining an appropriate PLOS target for this asset portfolio that balances affordability and achievability included:

- A large driver of the overall condition for this portfolio are the Facilities, which are currently modeled at a single-asset level. As such, the overall condition profile modeled over the forecast should be considered cautiously as the Facilities data is based on only average data confidence levels due to the lack of data granularity available for Facilities infrastructure assets. The resulting modeled forecast shows large jumps in condition, reflecting the entire facility asset moving from one condition state to another. Building Condition Assessment (BCA) information at the component level (HVAC, Roof, Electrical Systems, etc.) for WPL Facilities are required for the condition of these infrastructure assets to be re-modeled at the component level, which will significantly increase the data confidence for these assets and may impact the portfolio's forecasted condition results.

- While the above consideration remains, the facilities in the WPL's portfolio are also in overall 'Good', as are many of the other assets included. The condition therefore does not vary over either of the 20-year forecasts and conclusions may be drawn with a reasonable level of certainty that there is a low risk of significant variation in the forecast once component level data for the facilities are introduced to the model.

Under these considerations, Administration feels that current funding for this asset portfolio should be maintained as is currently approved in the City's 10-year Capital budget to support the PLOS Scenario (Scenario 4).

The Financial Strategy (Chapter 16) addresses the funding gap for WPL assets, consolidated with all asset categories. It identifies potential solutions for the City to bridge this gap and ensure long-term

financial sustainability. A key recommendation is to gradually increase financial contributions to these assets over time. In parallel, the City should pursue non-financial strategies which include the implementation of AM best practice, improved lifecycle management, and annual reviews of service level targets to prevent the gap from widening further. These recommendations can be reviewed in section 13.3.1.

Failure to address the funding gap in a timely manner will lead to increasingly severe consequences, such as reduced service levels, higher future costs, and the accelerated decline of critical infrastructure. Proactive planning and a balanced approach between financial investment and operational efficiency are essential to mitigating these risks.

13.3.1 Risk Mitigation Strategies

The City is required by O. Reg. 588/17 to outline how the risks associated with not performing the lifecycle activities identified in the proposed level of service scenario will be managed. As noted, continuing to fund assets at the current level presents inherent risks. However, the City has been proactively mitigating the impacts of the infrastructure gap through various strategies. For WPL infrastructure assets, risks are mitigated using the following strategies:

- Increasing maintenance activities
- 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
- Identifying and leverage grant opportunities
- Proactively conducting studies and preparing for project to take advantage of future funding opportunities.

By prioritizing these strategies, WPL continues to mitigate risks related to the infrastructure gap. While efforts are ongoing to address the funding gap, these strategies will be continuously implemented and refined to manage the risks of not achieving the PLOS. The City plans to implement an asset risk strategy to improve prioritization across asset categories, ensuring critical assets receive focused attention and minimizing risks to prevent service disruptions for the community.

13.3.2 Recommendations

The 2025 AMP has identified the PLOS infrastructure gap using current and best available information however, it acknowledges that further work is needed to explore various strategies for reducing the PLOS gap. To enhance forecasting accuracy for this asset category, it is recommended that WPL implement the necessary improvements outlined in the WPL 2024 AMP.

The implementation of appropriate asset management practices is essential for WPL because they help ensure sustainable, efficient, and cost-effective service delivery. Developing improved asset management practices can ensure long-term financial sustainability, optimize service delivery, enable risk management and resilience, and ensure regulatory compliance, accountability, and service delivery. These actions are important to minimize the infrastructure gap by minimizing lifecycle expenditures by prolonging an asset's life. By adopting strong asset management practices to make informed, data-driven decisions that balance affordability, service levels and long-term sustainability, WPL can improve service reliability, reduce costs, mitigate risks, and plan in a way that benefits the entire community.

It is recommended that WPL explore options to fund the anticipated WPL PLOS gap through a combination of both financial and non-financial strategies.

Table 13-4 reviews the specific recommended non-financial strategies that WPL can leverage to address the infrastructure gap, prior to implementing any financial strategies. These strategies are part of AM best practice and ensure that services are provided at the lowest possible cost.

Table 13-4. City of Windsor Public Library – Recommended Strategies

Recommendation	Explanation	Potential Impact
Facility-wide, Component Level Condition Assessments	Enhancing component level condition assessment data for these facilities will refine expenditure forecasts for greater accuracy and help the City identify targeted areas for improvement.	Increase/Decrease to Infrastructure Gap
Implement AM System	Selecting an appropriate Asset Management System (AMS) for tracking assets and maintenance activities requires a system that is centralized, accessible, and user-friendly for both field staff and decision-makers. Priority components of a system would include asset register and inventory management, maintenance and work order management, mobile accessibility, condition assessment and lifecycle tracking, GIS integration, and reporting and decision support.	Real-time data access that will improve decision-making and more accurate analysis for AM planning.
Develop Data Management Processes and Annual Review of Register, Condition, and Replacement Values	Develop appropriate processes to ensure asset register remains up-to-date, in an appropriate system that allows staff within the organization to access the information required to make decisions on assets. Develop appropriate processes to complete an annual data review to update condition, replacement costs, for all assets.	Improved forecast reliability.

13.3.3 Growth Considerations

In addition to addressing the infrastructure gap noted above, it is important to consider how growth impacts ongoing Operations and Maintenance (O&M) costs. Growth occurs through increases to the asset base as a result of population growth, increased economic activity, and through the addition and expansion of new or existing services.

WPL Administration maintains a capital refurbishment plan and carries out priorities based on the current and future needs for the acquisition or maintenance of fixed assets such as land, buildings, equipment, interior/exterior finishes, furniture, study areas, shelving, service areas, self-checkouts, book inventory, public computer workstations and other it related equipment.

Future growth is integrated with population increases and/or shifts and is based on an equitable distribution of branches, with the goal of providing ease of access to returning and new users.

14 Windsor Essex Community Housing Corporation

Windsor Essex Community Housing Corporation (WECHC)

1.1 Current State of the Infrastructure for the Asset Portfolio

2024 Replacement Value

$1.07B

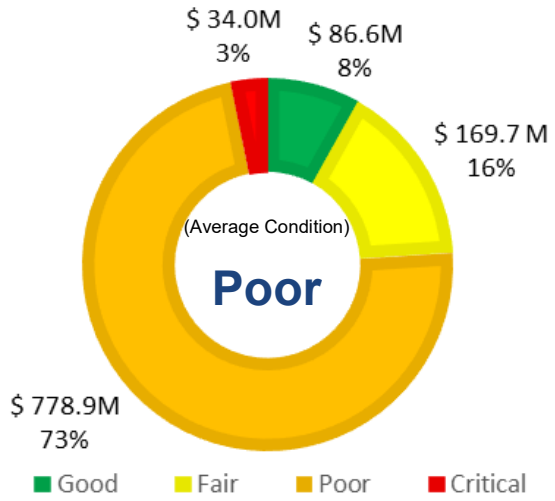
2024 Average Asset Condition	2024 CRV in 'Fair to Good' Condition
'Poor'	24%

WECHC is the leading affordable housing provider in Windsor Essex. Across the region, WECHC houses more than 12,000 people and maintain more than 4,900 units.

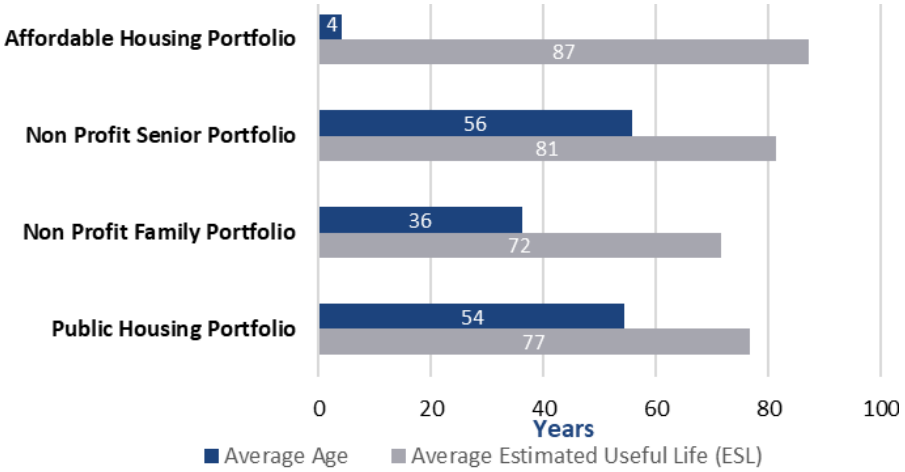
WECHC currently operates four distinct housing portfolios created under various Federal and/or Provincial programs. The details are as follows:

- **Public Housing (PH)** represents 72% of the asset base and is 100% Rent-Geared-to-Income (RGI).
- **Non-Profit Family (NPF)** represents 12% of WECHC's assets based on unit count and is comprised of 60% RGI and 40% "Affordable Market".
- **Non-Profit Senior (NPS)** represents about 12% of WECHC's assets based on unit count and is comprised of 100% "Affordable Market" units.
- **Affordable Housing (AH)** represents 4% of WECHC's assets based on unit count and is comprised of new built or acquired buildings.

2024 Asset Condition Profile Based on Current Replacement Value (CRV)



Average Age



Infrastructure Gap & Anticipated Growth

Average Annual Infrastructure Gap to Maintain Current Level of Service	Average Annual Infrastructure Gap for Proposed Level of Service	Average Annual Growth Expenditures
$11.7 M	$14.3 M	$0

1.1.1 Quick Facts

WECHC has total of 4916 units as follows:

- 3533 Public Housing units
- 573 Non-profit Family units
- 597 Non-profit Senior units
- 213 Affordable Housing units

1.2 Levels of Service

1.2.1 Level of Service Statement (this statement was developed in the 2024 AMP by each of the departmental areas, it is not a requirement under the O. Reg.)

Levels of service (LOS) are measures for what WECHC provides to its customers, residents, and visitors. They support the organization's strategic goals and are derived from customer needs and expectations, Board objectives, legislative and regulatory requirements, standards, along with the financial capacity of WECHC to deliver this LOS.

The current plan demonstrates a higher confidence level compared to the previous one due to its more thorough analysis, improved risk mitigation strategies, and better data-driven approach. It incorporates lessons learned from previous plan being the first draft, leverages more accurate forecasting approach, and includes clearly defined target expectations. As a result, stakeholders can have greater assurance and reliance in the plan's feasibility.

1.2.2 Current Levels of Service

WECHC has selected level of service performance measures as they relate to our Corporate Values of fiscal sustainability, scope, quality, availability, reliability, and environmental stewardship.
As per O. Reg. 588/17, it is required to understand the Current Level of Service (CLOS) and develop the Proposed Level of Service (PLOS). Thus, this version of the AMP considers the PLOS for assets, and the required investment to achieve it as shown in Figure 1 – 1 Scenario Comparison.

The following tables provide a summary of the customer and technical LOS performance measures as of 2023 and current performance measured using 2024 data.

Table 1-1. WECHC - Level of Service Metrics				
AMP Sub - Segment City Defined LOS	**Key Service Attribute**	**Performance Measure**	**Performance (2023)**	**Current Performance (2024)**
Public Housing (PH) Portfolio	Reliable	% of assets in fair to good condition[1]	30%	21%
	Environmental Stewardship[2]	Annual electric energy consumption	10.85 kWh/ Sq Ft	10.59 kWh/ Sq Ft
	Environmental Stewardship[2]	Annual Natural gas consumption	0.78 m^3/ Sq Ft	0.77 m^3/ Sq Ft
	Environmental Stewardship[2]	Annual water consumption per square foot	0.18 m^3/ Sq Ft	0.17 m^3/ Sq Ft
	Environmental Stewardship[2]	Annual GHG emissions	1.58 tons/ 1000 Sq Ft	1.58 tons/ 1000 Sq Ft
Non-Profit Family (NPF) Portfolio	Reliable	% of assets in fair to good condition[1]	35%	15%
	Environmental Stewardship[2]	Annual electric energy consumption	10 kWh/ Sq Ft	10.13 kWh/ Sq Ft
	Environmental Stewardship[2]	Annual Natural gas consumption	0.94 m^3/ Sq Ft	0.92 m^3/ Sq Ft
	Environmental Stewardship[2]	Annual water consumption per square foot	0.20 m^3/ Sq Ft	0.18 m^3/ Sq Ft
	Environmental Stewardship[2]	Annual GHG emissions	1.83 tons/ 1000 Sq Ft	1.83 tons/ 1000 Sq Ft
Non-Profit Senior	Reliable	% of assets in fair to good condition[1]	5%	2%

(NPS) Portfolio	Environmental Stewardship[2]	Annual electric energy consumption	10.53 kWh/ Sq Ft	10.82 kWh/ Sq Ft
	Environmental Stewardship[2]	Annual Natural gas consumption	0.48 m^3/ Sq Ft	0.49 m^3/ Sq Ft
	Environmental Stewardship[2]	Annual water consumption per square foot	0.13 m^3/ Sq Ft	0.10 m^3/ Sq Ft
	Environmental Stewardship[2]	Annual GHG emissions	0.93 tons/ 1000 Sq Ft	0.93 tons/ 1000 Sq Ft
Affordable Housing (AH) Portfolio	Reliable	% of assets in fair to good condition[1]	100%	100%
	Environmental Stewardship[3]	Annual electric energy consumption	[3]Not available	8.31 kWh/ Sq Ft
	Environmental Stewardship[3]	Annual Natural gas consumption	[3]Not available	0.23 m^3/ Sq Ft
	Environmental Stewardship[3]	Annual water consumption per square foot	[3]Not available	0.08 m^3/ Sq Ft
	Environmental Stewardship[3]	Annual GHG emissions	[3]Not available	1.05 tons/ 1000 Sq Ft

[1]WECHC's target is to have all its asset in fair to good condition.

[2] The data provided only represents multi residential buildings.

[3] This is a new portfolio and WECHC did not track the identified LOS before 2024.

1.2.3 Methodology of Establishing the Proposed Levels of Service

Currently, the overall condition of WECHC's asset portfolio is characterized as poor, with an average [1]Facility Condition Index (FCI) score of 15%.

In 2016, WECHC undertook a comprehensive facility condition assessment of its entire building portfolio, with the resulting data subsequently integrated into the Asset Planner software platform for strategic asset management and planning purposes. Since the initial assessment, WECHC has ensured data integrity and relevance by consistently updating the platform with completed projects and studies, thereby facilitating informed decision-making and strategic asset management.

The AMP focuses on identifying renewal, rehabilitation and replacement needs for infrastructure investments. Therefore, only these lifecycle activities are captured in the forecast scenarios and the infrastructure gap modeling. Expenditures required for the remaining lifecycle activities (non-infrastructure, operations, and maintenance) are based on current operating expenditures and are estimates which may not be reflective of actual operational needs. These activities and their associated expenditures, while not forming part of the model, have been captured to provide high-level information on the full lifecycle cost of asset ownership.

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 in 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 LCM scenarios, which modeled cost of condition over a 10-year forecast period, include:

- **Scenario 1:** Current Funding modeled the condition of the assets over the forecast period should the WECHC continue to fund the asset portfolio as planned in the approved 2024 10-year capital budget.
- **Scenario 2:** Maintain Current Performance (CLOS) modeled the cost over the forecast period to maintain the asset portfolio's current (2024) condition.
- **Scenario 3**: Achieve PLOS with optimal funding over the forecast period to perform the planned rehabilitation, renewal and replacements as scheduled per the lifecycle strategy model developed for each sub-segment of the asset portfolio.

For full details on the development of these scenarios and related lifecycle activities, please refer to the 2024 AMP. The Figure 1-1 shows a comparison of 10-year performance forecast for the three scenarios considered

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[1]Facility Condition Index (FCI)

0% - 5%	Good
5% - 10%	Fair
10% - 30%	Poor
>30%	Critical

1.2.3.1 Assessing Risks Associated with PLOS Options to Long Term Sustainability

Table 1-2. WECHC – Risk Assessment of the Level of Service Scenarios

Risks of Reducing CLOS (Scenario 1)	Risks of Maintaining CLOS (Scenario 2)	Risks of Increasing CLOS (Scenario 3)
• Aging structures/systems (e.g., electrical, gas, plumbing) may pose fire, flooding, air quality hazards or mold and deterioration. • Deferred maintenance can lead to non-compliance with building, fire, or health codes. • Increased costs resulting from higher cost of emergency repairs, higher utility costs due to older inefficient systems and repeated cost of short-term fixes. • Asset deterioration due to faster decline in asset conditions resulting in loss of value/marketability and eventual risk of demolition. • Reduced tenant satisfaction and retention resulting in lower quality of life and increased unit turnover cost. • Escalating Future Costs negatively affecting organization's financial profile. • Systems failure can impair housing services delivery, increase pressure on staff and divert resources from social or support services. • Poor building envelopes and old systems lead to inefficiency, environmental impact, and missed emission reduction target.	• All risks of Reducing CLOS (Scenario 1) apply to Maintaining CLOS (Scenario 2), but to a lesser degree. • Forecasts for upgrades and retrofits may be understated due to future uncertainties such as inflation and scope creep.	• Increased short term cost to the tax/rate payer as addressing backlogs needs of $170M require large capital outlays. • Additional staff/operational needs are required to implement the increase. • Forecasts for upgrades and retrofits may be understated, or overstated due to future uncertainties such as inflation and scope creep. • Suboptimal outcomes may occur due to poor planning, poor integration of old systems with existing systems and capacity constraint e.g. staff and tenants requiring repeated training to use new systems like Heat Management Systems (HMS). • Risk of pursuing short-term improvements without a clear portfolio-wide strategic roadmap may result in poor needs prioritization and suboptimal outcomes. • Multiple construction or system replacements may disrupt daily life of tenants and may be perceived by tenants as intrusive.

1.2.3.2 Proposed Levels of Service (Scenario 3)

The current WECHC's housing portfolio currently sitting at roughly 15% FCI indicates that WECHC's overall assert condition is poor thus providing below standard level of service to its customers. The goal is to achieve all it's asset in overall fair condition with an improved PLOS and an FCI of 10% by 2029.

As illustrated in Figure 1-2 and Table 1-5, WECHC requires $22.9 million per year which represents an additional annual investment of $11.7 million to maintain its asset portfolio at the current FCI level of 15%. However, to achieve its PLOS with a target FCI of 10% by 2029, WECHC needs a total of $25.5 million per year which represents an additional $14.3 million per year.

1.2.4 Proposed Level of Service Targets

For WECHC assets, along with their CLOS and designated PLOS values, are captured in Table 1-5.

Table 1-3. WECHC – Corporate Levels of Service

LOS: Metric Description	Current (2024) Performance (CLOS)	Proposed Performance (PLOS)	Proposed Change
Average Asset Condition Weighted by CRV for WECHC Assets	'Poor'	'Fair'	Improve

1.2.5 The Average Annual Funding Gap Required to Achieve the PLOS

To attain WECHC's goal of a 10% FCI, an additional annual funding allocation of $14.3M ($25.5M Total) will be necessary after R&R funding. This additional funding will enable WECHC to address maintenance backlogs, perform necessary repairs, and implement capital upgrades, ensuring the long-term sustainability and quality of its housing portfolio. The funding gap is summarized below in Table 1-5 while Table 1-4 shows quantitative impact of scenario 1 vs 3. Current funding for capital budgets presented are annual average approved budgets (as of 2024) for the 2024-2034 fiscal years.

Table 1-4. WECHC – Scenario Comparison Data

Scenario Data	Current Funding (Scenario 1)	PLOS (Scenario 3)
Average Annual Budget of the Scenario	$11,200,000	$25,500,000
Average Percent of Assets in 'Fair to Good' Condition (Based on CRV) over the 10 - year Scenario	14%	29%
Average Annual Funding Gap Required to Achieve the PLOS	$0.0M	$14.3 M

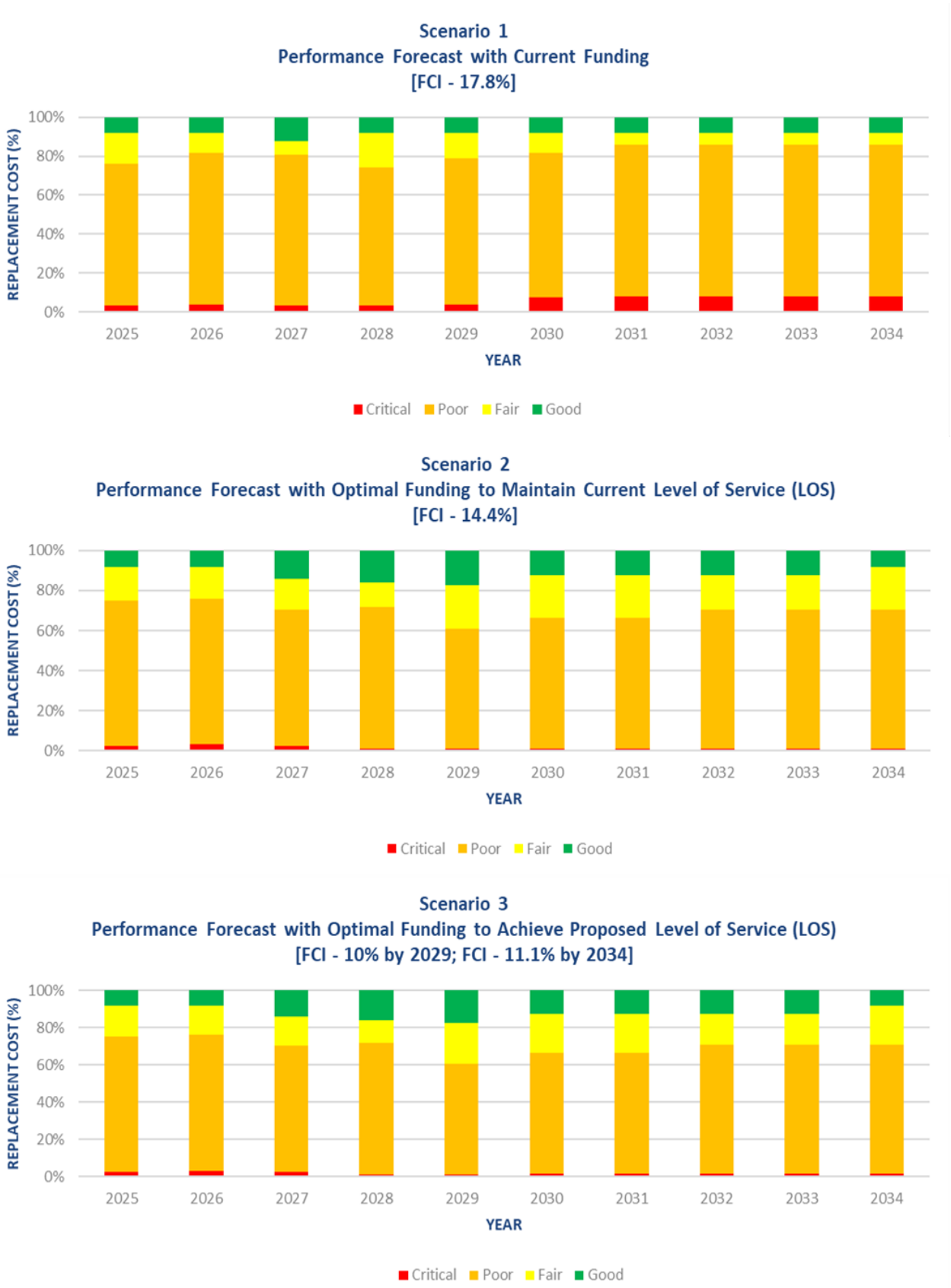


Figure 1-1. WECH – Scenario Comparison (Condition)

Table 1-5.

WECHC – Current and Optimal Capital Funding and Funding Gap

Asset Sub-Segment	Scenario 1 - Current Capital Funding (Average Annual)	Scenario 2 - Optimal Funding to Maintain Current LOS	Scenario 3 - Optimal Funding to Achieve Proposed LOS by 2029	Funding Gap to Achieve PLOS by 2029 (Average Annual)
Public Housing	$7.50 M	$17.4M	$18.45M	$10.9M
Non-Profit Family	$1.70 M	$2.60M	$3.35M	$1.70M
Non-Profit Senior	$1.80 M	$2.07M	$3.42M	$1.63M
Affordable Housing	$0.20 M	$0.20M	$0.27M	$0.07M
Total =	**11.20 M**	**$ 22.90M**	**$25.50M**	**$14.30M**

1.3 Infrastructure Gap Considerations

The “Capital Need Backlog” represents the cumulative backlog of deferred capital work needed to be completed. This current back log represents over $170M of deferred works that have accumulated over multiple decades and have created a significant backlog of necessary works compared to over $150M reported in 2024 AMP.

Deferring renewals create risks of higher financial costs, decreased availability, and decreased satisfaction with asset performance. Ultimately, continuously deferring renewals works ensures WECHC will not achieve intergenerational equality. If WECHC continues to push out necessary renewals, there is a high risk that future generations will be unable to maintain the level of service customers currently enjoy. It will burden future generations with significant costs that inevitably they will be unable to sustain.

Continued deferrals of projects will lead to significantly higher operational and maintenance costs and will affect the availability of services in the future. Properly funded and timely renewals will ensure the assets perform as expected and it is recommended to continue to analyze asset renewals based on criticality and availability of funds for future AM Plans.

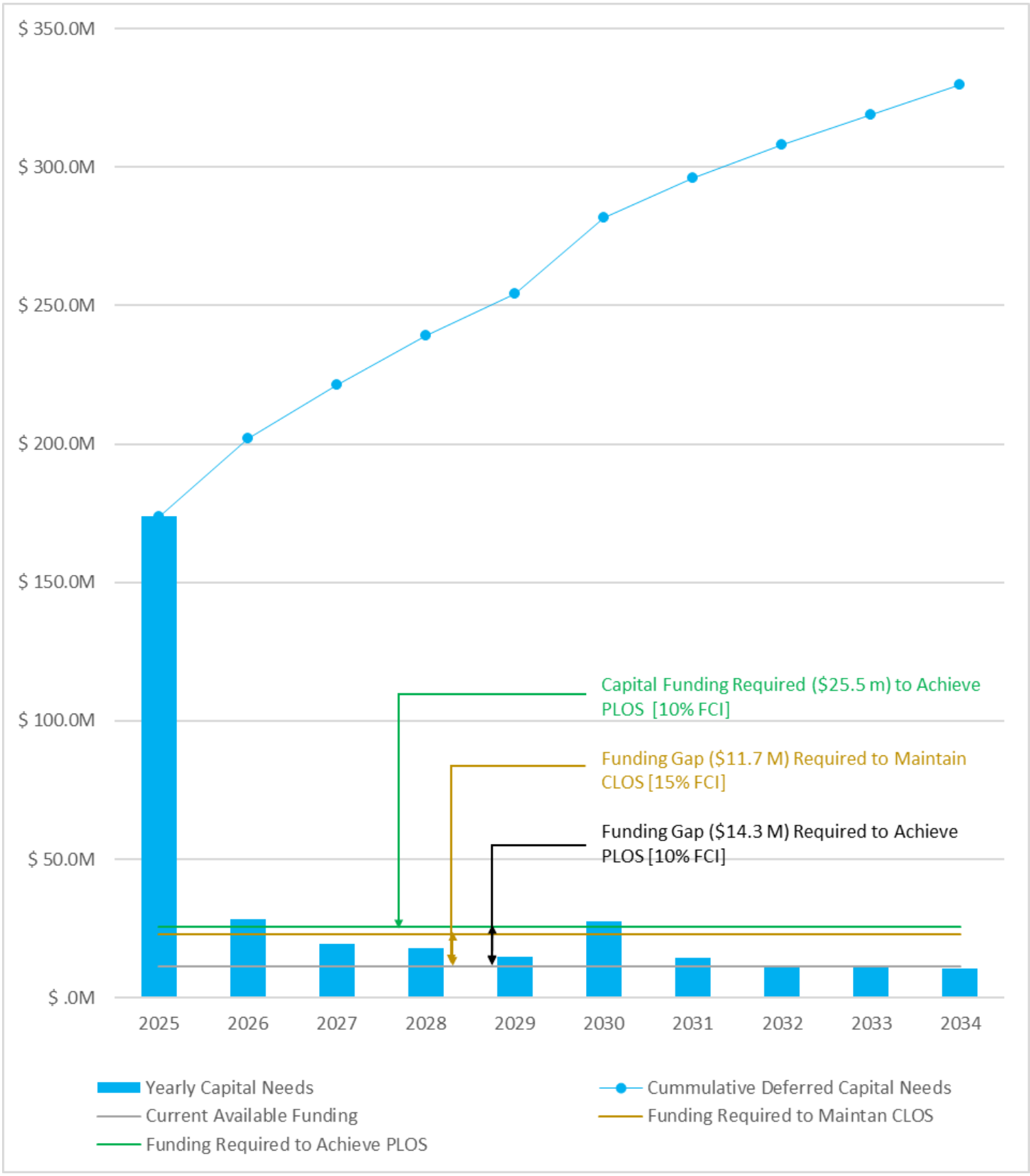


Figure 1-2. WECHC – Infrastructure Needs Assessment Compared to Planned Budget

1.3.1 Risk Mitigation Strategies

- Conducting improved condition assessments and studies to better prioritize high-risk assets/areas and prioritize asset replacements based on risk assessment results.
- Exploring cost-effective alternatives to extend asset lifespan.
- Strengthening capital planning and tenant communication to manage expectations.
- Promoting community education and encouraging resident participation.
- Earmark reserve funds for critical, high-risk systems.
- Schedule inspections and early repairs for key systems (HVAC, gas, electrical).
- Integrate energy performance targets into capital strategy and invest in Energy-Efficient Retrofits and upgrades with highest carbon and cost savings.
- Modernize Asset Management Systems: Use software tools for tracking asset conditions, repairs, and lifecycle plans for more efficient decision-making.
- Categorize buildings by condition and strategic value to determine if they should be maintained, redeveloped, or divested.
- Spread capital spending into manageable, clearly justified tranches (e.g., 5–10 years) to reduce large upfront capital costs.
- Test innovative systems or retrofit approaches at a small scale before wider rollout.
- Provide follow-up support, refresher training, and simple user manuals for new systems to ensure optimal project outcomes.
- Phase construction to limit impact: Avoid overlapping disruptive work in the same building or complex.
- Identifying and leverage grant opportunities with low-interest loans (e.g., CMHC), and public-private partnerships to reduce reliance on local funds.

1.3.2 Recommendations

WECHC continues to improve its approach to the management of its assets and will continue to put in place processes, procedures, and tools to enable a more consistent approach. Some identified lifecycle activities include actions or policies that can lower costs or extend useful life, operations & maintenance activities, renewal and replacement activities, asset end of life disposal activities and service improvement activities. For full details of some of the current asset management practices in place at WECHC, refer to AMP 2024.

Through the development of this AMP, several areas of improvement were identified which should be considered for incorporation into the WECHC's Asset Management practices as the AM program matures in accordance with O. Reg. 588/17.

Recommendations to the WECHC chapter are listed in Table 1-6.

Table 1-2. WECHC – Recommended Strategies

	Explanation	Potential Impact
Develop regular schedule for facility-wide, Component Level Facility Condition Assessments	Developing an enhanced component-level facility condition assessment data for these facilities will refine expenditure forecasts for greater accuracy and help WECHC identify targeted areas for improvement.	Increase/Decrease to Infrastructure Gap
Leverage a more efficient Computerized Asset Management System that integrates Computerized Maintenance Management System (CMMS).	Selecting an appropriate Asset Management System (AMS) for tracking assets and maintenance activities requires a system that is centralized, accessible, and user-friendly for both field staff and decision-makers. Priority components of a system would include asset register and inventory management, maintenance and work order management, mobile accessibility, condition assessment and lifecycle tracking, GIS integration, and reporting. CMMS improves asset management by providing accurate, real-time data that enhances decision-making, optimizes maintenance strategies, and extends asset life. By leveraging the CMMS data, WECHC can improve asset tracking and condition monitoring, develop data-driven maintenance strategies and support preventative maintenance programs.	Ability to optimize allocation of available funding. Real-time data access that will improve decision-making and more accurate analysis for AM planning.
Develop Data Management Processes and Annual Review of Register, Condition, and Replacement Values	Develop appropriate processes to ensure asset register remains up to date, in an appropriate system that allows staff within the organization to access the information required to make decisions on assets. Develop appropriate processes to complete an annual data review to	Improved forecast reliability.

	Explanation	Potential Impact
	update condition, replacement costs, for all assets.	
Asset Risk Management Strategy	The risk posed by asset failure varies by asset type, location, supported services, etc. Understanding the risk associated with each asset and developing mitigation strategies allows for the prioritization of work based on minimizing risk.	Allow to prioritize expenditures related to high-risk assets.
Asset Failure Definition/Asset Management Forecasts (Decision Support System)	By improving asset failure definitions and asset management forecasts, WECHC can reduce risks, improve financial sustainability, extend asset life, and ensure reliable service delivery. These improvements enable us to make more proactive, data-driven decisions that enhance long-term infrastructure resilience.	Provides more accurate risk management, enhanced financial planning and budgeting, optimized maintenance strategies, better service level management and informed decision-making and long-term planning.
Leverage a financial software with standardized divisions that integrates financial information with the asset management software.	By using an improved financial software with the capacity to integrate capital spending and operational expenses with the asset management module, WECHC can reduce risks of duplicating lifecycle activities, track components still under warranty thereby improve financial sustainability, generate cost savings to improve general asset life, and ensure reliable service delivery. These would enable us to make more proactive, data-driven cost allocation decisions that enhances long-term infrastructure resilience.	Provides more accurate risk management, enhanced financial planning and budgeting, optimized maintenance, better service level management and informed decision-making.

1.3.3 Growth Considerations

Windsor Essex Region faces a critical need to expand its social housing infrastructure to address escalating demand, affordability challenges, and demographic shifts due to recent population growth. This growth, coupled with rising housing costs, has intensified the demand for affordable housing. Strategic growth in the social housing sector is essential to ensure equitable access to housing and support the WECHC's long-term sustainability. It is essential to develop a plan and financial strategy for social housing providers to deal with the effect of this progressive growth trend.

1.4 Financial Strategy

At the current time, CHC receives operational funding from the Service Manager to maintain the service level within its Public Housing and Non-Profit Families portfolios. The Service Manager has also committed to providing funding for the Repair and Renewal (R&R) program. R&R which runs from 2020 to 2028 is a $170M program funded by CMHC, the Service Manager and CHC's Non-Profit Seniors portfolio. R&R is intended to provide funding to address the most needed capital improvements to CHC's legacy portfolio. Currently, growth activities (property acquisition, new developments and current property regenerations) are sanctioned as funding becomes available from time to time through the Service Manager and other levels of government.

1.5 Pictures of Recent Capital Improvement Projects

Figure 1-3 Accessibility Upgrades at 120 Oak Completed in 2024

Figure 1-4 Bathtub to Shower Conversion (Barrier-Free) – 120 Oak St., Unit 702 Completed in 2024

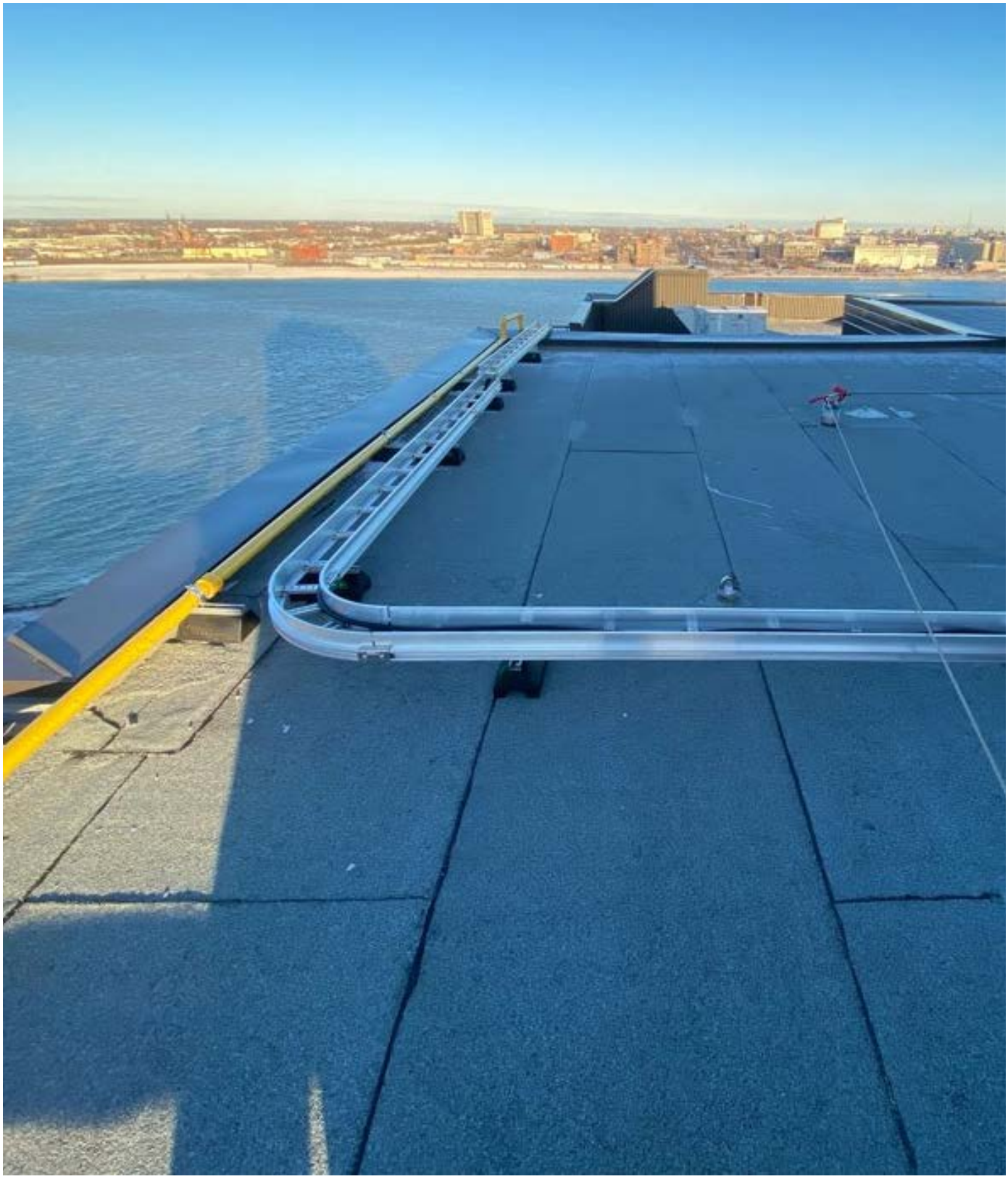


Figure 1-5 Flat Roof Replacement with Insulation Upgrade to R30 at 140 Bridge Completed in 2024

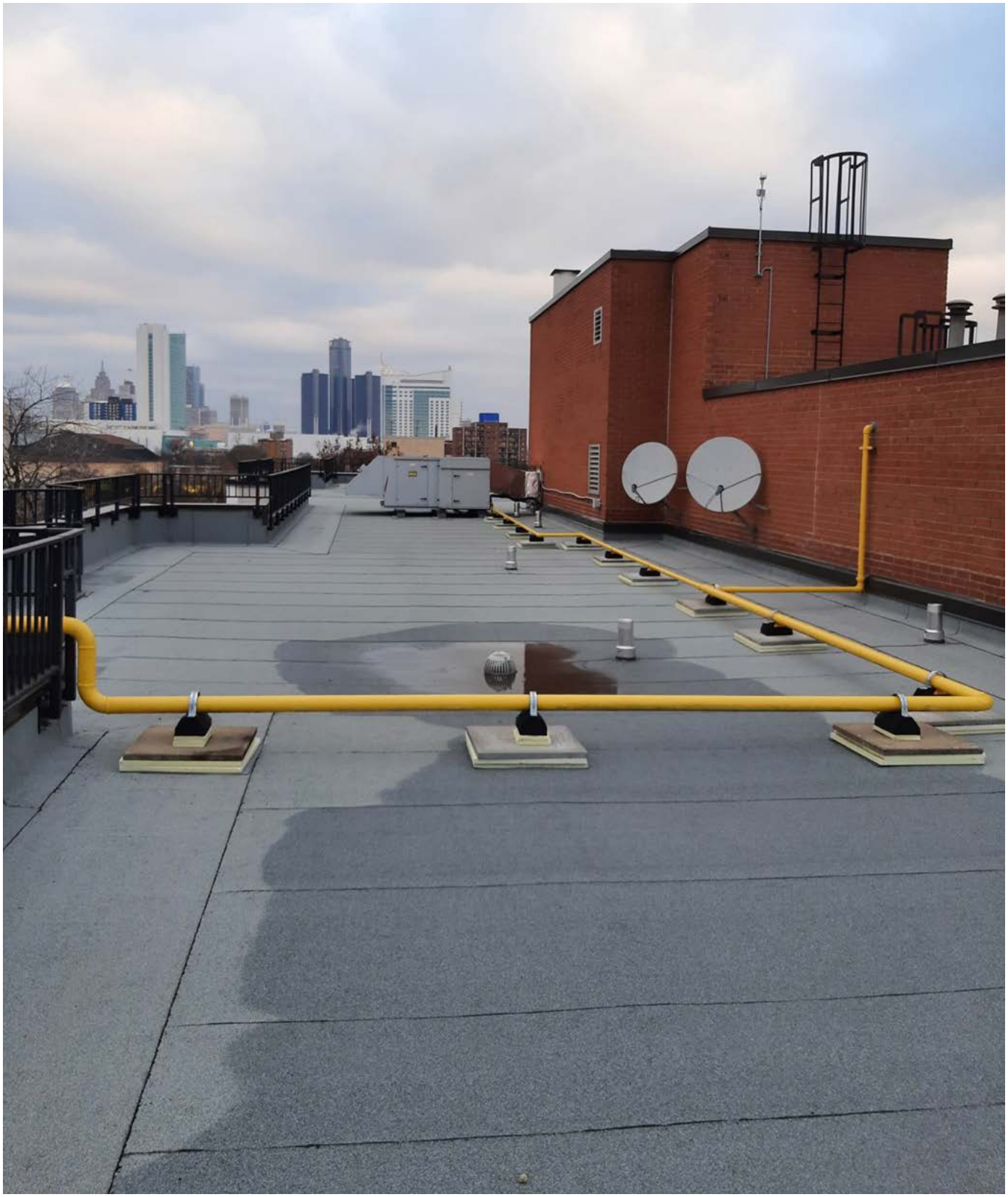


Figure 1-6 Flat Roof Replacement with Insulation Upgrade to R30 at 860 Mercer Completed in 2024

Figure 1-7 New Condensing Gas Powered Domestic Hot Water Tank High Efficiency Completed in 2024

Figure 1-8 New Natural Gas Generator with High Efficiency and Energy Saving Completed in 2024

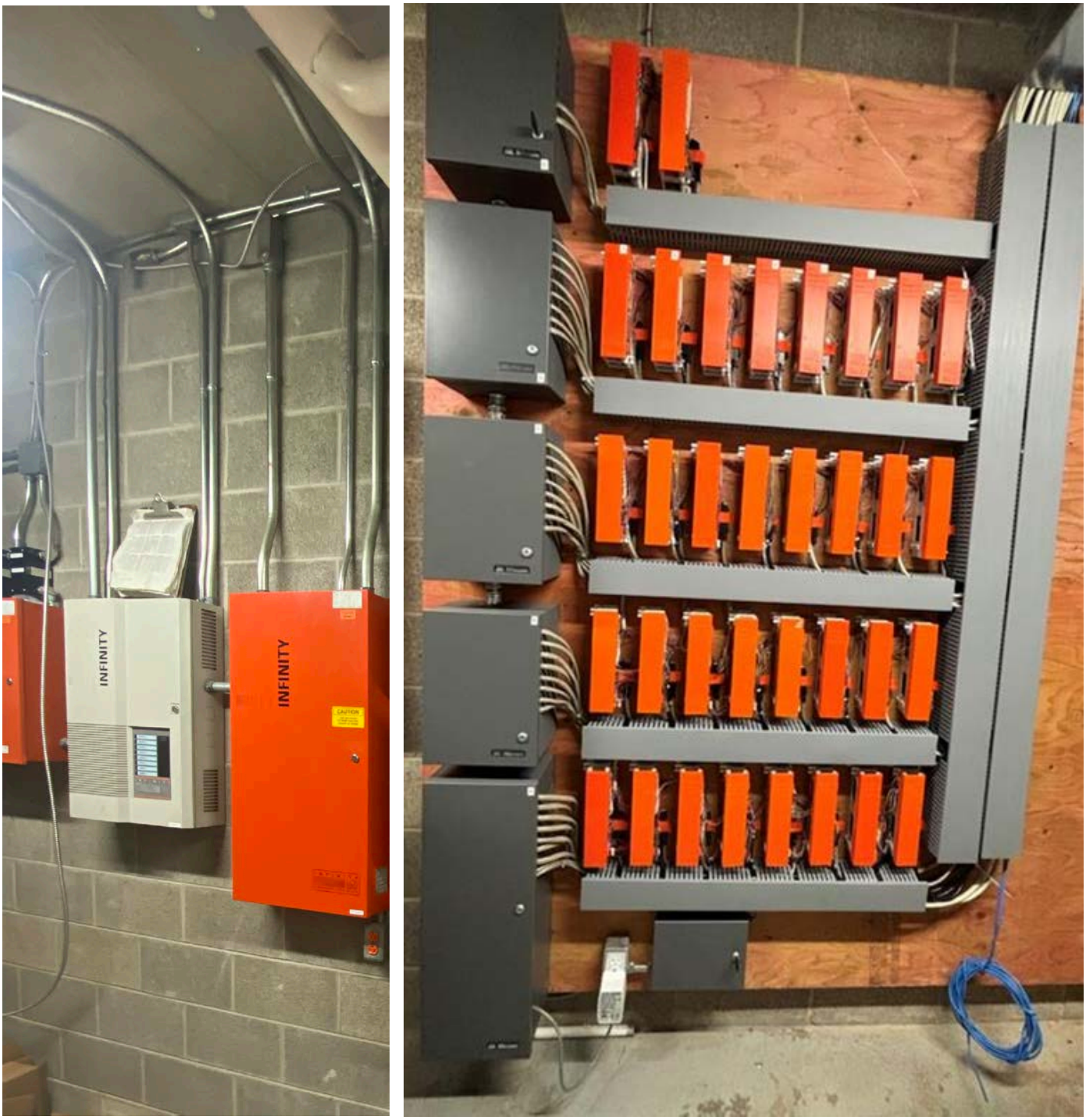


Figure 1-9 New Intercom / Interphone System at 920 Ouellette Completed in 2024

15 Essex-Windsor Solid Waste Authority

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

1.1 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.

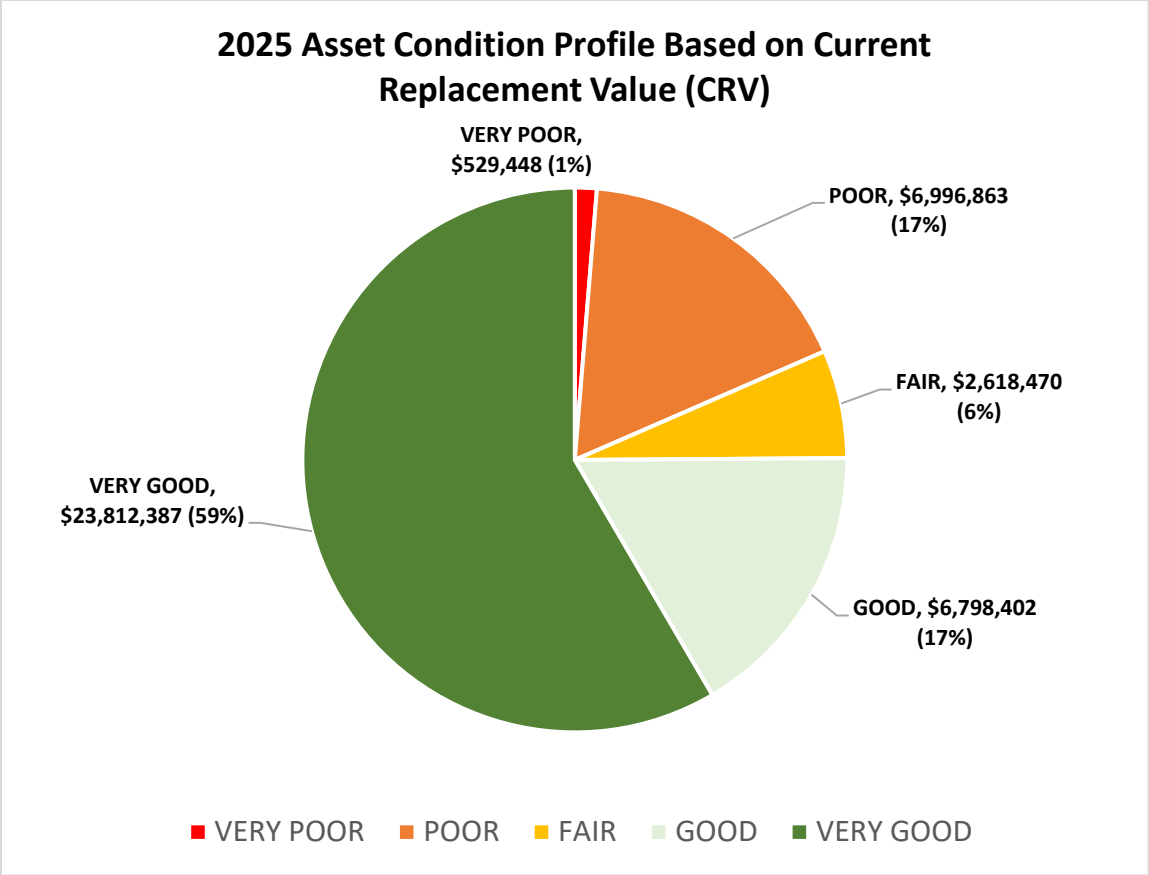


Table 1: Summary from the 2025 Asset Condition Profile Based on Current Replacement Value (CRV) From Graph Above

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

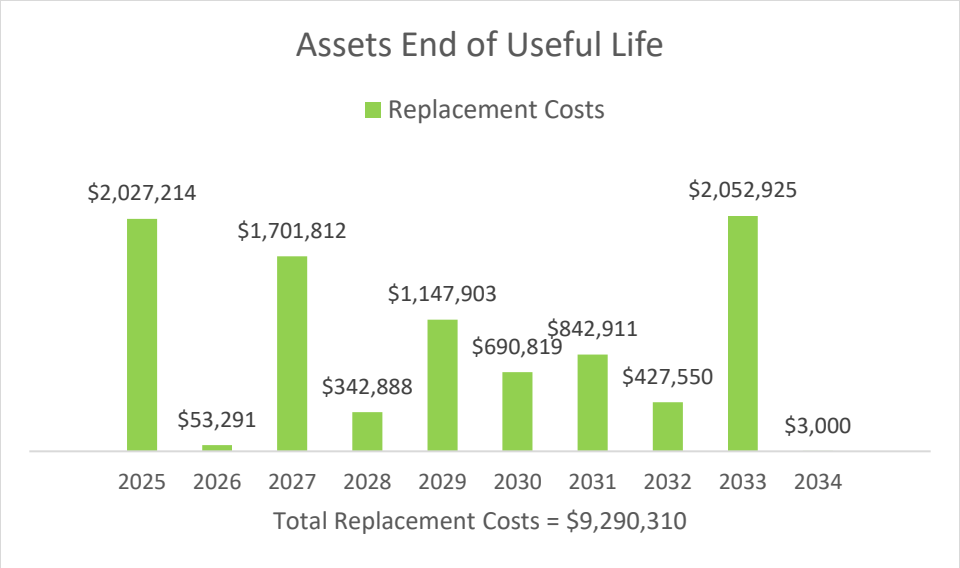
Average Annual Infrastructure Gap to Maintain Current Levels of Service: This figure is the annual sum of dollars needed to replace **all** existing assets (excluding the Regional Landfill and including only the assets which formed the 2024 AMP) at the end of their respective lives.

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)

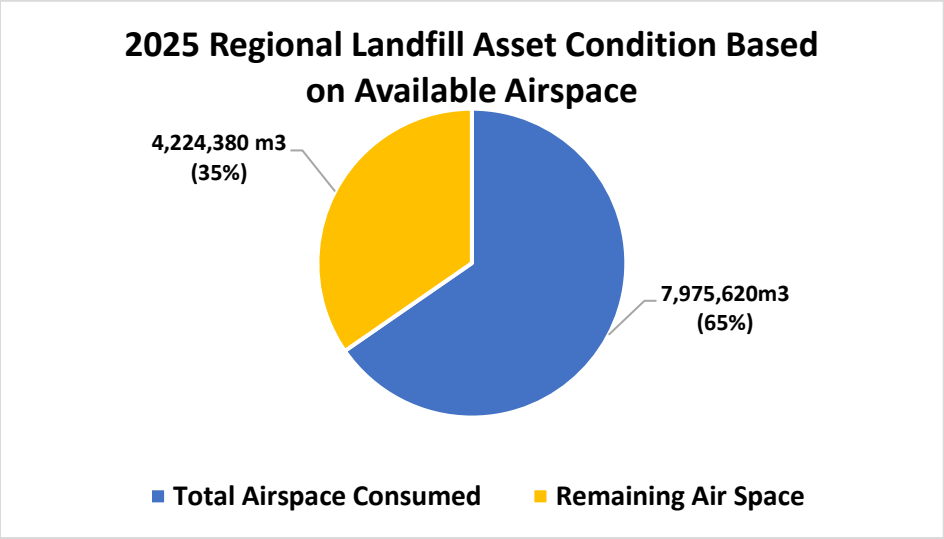
This section specifically highlights the financial figures and condition assessments related to the Regional Landfill asset.

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.

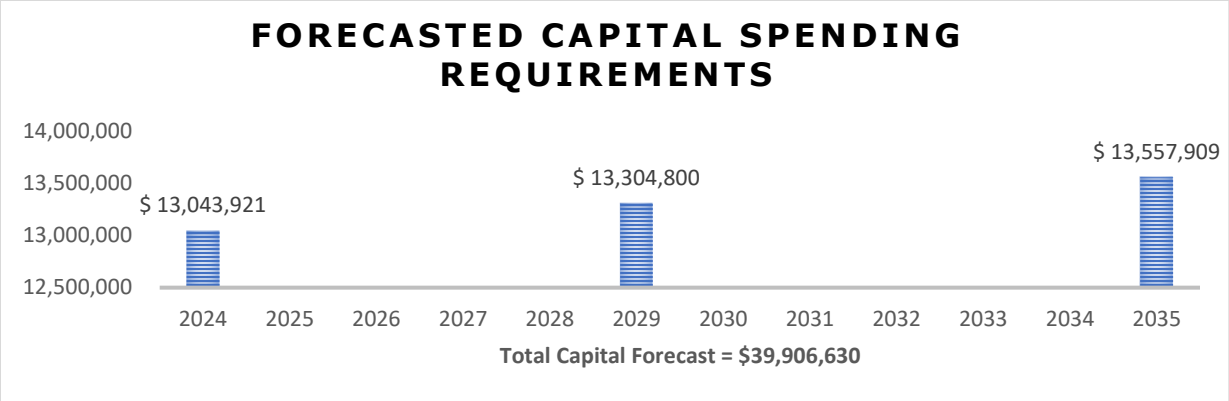
Table 4: Regional Landfill Condition Based on the Available Airspace



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.

1.2 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).

1.2.1 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.
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).

1.2.2 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"**

1.2.3 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	• Similar risks as Scenario 1, but with a lesser degree of impact • Forecasted funding to maintain CLOS may be understated and may fail	• Increased short-term cost to the municipalities, residents and or customers • Additional staff/operational needs are required to implement the increase

Risks of Reducing CLOS (Scenario 1)	Risks of Maintaining CLOS (Scenario 2)	Risks of Increasing CLOS (Scenario 3)
• Essential services may be impacted or halted • Potential increase in the environmental impact if assets are not properly maintained/replaced.	to capture the true replacement cost	• Forecasted funding needs may be understated or overstated

1.2.4 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.

1.3 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 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

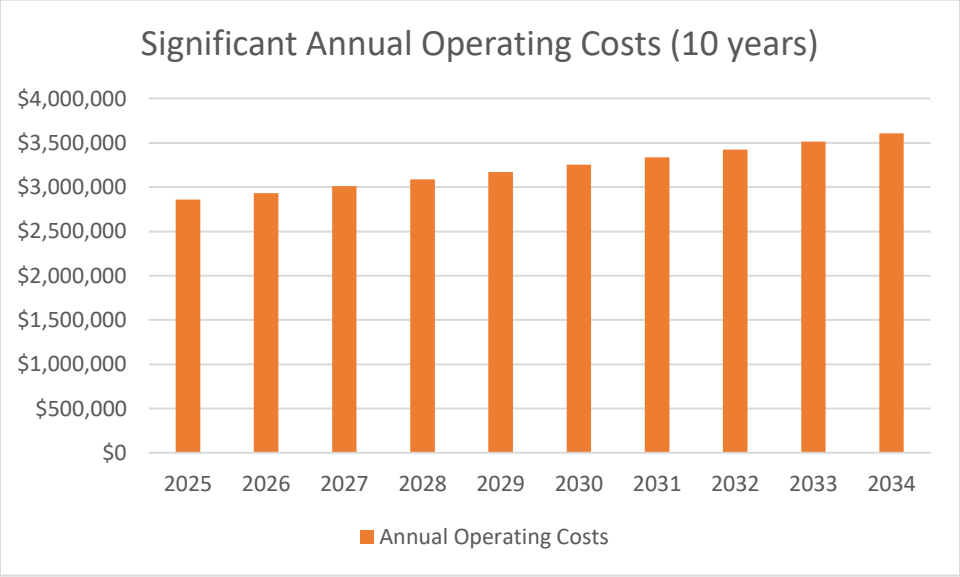
the risks associated with modifying current performance. The scenarios include:

- 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



1.3.1 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.

16 Financial Strategy

16 Financial Strategy

Effective asset management planning requires a financial strategy to address funding gaps identified in the AMP. This strategy ensures adequate funding to maintain, rehabilitate, and improve infrastructure in line with the City's service level goals. It outlines the funding needed to sustain and enhance assets based on the PLOS and analyzes average annual approved funding versus additional expenditures required to maintain or improve LOS.

As per O. Reg. 588/17, this 2025 AMP is required to provide a lifecycle management and financial strategy that includes the following:

- An identification of the lifecycle activities that would need to be undertaken to provide the proposed levels of service described throughout this AMP, which includes:
    - The full lifecycle of the assets
    - The options for which lifecycle activities could potentially be undertaken to achieve the proposed LOS
    - The risks associated with the options discussed
    - The lifecycle activities that can be undertaken for the lowest cost to achieve the proposed LOS
- An estimate of the annual costs for each of the 10 years of undertaking the lifecycle activities, including major capital and operating costs.
- An identification of the annual funding projected to be available to undertake the lifecycle activities, and an explanation of the options examined by the municipality to maximize the funding projected to be available.
- With a funding shortfall identified for the lifecycle activities that are required to meet proposed LOS, the City must also identify the lifecycle activities that will be undertaken and provide an explanation of the risk mitigation strategies associated with not reaching the proposed LOS lifecycle activities.

This financial strategy aligns with regulatory requirements and offers recommendations for both financial and non-financial approaches that can be explored to help close the PLOS infrastructure gap. It is expected that the City will take these considerations into account to advance its asset management practices and determine appropriate adjustments for future budgets. This will support informed decision making regarding necessary financial adjustments, guided by Council approval, and the community's willingness to pay, while balancing risk. Ultimately a phased approach with incremental yet meaningful changes is recommended to achieve long-term impact and financial sustainability.

16.1 Budget Overview

As part of the annual budget development process, the City ensures continued financial sustainability through effective financial planning and risk management. The goal of this AMP is to provide

information to Council and the public on the state of the City's infrastructure, to further inform the data used for purposes of preparing the City's budget and to provide responsible financial management to sustain and improve the City's infrastructure while balancing current needs with long-term financial sustainability. For further information on the budget process, the City provided a detailed overview in the 2024 AMP.

16.1.1 Revenue and Capital Funding Sources

The City's revenues, by source, are outlined in Figure 16-1. Revenues include those generated from property taxes, contributions from senior levels of government, rents, concessions, fines, and other miscellaneous revenue sources.

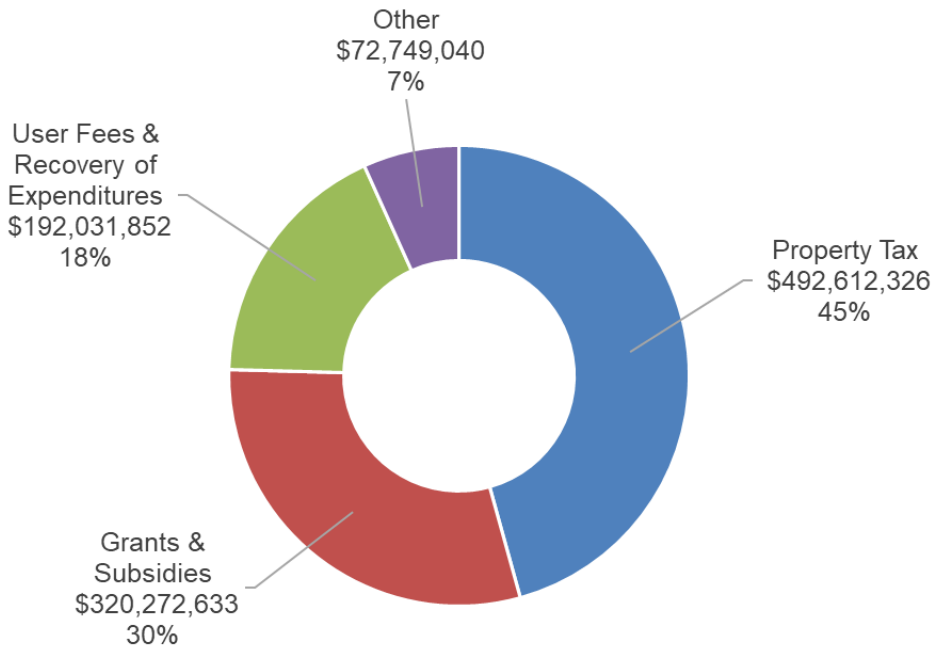


Figure 16-1. Current Funding Sources for Operating Budget Expenditures (2024)

As shown, 45% of the City's revenue is derived from Property Taxes. The next largest revenue source for the City are Grants & Subsidies, typically provided by senior levels of government. With regard to the funding of capital projects, the main sources of funding are as follows:

Levy / User Fee Based Revenue Sources

- Pay-As-You-Go
- Service Sustainability
- Sewer Surcharge
- Stormwater

Corporate Reserves

- Capital Expenditure Reserve
- Development Charges Reserves
- Other Reserves

External Sources

- Provincial Transit Funding
- Canada Community-Building Fund
- Grant Contributions
- Development Charges Revenue
- Third-Party Recoveries
- Other One-Time Funding

16.1.2 AMP Financial Development & Forecasting Assumptions

The City's approved 2024 10-year Capital Budget, along with select information from the approved 2023 operating budget, was used as the basis for the various analysis undertaken in both the 2024 AMP and the 2025 AMP and is shown as the Average Annual Budget.

As noted in the 2024 AMP, the financial analysis focuses on renewal, rehabilitation and replacement needs for infrastructure investments, therefore only these lifecycle activities, and their estimated costs, are utilized in the calculation of the PLOS gap. Expenditures required for the remaining lifecycle activities of non-infrastructure, operations and maintenance, disposal, service improvement, and growth are based on current operating and capital budget expenditures and, while not informing the model, have been captured to provide high-level information on the full Life Cycle Cost (LCC) of asset ownership. It should be noted that the AMP modeling assumes that non-infrastructure, operations and maintenance, service improvement, disposal and growth funding levels are adequate to meet the assets needs.

In determining the Average Annual Budget amounts, both the City's Capital and Operating budgets were analyzed to ensure alignment between the asset categories being reported on in this AMP and the funding that supports them. The calculated Average Annual Budget amounts were then applied to the following ten-year period covering 2034 – 2043 to allow for a 20-year forecast amount to be determined. For purposes of the 2025 AMP, the model did not assume any increases in current funding levels over the previous 2024 AMP forecast period.

O. Reg. 588/17, defines an "infrastructure asset" as any asset directly owned by the municipality or included on the consolidated financial statements of a municipality. With this consideration, the City's ABCs worked collaboratively with City Asset Planning staff in developing an AMP for the City-owned assets they manage and maintain within their respective portfolios. The ABCs consolidated within the analysis of the financial strategy include City of Windsor Airport, City of Windsor Golf Courses, City of Windsor Police Services, Windsor Public Library Board, the Windsor-Essex Community Housing Corporation (WECHC) and the Windsor-Essex Solid Waste Authority (EWSWA). These AMPs have been included as chapters to this document.

16.2 Projected Expenditures & Infrastructure Gap

The 2025 AMP is reporting on $16.4 billion of the City's infrastructure assets and has identified an annual overall PLOS funding gap of $113.9 million. Figure 16-2 below, presents the City's asset categories by current replacement value (CRV).

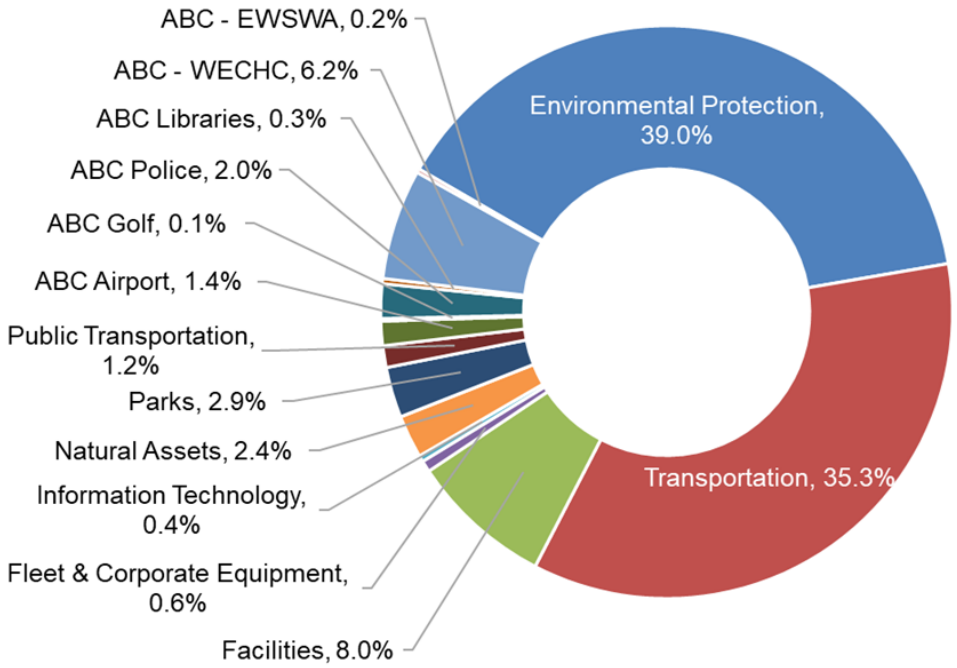


Figure 16-2. Asset Category Valuation as a Percentage of Total Replacement Value

When each asset category's replacement value is compared with the overall PLOS gap, it becomes clear that the largest funding gaps, shown in Figure 16-3, generally correspond to the asset categories with the highest replacement values.

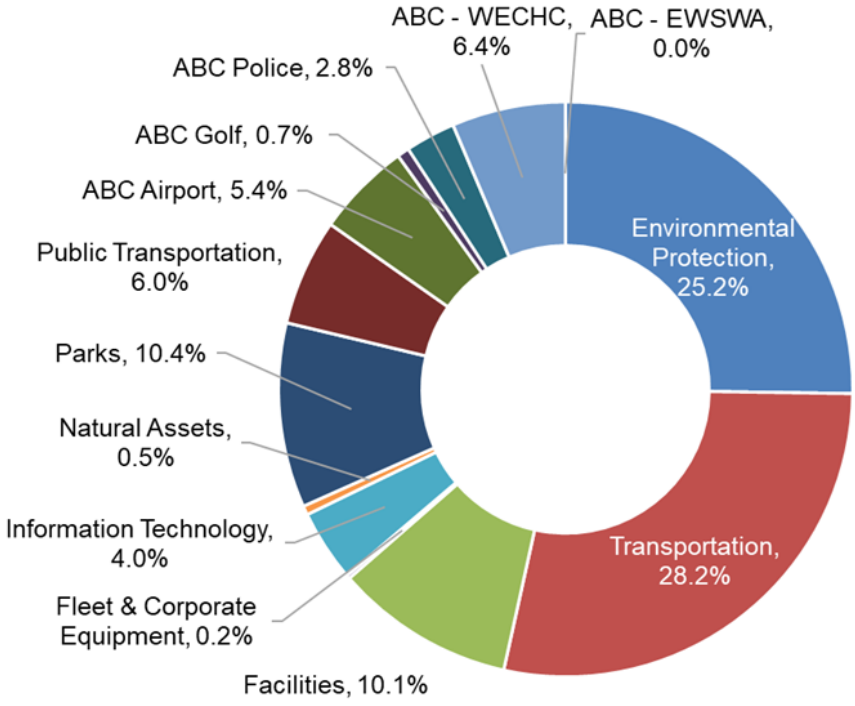


Figure 16-3. PLOS Gap by Asset Category as a Percentage of the Total PLOS Gap[6]

[6] The City of Windsor Libraries PLOS has been set at $0 and therefore, is not depicted in Figure 16-3.

There are some notable exceptions, for example, Information Technology accounts for just 0.4% of the City's total CRV but represents 4% of the overall funding gap. Similarly, Parks, Public Transportation, and the Airport contribute relatively small proportions to the City's total CRV but represent disproportionately large shares of the funding gap. This suggests that, relative to their replacement value, these asset groups have a higher funding shortfall than others, indicating they have likely experienced greater underfunding over time. These findings are detailed in Table 16-1 below, which shows the funding gap by asset category.

Figure 16-4 provides an overall view of the forecasted lifecycle expenditures for all asset categories. Although WECHC and EWSWA conducted their analysis independently, the numbers provided by their independent analysis have been included in the information presented below. Details regarding the establishment of PLOS for all asset categories reported on in the 2025 AMP, and their associated costs, can be found in each asset category's respective chapter.

This figure details the average lifecycle expenditures required for the scenarios for Current Funding and Proposed LOS. The lifecycle expenditures include disposal, growth, non-infrastructure, operations & maintenance, renewal, rehabilitation, replacements and service improvements.

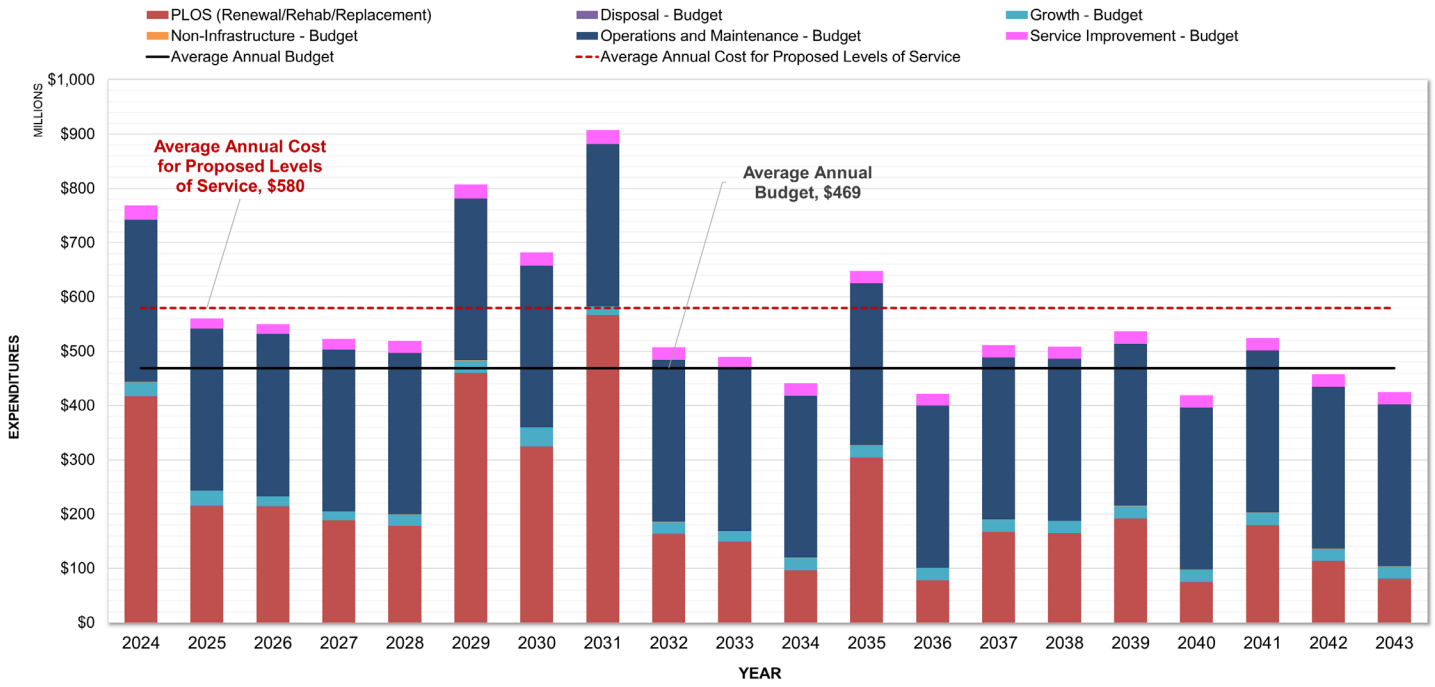


Figure 16-4. Forecasted Lifecycle Expenditures for All Asset Categories

As identified, the Average Annual Budget to support the PLOS lifecycle expenditures is $469 million and the City would require an additional $113.9 million annually to reach the PLOS target. While this is a significant gap, it represents only 0.7% of the total replacement value of the City's assets. It is recommended that the City implement incremental financial strategies to address the PLOS gap, while also implementing the non-financial strategies recommended within this AMP. If left unaddressed, the impacts can be found in section 16.2.1 showing the cumulative infrastructure gap. Additionally, the risks of the infrastructure gap are explored in section 16.3.

Table 16-1. Asset Category Overview & PLOS Funding Gap (All Asset Categories)

Asset Category	CRV	Average Annual Budget	Average Annual Cost for PLOS	Average Annual PLOS Funding Gap	Gap as Percent of CRV
Environmental Protection	$6,394,924,186	$84,969,005	$113,714,017	$28,745,012	0.4%
Transportation	$5,799,422,968	$83,088,133	$115,241,114	$32,152,981	0.6%
Facilities	$1,317,801,242	$36,487,050	$48,019,915	$11,532,864	0.9%
Fleet & Corporate Equipment	$105,226,002	$26,693,368	$26,922,067	$228,699	0.2%
Information Technology	$58,455,863	$14,925,959	$19,527,170	$4,601,211	7.9%
Natural Assets	$396,780,386	$5,217,944	$5,797,727	$579,784	0.1%
Parks	$467,941,316	$30,149,344	$41,982,074	$11,832,730	2.5%
Public Transportation	$201,188,899	$48,620,970	$55,460,927	$6,839,957	3.4%
ABC – Airport	$225,764,275	$7,532,000	$13,632,802	$6,100,802	2.7%
ABC – Golf	$23,055,540	$2,700,938	$3,471,447	$770,509	3.3%
ABC – Police	$320,338,489	$105,919,204	$109,136,148	$3,216,944	1.0%
ABC – Libraries	$47,871,161	$10,685,080	$10,685,080	$0	0.0%
ABC – WECHC[7]	$1,024,180,749	$11,200,000	$18,500,000	$7,300,000	0.7%
ABC – EWSWA[7,8]	$34,971,800	$821,550[9]	$824,400[9]	$2,850[9]	0.0%
Total	**$16,417,922,876**	**$469,010,545**	**$582,914,888**	**$113,904,343**	**0.7%**

[7] WECHC and EWSWA have updated their CRV, LCM activities and forecast modelling reported in their 2025 AMPs, the City has elected to use the figures, as reported under their 2024 AMPs to maintain a consistent approach to the Financial Analysis of the total Average Annual PLOS Funding Gap. Both the 2024 and 2025 figures were determined through forecast models independent from those used by GEI and therefore have not been validated by the City or by GEI. 2025 updated information can be found in each ABC's respective AMP chapter.

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

[9] These figures do not include the needs for the Regional Landfill.

16.2.1 Cumulative Infrastructure Gap

The PLOS scenarios across all asset categories highlights that significant investment, along with the adoption of strategic asset management practices and policies, will be required to meet expected infrastructure needs in order to keep assets in their current condition. The infrastructure gap is further demonstrated in Figure 16-5 and highlights the cumulative effect of this gap over the 20-year forecast period, emphasizing the impact of inflation on the required funding. The inflation rate used in this analysis, at 2.5%, has been chosen as a reasonable rate for consideration given that the average rate for inflation across Canada has been 3.3% over the last 5-year period, and 2.2% over the last 10-year period. If left unaddressed, the cumulative infrastructure gap, factoring in inflation, would amount to $5.0 billion by the end of the 20-year period. It is crucial for the City to consider ways in which to address this gap through strategic investments and planning to ensure sustainable and resilient infrastructure for the future.

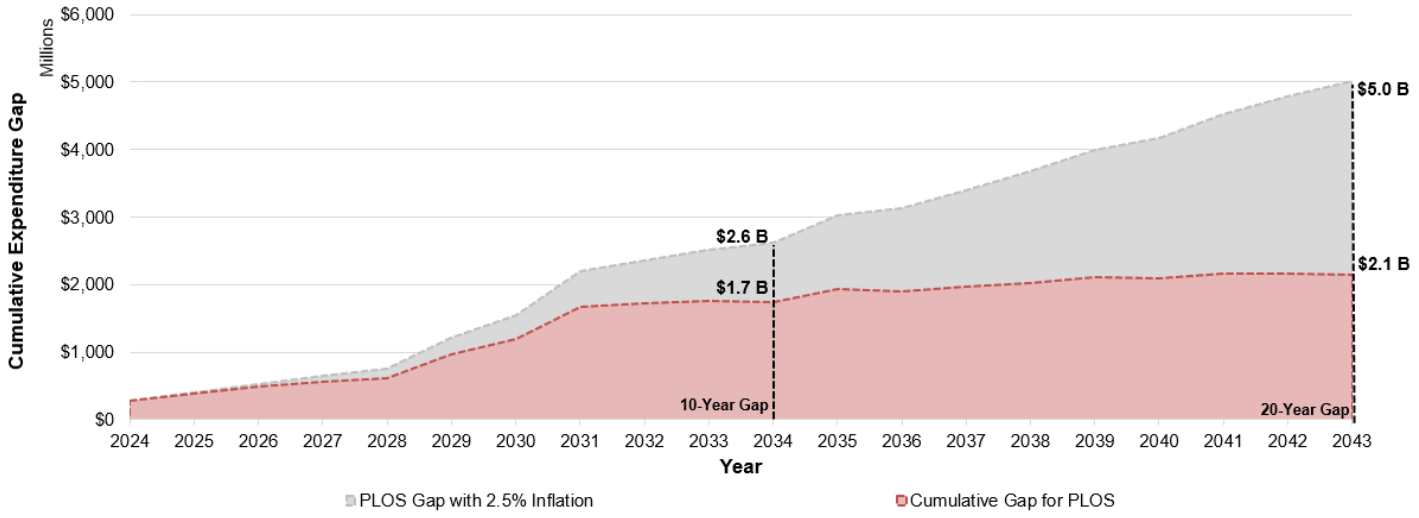


Figure 16-5. Cumulative PLOS Infrastructure Gap based on Total Lifecycle Expenditures

16.3 Risks of Not Closing the Gap and Meeting Infrastructure Needs

It is important to understand and take into consideration the linkages and trade-offs between options to address the gap. The goal of proper asset management is to continuously deliver the required service levels to citizens, at an acceptable level of risk, while minimizing LCC. This section outlines the high-level risks to the City associated with the infrastructure gap and details these risks and what they mean to the City. Specific risks to each asset category have been explored in the individual chapters, which also reviewed the risks associated with the various strategies and scenarios that were considered as a part of setting the PLOS.

16.3.1 Risks Associated with Lifecycle Management

Following the lifecycle strategies and activities outlined in this AMP are the City's best way to avoid risk. Ignoring the infrastructure gap and not completing lifecycle activities and strategies as outlined in

this AMP can lead to a range of negative consequences, both immediate and long-term. These risks and their consequences could include:

Deterioration of Infrastructure and Asset Failure: Without proper investments for renewal, rehabilitation and replacement activities, infrastructure assets will deteriorate over time, leading to increased breakdowns, service disruptions, and potentially safety hazards.

Decreased Operational Efficiency: Without proper lifecycle management strategies, infrastructure may become inefficient, leading to increased downtime, delays, and reduced productivity.

Increased Costs: Delaying infrastructure investments leads to higher costs in the long run. Deferred maintenance and rehabilitations can result in more extensive reactive maintenance, or the need for premature asset replacements, which are significantly more expensive than timely maintenance and upgrades. Ultimately by not adequately keeping assets in a good state of repair leads to higher LCC.

Improper Forecasts: Many non-infrastructure activities such as the development of master plans and asset management planning, provide valuable insights into the infrastructure needs. If these activities are not completed, it can lead to inaccurate estimations for funding requirements and capacity requirements.

Service Disruptions: The deterioration of assets, or asset failure, often leads to unplanned and unexpected disruptions to the services the community currently enjoys and relies on.

Negative Impact to Quality of Life: Poor infrastructure affects the quality of life for residents, including issues like traffic congestion, inadequate public transportation, sewer backups, basement flooding, or lack of access to services. Assets in poor working order also increase the risk of potential health and safety impacts.

Environmental Impacts: Inefficient infrastructure can have adverse environmental impacts such as increased emissions from old facility or fleet assets, or sewage reaching the environment through leaks in pipes. This also increases the potential risk of not meeting regulatory requirements.

Regulatory Non-Compliance: Many of the assets, in particular Environmental Services and Transportation, are highly regulated assets that require assets to be properly maintained and reported on their compliance. Failure to meet regulatory requirements for infrastructure maintenance and safety can result in fines, penalties, legal actions, and possible loss of licenses or permits.

Loss of Public Trust and Confidence: Persistent neglect of infrastructure needs can erode public trust in government institutions and undermine confidence in the ability of leaders to address pressing challenges and could result in difficulties in implementing future infrastructure initiatives.

Negative Economic Impact: Inadequate infrastructure can hinder economic growth because of inefficient and unreliable services to residents and businesses.

Safety Risks: Aging or poorly maintained infrastructure can pose safety hazards to users, workers, and the surrounding community, potentially leading to accidents, injuries, or even fatalities.

Addressing infrastructure needs requires proactive planning, investment, and ongoing maintenance to ensure the resilience and vitality of the community while mitigating the various risks outlined above.

16.4 Funding Strategies and Recommendations

As the previous section demonstrates, there is a significant gap between the currently projected infrastructure needs and the current funding levels. To address this gap, the City will need to explore options to increase funding, reduce the projected infrastructure costs or a combination of the two. Addressing such a substantial gap will require careful consideration and a combination of strategies, including non-financial and financial, some of which are outlined below. Many of the non-financial strategies align with AM best practice. Incremental financial strategies are recommended and will provide a significant impact on reducing the City's infrastructure gap, but it is also recommended to invest in the non-financial strategies that assist in reducing the gap.

The City will use this AMP in consideration of the financial strategies recommended here to determine appropriate recommendations for the City during the budget process, which will be brought to Council for approval.

16.4.1 Non-Financial Strategies

Implementing non-financial strategies is crucial for the City's long-term sustainability. These strategies integrate AM best practice in asset management planning, helping the City balance risk and service levels while making informed decisions based on the best available data for accurate forecasting. These tools play a key role in reducing the infrastructure gap and can be used alongside incremental increases considered in the Financial Strategies.

Levels of Service Targets: O. Reg. 588/17 mandates that municipalities provide an annual update on their progress in implementing the asset management plan. To support this requirement, it is recommended that the adopted levels of service (LOS) metrics be reviewed and updated annually. This will allow the City to assess its progress toward achieving the proposed LOS targets outlined in this plan. Adjustments can be made as needed to ensure that targets remain both achievable and financially sustainable while also helping to reduce the infrastructure gap.

LOS is an important consideration when achieving affordability and achievability. The intent is to consider risk, corporate priorities, and willingness to pay when setting these LOS. These conversations are essential at budget time. When there is not a willingness to increase expenditures, considerations must be made for which levels of service will be lowered.

Asset Prioritization: As the City continues to mature their Asset Management Program, asset prioritization and the implementation of asset management practices play a crucial role in addressing infrastructure gaps by ensuring that limited financial resources are allocated effectively. This can be done through optimizing investment decisions based on condition, criticality and risk to prevent resources from being spent on low-priority assets while high-risk assets deteriorate. Proactive asset management, including preventative maintenance and rehabilitation, will assist in extending life cycles and reducing the need for costly emergency repairs.

Asset Management Data, Systems and Technology: Enhancing asset data collection, analysis, and reporting tools and technology will strengthen evidence-based decision-making by providing accurate, timely, and comprehensive asset information. Improved data quality and analytics

capabilities will enable the City to better assess asset conditions, predict future infrastructure needs, and optimize maintenance and investment strategies.

By leveraging advanced technologies such as Geographic Information Systems (GIS), computerized maintenance management systems (CMMS), predictive modeling, and integrated asset management systems, the City can gain deeper insights into asset performance and lifecycle trends. This will support more precise forecasting, ensuring that financial planning aligns with actual infrastructure requirements. Reliable forecasting reduces uncertainty, enhances risk management, and enables proactive decision-making, ultimately contributing to more sustainable and cost-effective asset management practices.

Efficiency Measures: Enhancing asset management processes is a key strategy for reducing operations costs while improving efficiency and service delivery. By adopting best practices and leveraging modern technologies, the City can ensure that infrastructure investments are cost-effective and that assets are maintained in a way that maximizes their lifespan and minimizes lifecycle costs.

Long-Term Planning: Continue to develop long-term financial plans that allocate resources strategically over multiple budget cycles to address both immediate needs and reduce outstanding infrastructure needs over time.

Community Engagement: Engaging with residents about the significance of infrastructure investment and gathering their feedback on service level expectations is essential. By understanding community priorities, the City can better allocate resources to assets that align with the public's goals and values. However, implementing this in asset management planning can be challenging, as the lifecycle costs and requirements of many municipal assets may not be prioritized over others that the public perceives as more immediately desirable.

Advocacy: Advocating for increased funding support from senior levels of government and seeking partnerships with neighbouring municipalities to share resources and costs.

16.4.2 Financial Strategies

There are a number of financial management tools available that can be employed to increase funding for assets, as shown in Figure 16-6. These tools, along with non-financial strategies, can be leveraged to help address the infrastructure gap.

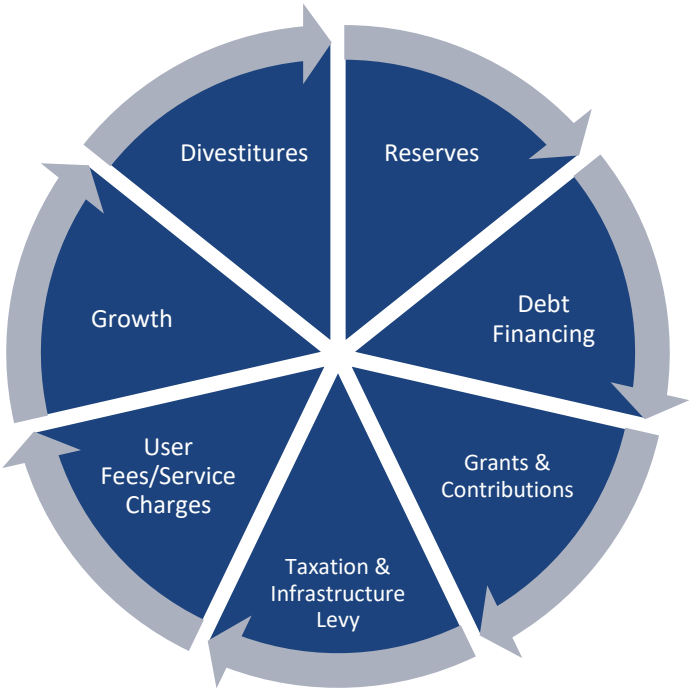


Figure 16-6. Financial Management Tools

Reserves: These are financial management tools that allow a municipality to set aside a portion of revenues over multiple years to pay for future infrastructure projects and to plan for contingencies. Acting like a savings account, reserves play a crucial role in asset management planning by providing financial stability and flexibility for infrastructure renewal, major repairs, and unexpected costs.

While reserves are used to ensure there are funds available in emergencies, they are a critical aspect in financially planning for infrastructure projects and providing affordable services for the future. Lowering property tax increases by reducing contributions to reserves creates a long-term problem and could require greater increases in the future to replenish these reserves in order to maintain service levels.

The benefits of leveraging reserves include:

- Supporting Long-Term Capital Planning - Reserves help smooth out funding requirements for capital projects, reducing the need for sudden tax increases or debt issuance by allowing the City to plan for infrastructure investments over multiple years, ensuring funding is available when assets reach the end of their lifecycle.
- Manage Risk and Uncertainty – Reserve funds can act as a financial buffer against unexpected asset failures or emergency repairs.
- Funding Lifecycle Asset Management – The City can allocate reserves for planning maintenance, rehabilitation, and replacement of assets. These reserves can ensure assets remain in a state where the intended LOS can be delivered, avoiding higher future costs due to deferred maintenance.

- Supports Debt Management and Affordability – Using reserves to fund asset renewal can reduce reliance on debt financing, lowering long-term borrowing and lifecycle costs.

The City currently does leverage reserves to support asset management, using reserves to fund projects within the capital plan. Where projects have been funded with reserves in the Capital Plan, these amounts have been consolidated within the calculation of the PLOS Gap.

It is recommended that the City continue to review and manage its dedicated capital reserves, to ensure the continued upkeep, renewal, and maintenance of its assets within each service portfolio. These reserves serve as a financial mechanism to support long-term asset sustainability and reduce reliance on reactive funding strategies.

Ideally, the City would determine optimal annual reserve contributions based on asset lifecycle needs, risk exposure, and projected funding shortfalls. Establishing these contributions would support more predictable budgeting and provide a strategic approach to addressing the infrastructure funding gap over time, while also enhancing the City's ability to deliver consistent service levels and mitigate the risk of asset failure.

Debt Financing: Debt is a valuable tool for the City when used responsibly to finance critical infrastructure. A well-planned debt strategy ensures financial sustainability, aligns with long-term asset management goals and balances affordability for taxpayers, while maintaining service levels. Situations where the use of debt may be appropriate include:

- Addressing Urgent Infrastructure Needs – When essential assets require immediate replacement, and reserves or other funding sources are insufficient, debt can provide necessary funding to avoid service disruptions and higher future costs due to asset deterioration.
- Leveraging Grant Funding – The City may use debt to secure matching funds for federal or provincial grants, maximizing funding opportunities.
- Managing Cash Flow for Large-Scale Projects – Debt financing may help the City undertake major projects without depleting reserves or requiring large tax increases in a single year.
- When Debt Servicing is Affordable – The City should assess their debt capacity, ensuring that borrowing aligns with financial policies and does not exceed debt limits set by regulations.

Grants & Contributions: The City currently leverages multiple grants to offset expenditures required to provide services. It is recommended that the City continue actively seeking and applying for grant opportunities. While these grants can be difficult to predict and should not be considered a reliable long-term funding source, they can still be leveraged to support expenditures and ease financial pressures.

Taxation & Infrastructure Levy: Incremental tax and rate increases can help close the infrastructure gap by gradually providing additional revenue to fund the long-term maintenance, renewal, and improve of the City’s infrastructure.

The approved AMP Levy, as adopted with the 2018-2019 AMP, provided an annual increase to the capital budget for each of the years 2020 through 2025, specifically for the purpose of maintaining the

condition of existing assets. In 2023, Council supported the extension of the AMP Levy through 2026 to allow for targeted support for homelessness and housing initiatives, and in addition approved a Local Residential Roads (LRR) Levy which provides increased annual capital funding to directly support the rehabilitation of roads in this category. Combined, the AMP and LRR levies, when fully implemented in 2026, will provide incremental funding of approximately $41 million annually as a permanent and ongoing increase to the capital budget. Long term sustainable funding is foundational to being able to address challenges in infrastructure deficits. Continued development and adherence to a measured and well-thought asset management approach will ensure that capital funding continues to address the sustainability of existing assets at proposed LOS.

User Fees & Service Charges: Implementing or adjusting fees and charges for municipal services to address the gap in renewals and replacements for various assets is another approach which can help to address infrastructure needs. The City is currently working towards an update to the Development Charge background study. This will further analyze the anticipated growth expectations and review if updated development charge rates are required. The City should ensure that master plans for wastewater, stormwater, public transit, parks, recreation and other services have been updated to ensure that future development charge and rate studies include all required expenditures for growth to ensure development charges are updated appropriately.

Growth: Increasing density and new developments can provide additional revenue produced from taxes and rates, particularly if new growth is focused in areas where the costs to service the development are less than the additional revenues. Through the budget process, the City updates revenues anticipated to be available through additional taxes as a result of growth. Historically the City has leveraged this increased revenue to fund operating expenses. It is recommended to consider splitting the additional revenue to fund both operating and capital expenditures.

Divestitures: Selling non-essential assets to generate revenue and reduce maintenance costs may be an option for the City. By selling assets no longer in use or providing a service, the City can generate one-time revenues and reduce the amount of assets the City is required to maintain, reducing operating and capital expenses. For example, in the case where a facility is no longer in use but still needs to be maintained at a certain level to avoid risk, there are operation and capital expenses to keep these assets which no longer serve a purpose to the community. Careful consideration of assets for possible divestitures should be undertaken prior to implementing this strategy. The asset's relevance to core services and community value should be evaluated, along with consideration of the asset's condition, financial implications, legal and regulatory review, and engagement with stakeholders. The City may consider alternative uses or partnerships for the asset rather than divestiture, to ensure future community needs are met.

By adopting a comprehensive and balanced combination of financial and non-financial strategies, the City can more effectively address the growing infrastructure gap. Through proactive planning and strategic investment, the City can maintain and enhance service delivery standards, ensuring that infrastructure continues to meet the needs of current residents while accommodating future growth. Importantly, this strategy supports fiscal sustainability by balancing affordability for residents with the need for ongoing infrastructure renewal and replacement. In encourages responsible stewardship of

public assets by integrating financial planning, risk management, and performance monitoring into daily operations and long-term planning processes.

Ultimately, this approach positions the City to remain resilient in the face of economic, environment, and demographic challenges, ensuring its infrastructure systems continue to support a safe, livable, and thriving community for generations to come. This financial strategy offers key insights to inform future City budgets, helping to establish appropriate funding levels that support the delivery of municipal services.

17 Improvement and Monitoring Plan

17 Improvement and Monitoring Plan

Continual improvement in asset management involves an ongoing process of refining strategies, practices, and systems to optimize the performance and value of assets over time. Some key principles include:

Data-driven decision-making: Utilizing data analytics and performance metrics to assess asset performance, identify trends, and make informed decisions. This includes collecting data on asset condition, usage, maintenance history, and LCC.

Risk management: Implementing strategies to identify, assess, and mitigate risks associated with asset ownership and operation.

Asset performance: Regularly monitoring asset performance against predefined performance indicators and benchmarks to identify areas for improvement and ensure alignment with organizational goals.

By continuously refining asset management practices through these principles, the City can enhance asset performance, reduce costs, and ultimately achieve their strategic objectives more effectively.

17.1 2025 AMP Work Plan

AMPs are designed to be “living” documents which require continuous updates and improvements. This allows the City to understand the ever-changing state and needs of the system, while utilizing new information and processes to improve decision-making around these assets. The City is taking a proactive approach to asset management, recognizing the importance of continually improving their forecasting and planning processes.

The City has been tracking the progress on its AMP workplan tasks since the development of the 2013 Corporate AMP. The work that has been identified under these tasks is available within Appendix H. All of the tasks labelled as “Complete” in the 2024 AMP have not been included in this table. The remaining tasks have either been closed out and given a status of “Complete”, or have been integrated into the new reporting format, as seen in Table H-1. Going forward, this new format provides a better understanding of the overall depth of the work that needs to be undertaken to support the City’s continues improvement of its AM program.

To address considerations and recommendations that have been identified in each chapter of this AMP, the Asset Planning Department, in conjunction with GEI, has developed a 2025 AMP Workplan, shown in Table 17-1. This Workplan will set the foundation for the ongoing collection and management of data for the City’s corporate Asset Management Program going forward. These priority items will enhance data accuracy, improve modeling and forecasting, and optimize budget alignment ensuring long-term sustainability and service reliability. This plan addresses both asset-specific and general tasks that should be targeted for executed/implemented over a ‘Short-‘, ‘Medium-‘,or ‘Long-Term’. Alternatively, tasks may also be identified as ‘Ongoing’. Short-Term represents work that should ideally take place within 1-5 years. The Medium-Term work, while important, needs to be

undertaken after the structural data/program work happens (i.e. getting asset data in order, developing and defining process, etc.) and requires further assessment as to the full scope of work and resource requirements and timing; this work would occur within 6-8 years. The Long-Term work is ideally targeted to be undertaken in 8+ years. Ongoing tasks are currently in progress and do not have a defined end point. These tasks require continuous attention, effort, and/or maintenance, and can be recurring. A thorough assessment was conducted to determine the estimated timelines and necessary resourcing needed to execute/implement the work identified, shown in Figure 17-1. Based on this evaluation, it is recommended that staffing levels be appropriately established to support the successful completion of the noted foundational AM work and to ensure continued integration and development of AM practices for the organization as a whole. The noted benefits and outcomes of the high priority items are as follows:

- Compliance Assurance: Keeping up-to-date data with O. Reg 588/17 and alignment to industry standards.
- Improved Data Quality: Ability to drill-down to problems and roll-up costs though function-based hierarchies which enable streamlined reporting, analysis, and improved accuracy for AM forecasts. This ensures data will support strategic decision-making that is data-driven and defensible through increased accuracy of forecasts.
- Operational Efficiency: Effective data governance and a robust framework provides consistency across the organization in AM reporting practices which leads to high quality data, increased confidence in infrastructure investment decisions and structured data capture.
- Improved budgeting and planning through accurate tracking of current replacement costs enhances long-term planning. It ensures that sufficient funds are allocated for asset maintenance and replacement.
- Improved prioritization of limited resources through systematic identification of potential risks and mitigating them promptly, the implementation of consistent AM practices, and the ability to identify high-risk assets and prioritize investment where it will have the most impact, improves value for money.
- Enhance Stakeholder Understanding: Documenting and communicating condition definitions to all relevant stakeholders, including asset managers, decision-makers, and operational teams, to promote a shared understanding and support informed decision-making.
- Supports Sustainable and Resilient Communities: Well-managed infrastructure supports growth, economic development and quality of life. Budgeting with asset management in mind, municipalities are better equipped to adapt to climate change, manage growth, and protect public interest through data driven decisions.
- Shifts in Organizational Mindset: Asset management requires moving from reactive, siloed decision-making to a coordinated, long-term approach. Change management helps staff and leadership understand the "why" behind the shift and embrace new ways of thinking about service delivery and infrastructure planning.

Table 17-1: 2025 AMP Workplan

Area of Improvement	Task / Sub-Task	Priority	Ideal Implementation Time
Data	**(A) Review Functional Asset Hierarchy Structure Standard**		
	A1. Confirming the City's current framework and functional asset hierarchy against the organization's specific needs as they currently are, and as they evolve.	High	Short (1-5 yrs)
	(B) Data Methodology, Updates & Governance		
	B1. Continue to work with all asset owners to align data sources, ensure that asset registries are maintained regularly and stored appropriately.	High	Short (1-5 yrs)
	B2. Review and update basic asset information where possible, such as installation dates to improve accuracy and precision.	High	Short (1-5 yrs)
	B3. Align data sources and ensure that asset registries are maintained regularly and stored appropriately.	High	Ongoing
	B4. Continue the development of processes to annually review asset sub-systems and TCA data.	High	Ongoing
	B5. Review and develop consistent methods for determining data fields that may change over time, particularly replacement values.	High	Ongoing
Condition	**(C) Develop a consistent framework and data collection protocol**		
	C1. Develop a consistent framework and data collection protocol for condition assessments for linear and non-linear assets.	High	Short (1-5 yrs)
	C2. Build on lessons learned from past BCAs and move forward with an improved BCA program that can be used for all corporate buildings.	High	Short (1-5 yrs)
	C3. Work with departments to identify which subjectively rated assets require a formal objective condition rating process, define and implement those processes.	High	Short (1-5 yrs)
	C4. Facilitate updated BCAs for the Wastewater Treatment Plants and Biosolids Facility assets at the component level through industry-appropriate third-party services.	High	Short (1-5 yrs)

Area of Improvement	Task / Sub-Task	Priority	Ideal Implementation Time
	C5. Update asset registries for pumping stations, and interceptors at the component level to better reflect the complexity of these facilities.	High	Short (1-5 yrs)
Process (Business Mapping)	**(D) Understanding Asset Management and Lifecyle Planning Forecasts**		
	D1. Develop and maintain business processes and lifecycle planning forecasts to identify the process from start to finish.	High	Short (1-5 yrs)
	D2. Development of process to annually review asset sub-systems and TCA data.	High	Short (1-5 yrs)
Process (O&M)	**(E) Maintenance Maturity Assessment**		
	E1. Conduct a Maintenance Management Maturity Assessment.	Medium	Medium (6-8 yrs)
Process (Planning)	**(F) Incorporate Asset Management into Budget Development**		
	F1. Develop processes to align budget with asset management planning.	High	Short (1-5 yrs)
	F2. Continue to explore opportunities to address financial pressure and infrastructure gaps identified in the Asset Management Plan.	High	Short (1-5 yrs)
Process (Planning)	**(G) Develop and Implement a Criticality and Risk Assessment Framework for all Assets**		
	G1. Support departments in implementing AM best practice such as risk assessment, analysis of lifecycle costing, whole life cycle costing, and business case evaluation for projects.	High	Ongoing
	G2. Build a criticality and risk assessment framework. It is recommended the framework be aligned to organizational objective and levels of service.	High	Short (1-5 yrs)
	G3. Define the decision points that the criticality and risk assessment framework will support.	High	Short (1-5 yrs)

Area of Improvement	Task / Sub-Task	Priority	Ideal Implementation Time
	G4. Criticality and risk scores should be linked to the respective systems and assets within the enterprise asset management systems e.g., Decision Support System, Work Management System.	High	Short (1-5 yrs)
	G5. Vet the Framework through proof of concept.	High	Short (1-5 yrs)
Process (Planning)	**(H) Integrating Climate Change into Asset Management Planning**		
	H1. Updating data, improving reporting practices, and securing sustainable funding to address climate-related infrastructure vulnerabilities.	Medium	Medium (6-8 yrs)
	H2. Assess Climate Risks to Infrastructure.	Medium	Medium (6-8 yrs)
	H3. Incorporate climate projections into asset lifecycle planning and decision-making processes.	Medium	Medium (6-8 yrs)
	H4. Enhance Financial Planning for Climate Resilience.	Low	Long (8+ yrs)
	H5. Update Master Plans and Policies to ensure alignment between existing Asset Management Plans, climate action strategies, and other municipal planning documents.	Medium	Medium (6-8 yrs)
	H6. Implement Climate-Responsive asset management practices.	Medium	Medium (6-8 yrs)
Process (Planning)	**(I) Development of Risk Assessment Guidelines and Processes in support of the Asset Management Policy and Corporate Strategic Direction**		
	I1. Build guidelines and a supporting framework which outlines a strategic approach to managing maintenance activities to ensure alignment with the organization's overall goals and objectives, considering risk management, cost optimization, regulatory compliance, and the overall lifecycle of assets.	Medium	Medium (6-8 yrs)
	I2. Review and approval of the developed guidelines by the AM Steering Committee and implementation through update of the existing AM Policy and AM Framework documents.	Medium	Medium (6-8 yrs)

Area of Improvement	Task / Sub-Task	Priority	Ideal Implementation Time
Process (Planning)	**(J) Failure Analysis**		
	J1. List of failure modes and mitigating actions for all assets.	Medium	Medium (6-8 yrs)
Process (Planning)	**(K) Lifecycle Strategy Enhancements**		
	K1. Continue to expand and improve on lifecycle management strategies used to forecast the infrastructure needs of assets.	Medium	Medium (6-8 yrs)
Process (Reporting)	**(L) Ongoing Asset Management Reporting, including Annual Update of Progress Implementing AMP**		
	L1. Provide an annual update of the progress implementing the AMP, following the 2025 AMP.	High	Ongoing
	L2. Implementation of Council approved asset management projects as identified by the Asset Planning Steering Committee.	High	Ongoing
Technology	**(M) Work Management System Audit and Assessment**		
	M1. Understanding the value extracted from existing maintenance work system to ensure alignment with execution of the Asset Management Plan and managing levels of service at the lowest risk and cost.	High	Medium (6-8 yrs)
	M2. Conduct an audit to extract data from the work management system using metrics based on typical industry standards.	High	Medium (6-8 yrs)
Technology	**(N) Asset Management System Audit and Assessment**		
	N1. Assessment of functionality and integration of Asset Manager Software for automation of LOS, Risk, and deterioration models as well as the Capital Budgeting and Planning software.	High	Medium (6-8 yrs)
	N2. Improve alignment between Citywide and other expert systems used for asset inventories across all departments to improve consistency of data across the organization.	High	Medium (6-8 yrs)

Area of Improvement	Task / Sub-Task	Priority	Ideal Implementation Time
	N3. Further investigate the use of decision support tools and implement the chosen platform to include all assets.	High	Medium (6-8 yrs)
Resources	**(O) Change Management Planning**		
	O1. Development of an AM Change Management Plan and Implementation Plan for asset management initiatives.	High	Ongoing
Resources	**(P) Education and Awareness within the Organization**		
	P1. Continue to educate and advocate for the adoption and use of AM best practice across all areas of the organization.	High	Ongoing
	P2. Develop opportunities for public engagement to inform and educate the public on asset management, its importance, and benefits to the community to increase transparency.	Medium	Ongoing

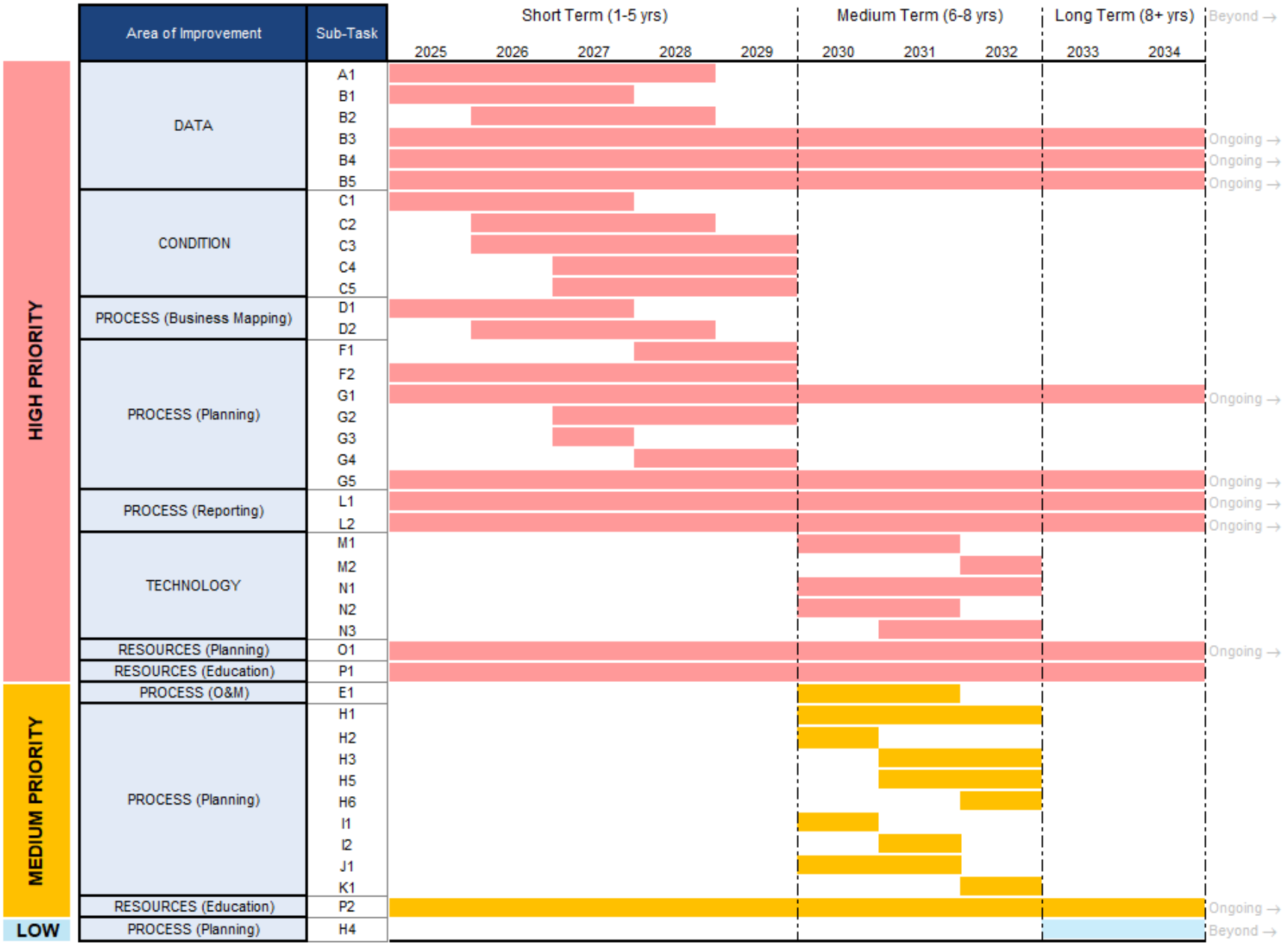


Figure 17-1: 2025 AMP Workplan – Task Implementation Timelines

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Appendix D.
List of Acronyms, Abbreviations and Definitions

Acronyms

ABC	Agencies, Boards and Commissions
AMP	Asset Management Plan
AODA	Accessibility for Ontarians with Disability Act
BCA	Building Condition Assessment
CCAP	Corporate Climate Action Plan
CCTV	Closed Circuit Television
CHP	Combined Heat and Power
CMMS	Computerized Maintenance Management System
Core Assets	As defined by Ontario Regulation 588/17: “core municipal infrastructure asset” means any municipal infrastructure asset that is a, (a) water asset that relates to the collection, production, treatment, storage, supply or distribution of water, (b) wastewater asset that relates to the collection, transmission, treatment or disposal of wastewater, including any wastewater asset that from time to time manages stormwater, (c) stormwater management asset that relates to the collection, transmission, treatment, retention, infiltration, control or disposal of stormwater, (d) road; or (e) bridge or culvert.
CRV	Current Replacement Value
CTSP	Corporate Technology and Strategic Plan
ERM	Enterprise Risk Management
EUL	**Estimated Useful Life** The period over which an asset is designed to deliver the agreed upon level of service (LOS) before replacement.
EV	Electric Vehicle
FAO	Financial Accountability Office of Ontario
GHG	Greenhouse Gas
GIS	Geographic Information System
Infrastructure Gap	Represents the estimated annual funding requirement under the designated scenario, based on the defined lifecycle activities
LCC	**Lifecycle Cost** The total cost of ownership over the life of an asset. This may include but is not limited to capital costs, operating costs, maintenance costs, renewal costs, replacement costs, environmental costs, and user delay.

LOS	**Level of Service** The parameters or combination of parameters that reflect the social, political, economic, and environmental outcomes that the organization delivers. Levels of service statements describe the outputs or objectives an organization or activity provides to customers.
PLOS	**Proposed Level of Service** Similar to Level of Service (LOS), where the parameters and statements reflect the desired or expected levels of service that the organization intends to deliver to its customers.
Pooled Asset	Assets that are homogenous in terms of their physical characteristics, use, and expected useful life. Pooled assets are amortized using a composite amortization rate based on the average useful life of the different assets in a group.
PXO	Pedestrian Crossings
Rehabilitation	Work to rebuild or replace parts or components of an asset, to restore it to a required functional condition and extend its life, which may incorporate some modification.
Renewal	Work to upgrade, refurbish, or replace existing assets or facilities with assets or facilities of equivalent capacity or performance capability.
ROW	Right-of-Way
SaaS	Software-as-a-Service
SME	Subject Matter Expert
SMP	Sewer and Coastal Flood Protection Master Plan (2020)
TCA	**Tangible Capital Assets** Non-financial assets having physical substance that: (a) are held for use in the production or supply of goods and services, for rental to others, for administrative purposes or for the development, construction, maintenance or repair of other tangible capital assets; (b) have useful economic lives extending beyond an accounting period; (c) are to be used on a continuing basis. (d) are not for sale in the ordinary course of operations.
TBL	**Triple Bottom Line** Expands on the traditional view of an organization's financial bottom line by also measuring the organization's commitment to economic, socio-cultural and environmental factors.
Valuation	An estimation of asset worth, typically carried out by a professional appraiser.
WECHC	Windsor Essex Community Housing Corporation
WLC	**Whole Lifecycle Costing** Similar to Lifecycle Costing (LCC), with the inclusion of client and user costs, such as project financing, land, income and external costs.

WPLB	Windsor Public Library Board
WPS	Windsor Police Services
YQG	Your Quick Getaway

Appendix E.
O. Reg. 588/17 Compliance

Section 3: Strategic Asset Management Policy

O. Reg. Section	O. Reg. Description	Requirement met
3.1	Every municipality shall prepare a strategic asset management policy that includes the following	-
3.1.1	Any of the municipality's goals, policies or plans that are supported by its asset management plan.	Yes
3.1.2	The process by which the asset management plan is to be considered in the development of the municipality's budget or of any long-term financial plans of the municipality that take into account municipal infrastructure assets.	Yes
3.1.3	The municipality's approach to continuous improvement and adoption of appropriate practices regarding asset management planning.	Yes
3.1.4	The principles to be followed by the municipality in its asset management planning, which must include the principles set out in section 3 of the Act.	Yes
3.1.5	The municipality's commitment to consider, as part of its asset management planning,	-
3.1.5.i	the actions that may be required to address the vulnerabilities that may be caused by climate change to the municipality's infrastructure assets, in respect of such matters as,	Yes
3.1.5.i.A	operations, such as increased maintenance schedules,	Yes
3.1.5.i.B	levels of service, and	Yes
3.1.5.i.C	lifecycle management,	Yes
3.1.5.ii	the anticipated costs that could arise from the vulnerabilities described in subparagraph i,	Yes
3.1.5.iii	adaptation opportunities that may be undertaken to manage the vulnerabilities described in subparagraph i,	Yes

O. Reg. Section	O. Reg. Description	Requirement met
3.1.5.iv	mitigation approaches to climate change, such as greenhouse gas emission reduction goals and targets, and	Yes
3.1.5.v	disaster planning and contingency funding.	Yes
3.1.6	A process to ensure that the municipality's asset management planning is aligned with any of the following financial plans:	-
3.1.6.i	Financial plans related to the municipality's water assets including any financial plans prepared under the Safe Drinking Water Act, 2002.	Yes
3.1.6.ii	Financial plans related to the municipality's wastewater assets.	N/A
3.1.7	A process to ensure that the municipality's asset management planning is aligned with Ontario's land-use planning framework, including any relevant policy statements issued under subsection 3 (1) of the Planning Act, any provincial plans as defined in the Planning Act and the municipality's official plan.	Yes
3.1.8	An explanation of the capitalization thresholds used to determine which assets are to be included in the municipality's asset management plan and how the thresholds compare to those in the municipality's tangible capital asset policy, if it has one.	Yes
3.1.9	The municipality's commitment to coordinate planning for asset management, where municipal infrastructure assets connect or are interrelated with those of its upper-tier municipality, neighbouring municipalities or jointly-owned municipal bodies.	Yes
3.1.10	The persons responsible for the municipality's asset management planning, including the executive lead.	Yes
3.1.11	An explanation of the municipal council's involvement in the municipality's asset management planning.	Yes
3.1.12	The municipality's commitment to provide opportunities for municipal residents and other interested parties to provide input into the municipality's asset management planning.	Yes

Section 4: Update Of Asset Management Policy

O. Reg. Section	O. Reg. Description	Requirement met
4.1	Every municipality shall prepare its first strategic asset management policy by July 1, 2019 and shall review and, if necessary, update it at least every five years.	Yes

Section 5: Asset Management Plans, Current Levels Of Service

O. Reg. Section	O. Reg. Description	Requirement met
5.1	Every municipality shall prepare an asset management plan in respect of its core municipal infrastructure assets by July 1, 2022, and in respect of all of its other municipal infrastructure assets by July 1, 2024. O. Reg. 193/21, s. 1.	-
5.2	A municipality's asset management plan must include the following:	-
5.2.1	For each asset category, the current levels of service being provided, determined in accordance with the following qualitative descriptions and technical metrics and based on data from at most the two calendar years prior to the year in which all information required under this section is included in the asset management plan:	-
5.2.1.i	With respect to core municipal infrastructure assets, the qualitative descriptions set out in Column 2 and the technical metrics set out in Column 3 of Table 1, 2, 3, 4 or 5, as the case may be.	Yes
5.2.1.ii	With respect to all other municipal infrastructure assets, the qualitative descriptions and technical metrics established by the municipality.	Yes

O. Reg. Section	O. Reg. Description	Requirement met
5.2.2	The current performance of each asset category, determined in accordance with the performance measures established by the municipality, such as those that would measure energy usage and operating efficiency, and based on data from at most two calendar years prior to the year in which all information required under this section is included in the asset management plan.	Yes
5.2.3	For each asset category,	-
5.2.3.i	a summary of the assets in the category,	Yes
5.2.3.ii	the replacement cost of the assets in the category,	Yes
5.2.3.iii	the average age of the assets in the category, determined by assessing the average age of the components of the assets,	Yes
5.2.3.iv	the information available on the condition of the assets in the category, and	Yes
5.2.4.v	a description of the municipality's approach to assessing the condition of the assets in the category, based on recognized and generally accepted good engineering practices where appropriate.	Yes
5.2.4	For each asset category, the lifecycle activities that would need to be undertaken to maintain the current levels of service as described in paragraph 1 for each of the 10 years following the year for which the current levels of service under paragraph 1 are determined and the costs of providing those activities based on an assessment of the following:	-
5.2.4.i	The full lifecycle of the assets.	Yes
5.2.4.ii	The options for which lifecycle activities could potentially be undertaken to maintain the current levels of service.	Yes
5.2.4.iii	The risks associated with the options referred to in subparagraph ii.	Yes

O. Reg. Section	O. Reg. Description	Requirement met
5.2.4.iv	The lifecycle activities referred to in subparagraph ii that can be undertaken for the lowest cost to maintain the current levels of service.	Yes
5.2.5	For municipalities with a population of less than 25,000, as reported by Statistics Canada in the most recent official census, the following:	N/A
5.2.5.i	A description of assumptions regarding future changes in population or economic activity.	N/A
5.2.5.ii	How the assumptions referred to in subparagraph i relate to the information required by paragraph 4.	N/A
5.2.6	For municipalities with a population of 25,000 or more, as reported by Statistics Canada in the most recent official census, the following:	-
5.2.6.i	With respect to municipalities in the Greater Golden Horseshoe growth plan area, if the population and employment forecasts for the municipality are set out in Schedule 3 or 7 to the 2017 Growth Plan, those forecasts.	N/A
5.2.6.ii	With respect to lower-tier municipalities in the Greater Golden Horseshoe growth plan area, if the population and employment forecasts for the municipality are not set out in Schedule 7 to the 2017 Growth Plan, the portion of the forecasts allocated to the lower-tier municipality in the official plan of the upper-tier municipality of which it is a part.	N/A
5.2.6.iii	With respect to upper-tier municipalities or single-tier municipalities outside of the Greater Golden Horseshoe growth plan area, the population and employment forecasts for the municipality that are set out in its official plan.	Yes
5.2.6.iv	With respect to lower-tier municipalities outside of the Greater Golden Horseshoe growth plan area, the population and employment forecasts for the lower-tier municipality that are set out in the official plan of the upper-tier municipality of which it is a part.	N/A

O. Reg. Section	O. Reg. Description	Requirement met
5.2.6.v	If, with respect to any municipality referred to in subparagraph iii or iv, the population and employment forecasts for the municipality cannot be determined as set out in those subparagraphs, a description of assumptions regarding future changes in population or economic activity.	Yes
5.2.6.vi	For each of the 10 years following the year for which the current levels of service under paragraph 1 are determined, the estimated capital expenditures and significant operating costs related to the lifecycle activities required to maintain the current levels of service in order to accommodate projected increases in demand caused by growth, including estimated capital expenditures and significant operating costs related to new construction or to upgrading of existing municipal infrastructure assets.	Yes
5.3	(3) Every asset management plan must indicate how all background information and reports upon which the information required by paragraph 3 of subsection (2) is based will be made available to the public.	Yes
5.4	(4) In this section,	-
	“2017 Growth Plan” means the Growth Plan for the Greater Golden Horseshoe, 2017 that was approved under subsection 7 (6) of the Places to Grow Act, 2005 on May 16, 2017 and came into effect on July 1, 2017; (“Plan de croissance de 2017”)	-
	“Greater Golden Horseshoe growth plan area” means the area designated by section 2 of Ontario Regulation 416/05 (Growth Plan Areas) made under the Places to Grow Act, 2005. (“zone de croissance planifiée de la région élargie du Golden Horseshoe”)	-

Section 6: Asset Management Plans, Proposed Levels Of Service - 2025

O. Reg. Section	O. Reg. Description	Requirement met
6.1	6. (1) Subject to subsection (2), by July 1, 2025, every asset management plan prepared under section 5 must include the following additional information:	-

O. Reg. Section	O. Reg. Description	Requirement met
6.1.1	For each asset category, the levels of service that the municipality proposes to provide for each of the 10 years following the year in which all information required under section 5 and this section is included in the asset management plan, determined in accordance with the following qualitative descriptions and technical metrics:	-
6.1.1.i	With respect to core municipal infrastructure assets, the qualitative descriptions set out in Column 2 and the technical metrics set out in Column 3 of Table 1, 2, 3, 4 or 5, as the case may be.	Yes
6.1.1.ii	With respect to all other municipal infrastructure assets, the qualitative descriptions and technical metrics established by the municipality.	Yes
6.1.2	An explanation of why the proposed levels of service under paragraph 1 are appropriate for the municipality, based on an assessment of the following:	Yes
6.1.2.i	The options for the proposed levels of service and the risks associated with those options to the long-term sustainability of the municipality.	Yes
6.1.2.ii	How the proposed levels of service differ from the current levels of service set out under paragraph 1 of subsection 5 (2).	Yes
6.1.2.iii	Whether the proposed levels of service are achievable.	Yes
6.1.2.iv	The municipality's ability to afford the proposed levels of service.	Yes
6.1.3	The proposed performance of each asset category for each year of the 10-year period referred to in paragraph 1, determined in accordance with the performance measures established by the municipality, such as those that would measure energy usage and operating efficiency.	Yes
6.1.4	A lifecycle management and financial strategy that sets out the following information with respect to the assets in each asset category for the 10-year period referred to in paragraph 1:	-
6.1.4.i	An identification of the lifecycle activities that would need to be undertaken to provide the proposed levels of service described in paragraph 1, based on an assessment of the following:	Yes

O. Reg. Section	O. Reg. Description	Requirement met
6.1.4.i.A	The full lifecycle of the assets.	Yes
6.1.4.i.B	The options for which lifecycle activities could potentially be undertaken to achieve the proposed levels of service.	Yes
6.1.4.i.C	The risks associated with the options referred to in sub-subparagraph B.	Yes
6.1.4.i.D	The lifecycle activities referred to in sub-subparagraph B that can be undertaken for the lowest cost to achieve the proposed levels of service.	Yes
6.1.D.ii	An estimate of the annual costs for each of the 10 years of undertaking the lifecycle activities identified in subparagraph i, separated into capital expenditures and significant operating costs.	Yes
6.1.D.iii	An identification of the annual funding projected to be available to undertake lifecycle activities and an explanation of the options examined by the municipality to maximize the funding projected to be available.	Yes
6.1.D.iv	If, based on the funding projected to be available, the municipality identifies a funding shortfall for the lifecycle activities identified in subparagraph i,	-
6.1.D.iv.A	an identification of the lifecycle activities, whether set out in subparagraph i or otherwise, that the municipality will undertake, and	Yes
6.1.D.iv.B	if applicable, an explanation of how the municipality will manage the risks associated with not undertaking any of the lifecycle activities identified in subparagraph i.	Yes
6.1.5	For municipalities with a population of less than 25,000, as reported by Statistics Canada in the most recent official census, a discussion of how the assumptions regarding future changes in population and economic activity, set out in subparagraph 5 i of subsection 5 (2), informed the preparation of the lifecycle management and financial strategy referred to in paragraph 4 of this subsection.	Yes

O. Reg. Section	O. Reg. Description	Requirement met
6.1.6	For municipalities with a population of 25,000 or more, as reported by Statistics Canada in the most recent official census,	Yes
6.1.6.i	the estimated capital expenditures and significant operating costs to achieve the proposed levels of service as described in paragraph 1 in order to accommodate projected increases in demand caused by population and employment growth, as set out in the forecasts or assumptions referred to in paragraph 6 of subsection 5 (2), including estimated capital expenditures and significant operating costs related to new construction or to upgrading of existing municipal infrastructure assets,	Yes
6.1.6.ii	the funding projected to be available, by source, as a result of increased population and economic activity, and	Yes
6.1.6.iii	an overview of the risks associated with implementation of the asset management plan and any actions that would be proposed in response to those risks.	Yes
6.1.7	An explanation of any other key assumptions underlying the plan that have not previously been explained.	Yes
6.2	(2) With respect to an asset management plan prepared under section 5 on or before July 1, 2021, if the additional information required under this section is not included before July 1, 2023, the municipality shall, before including the additional information, update the current levels of service set out under paragraph 1 of subsection 5 (2) and the current performance measures set out under paragraph 2 of subsection 5 (2) based on data from the two most recent calendar years.	Yes

Section 7: Update of Asset Management Plans

O. Reg. Section	O. Reg. Description	Requirement met
7.1	Every municipality shall review and update its asset management plan at least five years after the year in which the plan is completed under section 6 and at least every five years thereafter.	2026
7.2	The updated asset management plan must comply with the requirements set out under paragraphs 1, 2 and 3 and subparagraphs 5 i and 6 i, ii, iii, iv and v of subsection 5 (2), subsection 5 (3) and paragraphs 1 to 7 of subsection 6 (1).	2026

Section 8: Endorsement And Approval Required

O. Reg. Section	O. Reg. Description	Requirement met
8.1	Every asset management plan prepared under section 5 or 6, or updated under section 7, must be,	-
8.1.a	Endorsed by the executive lead of the municipality; and	Pending
8.1.b	Approved by a resolution passed by the municipal council.	Pending

Section 9: Annual Review of Asset Management Planning Progress

O. Reg. Section	O. Reg. Description	Requirement met
9.1	Every municipal council shall conduct an annual review of its asset management progress on or before July 1 in each year, starting the year after the municipality's asset management plan is completed under section 6.	2026+
9.2	The annual review must address,	-
9.2.a	the municipality's progress in implementing its asset management plan;	2026+
9.2.b	any factors impeding the municipality's ability to implement its asset management plan; and	2026+
9.2.c	a strategy to address the factors described in clause (b).	2026+

Section 10: Public Availability

O. Reg. Section	O. Reg. Description	Requirement met
10	Every municipality shall post its current strategic asset management policy and asset management plan on a website that is available to the public and shall provide a copy of the policy and plan to any person who requests it.	Yes

Appendix F.
O. Reg. 588/17

Ontario

Français

Infrastructure for Jobs and Prosperity Act, 2015

ONTARIO REGULATION 588/17

ASSET MANAGEMENT PLANNING FOR MUNICIPAL INFRASTRUCTURE

Consolidation Period: From March 15, 2021 to the e-Laws currency date.

Las amendment: 193/21.

Legislative History: [+]

This is the English version of a bilingual regulation.

CONTENTS [−]

INTERPRETATION AND APPLICATION

Definitions

1. (1) In this Regulation,

"asset category" means a category of municipal infrastructure assets that is,

(a) an aggregate of assets described in each of clauses (a) to (e) of the definition of core municipal infrastructure asset, or

(b) composed of any other aggregate of municipal infrastructure assets that provide the same type of service; ("catégorie de biens")

"core municipal infrastructure asset" means any municipal infrastructure asset that is a,

(a) water asset that relates to the collection, production, treatment, storage, supply or distribution of water,

(b) wastewater asset that relates to the collection, transmission, treatment or disposal of wastewater, including any wastewater asset that from time to time manages stormwater,

(c) stormwater management asset that relates to the collection, transmission, treatment, retention, infiltration, control or disposal of stormwater,

(d) road, or

(e) bridge or culvert; ("bien d'infrastructure municipale essentiel")

"ecological functions" has the same meaning as in Ontario Regulation 140/02 (Oak Ridges Moraine Conservation Plan) made under the *Oak Ridges Moraine Conservation Act, 2001*; ("fonctions écologiques")

"green infrastructure asset" means an infrastructure asset consisting of natural or human-made elements that provide ecological and hydrological functions and processes and includes natural heritage features and systems, parklands, stormwater management systems, street trees, urban forests, natural channels, permeable surfaces and green roofs; ("bien d'infrastructure verte")

"hydrological functions" has the same meaning as in Ontario Regulation 140/02; ("fonctions hydrologiques")

"joint municipal water board" means a joint board established in accordance with a transfer order made under the *Municipal Water and Sewage Transfer Act, 1997*; ("conseil mixte de gestion municipale des eaux")

"lifecycle activities" means activities undertaken with respect to a municipal infrastructure asset over its service life, including constructing, maintaining, renewing, operating and decommissioning, and all engineering and design work associated with those activities; ("activités relatives au cycle de vie")

"municipal infrastructure asset" means an infrastructure asset, including a green infrastructure asset, directly owned by a municipality or included on the consolidated financial statements of a municipality, but does not include an infrastructure asset that is managed by a joint municipal water board; ("bien d'infrastructure municipale")

"municipality" has the same meaning as in the *Municipal Act, 2001*; ("municipalité")

"operating costs" means the aggregate of costs, including energy costs, of operating a municipal infrastructure asset over its service life; ("frais d'exploitation")

"service life" means the total period during which a municipal infrastructure asset is in use or is available to be used; ("durée de vie")

"significant operating costs" means, where the operating costs with respect to all municipal infrastructure assets within an asset category are in excess of a threshold amount set by the municipality, the total amount of those operating costs. ("frais d'exploitation importants")

(2) In Tables 1 and 2,

"connection-days" means the number of properties connected to a municipal system that are affected by a service issue, multiplied by the number of days on which those properties are affected by the service issue. ("jours-branchements")

(3) In Table 4,

"arterial roads" means Class 1 and Class 2 highways as determined under the Table to section 1 of Ontario Regulation 239/02 (Minimum Maintenance Standards for Municipal Highways) made under the *Municipal Act, 2001*; ("artères")

"collector roads" means Class 3 and Class 4 highways as determined under the Table to section 1 of Ontario Regulation 239/02; ("routes collectrices")

"lane-kilometre" means a kilometre-long segment of roadway that is a single lane in width; ("kilomètre de voie")

"local roads" means Class 5 and Class 6 highways as determined under the Table to section 1 of Ontario Regulation 239/02. ("routes locales")

(4) In Table 5,

"Ontario Structure Inspection Manual" means the Ontario Structure Inspection Manual (OSIM), published by the Ministry of Transportation and dated October 2000 (revised November 2003 and April 2008) and available on a Government of Ontario website; ("manuel d'inspection des structures de l'Ontario")

"structural culvert" has the meaning set out for "culvert (structural)" in the Ontario Structure Inspection Manual. ("ponceau structurel")

Application

2. For the purposes of section 6 of the Act, every municipality is prescribed as a broader public sector entity to which that section applies.

Strategic Asset Management Policies

Strategic asset management policy

3. (1) Every municipality shall prepare a strategic asset management policy that includes the following:

1. Any of the municipality's goals, policies or plans that are supported by its asset management plan.
2. The process by which the asset management plan is to be considered in the development of the municipality's budget or of any long-term financial plans of the municipality that take into account municipal infrastructure assets.
3. The municipality's approach to continuous improvement and adoption of appropriate practices regarding asset management planning.
4. The principles to be followed by the municipality in its asset management planning, which must include the principles set out in section 3 of the Act.
5. The municipality's commitment to consider, as part of its asset management planning,
    i. the actions that may be required to address the vulnerabilities that may be caused by climate change to the municipality's infrastructure assets, in respect of such matters as,
        A. operations, such as increased maintenance schedules,
        B. levels of service, and
        C. lifecycle management,
    ii. the anticipated costs that could arise from the vulnerabilities described in subparagraph i,
    iii. adaptation opportunities that may be undertaken to manage the vulnerabilities described in subparagraph i,
    iv. mitigation approaches to climate change, such as greenhouse gas emission reduction goals and targets, and
    v. disaster planning and contingency funding.
6. A process to ensure that the municipality's asset management planning is aligned with any of the following financial plans:
    i. Financial plans related to the municipality's water assets including any financial plans prepared under the *Safe Drinking Water Act, 2002*.
    ii. Financial plans related to the municipality's wastewater assets.

7. A process to ensure that the municipality's asset management planning is aligned with Ontario's land-use planning framework, including any relevant policy statements issued under subsection 3 (1) of the *Planning Act*, any provincial plans as defined in the *Planning Act* and the municipality's official plan.

8. An explanation of the capitalization thresholds used to determine which assets are to be included in the municipality's asset management plan and how the thresholds compare to those in the municipality's tangible capital asset policy, if it has one.

9. The municipality's commitment to coordinate planning for asset management, where municipal infrastructure assets connect or are interrelated with those of its upper-tier municipality, neighbouring municipalities or jointly-owned municipal bodies.

10. The persons responsible for the municipality's asset management planning, including the executive lead.

11. An explanation of the municipal council's involvement in the municipality's asset management planning.

12. The municipality's commitment to provide opportunities for municipal residents and other interested parties to provide input into the municipality's asset management planning.

(2) For the purposes of this section,

"capitalization threshold" is the value of a municipal infrastructure asset at or above which a municipality will capitalize the value of it and below which it will expense the value of it. ("seuil de capitalisation")

Update of asset management policy

4. Every municipality shall prepare its first strategic asset management policy by July 1, 2019 and shall review and, if necessary, update it at least every five years.

Asset Management Plans

Asset management plans, current levels of service

5. (1) Every municipality shall prepare an asset management plan in respect of its core municipal infrastructure assets on or before July 1, 2022, and in respect of all of its other municipal infrastructure assets on or before July 1, 2024. O. Reg. 193/21, s. 1.

(2) A municipality's asset management plan must include the following:

1. For each asset category, the current levels of service being provided, determined in accordance with the following qualitative descriptions and technical metrics and based on data from at most the two calendar years prior to the year in which all information required under this section is included in the asset management plan:
    i. With respect to core municipal infrastructure assets, the qualitative descriptions set out in Column 2 and the technical metrics set out in Column 3 of Table 1, 2, 3, 4 or 5, as the case may be.
    ii. With respect to all other municipal infrastructure assets, the qualitative descriptions and technical metrics established by the municipality.
2. The current performance of each asset category, determined in accordance with the performance measures established by the municipality, such as those that would measure energy usage and operating efficiency, and based on data from at most two calendar years prior to the year in which all information required under this section is included in the asset management plan.
3. For each asset category,
    i. a summary of the assets in the category,
    ii. the replacement cost of the assets in the category,
    iii. the average age of the assets in the category, determined by assessing the average age of the components of the assets,

iv. the information available on the condition of the assets in the category, and

v. a description of the municipality's approach to assessing the condition of the assets in the category, based on recognized and generally accepted good engineering practices where appropriate.

4. For each asset category, the lifecycle activities that would need to be undertaken to maintain the current levels of service as described in paragraph 1 for each of the 10 years following the year for which the current levels of service under paragraph 1 are determined and the costs of providing those activities based on an assessment of the following:

   i. The full lifecycle of the assets.

   ii. The options for which lifecycle activities could potentially be undertaken to maintain the current levels of service.

   iii. The risks associated with the options referred to in subparagraph ii.

   iv. The lifecycle activities referred to in subparagraph ii that can be undertaken for the lowest cost to maintain the current levels of service.

5. For municipalities with a population of less than 25,000, as reported by Statistics Canada in the most recent official census, the following:

   i. A description of assumptions regarding future changes in population or economic activity.

   ii. How the assumptions referred to in subparagraph i relate to the information required by paragraph 4.

6. For municipalities with a population of 25,000 or more, as reported by Statistics Canada in the most recent official census, the following:

   i. With respect to municipalities in the Greater Golden Horseshoe growth plan area, if the population and employment forecasts for the municipality are set out in Schedule 3 or 7 to the 2017 Growth Plan, those forecasts.

   ii. With respect to lower-tier municipalities in the Greater Golden Horseshoe growth plan area, if the population and employment forecasts for the municipality are not set out in Schedule 7 to the 2017 Growth Plan, the portion of the forecasts allocated to the lower-tier municipality in the official plan of the upper-tier municipality of which it is a part.

   iii. With respect to upper-tier municipalities or single-tier municipalities outside of the Greater Golden Horseshoe growth plan area, the population and employment forecasts for the municipality that are set out in its official plan.

   iv. With respect to lower-tier municipalities outside of the Greater Golden Horseshoe growth plan area, the population and employment forecasts for the lower-tier municipality that are set out in the official plan of the upper-tier municipality of which it is a part.

   v. If, with respect to any municipality referred to in subparagraph iii or iv, the population and employment forecasts for the municipality cannot be determined as set out in those subparagraphs, a description of assumptions regarding future changes in population or economic activity.

   vi. For each of the 10 years following the year for which the current levels of service under paragraph 1 are determined, the estimated capital expenditures and significant operating costs related to the lifecycle activities required to maintain the current levels of service in order to accommodate projected increases in demand caused by growth, including estimated capital expenditures and significant operating costs related to new construction or to upgrading of existing municipal infrastructure assets. O. Reg. 588/17, s. 5 (2).

(3) Every asset management plan must indicate how all background information and reports upon which the information required by paragraph 3 of subsection (2) is based will be made available to the public. O. Reg. 588/17, s. 5 (3).

(4) In this section,

"2017 Growth Plan" means the Growth Plan for the Greater Golden Horseshoe, 2017 that was approved under subsection 7 (6) of the *Places to Grow Act, 2005* on May 16, 2017 and came into effect on July 1, 2017; ("Plan de croissance de 2017")

"Greater Golden Horseshoe growth plan area" means the area designated by section 2 of Ontario Regulation 416/05 (Growth Plan Areas) made under the *Places to Grow Act, 2005*. ("zone de croissance planifiée de la région élargie du Golden Horseshoe") O. Reg. 588/17, s. 5 (4).

Asset management plans, proposed levels of service

6. (1) Subject to subsection (2), on or before July 1, 2025, every asset management plan prepared under section 5 must include the following additional information:

1. For each asset category, the levels of service that the municipality proposes to provide for each of the 10 years following the year in which all information required under section 5 and this section is included in the asset management plan, determined in accordance with the following qualitative descriptions and technical metrics:
    i. With respect to core municipal infrastructure assets, the qualitative descriptions set out in Column 2 and the technical metrics set out in Column 3 of Table 1, 2, 3, 4 or 5, as the case may be.

    ii. With respect to all other municipal infrastructure assets, the qualitative descriptions and technical metrics established by the municipality.

2. An explanation of why the proposed levels of service under paragraph 1 are appropriate for the municipality, based on an assessment of the following:
    i. The options for the proposed levels of service and the risks associated with those options to the long term sustainability of the municipality.

    ii. How the proposed levels of service differ from the current levels of service set out under paragraph 1 of subsection 5 (2).

    iii. Whether the proposed levels of service are achievable.

    iv. The municipality's ability to afford the proposed levels of service.

3. The proposed performance of each asset category for each year of the 10-year period referred to in paragraph 1, determined in accordance with the performance measures established by the municipality, such as those that would measure energy usage and operating efficiency.
4. A lifecycle management and financial strategy that sets out the following information with respect to the assets in each asset category for the 10-year period referred to in paragraph 1:
    i. An identification of the lifecycle activities that would need to be undertaken to provide the proposed levels of service described in paragraph 1, based on an assessment of the following:

        A. The full lifecycle of the assets.

        B. The options for which lifecycle activities could potentially be undertaken to achieve the proposed levels of service.

        C. The risks associated with the options referred to in sub-subparagraph B.

D. The lifecycle activities referred to in sub-subparagraph B that can be undertaken for the lowest cost to achieve the proposed levels of service.

ii. An estimate of the annual costs for each of the 10 years of undertaking the lifecycle activities identified in subparagraph i, separated into capital expenditures and significant operating costs.

iii. An identification of the annual funding projected to be available to undertake lifecycle activities and an explanation of the options examined by the municipality to maximize the funding projected to be available.

iv. If, based on the funding projected to be available, the municipality identifies a funding shortfall for the lifecycle activities identified in subparagraph i,

A. an identification of the lifecycle activities, whether set out in subparagraph i or otherwise, that the municipality will undertake, and

B. if applicable, an explanation of how the municipality will manage the risks associated with not undertaking any of the lifecycle activities identified in subparagraph i.

5. For municipalities with a population of less than 25,000, as reported by Statistics Canada in the most recent official census, a discussion of how the assumptions regarding future changes in population and economic activity, set out in subparagraph 5 i of subsection 5 (2), informed the preparation of the lifecycle management and financial strategy referred to in paragraph 4 of this subsection.

6. For municipalities with a population of 25,000 or more, as reported by Statistics Canada in the most recent official census,

i. the estimated capital expenditures and significant operating costs to achieve the proposed levels of service as described in paragraph 1 in order to accommodate projected increases in demand caused by population and employment growth, as set out in the forecasts or assumptions referred to in paragraph 6 of subsection 5 (2), including estimated capital expenditures and significant operating costs related to new construction or to upgrading of existing municipal infrastructure assets,

ii. the funding projected to be available, by source, as a result of increased population and economic activity, and

iii. an overview of the risks associated with implementation of the asset management plan and any actions that would be proposed in response to those risks.

7. An explanation of any other key assumptions underlying the plan that have not previously been explained. O. Reg. 588/17, s. 6 (1); O. Reg. 193/21, s. 2 (1).

(2) With respect to an asset management plan prepared under section 5 on or before July 1, 2022, if the additional information required under this section is not included before July 1, 2024, the municipality shall, before including the additional information, update the current levels of service set out under paragraph 1 of subsection 5 (2) and the current performance measures set out under paragraph 2 of subsection 5 (2) based on data from the two most recent calendar years. O. Reg. 193/21, s. 2 (2).

Update of asset management plans

7. (1) Every municipality shall review and update its asset management plan at least five years after the year in which the plan is completed under section 6 and at least every five years thereafter.

(2) The updated asset management plan must comply with the requirements set out under paragraphs 1, 2 and 3 and subparagraphs 5 i and 6 i, ii, iii, iv and v of subsection 5 (2), subsection 5 (3) and paragraphs 1 to 7 of subsection 6 (1).

Endorsement and approval required

8. Every asset management plan prepared under section 5 or 6, or updated under section 7, must be,

(a) endorsed by the executive lead of the municipality; and

(b) approved by a resolution passed by the municipal council.

Annual review of asset management planning progress

9. (1) Every municipal council shall conduct an annual review of its asset management progress on or before July 1 in each year, starting the year after the municipality's asset management plan is completed under section 6.

(2) The annual review must address,

(a) the municipality's progress in implementing its asset management plan;

(b) any factors impeding the municipality's ability to implement its asset management plan; and

(c) a strategy to address the factors described in clause (b).

Public availability

10. Every municipality shall post its current strategic asset management policy and asset management plan on a website that is available to the public, and shall provide a copy of the policy and plan to any person who requests it.

TABLE 1
WATER ASSETS

Column 1 Service attribute	Column 2 Community levels of service (qualitative descriptions)	Column 3 Technical levels of service (technical metrics)
Scope	1. Description, which may include maps, of the user groups or areas of the municipality that are connected to the municipal water system. 2. Description, which may include maps, of the user groups or areas of the municipality that have fire flow.	1. Percentage of properties connected to the municipal water system. 2. Percentage of properties where fire flow is available.
Reliability	Description of boil water advisories and service interruptions.	1. The number of connection-days per year where a boil water advisory notice is in place compared to the total number of properties connected to the municipal water system. *2.* The number of connection-days per year due to water main breaks compared to the total number of properties connected to the municipal water system.

TABLE 2
WASTEWATER ASSETS

Column 1 Service attribute	Column 2 Community levels of service (qualitative descriptions)	Column 3 Technical levels of service (technical metrics)
Scope	Description, which may include maps, of the user groups or areas of the municipality that are connected to the municipal wastewater system.	Percentage of properties connected to the municipal wastewater system.

Reliability	1. Description of how combined sewers in the municipal wastewater system are designed with overflow structures in place which allow overflow during storm events to prevent backups into homes. 2. Description of the frequency and volume of overflows in combined sewers in the municipal wastewater system that occur in habitable areas or beaches. 3. Description of how stormwater can get into sanitary sewers in the municipal wastewater system, causing sewage to overflow into streets or backup into homes. 4. Description of how sanitary sewers in the municipal wastewater system are designed to be resilient to avoid events described in paragraph 3. 5. Description of the effluent that is discharged from sewage treatment plants in the municipal wastewater system.	1. The number of events per year where combined sewer flow in the municipal wastewater system exceeds system capacity compared to the total number of properties connected to the municipal wastewater system. 2. The number of connection-days per year due to wastewater backups compared to the total number of properties connected to the municipal wastewater system. 3. The number of effluent violations per year due to wastewater discharge compared to the total number of properties connected to the municipal wastewater system.

TABLE 3
STORMWATER MANAGEMENT ASSETS

Column 1 Service attribute	Column 2 Community levels of service (qualitative descriptions)	Column 3 Technical levels of service (technical metrics)
Scope	Description, which may include maps, of the user groups or areas of the municipality that are protected from flooding, including the extent of the protection provided by the municipal stormwater management system.	1. Percentage of properties in municipality resilient to a 100-year storm. 2. Percentage of the municipal stormwater management system resilient to a 5-year storm.

TABLE 4
ROADS

Column 1 Service attribute	Column 2 Community levels of service (qualitative descriptions)	Column 3 Technical levels of service (technical metrics)
Scope	Description, which may include maps, of the road network in the municipality and its level of connectivity.	Number of lane-kilometres of each of arterial roads, collector roads and local roads as a proportion of square kilometres of land area of the municipality.
Quality	Description or images that illustrate the different levels of road class pavement condition.	1. For paved roads in the municipality, the average pavement condition index value. 2. For unpaved roads in the municipality, the average surface condition (e.g. excellent, good, fair or poor).

TABLE 5
BRIDGES AND CULVERTS

Column 1 Service attribute	Column 2 Community levels of service (qualitative descriptions)	Column 3 Technical levels of service (technical metrics)
Scope	Description of the traffic that is supported by municipal bridges (e.g., heavy transport vehicles, motor vehicles, emergency vehicles, pedestrians, cyclists).	Percentage of bridges in the municipality with loading or dimensional restrictions.
Quality	1. Description or images of the condition of bridges and how this would affect use of the bridges. 2. Description or images of the condition of culverts and how this would affect use of the culverts.	1. For bridges in the municipality, the average bridge condition index value. 2. For structural culverts in the municipality, the average bridge condition index value.

11. Omitted (provides for coming into force of provisions of this Regulation).

Français

Appendix G.
Key Performance Indicators

Table G-1. Environmental Protection – Key Performance Indicators

AMP Segment	Key Service Attribute	LOS: Metric Description	LOS: Current (2024 AMP) Performance
Stormwater Collection & Wastewater Collection	Reliable	Percentage of total replacement cost for sewer assets in 'Good to Very Good' condition	60.81%
Wastewater Treatment	Reliable	Percentage of total replacement cost for Pollution Control assets in 'Good to Very Good' condition	60.65%
Stormwater Collection & Wastewater Collection	Fiscal Sustainability	Reinvestment Rate (Sewers)	0.98%
Wastewater Treatment	Fiscal Sustainability	Reinvestment Rate (Wastewater Treatment)	0.28%
All Segments	Environmental Stewardship	Annual GHG emissions	8,462.32 tCO2e
Stormwater Collection	Reliable	Percentage of drains (length) with Municipal Drainage Reports	75% approximately[10]
Stormwater Collection	Available	Total number of properties that completed the City's downspout disconnection program	4,974 downspouts have been disconnected under the free program. 165 downspouts have been disconnected under the mandatory program.
Stormwater Collection & Wastewater Collection	Reliable	Length of sewers Zoom/CCTV inspected (2022)	42.66 km

[10] A large portion of drainage reports are out-of-date and require updating.

AMP Segment	Key Service Attribute	LOS: Metric Description	LOS: Current (2024 AMP) Performance
Stormwater Collection & Wastewater Collection	Reliable	Length of sewers flushed (2022)	194.17 km
Wastewater Treatment	Environmental Stewardship	Wastewater Treatment annual electricity consumption per ML wastewater treated	572.7 kWh/ML
Wastewater Treatment	Environmental Stewardship	Wastewater Treatment annual natural gas consumption per ML wastewater treated	42.94 m^3/ML
Wastewater Treatment	Available	Average Annual Daily Influent Flow	Little River Pollution Control Plant – 51% Lou Romano Water Reclamation Plant – 55%
Wastewater Treatment	Available	Windsor Biosolids Processing Facility capacity range	47,000 (low) to 52,000 (high) tonnes of wet dewatered sludge per year. Capacity used ranged from 72 to 80%. (2022)

Table G-2. Transportation – Key Performance Indicators

AMP Segment	Key Service Attribute	LOS: Metric Description	LOS: Current (2024 AMP) Performance
All Segments	Fiscal Sustainability	Reinvestment Rate (All Transportation Assets)	0.97%
Active Transportation	Available	Kilometers of On-Road Bike Facilities	131 km
Active Transportation	Reliable	Percentage of sidewalk reconstructed annually	1.17%

AMP Segment	Key Service Attribute	LOS: Metric Description	LOS: Current (2024 AMP) Performance
Roads & Paved Alleys and Sidewalks	Fiscal Sustainability	Reinvestment Rate	0.94%
Roads & Paved Alleys and Sidewalks	Reliable	Percentage of total replacement cost for Roads, Paved Alleys & Sidewalk assets in 'Good to Very Good' condition	48.43%
Roads & Paved Alleys	Reliable	Percentage of road renewal annually by road classification	Expressway - 0.65% Arterial - 1.38% Collector - 1.11% Local - 0.66% Scenic Parkway - 0% Paved Alleys – 0.08%
Roads & Paved Alleys	Reliable	Percentage of road mill and pave work annually by road classification	Expressway - 1.37% Arterial - 0.36% Collector - 0.88% Local - 0.41% Scenic Parkway - 0% Paved Alleys – 0%
Roads & Paved Alleys	Reliable	Percentage of concrete panel repair annually by road classification	Expressway - 0% Arterial - 0.11% Collector - 0% Local - 0.01% Scenic Parkway - 0% Paved Alleys – 0%
Structures	Reliable	Percentage of total replacement cost for Structures in 'Good to Very Good' condition	91.86%
Structures	Fiscal Sustainability	Reinvestment Rate	0.34%

AMP Segment	Key Service Attribute	LOS: Metric Description	LOS: Current (2024 AMP) Performance
Traffic Infrastructure	Available	Total number of available parking spaces (garages, off street lots, on street metered spaces)	4,042 as of 2023
Traffic Infrastructure	Reliable	Percentage of total replacement cost for Traffic Infrastructure assets in 'Good to Very Good' condition	44.30%
Traffic Infrastructure	Reliable	Percentage of the total replacement cost for Traffic Signals assets past EUL	54.89%
Traffic Infrastructure	Environmental Stewardship	Percentage of streetlights that are LED	81%
Traffic Infrastructure	Fiscal Sustainability	Reinvestment Rate	2.79%

Table G-3. Facilities – Key Performance Indicators

AMP Segment	Key Service Attribute	LOS: Metric Description	LOS: Current (2024 AMP) Performance
All Segments	Fiscal Sustainability	Reinvestment Rate	1.40%
All Segments	Environmental Stewardship	Annual electric energy consumption per square foot	12.26 kWh/Sq.Ft.
All Segments	Environmental Stewardship	Annual natural gas consumption per square foot	2.15 m^3/Sq,Ft
All Segments	Environmental Stewardship	Annual water consumption per square foot	0.28 L/Sq.Ft.
All Segments	Environmental Stewardship	Annual GHG emissions	12,871 tCO2e
All Segments	Reliable	Percentage of total replacement cost for Facilities assets in 'Good to Very Good' condition	39.72%

Table G-4. Fleet & Corporate Equipment – Key Performance Indicators

AMP Segment	Key Service Attribute	LOS: Metric Description	LOS: Current (2024 AMP) Performance
Vehicles	Fiscal Sustainability	Reinvestment Rate	7.49%
Fleet & Corporate Equipment	Reliable	Percentage of total replacement cost for Corporate Fleet & Equipment assets in 'Good to Very Good' condition	61.94%
Vehicles	Reliable	Percentage of the count of Vehicles past EUL	9.46%
Vehicles	Environmental Stewardship	Number of Electric Vehicles (EV)	15
Vehicles	Environmental Stewardship	Annual GHG emissions	4,924.4 tCO2e
Equipment	Reliable	Percentage of total replacement cost for Equipment assets past EUL	10.27%
Equipment	Reliable	Total system efficiency of CHP (Energy Systems)	Huron Lodge CHP – 74% WFCU Centre CHP - 69% WIATC CHP – 71%
Equipment	Environmental Stewardship	Renewable energy generated from solar PV (Energy Systems)	WIATC PV – 390 MWh WFCU Centre PV – 671 MWh Transit PV – 598 MWh

Table G-5. Information Technology – Key Performance Indicators

AMP Segment	Key Service Attribute	LOS: Metric Description	LOS: Current (2024 AMP) Performance
All Segments	Fiscal Sustainability	Reinvestment Rate (All IT assets)	8.00%
All Segments	Reliable	Percentage of total replacement cost for IT assets in 'Good to Very Good' condition	46.55%
All Segments	Reliable	Percentage of total replacement cost for IT assets past EUL	45.19%

Table G-6. Natural Assets – Key Performance Indicators

AMP Segment	Key Service Attribute	LOS: Metric Description	LOS: Current (2024 AMP) Performance
Park Trees & Street Trees	Fiscal Sustainability	Reinvestment Rate (Trees)	0.55%
Natural Shorewall	Fiscal Sustainability	Reinvestment Rate (Natural Shorewall)	0.39%
Trees	Reliable	Percentage of total replacement cost for Trees assets in 'Good to Very Good' condition	74.03%
Natural Shorewall	Reliable	Percentage of total replacement cost for Natural Shorewall assets in 'Good to Very Good' condition	97.54%
Trees	Reliable	Percentage of tree related work orders closed within designated timeline	71%
Trees	Environmental Stewardship	Percentage of canopy coverage	19%
Trees	Environmental Stewardship	Number of tree inspection requests per year	6,717
Trees	Environmental Stewardship	Number of trees planted per year by City Forestry office	2,644

Table G-7. Parks – Key Performance Indicators

AMP Segment	Key Service Attribute	LOS: Metric Description	LOS: Current (2024 AMP) Performance
All Segments (excluding Riverfront Parks Shorewall)	Fiscal Sustainability	Reinvestment Rate (Parks assets excluding Riverfront Parks Shorewall)	1.93%
Riverfront Parks Shorewall	Fiscal Sustainability	Reinvestment Rate (Parks Riverfront Parks Shorewall)	1.07%
All Segments	Available	All Parkland in Municipality as a percent of Total Area of Municipality	7%

AMP Segment	Key Service Attribute	LOS: Metric Description	LOS: Current (2024 AMP) Performance
Riverfront Parks Shorewall	Reliable	Percentage of total replacement cost for Riverfront Parks Shorewall assets in 'Good to Very Good' condition	0.73%
All Segments (excluding Riverfront Parks Shorewall)	Reliable	Percentage of total replacement cost for all Park assets excluding Riverfront Parks Shorewall in 'Good to Very Good' condition	34.79%
All Segments (excluding Riverfront Parks Shorewall)	Reliable	Percentage of total replacement cost for Parks assets past their EUL (excluding Riverfront Parks Shorewall)	14.61%
All Segments	Fiscal Sustainability	Operating Cost Per Hectare - Maintained and Natural Parkland	$22,850.23

Table G-8. Public Transportation – Key Performance Indicators

AMP Segment	Key Service Attribute	LOS: Metric Description	LOS: Current (2024 AMP) Performance
All Segments	Fiscal Sustainability	Reinvestment Rate	2.67%
All Segments	Reliable	Percentage Transit Windsor assets in 'Good to Very Good' condition based on total replacement cost	32.41%
Bus Shelters	Available	Percentage of residents within 400m of a bus stop	84%
Bus Shelters	Available	Percentage of bus stops that are not accessible	38%
Facilities	Environmental Stewardship	Annual electric energy consumption per square foot	10.58 kWh/Sq.Ft.
Facilities	Environmental Stewardship	Annual electric energy consumption per square foot (District Energy)	0.01 GJ/Sq.Ft.
Facilities	Environmental Stewardship	Annual natural gas consumption per square foot	1.62 m3/Sq.Ft

AMP Segment	Key Service Attribute	LOS: Metric Description	LOS: Current (2024 AMP) Performance
Facilities	Environmental Stewardship	Annual water consumption per square foot	0.04 L/Sq.Ft.
Facilities	Environmental Stewardship	Annual GHG emissions	554.46 tCO2e
Transit Fleet	Available	Number of regular service passenger trips per capita in service area	22.68 Regular service trips per service area
Transit Fleet	Available	Revenue Vehicle Hours per capita in service area	1.14 Revenue vehicle hours per service area
Transit Fleet	Available	Number of total service hours per year	299,231 total service hours per year in 2023
Transit Fleet	Reliable	Average age of Transit Windsor Fleet (buses)	7 years
Transit Fleet	Environmental Stewardship	Annual GHG emissions	7,482 tCO2e
Transit Fleet	Environmental Stewardship	Annual Fuel distance per Litre	2.075 km/L

Table G-9. City of Windsor Airport – Key Performance Indicators

AMP Segment	Key Service Attribute	LOS: Metric Description	LOS: Current (2024 AMP) Performance
All segments	Fiscal Sustainability	Reinvestment Rate	7%
All segments	Reliable	Percentage of total replacement cost for assets in 'Good to Very Good' condition	41.91%
Fleet	Reliable	Percentage of dedicated fleet vehicles beyond estimated useful life	35%
Runways	Reliable	Percentage of total replacement cost for Runways in 'Fair to Very Good' condition	100%

AMP Segment	Key Service Attribute	LOS: Metric Description	LOS: Current (2024 AMP) Performance
Taxiways and Aprons	Reliable	Percentage of total replacement cost for Taxiways and Aprons in 'Good to Very Good' condition	73.59%
Other	Reliable	Percentage of total replacement cost for Other assets in 'Good to Very Good' condition	23.11%
Facilities	Reliable	Percentage of total replacement cost for Facilities in 'Good to Very Good' condition	62.62%

Table G-10. City of Windsor Golf Courses – Key Performance Indicators

AMP Segment	Key Service Attribute	LOS: Metric Description	LOS: Current (2024 AMP) Performance
All Segments	Fiscal Sustainability	Reinvestment Rate	%17
All Segments	Reliable	Percentage of total replacement cost for Golf Courses assets in 'Good to Very Good' condition	21.8%
Facilities	Available	Gross Square Footage	192,500 Sq.Ft (Facilities) 170 acres (Courses)
Facilities	Environmental Stewardship	Annual GHG emissions	146.52 tCO2e
Facilities	Environmental Stewardship	Annual electric energy consumption per square foot	3.78 kWh/Sq.Ft.
Facilities	Environmental Stewardship	Annual natural gas consumption per square foot	0.34 m3/Sq.Ft
Facilities	Environmental Stewardship	Annual water consumption per square foot	0.41 L/Sq.Ft

Table G-11. City of Windsor Police Services – Key Performance Indicators

AMP Segment	Key Service Attribute	LOS: Metric Description	LOS: Current (2024 AMP) Performance
All Segments	Fiscal Sustainability	Reinvestment Rate	19%
All Segments	Reliable	Percentage of total replacement cost for Police assets in 'Good to Very Good' condition	95.7%
Facilities	Reliable	Percentage of total replacement cost for Facilities assets in 'Good to Very Good' condition	100%
Facilities	Environmental Stewardship	Annual electric energy consumption per square foot	1.51 kWh/Sq.Ft.
Facilities	Environmental Stewardship	Annual natural gas consumption per square foot	0.65 m3/Sq.Ft.
Facilities	Environmental Stewardship	Annual water consumption per square foot	0.01 L/Sq.Ft
Facilities	Environmental Stewardship	Annual GHG emissions	1023 tCO2e
Information Technology	Reliable	Percentage of total replacement cost for IT assets in 'Good to Very Good' condition	88.52%
Equipment	Reliable	Percentage of equipment beyond estimated useful life	5%
Information Technology	Reliable	Percentage of total replacement cost for IT assets past their estimated useful life	0%
Vehicles	Reliable	Percentage of Vehicles beyond estimated useful life	29.02%
Vehicles	Environmental Stewardship	# of Electric Vehicles (EV)	Currently 0: 2 to 4 plug-in, fully electric vehicles anticipated to be procured in 2024
Vehicles	Environmental Stewardship	# of Hybrid Vehicles	16

AMP Segment	Key Service Attribute	LOS: Metric Description	LOS: Current (2024 AMP) Performance
Vehicles	Environmental Stewardship	Annual GHG emissions	4.52 tCO2e (Diesel) 1,402 tCO2e (Gasoline)

Table G-12. City of Windsor Public Library Board – Key Performance Indicators

AMP Segment	Key Service Attribute	LOS: Metric Description	LOS: Current (2024 AMP) Performance
All Segments	Fiscal Sustainability	Reinvestment Rate	16%
All Segments	Reliable	Percentage of total replacement cost for all WPLB assets in 'Good to Very Good' condition	99.69%
Facilities	Available	Gross Square Footage of Facilities	61,013 Sq.Ft
Facilities	Environmental Stewardship	Annual GHG emissions	195.18 tCO2e
Facilities	Environmental Stewardship	Annual electric energy consumption per square foot	13.61 kWh/Sq.Ft.
Facilities	Environmental Stewardship	Annual natural gas consumption per square foot	1.47 m3/Sq.Ft
Facilities	Environmental Stewardship	Annual water consumption per square foot	0.10 L/Sq.Ft
Facilities	Available	Number of Library Branches	11[11]
Facilities	Environmental Stewardship	Annual GHG emissions	195.18 tCO2e

[11] Some library branches are located in shared municipal spaces or buildings; therefore the number of branches does equal the number of facilities that are included in the analysis of this AMP.

Appendix H.
Consolidated Workplan Tasks (2018/19 AMP & 2024 AMP)

Table H-1. Consolidated Workplan Tasks from the 2018-2024 AMPs

Task No.	AMP	AMP Category	Task	Required Resources	Responsibility	Status (2025)
3	2018-2019	All	Implement Council approved asset management tools (Whole Life-cycle Costing, Triple Bottom Line (TBL), and Business Case Evaluation) for projects as identified by the Asset Planning Steering Committee.	Internal	Asset Planning	Ongoing, integrated into the new workplan format under (**N**)
4	2018-2019	All	Work with departments to identify which subjectively rated assets require formal objective condition rating process and seek to define and implement. This could involve use of third-party services.	Internal /External	Asset Planning /Various Departments	Ongoing, integrated into the new workplan format under (**C**)
5	2018-2019	All	Development of process to annually review asset sub-systems and TCA data. Process to include identification of gaps in current process to ensure better alignment between the two systems going forward.	Internal /External	Asset Planning /Various Departments	Ongoing, integrated into the new workplan format under (**L**)
6	2018-2019	All	Implementation of balance of Asset Manager Software of automation of LOS, Risk, and deterioration models as well as the Capital Budgeting and Planning software. This will improve efficiency of data gathering for Asset Management Plan as well as capital budgeting and TCA data management.	Internal /External	Asset Planning /Capital Budget & Planning /Various Departments	Implementation of software is complete for Parks assets is complete. Assessment of software functionality and integration is ongoing, integrated into the new workplan format under (**N**)

Task No.	AMP	AMP Category	Task	Required Resources	Responsibility	Status (2025)
7	2018-2019	All	Develop and implement a project plan based on 2023/2024 regulation requirements. This includes but is not limited to 10-year funding numbers, costs to meet Proposed Levels of Service, expansion of growth needs based on results of various plans identified in Chapter 2 of this AMP.	Internal	Asset Planning Various Departments /Steering Committee /Appropriate ABCs	Complete
9	2018-2019	All	Development of a process to determine proposed LOS for assets as well as public engagement as required for O. Reg. 588/17.	Internal /External	Asset Planning /Steering Committee	Complete
1	2024	All	Continue work to meet the requirements of O. Reg. 588/17 as it relates to the July 1, 2025 milestone of defining proposed LOS and the related financing implications and strategy.	Internal /External	Asset Planning /Various Departments	Complete
2	2024	All	Continue to educate and advocate for the adoption and use of AM best practice across all areas of the organization.	Internal	Asset Planning	Integrated into the new workplan format under (**P**)
3	2024	All	Support departments in implementing AM best practice such as risk assessment, analysis of lifecycle costing, whole life-cycle costing, and business case evaluation for various projects.	Internal	Asset Planning	Integrated into the new workplan format under (**C**)

Task No.	AMP	AMP Category	Task	Required Resources	Responsibility	Status (2025)
4	2024	All	Continue to work with all asset owners to align data sources, ensure that asset registries are maintained regularly and stored appropriately and continue the development of processes to annually review asset sub-systems and TCA data. Process to include identification of gaps in current process to ensure better alignment between all systems going forward.	Internal	Asset Planning /Various Departments	Integrated into the new workplan format under (**B**)
5	2024	All	Work with departments to identify which subjectively rated assets require a formal objective condition rating process and look to define and implement those processes, where able.	Internal	Asset Planning /Various Departments	Integrated into the new workplan format under (**C**)
6	2024	All	Continue to explore opportunities to address financial pressures and infrastructure gaps identified in the AMP.	Internal /Third Party, where appropriate and/or required	Asset Planning /Capital Budget & Planning /Various Departments	Integrated into the new workplan format under (**F**)
7	2024	All	Build on lessons learned from past Building Condition Assessments and move forward with an improved Building Condition Assessment program that can be used for all corporate buildings.	Internal /Third Party, where appropriate and/or required	Asset Planning /Various Departments	Integrated into the new workplan format under (**C**)
8	2024	All	Assessment of functionality and integration of Asset Manager Software for automation of LOS, Risk, and deterioration models as well as the Capital Budgeting and Planning software.	Internal /External	Asset Planning /Capital Budget & Planning /Various Departments	Integrated into the new workplan format under (**N**)