Asset Management Plan | 2025

Village of Oil Springs

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Executive Summary

Municipal infrastructure supports the economic, social, and environmental well-being of the community by enabling essential services. Asset management aims to deliver these services cost-effectively through strategic planning and long-term financial forecasting.

This 2025 Asset Management Plan has been prepared using the best available information and reflects the Village's asset inventory and financial information as of year-end 2025. With the completion of this Plan, the Village meets the applicable 2025 requirements of Ontario Regulation 588/17 under the Infrastructure for Jobs and Prosperity Act, 2015.

Oil Springs owns approximately $25.3 million in infrastructure assets, with 79% in fair or better condition. Assessed condition data was available for key asset categories, including roads, bridges, stormwater, parks, water, and wastewater systems. For the remaining assets, assessed condition data was unavailable, and asset age was used to approximate condition. As age alone may not accurately reflect true asset condition, continued condition assessments will remain important to improving future asset management planning and decision-making.

To meet long-term rehabilitation and replacement needs for existing infrastructure, prevent future infrastructure backlogs, and support sustainable service delivery, the Village's estimated average annual capital requirement is approximately $668 thousand. Based on a historical analysis of sustainable capital funding sources, the Village is currently committing approximately $203 thousand annually toward capital projects.

Recognizing the Village's modest growth outlook, limited financial capacity, and desire to maintain affordability for residents, the proposed levels of service and financial strategy included in this AMP generally reflect the continuation of current funding and service approaches. The Village will continue to prioritize capital investments based on risk, condition, and criticality while pursuing grant funding opportunities and refining asset information over time to support future decision-making.

The Village has made strong progress in enhancing its asset inventory and asset management practices. Maintaining this momentum will be critical to supporting long-term financial sustainability and consistent service delivery.

About this Document

The Oil Springs Asset Management Plan was developed in accordance with Ontario Regulation 588/17 ("O. Reg 588/17"). It contains a comprehensive analysis of Oil Springs's infrastructure portfolio. This is a living document that should be updated regularly as additional asset and financial data becomes available.

Ontario Regulation 588/17

As part of the *Infrastructure for Jobs and Prosperity Act, 2015*, the Ontario government introduced Regulation 588/17 - Asset Management Planning for Municipal Infrastructure. Along with creating better performing organizations, more livable and sustainable communities, the regulation is a key, mandated driver of asset management planning and reporting. It places substantial emphasis on current and proposed levels of service and the lifecycle costs incurred in delivering them.

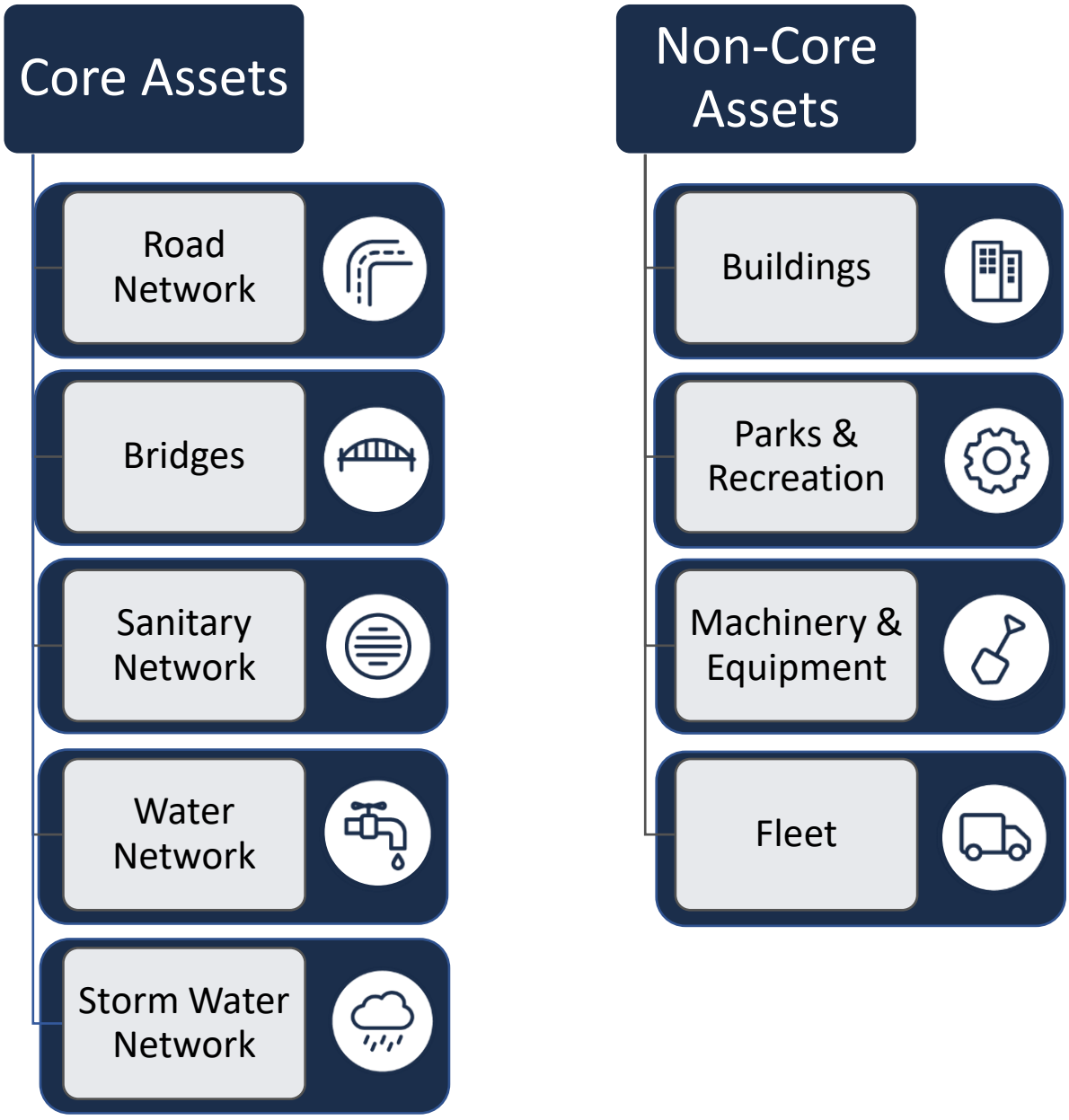
Table 1 Ontario Regulation 588/17 Requirements and Reporting Deadlines

Requirement	2019	2022	2024	2025
Asset Management Policy	●		●	
Asset Management Plans		●	●	●
State of infrastructure for core assets		●		
State of infrastructure for all assets			●	●
Current levels of service for core assets		●		
Current levels of service for all assets			●	
Proposed levels of service for all assets				●
Lifecycle costs associated with current levels of service		●	●	
Lifecycle costs associated with proposed levels of service				●
Growth impacts		●	●	●
Financial strategy				●

Scope

The scope of this document is to identify the current practices and strategies that are in place to manage the public infrastructure and to make recommendations where they can be further refined. Through the implementation of sound asset management strategies, the Village can ensure that public infrastructure is managed to support the sustainable delivery of services.

The following asset categories are addressed in further detail in the Appendix.



Limitations and Constraints

The asset management program development required substantial effort by staff, it was developed based on best-available data, and is subject to the following broad limitations, constrains, and assumptions:

- The analysis is highly sensitive to several critical data fields, including an asset's estimated useful life, replacement cost, quantity, and in-service date. Inaccuracies or imprecisions in any of these fields can have substantial and cascading impacts on all reporting and analytics.
- User-defined and unit cost estimates, based typically on staff judgment, recent projects, or established through completion of technical studies, offer the most precise approximations of current replacement costs. When this isn't possible, historical costs incurred at the time of asset acquisition or construction can be inflated to present day. This approach, while sometimes necessary, can produce inaccurate estimates.
- In the absence of condition assessment data, age was used to estimate asset condition ratings. This approach can result in an over- or understatement of asset needs. As a result, financial requirements generated through this approach can differ from those produced by in-field assessments.
- The risk models are designed to support objective project prioritization and selection. However, in addition to the inherent limitations that all models face, they also require availability of important asset attribute data to ensure that asset risk ratings are valid, and assets are properly stratified within the risk matrix. Missing attribute data can misclassify assets.

These limitations have a direct impact on most of the analysis presented, including condition summaries, age profiles, long-term replacement and rehabilitation forecasts, and shorter term, 10-year forecasts that are generated from Citywide, the Village's primary asset management system.

These challenges are quite common and require long-term commitment and sustained effort by staff. As the Village's asset management program evolves and advances, the quality of future AMPs and other core documents that support asset management will continue to increase.

An Overview of Asset Management

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

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

This industry standard, defined by the Institute of Asset Management (IAM), emphasizes the alignment between the corporate strategic plan and various asset management documents.

Foundational Documents

In the municipal sector, 'asset management strategy' and 'asset management plan' are often used interchangeably. Other concepts such as 'asset management framework', 'asset management system', and 'strategic asset management plan' further add to the confusion; lack of consistency in the industry on the purpose and definition of these elements offers little clarity. To make a clear distinction between the policy, strategy, and the plan see the following sections for detailed descriptions of the document types.

Strategic Plan

The strategic plan has a direct, and cascading impact on asset management planning and reporting, making it a foundational element. At the beginning of each term, Council holds strategic planning exercises and discussions to identify major initiatives and administrative improvements it wishes to achieve during its tenure. Staff then identify the scope, resources, timing & other logistical matters associated with proposed initiatives.

Asset Management Policy

An asset management policy represents a statement of the principles guiding the Village's approach to asset management activities as well as their commitment. It aligns with the organization and provides clear direction to municipal staff on their roles and responsibilities.

Asset Management Strategy

An asset management strategy outlines the translation of organizational objectives into asset management objectives and provides a strategic overview of the activities required to meet these objectives. It provides greater detail than the

policy on how the Village plans to achieve its asset management objectives through planned activities and decision-making criteria.

Asset Management Plan

The asset management plan is often identified as a key output within the strategy. The AMP has a sharp focus on the current state of the Village's asset portfolio, and its approach to managing and funding individual asset groups. It is tactical in nature and provides a snapshot in time.

Key Technical Concepts

Effective asset management integrates several key components, including data management, lifecycle management, risk management, and levels of service.

Asset Hierarchy and Data Classification

Asset hierarchy illustrates the relationship between individual assets and their components, and a wider, more expansive network and system. How assets are grouped in a hierarchy structure can impact how data is interpreted. Key category details are summarized at the asset segment level.

Table 2 Asset Hierarchy

•Asphalt •Curb •Gravel Sidewalk **Road Network**	•Bridges **Bridges**	•Fire Hydrants •Valves •Watermains **Water Network**
•Control Structures •Lagoons •Maintenance Holes •Outfall Sewer •Sanitary Mains •Sanitary Pump Station **Sanitary Network**	•Catch Basins •Maintenance Holes •Storm Mains **Storm Water Network**	•Administration •Fire Services •Roads **Buildings**
•East End Park •Hart Park •Ward Park **Parks & Recreation**	•Fire Services •Roads **Fleet**	•Administration •Fire Services •Parks and Recreation •Roads **Machinery & Equipment**

Replacement Costs

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

- User-Defined Cost and Cost/Unit: Based on costs provided by municipal staff which could include average costs from recent contracts; data from engineering reports and assessments; staff estimates based on knowledge and experience.
- Cost Inflation/CPI Tables: Historical cost of the asset is inflated based on Consumer Price Index or Non-Residential Building Construction Price Index.

User-defined costs based on reliable sources are a reasonably accurate and reliable way to determine asset replacement costs. Cost inflation is typically used in the absence of reliable replacement cost data. It is a reliable method for recently purchased and/or constructed assets where the total cost is reflective of the actual costs that the Village incurred. As assets age, and new products and technologies become available, cost inflation becomes a less reliable method.

Estimated Useful Life and Service Life Remaining

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

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

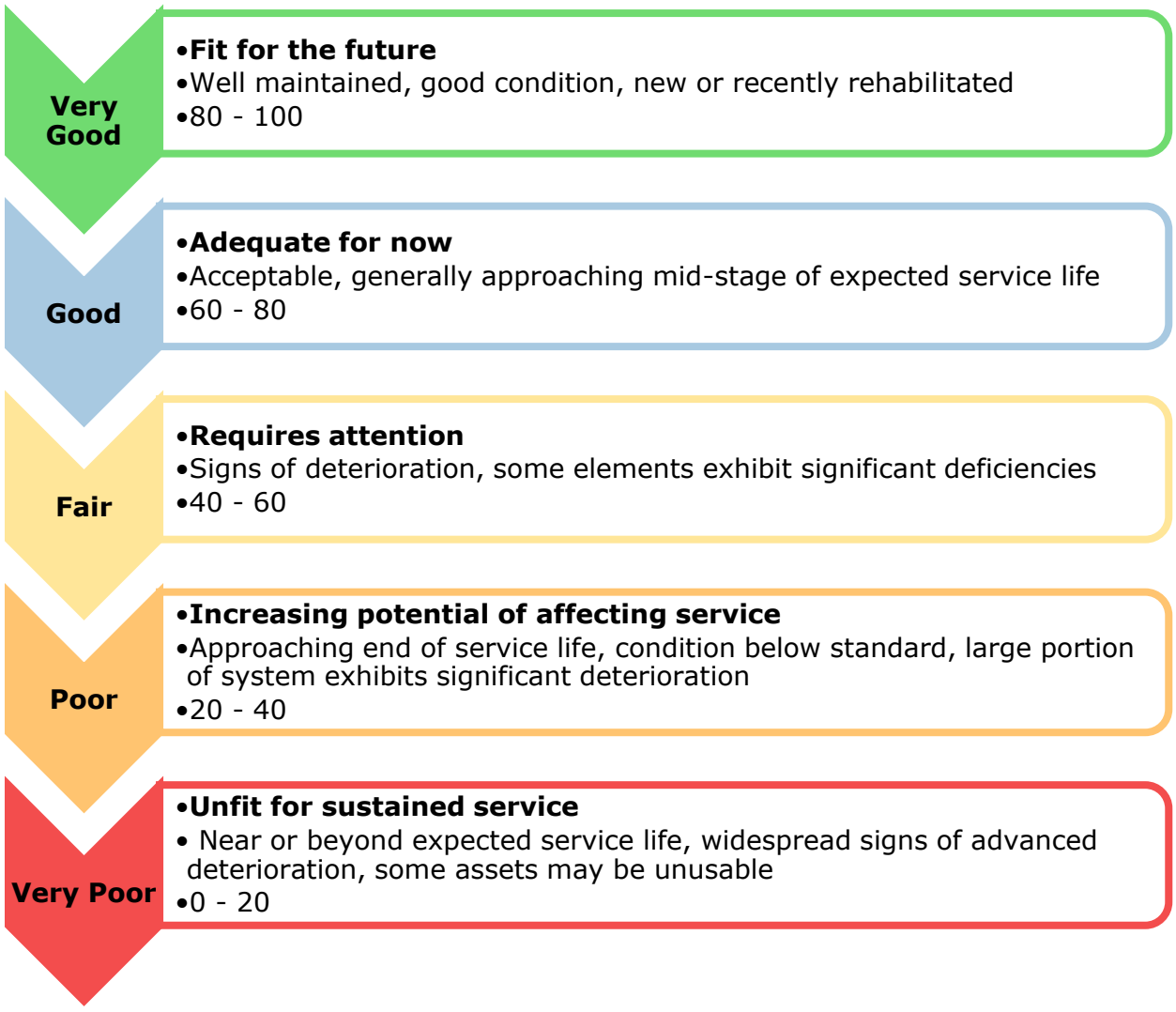
Figure 1: Service Life Remaining Calculation

Asset Condition

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

A condition assessment rating system provides a standardized descriptive framework that allows comparative benchmarking across the Village's asset portfolio. The figure below outlines the condition rating system used to determine asset condition for all assets in Oil Springs.

Figure 2: Standard Condition Rating Scale



The analysis is based on assessed condition data (only as available). In the absence of assessed condition data, asset age is used as a proxy to determine asset condition. Appendix L: Condition Assessment Guidelines includes additional information on the role of asset condition data and provides basic guidelines for the development of a condition assessment program.

Lifecycle Management Strategies

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

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

There are several field intervention activities that are available to extend the life of an asset. These activities can be generally placed into one of three categories: maintenance, rehabilitation, and replacement. Figure 3 provides a description of each type of activity and the general difference in cost.

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

The Village's approach to lifecycle management is described within each asset category. Developing and implementing a proactive lifecycle strategy will help staff to determine which activities to perform on an asset and when they should be performed to maximize useful life at the lowest total cost of ownership.

Figure 3: Lifecyle Management Typical Interventions

Maintenance

- General level of cost is **$**
- All actions necessary for retaining an asset as near as practicable to its original condition, but excluding rehabilitation or renewal. Maintenance does not increase the service potential of the asset
- It slows down deterioration and delays when rehabilitation or replacement is necessary.

Rehabilitation / Renewal

- General level of cost is **$$$**
- Works 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.
- Generally involves repairing the asset to deliver its original level of service (i.e. milling and paving of roads) without resorting to significant upgrading or replacement, using available techniques and standards.

Replacement

- General level of cost is **$$$$$**
- The complete replacement of an asset that has reached the end of its life, so as to provide a similar, or agreed alternative, level of service.
- Existing asset disposal is generally included.

Risk Management Strategies

Municipalities generally take a 'worst-first' approach to infrastructure spending. Rather than prioritizing assets based on their importance to service delivery, assets in the worst condition are fixed first, regardless of their criticality. However, not all assets are created equal. Some are more important than others, and their failure or disrepair poses more risk to the community. For example, a road with a high

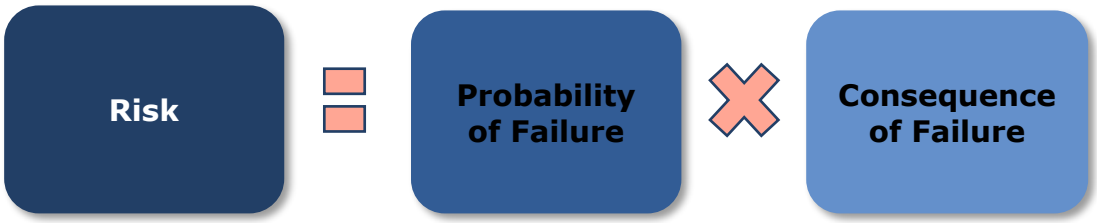
volume of traffic that provides access to critical services poses a higher risk than a low volume rural road. These high-value assets should receive funding before others.

By identifying the various impacts of asset failure and the likelihood that it will fail, risk management strategies can identify critical assets, and determine where maintenance efforts, and spending, should be focused.

A high-level evaluation of asset risk and criticality was performed. Each asset has been assigned a probability of failure score and consequence of failure score based on available asset data. These risk scores can be used to prioritize maintenance, rehabilitation, and replacement strategies for critical assets.

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

Figure 4: Risk Equation



Probability of Failure

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

Consequence of Failure

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

Levels of Service

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

At this stage, three strategic levels of service are measured for every asset category, and they are:

- Financial –targeted reinvestment rate compared to the actual current reinvestment rate.
- Performance – this is the condition breakdown for the asset category.
- Risk – this is the risk profile for the asset category.

Only those LOS that are required under O. Reg for core asset categories are included in addition to the strategic LOS.

Community Levels of Service

Community LOS are a simple, plain language description or measure of the service that the community receives. For core asset categories, the Province, through O. Reg. 588/17, has provided qualitative descriptions that are required. For non-core asset categories, the Village must determine the qualitative descriptions that will be used. The community LOS can be found in the Levels of Service subsection within each asset category section.

Technical Levels of Service

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

For core asset categories, the Province, through O. Reg. 588/17, has provided technical metrics that are required. For non-core asset categories, the Village determined the technical metrics that will be used. The metrics can be found in the LOS subsection within each asset category.

Current and Proposed Levels of Service

Oil Springs is focused on measuring the current LOS provided to the community. Once current LOS have been measured and trended, the Village plans to establish their proposed LOS over a 10-year period, in accordance with O. Reg. 588/17.

Proposed levels of service should be realistic and achievable within the timeframe outlined by the Village. They should also be determined with consideration of a variety of community expectations, fiscal capacity, regulatory requirements, corporate goals, and long-term sustainability. Once proposed LOS have been established, and prior to July 2025, the Village must identify lifecycle management and financial strategies which allow these targets to be achieved.

Climate Change

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

The report revealed that between 1948 and 2016, the average temperature increase across Canada was 1.7°C; moreover, during this time period, Northern Canada experienced a 2.3°C increase. The temperature increase in Canada has

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

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

Oil Springs Climate Profile

The Village of Oil Springs is a village in Lambton County, Ontario, Canada. The Village is expected to experience notable effects of climate change which include higher average annual temperatures, an increase in total annual precipitation, and an increase in the frequency and severity of extreme events. According to Climatedata.ca – a collaboration supported by Environment and Climate Change Canada (ECCC) – the Village of Oil Springs may experience the following trends:

Higher Average Annual Temperature:

- Between the years 1971 and 2000 the annual average temperature was 8.6 ºC
- Under a high emissions scenario, the annual average temperatures are projected to increase by 3.0ºC by the year 2050 and over 5.2 ºC by 2080.

Increase in Total Annual Precipitation:

- Under a high emissions scenario, Oil Springs is projected to experience an 12% increase in precipitation by the year 2051 and a 16% increase by 2080.

Increase in Frequency of Extreme Weather Events:

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

Integration Climate change and Asset Management

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

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

Reinvestment Rate

As assets age and deteriorate, they require additional investment to maintain a state of good repair. The reinvestment of capital funds, through asset renewal or replacement, is necessary to sustain an adequate level of service. The reinvestment rate is a measurement of available or required funding relative to the total replacement cost. By comparing the actual vs. target reinvestment rate the Village can determine the extent of any existing funding gap.

Portfolio Overview

Community Profile

The Village of Oil Springs is in Lambton County, Ontario which was incorporated in 1865. The village is an enclave within Enniskillen Township. Oil Springs is located approximately 90 kilometres southwest of London and approximately 30 kilometres east of the American border.

Census Characteristic	Village of Oil Springs	Lambton County	Ontario
Population 2021	647	128,154	14,223,942
Population 2016	648	126,638	13,448,494
Total Private Dwellings	283	60,322	5,929,250
Population Density	79.5/km2	42.7/km2	15.9/km2
Land Area	8.14 km2	2,999.93 km2	892,411.76 km2

Oil Springs holds a pivotal place in Canadian history, as the birthplace of North America's first commercial oil well. In 1858, James Miller Williams, an asphalt producer, inadvertently discovered free oil while attempting to dig a water well in what was then known as Black Creek. This discovery triggered Canada's first oil rush, leading to a rapid transformation of the village and the surrounding region.

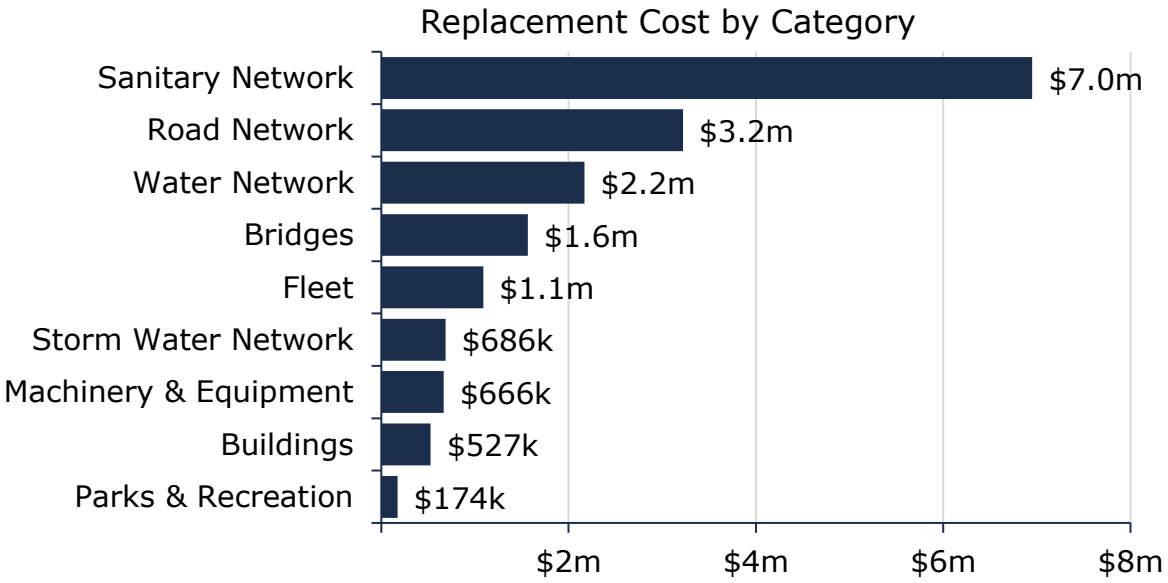
The Village was subsequently renamed Oil Springs, reflecting its newfound identity as a hub for petroleum production. Today, the village proudly preserves its rich heritage through attractions like the Oil Museum of Canada and the Fairbanks Oil Fields.

The Village of Oil springs represents an ideal mix of a small-town feel with access to urban centres such as London. Although the village has seen a slight population decline from 2016 to 2021, it maintains a stable residential base with 283 private dwellings and a population density of 79.5 people per square kilometer - significantly higher than the county and provincial averages. The Village generates a total revenue of $800 thousand from taxes and rates and spends an average of $349 thousand annually on capital projects.

Replacement Cost

All Oil Springs's asset categories have a total replacement cost of $25.3 million based on available inventory data. This total was determined based on a combination of user-defined costs and historical cost inflation. This estimate reflects the replacement of historical assets with similar, not necessarily identical, assets available for procurement today.

Figure 5: Portfolio Replacement Value

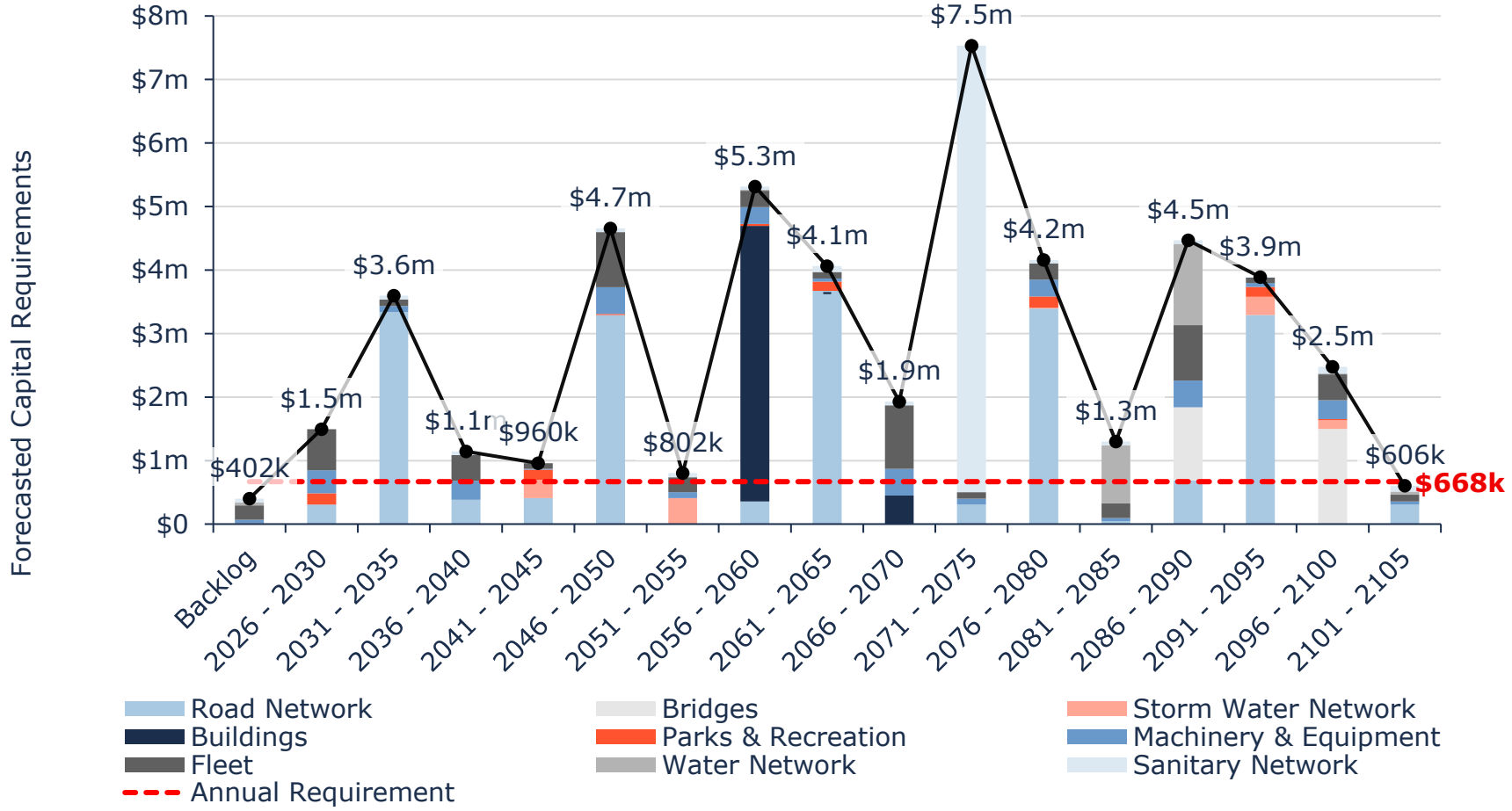


Forecasted Capital Requirements

Aging assets require maintenance, rehabilitation, and replacement. Figure 6 below illustrates the cyclical short-, medium- and long-term infrastructure replacement requirements for all asset categories analyzed. On average, $668 thousand is required each year to remain current with capital replacement needs for Oil Springs's asset portfolio (red dotted line).

Although actual spending may fluctuate substantially from year to year, this figure is a useful benchmark for annual capital expenditure targets (or allocations to reserves) to ensure projects are not deferred and replacement needs are met as they arise. This figure relies on age and available condition data. Based on the current replacement cost of the portfolio, this represents an annual target reinvestment rate of 2.6%.

Figure 6: Forecasted Capital Requirements

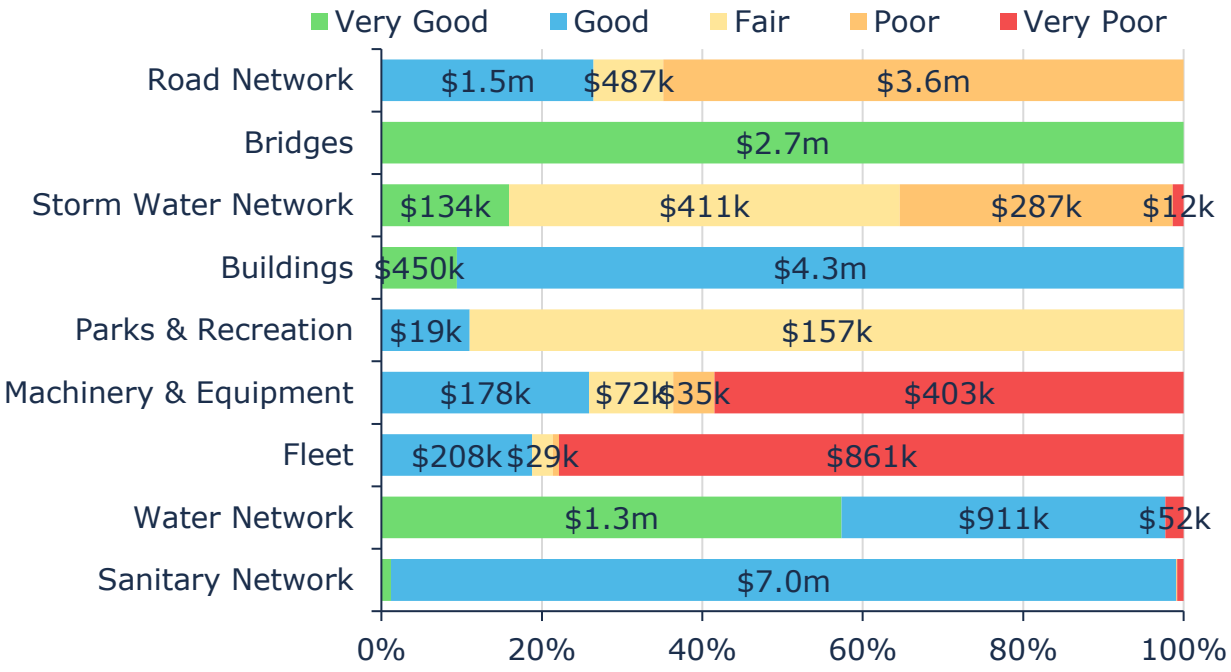


The chart also illustrates a backlog of $402 thousand, comprising assets that remain in service beyond their estimated useful life. It is unlikely that all such assets are in a state of disrepair, requiring immediate replacements or major renewals. This makes targeted and consistent condition assessments integral.

Risk frameworks, proactive lifecycle strategies, and levels of service targets can then be used to prioritize projects, continuously refine estimates for backlogs and ongoing capital needs and help select the right treatment for each asset.

Condition of Asset Portfolio

The current condition of the assets is central to all asset management planning. Collectively, 79% of assets in Oil Springs are in fair or better condition. This estimate relies on both age-based and field condition data.



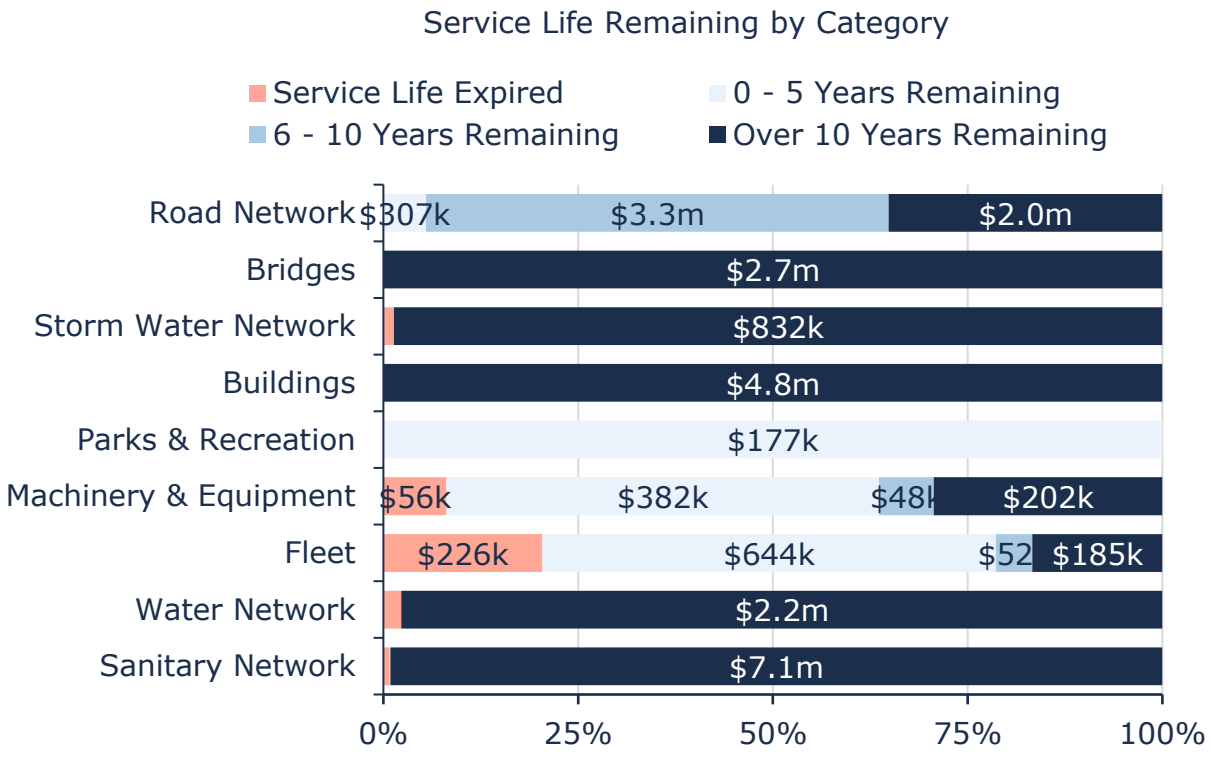
Value and Percentage of Asset Segments by Replacement Cost

Assessed condition data is available for road network, bridges and culverts, storm water network, parks and recreation, water network and sanitary network; for the remaining portfolio, age is used as an approximation of condition. Assessed condition data is invaluable in asset management planning as it reflects the true condition of the asset and its ability to perform its functions.

Service Life Remaining

Based on asset age, available assessed condition data and estimated useful life, 21% of the Village's assets will require rehabilitation/replacement within the next 10 years. Details of the capital requirements are identified in each asset section.

Figure 7: Asset Portfolio Service Life Remaining



Risk & Criticality

The overall asset risk breakdown for Oil Springs's asset inventory is portrayed in the figure below.

Figure 8: Overall Asset Risk Breakdown

1 - 4 **Very Low** $4,411,613 (17%)	5 - 7 **Low** $4,763,474 (19%)	8 - 9 **Moderate** $3,081,980 (12%)	10 - 14 **High** $9,370,406 (37%)	15 - 25 **Very High** $3,669,549 (15%)

Reviewing the list of very high-risk assets to evaluate how best to mitigate the level of risk the Village is experiencing will help advance Oil Springs's asset management program.

Proposed Levels of Service

O. Reg 588/17 Proposed Levels of Service

The 2025 deadline requires that proposed Levels of Service (LOS) are demonstrated to be appropriate based on an assessment of:

1. Proposed LOS options and the risks associated with these options (i.e., asset reliability, safety, affordability) when considering the long-term sustainability of the municipality.
2. How proposed LOS may differ from current LOS.
3. Whether proposed LOS are achievable.
4. The municipality's ability to afford proposed LOS.

Additionally, a lifecycle management and financial strategy to support these LOS must be identified, covering a 10-year period and including:

1. Identification of lifecycle activities required to support the proposed LOS, with consideration for:
    - Full lifecycle of assets.
    - Lifecycle activity options available to meet LOS objectives.
    - Risks associated with the identified options.
    - Identification of lowest-cost lifecycle activities.
2. An estimate of the annual cost of meeting the proposed LOS over a 10-year period, separated by capital and operating expenditures.

Methodology

The proposed levels of service for the Village of Oil Springs were developed as a desktop exercise through engagement with Village staff, supported by available asset data and internal knowledge of operations. This approach reflects current service delivery practices and the Village's financial constraints, particularly the significant allocation of revenues toward debt servicing.

While this analysis was primarily staff-driven, community perspective was considered where available, including general expectations for safe, reliable, and functional infrastructure. These considerations help ensure that the proposed levels of service remain aligned with the broader interests of the community while remaining achievable within existing financial limitations.

Key considerations in developing the LOS include:

Financial Impact Assessment

- Review of historical expenditures and budget allocations
- Assessment of financial capacity in the context of existing debt obligations

- Consideration of trade-offs between infrastructure investment and other service demands

Infrastructure Condition Assessment

- Use of available asset data and staff knowledge of system condition Identification of critical assets requiring ongoing maintenance or priority attention
- Recognition that limited funding may impact the ability to fully address lifecycle needs

Service Impact Assessment

- Consideration of how different levels of investment may impact service reliability and asset performance
- Evaluation of the potential effects on public safety and day-to-day service delivery

Risk Management

- Identification of risks associated with maintaining, increasing, or decreasing service levels
- Recognition that deferred investment may lead to increased lifecycle costs over time
- Consideration of risks related to asset failure and service disruption

Community Considerations

- While no formal engagement process was conducted as part of this exercise, general community expectations for safe, reliable, and cost-effective services were considered
- The approach aims to balance infrastructure needs with affordability and the Village's overall financial capacity

Timeline Considerations

- In accordance with O. Reg. 588/17, a 10-year planning horizon is used to estimate costs associated with maintaining proposed levels of service The regulation does not require that service level targets be achieved within a specific timeframe, allowing flexibility to align improvements with future financial capacity

Levels of Service Options

Maintaining Current Levels of Service

The Village of Oil Springs has selected a Maintain Current Levels of Service approach, reflecting the Village's continued commitment to delivering services at existing levels based on current operational practices and available resources.

Under this approach, the Village will maintain its current asset management and reinvestment strategies, while making incremental improvements where feasible.

Given existing financial constraints, particularly the significant allocation of revenues toward debt servicing, the Village will aim to progress toward full lifecycle funding over time but recognizes that this may not be achievable in the near term through municipal revenues alone.

To support this objective, the Village will continue to pursue external funding opportunities, including provincial and federal grants, to supplement capital investment and address infrastructure needs. This will be critical in advancing priority projects and mitigating the impacts of funding gaps.

While this approach may result in some gradual asset deterioration or delayed reinvestment in certain areas, it represents a balanced and financially responsible path forward. The Village will continue to monitor asset performance, risks, and financial capacity, and will adjust investment strategies as opportunities arise.

As financial flexibility improves, the Village may revisit opportunities to enhance levels of service and accelerate infrastructure investment in a sustainable manner.

Alternative Scenarios

Alternative approaches to service levels were considered as part of the analysis, reflecting the range of potential strategies available to the Village.

Increasing investment in infrastructure would support improved asset condition, reduced risk, and enhanced service delivery. However, this approach would require a significant increase in funding, which is not currently feasible given existing financial constraints and ongoing debt servicing obligations. Pursuing this path at this time could place additional pressure on the Village's financial position and impact affordability for residents.

Conversely, reducing investment or deferring maintenance could provide short-term financial relief but would introduce substantial long-term risks. Lower levels of reinvestment would likely accelerate asset deterioration, increase the likelihood of asset failures, and result in higher lifecycle costs over time. This approach could also negatively impact service reliability and, in some cases, public safety.

These considerations highlight the balance required between maintaining affordability and addressing long-term infrastructure needs. Adjusting funding timelines can influence this balance, extending timelines may reduce immediate financial pressures but can lead to continued deferral of infrastructure needs, while more aggressive investment would address deficiencies more quickly but require a higher financial commitment.

In this context, the Village's preferred approach represents a measured path that maintains current service levels while managing financial risk and positioning the municipality to take advantage of future funding opportunities.

10-year Capital Requirements

The following table outlines the capital cost requirements associated with recommended lifecycle events. These have been generated through the Village's asset management software and refined to reflect current Village priorities.

Table 3 Proposed Levels of Service 10-Year Capital Requirements

Segment	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Road Network	$257k	$200k	$185k	$307k	$200k	-	$26k	$102k	$48k	$104k
Bridges	-	-	-	-	-	-	-	-	-	-
Storm Water Network	-	-	-	-	-	-	-	$12k	-	-
Buildings	-	-	-	-	-	-	-	$18k	-	-
Parks & Recreation	-	-	-	-	-	-	$145k	$31k	-	-
Machinery & Equipment	-	-	$56k	-	-	-	$290k	-	$32k	-
Fleet	-	-	$20k	$38k	$230k	$771k	$8k	$33k	$20k	$16k
Water Network	-	$14k	-	-	-	-	-	$23k	-	-
Sanitary Network	-	-	-	-	-	-	$7k	-	$58k	-
Total	**$257k**	**$214k**	**$261k**	**$345k**	**$430k**	**$771k**	**$476k**	**$219k**	**$158k**	**$120k**

Financial Strategy

Financial Strategy Overview

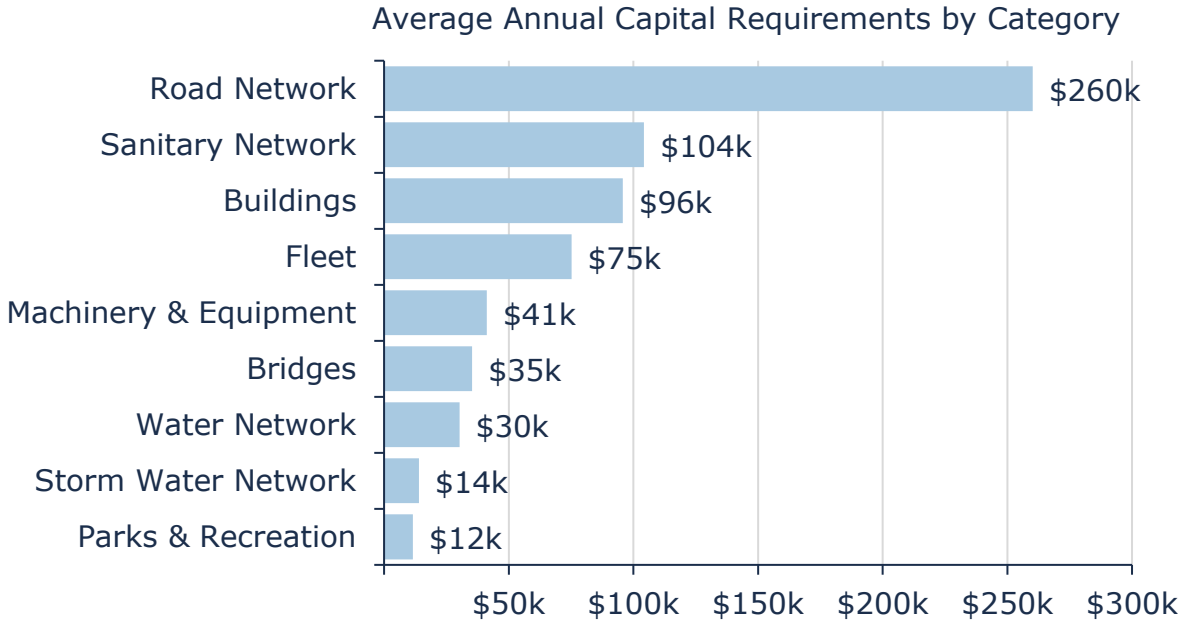
For an asset management plan to be effective and meaningful, it must be integrated with financial planning and long-term budgeting. The development of a comprehensive financial plan will allow Village of Oil Springs to identify the financial resources required for sustainable asset management based on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

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

1. In order to reduce financial requirements, consideration has been given to revising service levels downward.

Annual Requirements & Capital Funding

The annual requirements represent the amount the Village should allocate annually to each asset category to meet replacement needs as they arise, prevent infrastructure backlogs and achieve long-term sustainability. In total, the Village must allocate approximately $668 thousand annually to address capital requirements for the assets included in this AMP.



For all asset categories the annual requirement has been calculated based on a "replacement only" scenario, in which capital costs are only incurred at the construction and replacement of each asset.

Annual Funding Available

Based on a historical analysis of sustainable capital funding sources, the Village is currently allocating approximately $203 thousand annually toward capital infrastructure projects. Compared to the estimated long-term average annual capital requirement of approximately $668 thousand, this results in an estimated annual funding gap of approximately $465 thousand across all asset categories included in this AMP.

The funding gap identified in this analysis reflects the estimated investment required to achieve and maintain full lifecycle funding over the long term. However, the Village's proposed levels of service and financial strategy are based on maintaining the current funding approach at this time, balancing infrastructure investment needs with affordability considerations for residents and the community. The Village will continue to prioritize capital investments based on risk, condition, and criticality while pursuing external funding opportunities where available.

Financial Profile: Tax Funded Assets

Current Funding Position

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

Table 4: Taxes - Required Funding vs Current Funding Position

Asset Category	Avg. Annual Requirement	Annual Funding Available				Annual Deficit
		Taxes	CCBF	OCIF	Total Available	
Road Network	$260,126	$39,563	$21,445	$115,000	$176,008	$84,117
Stormwater Network	$13,965					$13,965
Bridges & Culverts	$35,333	$6,667			$6,667	$28,667
Buildings	$95,762					$95,762
Machinery & Equipment	$41,202					$41,202
Land Improvements	$11,578					$11,578
Vehicles	$75,240					$75,240
	$533,206	**$46,230**	**$21,445**	**$115,000**	**$182,675**	**$350,531**

The analysis indicates that tax-supported infrastructure categories are currently funded below estimated long-term lifecycle requirements. Based on the modeled full funding scenario, achieving full lifecycle funding for these assets would require additional long-term tax-supported investment. For context, full funding would

equate to an approximate 2.6% tax increase phased in over 20 years, excluding inflationary and operational pressures.

This full funding analysis is intended to illustrate the scale of long-term infrastructure investment requirements and does not represent the Village's proposed funding strategy at this time.

Financial Profile: Rate Funded Assets

Current Funding Position

The following tables show, by asset category, Oil Springs' average annual asset investment requirements, current funding positions, and funding increases required to achieve full funding on assets funded by rates.

Table 5: Rates: Required Funding vs Current Funding Position

Asset Category	Avg. Annual Requirement	Annual Funding Available				Annual Deficit
		Rates	To Operations	OCIF	Total Available	
Water Network	$30,280	$181,731	($171,731)		$10,000	$20,280
Sanitary Network	$104,284	$84,943	($74,437)		$10,506	$93,778
	$134,564	**$266,674**	**($246,168)**	**0**	**$20,506**	**$114,058**

The analysis indicates that water and sanitary assets are currently funded below estimated long-term lifecycle requirements. Based on the modeled full funding scenario, achieving full lifecycle funding would require long-term rate increases of approximately 0.6% annually over 10 years for water services and 3.8% annually over 20 years for sanitary services, excluding inflationary and operational pressures.

At this time, the Village's proposed levels of service assume the continuation of the current funding approach while prioritizing capital projects based on risk and asset criticality and continuing to pursue available grant funding opportunities.

Recommendations

Asset Data

- Asset management planning is highly sensitive to replacement costs. Periodically update replacement costs based on recent projects, invoices, or estimates, or any other technical reports and studies. Material and labour costs can fluctuate due to local, regional, and broader market trends, and substantially so during major world events. Accurately estimating the replacement cost of like-for-like assets can be challenging. Ideally, several recent projects over multiple years should be used.

Condition Assessment Strategies

- Implement condition assessments for additional asset categories to ensure that condition information remains reliable. Regular evaluations are crucial for maintaining an effective asset management plan, as they provide essential insights into the health and performance of various assets over time. By expanding condition assessments to more asset categories, the Village can better prioritize maintenance and repair efforts, optimize resource allocation, and extend the lifespan of its infrastructure and equipment.

Lifecycle Management Strategies

- Evaluate the efficacy of the Village's current lifecycle management strategies at regular intervals to determine the impact cost, condition, and risk. Currently, the Village conducts maintenance on an as-needed basis without extensive lifecycle interventions. It is recommended that the Village consider adopting a formal lifecycle management strategy to ensure systematic maintenance and optimal resource use for its paved roads.

Risk Management Strategies

- Implement risk-based decision-making as part of asset management planning and budgeting processes. This should include the regular review of high-risk assets to determine appropriate risk mitigation strategies.
- Review risk models on a regular basis and adjust according to an evolving understanding of the probability and consequences of asset failure.

Levels of Service

- Continue to measure current levels of service in accordance with the metrics identified in O. Reg. 588/17 and those metrics that the Village believes to provide meaningful and reliable inputs into asset management planning.

Appendix A: Road Network

Oil Springs's Road Network comprises the second largest share of its infrastructure portfolio, with a current replacement cost of $5.6 million, primarily asphalt roads.

The Village also owns and manages other supporting infrastructure and capital assets, including curb and sidewalk.

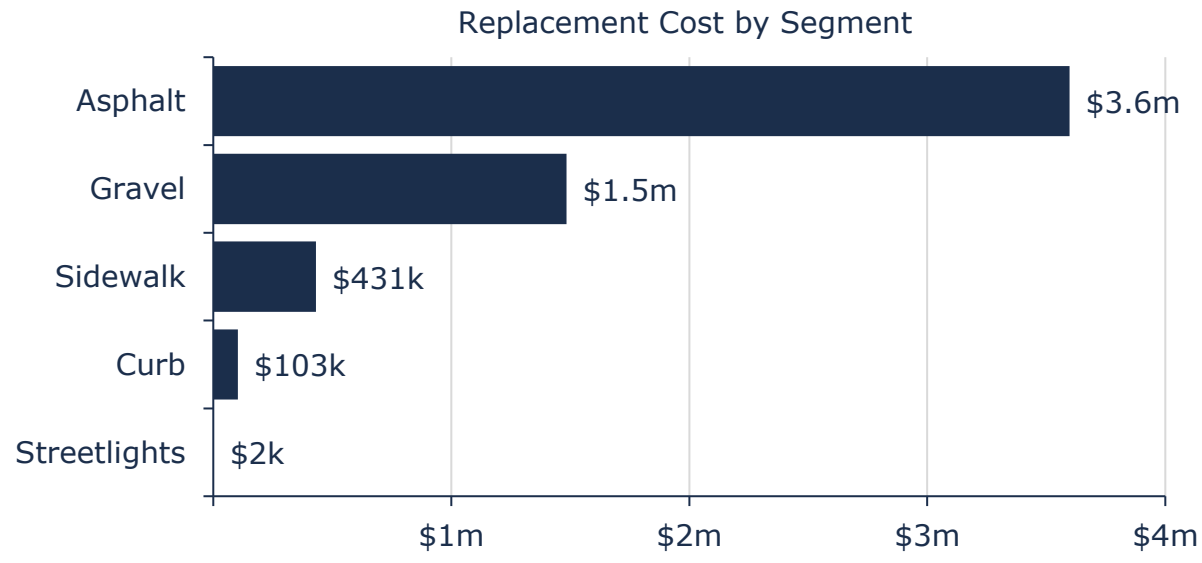
Inventory & Valuation

The table below includes the quantity, replacement cost method and total replacement cost of each asset segment in the Village's Road Network inventory.

Segment	Quantity	Unit of Measure	Primary Replacement Cost Method	Replacement Cost
Asphalt	10,714	Length (m)	Cost per Unit	$3,597,309
Curb	861	Length (m)	Cost per Unit	$103,320
Gravel	4,948	Length (m)	Cost per Unit	$1,484,400
Sidewalk	2,271	Length (m)	Cost per Unit	$431,490
Street Lights	1	Pooled Asset	CPI	$2,332
Total	**18,813**	**Meters**		**$5,618,851**

The figure below displays the replacement cost of each asset segment in the Village's road inventory.

Figure 9: Road Network Replacement Value

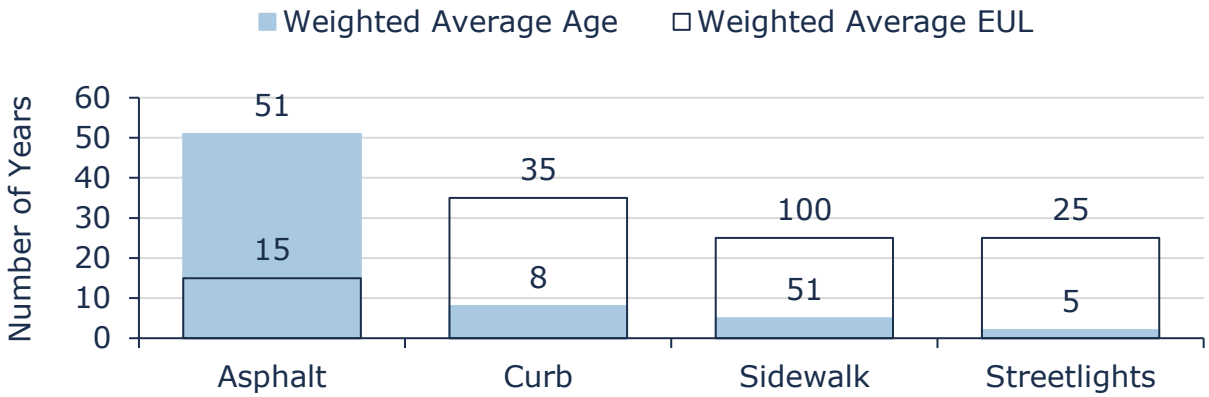


Each asset's replacement cost should be reviewed periodically to determine whether adjustments are needed to more accurate represent realistic capital requirements.

Asset Condition & Age

The graph below identifies the average age, and the estimated useful life for each asset segment[1]. It is all weighted by replacement cost.

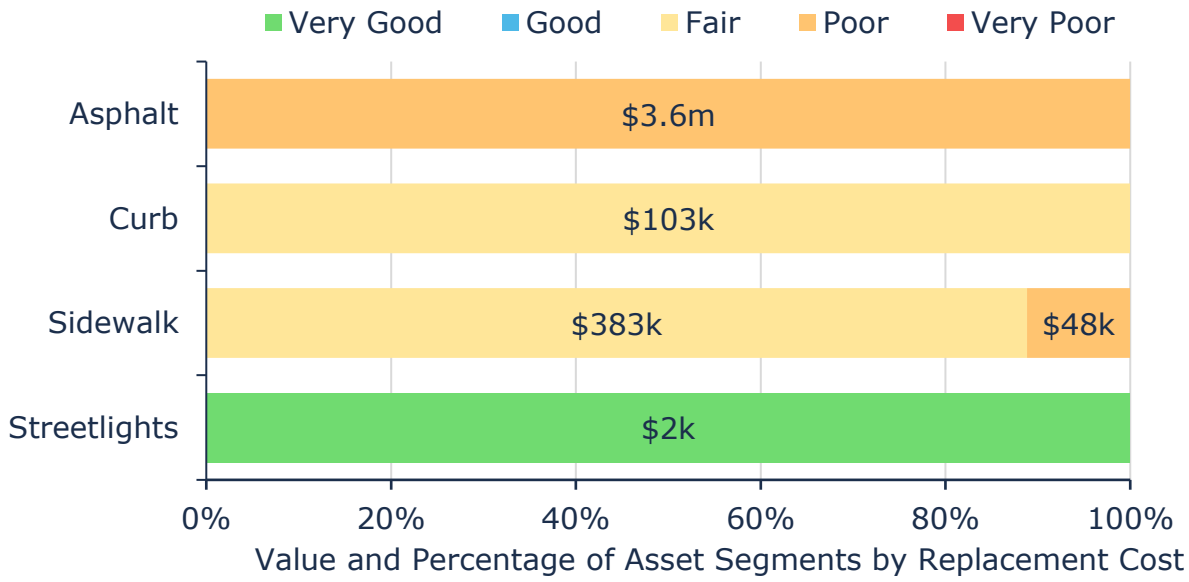
Figure 10: Road Network Average Age vs Average EUL



The analysis shows that, based on in-service dates, roads continue to remain in operation beyond their expected useful life. This is due to the life cycle management strategies currently being utilized.

The graph below visually illustrates the average condition for each asset segment on a very good to very poor scale.

Figure 11: Road Network Condition Breakdown



[1] Gravel roads undergo perpetual operating and maintenance activities. If maintained properly, they can theoretically have a limitless service life.

Each asset's estimated useful life should also be reviewed periodically to determine whether adjustments need to be made to better align with the observed length of service life for each asset type.

Current Approach to Condition Assessment

Accurate and reliable condition data allows staff to determine the remaining service life of assets and identify the most cost-effective approach to managing assets. The Village performs external annual assessments of its road network assets with the most recent completed in 2023. Internal annual assessment for streetlights and sidewalks, and signage is evaluated during road patrols. These assessment ensures timely maintenance, effective resource allocation and grant applications.

Lifecycle Management Strategy

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

The following lifecycle strategies shown in Figure 13 have been developed as a proactive approach to managing the lifecycle of municipally owned roads. Instead of allowing the roads to deteriorate until replacement is required, strategic rehabilitation is expected to extend the service life of roads at a lower total cost.

Figure 12: Road Network Current Lifecycle Strategy

Maintenance

- Routine maintenance includes frequent inspections, street sweeping, spray patching and crack sealing for roads.
- Annual inspections, marking, and grinding spots are done for sidewalks
- Road patrols are conducted regularly to meet safety requirements

Rehabilitation / Renewal / Replacement

- Road rehabilitation activities including double surface treatment occurs when roads are at poor (PCI of 20) conditions.
- Replacement is considered for road assets when they are nearing the end of their expected service life causing safety concerns or if their condition has significantly deteriorated and repairs or rehabilitation are no longer cost-effective

Forecasted Capital Requirements

The figure below illustrates the projected short-, medium-, and long-term rehabilitation and replacement requirements for the Village's road network. The analysis was run to 2055 to capture at least one full replacement cycle for the longest-lived assets in the inventory.

The Village's average annual capital requirement for the road network is approximately $260 thousand, as represented by the red dotted line. While annual expenditures may vary, this value provides a useful benchmark for long-term capital planning and reserve contributions. Projections are based on replacement costs, asset age, available condition information, and lifecycle modeling, and are presented in 5-year intervals to support long-term financial planning.

Figure 13: Road Network Forecasted Capital Replacement Requirements

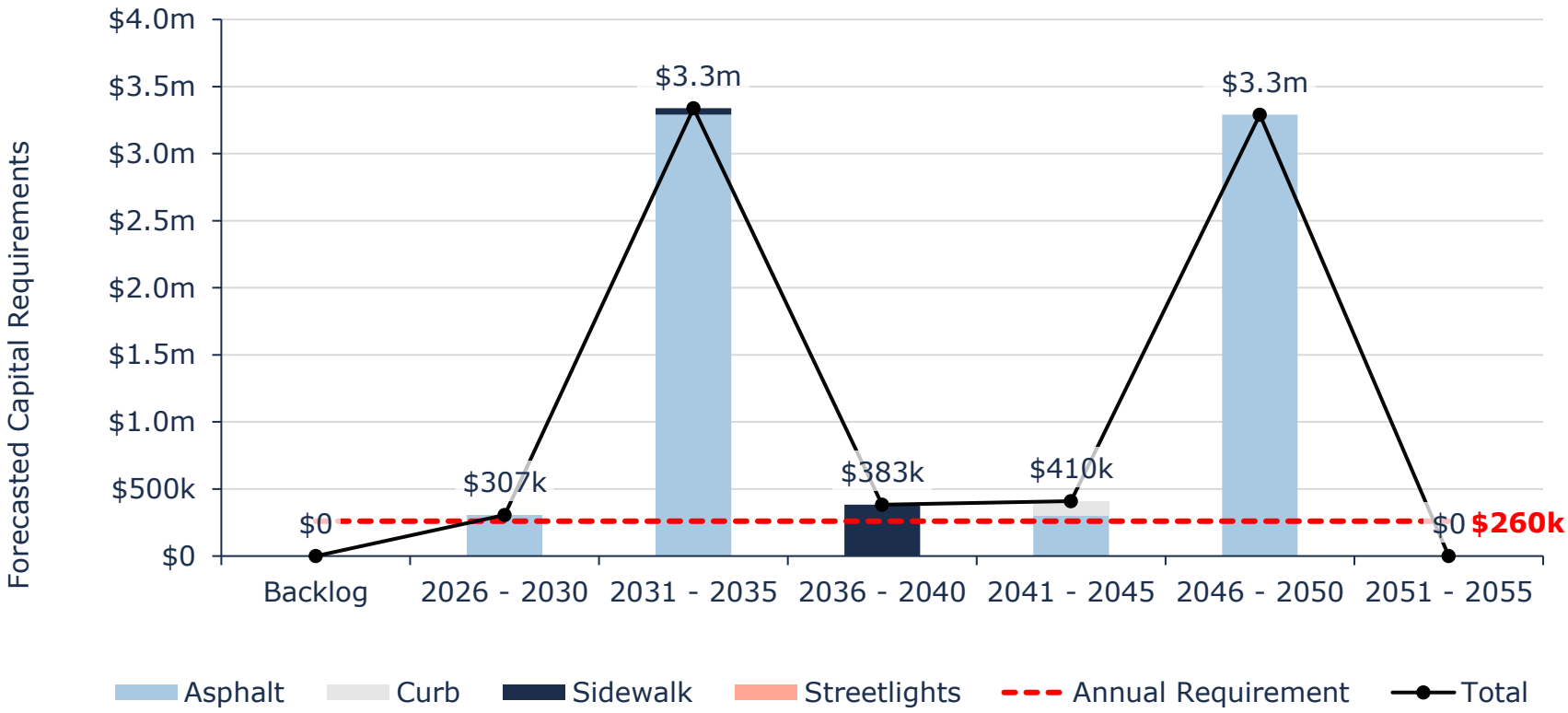


Table 7 below summarizes the projected cost of lifecycle activities (rehabilitation and replacement) that may need to be undertaken over the next 10 years to support current levels of service. These projections are generated in Citywide and rely on the data available in the asset register.

These projections can be different from actual capital forecasts. Consistent data updates, especially condition, will improve the alignment between the system-generated expenditure requirements, and the Village's capital expenditure forecasts.

Table 6 Road Network System-generated 10-Year Capital Costs

Segment	Backlog	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Asphalt	-	-	-	-	-	$307k	$2.9m	$407k	-	-	-
Curb	-	-	-	-	-	-	-	-	-	-	-
Sidewalk	-	-	-	-	-	-	-	-	-	$48k	-
Streetlights	-	-	-	-	-	-	-	-	-	-	-
Total	**-**	**-**	**-**	**-**	**-**	**$307k**	**$2.9m**	**$407k**	**-**	**$48k**	**-**

Risk & Criticality

The following risk matrix provides a visual representation of the relationship between the probability of failure and the consequence of failure for the assets within this asset category based on available inventory data. See Appendix M: Risk Rating Criteria. For the criteria used to determine the risk rating of each asset.

Figure 14: Road Network Risk Matrix

1 - 4 Very Low $247,767 (4%)	5 - 7 Low $258,674 (5%)	8 - 9 Moderate $1,755,833 (31%)	10 - 14 High $925,126 (16%)	15 - 25 Very High $2,431,451 (43%)

This is a high-level model developed by Village staff and it should be reviewed and adjusted to reflect an evolving understanding of both the probability and consequences of asset failure.

The identification of critical assets allows the Village to determine appropriate risk mitigation strategies and treatment options. Risk mitigation may include asset-specific lifecycle strategies, condition assessment strategies, or simply the need to collect better asset data.

Risks to Current Asset Management Strategies

The following section summarizes key trends, challenges, and risks to service delivery that the Village is currently facing:

Climate Change & Extreme Weather Events

The trend of climate change-induced extreme precipitation events is projected to continue. Severe rainfall and drought, or increased temperature can impact service availability and usage. Flooding can tax the existing drainage system and damage roads. The Village maintains a Road Network that could be impacted by more rapid freeze-thaw cycles, contributing to pavement deterioration. As a result, higher maintenance and rehabilitation requirements are expected to maintain the same level of service, to avoid complaints, liabilities, and larger capital spending. To improve asset resiliency, staff should identify the critical areas and improve drainage through enhanced lifecycle strategies.

Levels of Service

The following tables identify the Village's metrics to identify their current level of service for the roads.

Community Levels of Service

The following table outlines the qualitative descriptions that determine the community levels of service provided by the road network.

Table 7 Road Network Community Levels of Service

Service Attribute	Qualitative Description	Current LOS
Scope	Description, which may include maps, of the road network in the Village and its level of connectivity	The Village's road network includes 11 km of asphalt and 5 km of gravel roads. Asphalt roads serve as the main transportation routes, providing reliable access to homes, businesses, and community facilities. Gravel roads support lower-density and seasonal areas. The network offers sufficient local connectivity, with most properties accessible year-round, though some gravel roads may be affected by seasonal conditions.
Performance	Description or images that illustrate the different levels of road class pavement condition	See Figure 2 for the description of road condition

Technical Levels of Service

The following table outlines the quantitative metrics that determine the technical level of service provided by the road network.

Table 8 Road Network Technical Levels of Service

Service Attribute	Technical Metric	Curent LOS
Scope	Lane-km of arterial roads (MMS classes 1 and 2) per land area in the municipality (km/km^2)	0
	Lane-km of collector roads (MMS classes 3 and 4) per land area in the municipality (km/km^2)	0.45
	Lane-km of local roads (MMS classes 5 and 6) per land area in the municipality (km/km^2)	3.25
	Average Risk Rating	13.67 (High)

Service Attribute	Technical Metric	Curent LOS
Quality	Average pavement condition index for paved roads in the municipality	70%
	Average surface condition for unpaved roads in the municipality	71%
Performance	Capital Reinvestment Rate (Annual)	3.13%

Appendix B: Bridges

Bridges represent a critical portion of the transportation services provided to the community.

Inventory & Valuation

The table below includes the quantity, replacement cost method and total replacement cost of each asset segment in the Bridges inventory.

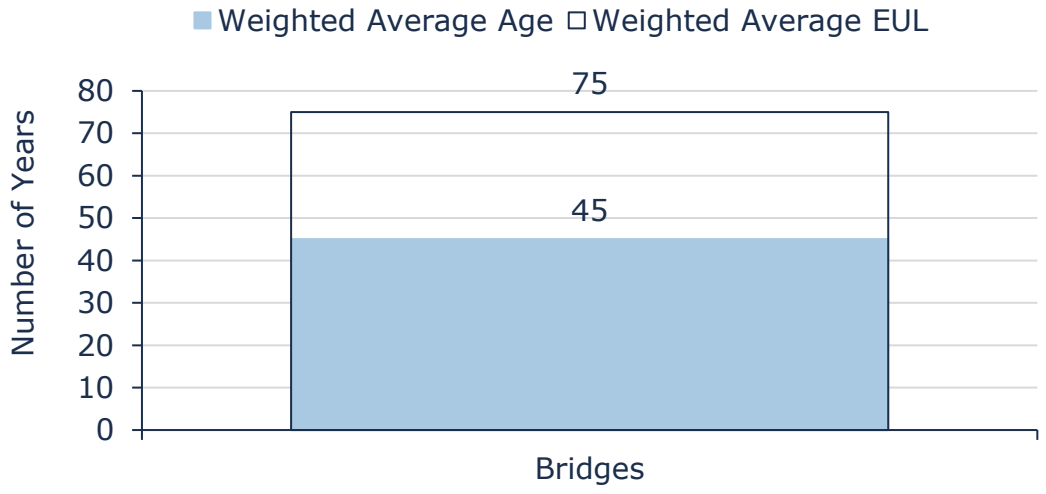
Segment	Quantity	Unit of Measure	Primary Replacement Cost Method	Replacement Cost
Bridges	2	Assets	User-Defined	$2,650,000
Total	**2**	**Assets**	**User-Defined**	**$2,650,000**

Each asset's replacement cost should be reviewed periodically to determine whether adjustments are needed. This can be included in the Ontario Structures Inspection Manual (OSIM) inspections as the replacement cost is part of the calculation for the bridge condition index (BCI).

Asset Condition & Age

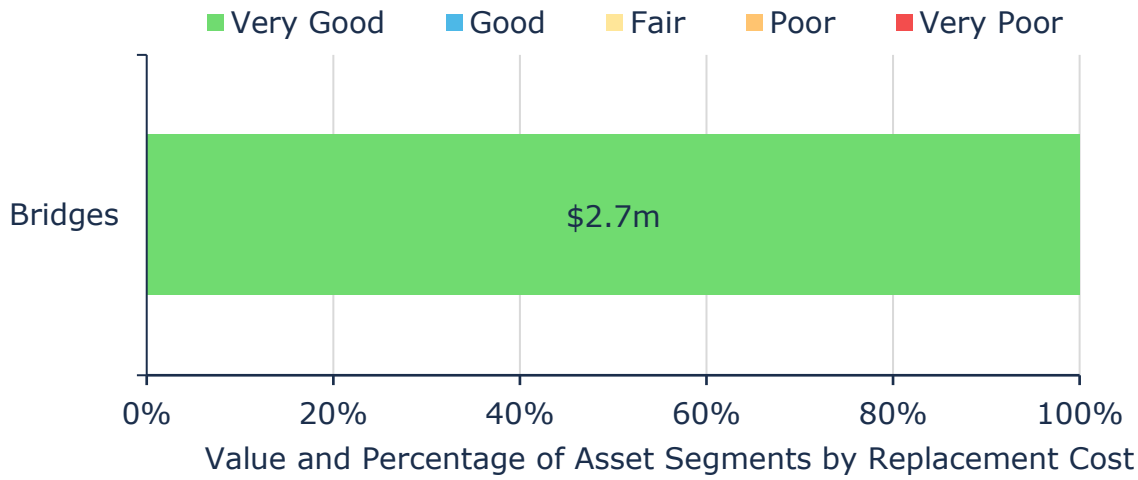
The graph below identifies the average age and the estimated useful life for each asset segment. The values are weighted based on replacement cost.

Figure 15: Bridges Average Age vs Average EUL



The graph below visually illustrates the average condition for each asset segment on a very good to very poor scale.

Figure 16: Bridges Condition Breakdown



To ensure that the Village's bridges continue to provide an acceptable level of service, the staff should monitor the average condition of all assets. Each asset's estimated useful life should also be reviewed periodically to determine whether adjustments need to be made to better align with the observed length of service life for each asset type.

Current Approach to Condition Assessment

Accurate and reliable condition data allows staff to determine the remaining service life of assets and identify the most cost-effective approach to managing assets. Oil Springs's current approach is to assess the bridges and structural culverts every 2 years in accordance with the Ontario Structure Inspection Manual (OSIM). The most recent assessment was scheduled in October 2024.

Lifecycle Management Strategy

The condition or performance of most assets will deteriorate over time. To ensure that municipal assets are performing as expected and meeting the needs of customers, it is important to establish a lifecycle management strategy to proactively manage asset deterioration. Figure 19 outlines Oil Springs's current lifecycle management strategy.

Figure 17: Bridges Current Lifecycle Strategy

Maintenance

- Routine maintenance of bridges including quarterly inspections are done as per recommendations of OSIM reports.

Rehabilitation / Renewal / Replacement

- Guardrail installation has been identified as a safety improvement priority, with capital funding approved for 2025 ($90,000). The upgrade aligns with recommendations captured from OSIM studies and supports the long-term serviceability of the structure.
- Rehabilitation activities are based on recommendations from biennial OSIMs.
- Replacement is considered for bridges when their condition has significantly deteriorated and rehabilitation is no longer cost-effective.

Forecasted Capital Requirements

Figure 20 illustrates the cyclical short-, medium- and long-term infrastructure rehabilitation and replacement requirements for the Village's bridges. These projections are based on asset replacement costs, age analysis, and condition data. They are designed to provide a long-term, portfolio-level overview of capital needs and should be used to support improved financial planning over several decades.

The following analysis was run until 2100, and the resulting graph identifies capital requirements over the next 75 years. Oil Springs's average annual requirements (red dotted line) for bridges total $35 thousand. Although actual spending may fluctuate substantially from year to year, this figure is a useful benchmark value for annual capital expenditure targets (or allocations to reserves) to ensure projects are not deferred and replacement needs are met as they arise.

OSIM condition assessments and a robust risk framework will ensure that high-criticality assets receive proper and timely lifecycle intervention, including rehabilitation and replacement activities.

Figure 18: Bridges Forecasted Capital Replacement Requirements

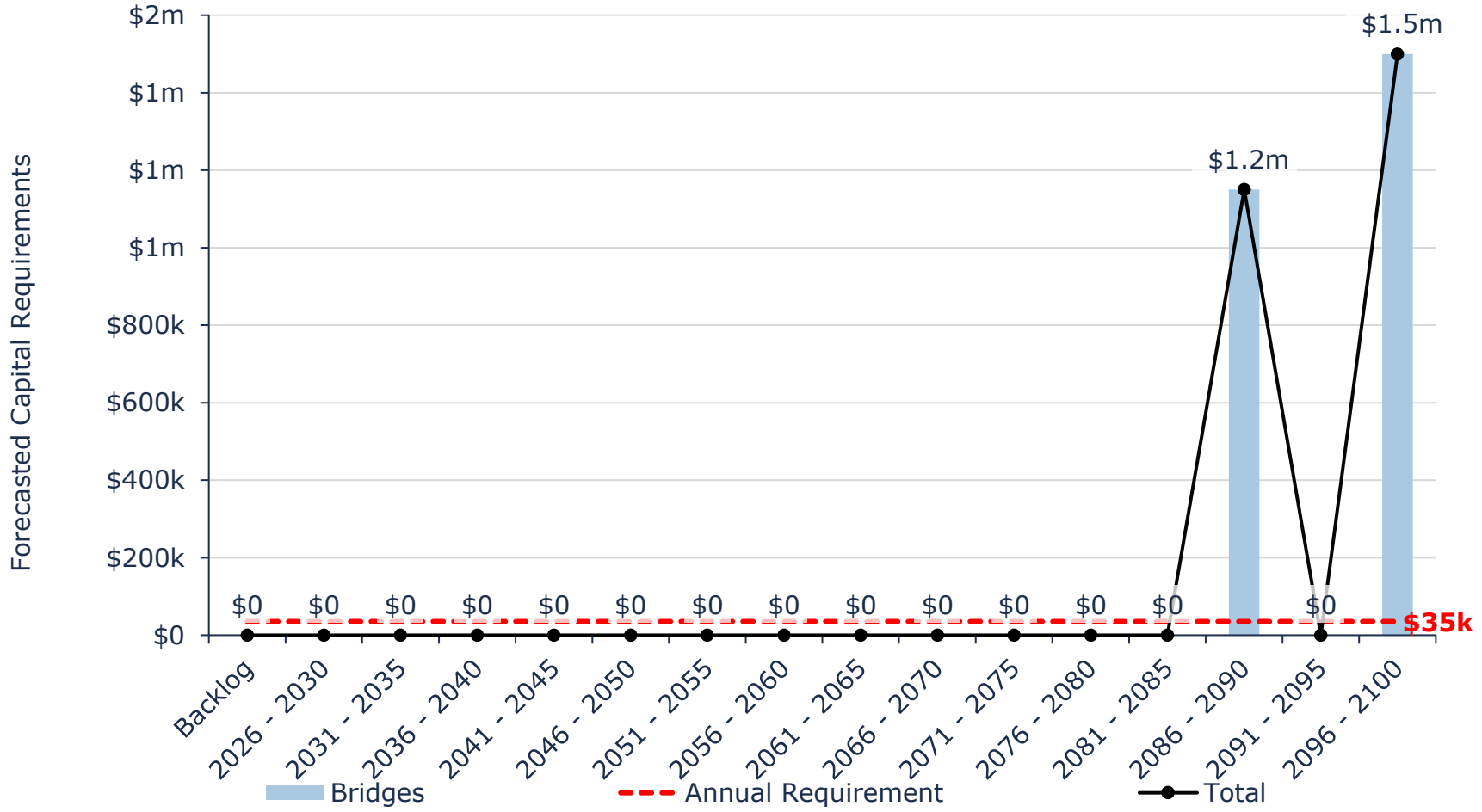


Table 10 below summarizes the projected cost of lifecycle activities (as previously described) that may need to be undertaken over the next 10 years to support current levels of service. These are represented at the major asset level.

Table 9 Bridges System-generated 10-Year Capital Costs

Segment	Backlog	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Bridges	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

These projections are generated in Citywide and rely on the data available in the asset register. Assessed condition data and replacement costs were used to assist in forecasting replacement needs for bridges and structural culverts.

Risk & Criticality

The risk matrix provides a visual representation of the relationship between the probability of failure and the consequence of failure for the assets within this asset category based on available inventory data. See Appendix M: Risk Rating Criteria for the criteria used to determine the risk rating of each asset.

Figure 19: Bridges Risk Matrix

1 - 4 Very Low - (0%)	5 - 7 Low $2,650,000 (100%)	8 - 9 Moderate - (0%)	10 - 14 High - (0%)	15 - 25 Very High - (0%)

This is a high-level model developed by municipal staff and should be reviewed and adjusted to reflect an evolving understanding of both the probability and consequences of asset failure. The asset-specific attributes that municipal staff utilize to define and prioritize the criticality of bridges and culverts are documented below:

Probability of Failure (POF)	Consequence of Failure (COF)
Condition	Replacement Cost (Economic)

The identification of critical assets allows the Village to determine appropriate risk mitigation strategies and treatment options. Risk mitigation may include asset-specific lifecycle strategies, condition assessment strategies, or simply the need to collect better asset data.

Risks to Current Asset Management Strategies

The following section summarizes key trends, challenges, and risks to service delivery that the Village is currently facing:

Climate Change & Extreme Weather Events

Climate change and extreme weather events like intense flooding pose significant risks to a Village's bridges. Infrastructure will be increasingly vulnerable to damage from higher water flows and erosion. As such events become more frequent, the potential for severe damage escalates, threatening safety and transportation efficiency.

Capital Funding Strategies

Financial constraints present a significant challenge for the Village particularly when there are insufficient funds to replace or upgrade key infrastructure. At present, the Village lacks a dedicated reserve for Bridges and will need to allocate specific funding in the future for the replacement of two essential bridges.

Levels of Service

The following tables identify the Village's metrics to identify their current level of service for the bridges.

Community Levels of Service

The following table outlines the qualitative descriptions that determine the community levels of service provided by bridges.

Table 10 Bridges Community Levels of Service

Service Attribute	Qualitative Description	Current LOS
Scope	Description of the traffic that is supported by municipal bridges (e.g. heavy transport, motor, emergency vehicles, pedestrians, cyclists)	Two municipal bridges support a diverse range of traffic, serving as crucial conduits within the Village and also for travel between communities. They accommodate a wide array of vehicles, from heavy transport vehicles such as snowplows to motor and emergency vehicles.
Quality & Performance	Description or images of the condition of bridges and culverts and how this would affect use of the bridges and culverts	See Appendix J.

Technical Levels of Service

The following table outlines the quantitative metrics that determine the technical level of service provided by bridges.

Table 11 Bridges Technical Levels of Service

Service Attribute	Technical Metric	Current LOS
Scope	% of bridges in the Village with loading or dimensional restrictions	0
	Average Risk Rating	5.0 (Low)
Quality	Average bridge condition index value for bridges in the municipality	94%
Performance	Capital Reinvestment Rate (Annual)	0.3%

Appendix C: Water Network

The Oil Springs distribution system is connected to the Village of Enniskillen Water Distribution System. The Village water system is managed and maintained through a partnership with Jacobs/OMI, and includes a network of water mains, fire hydrants, isolation valves, and residential services.

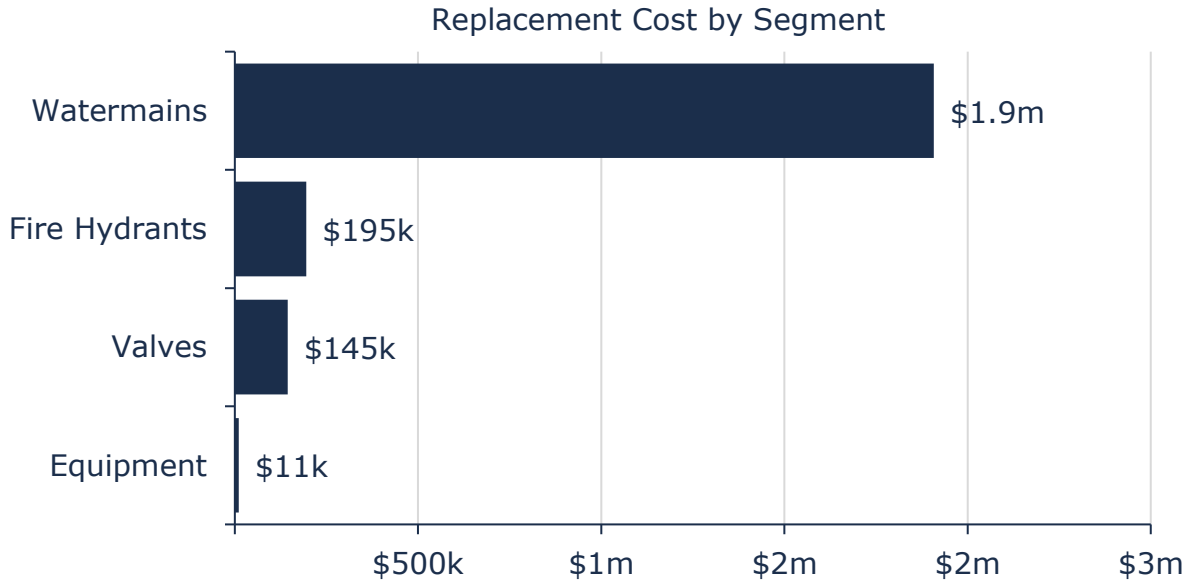
Inventory & Valuation

The table below includes the quantity, replacement cost method and total replacement cost of each asset segment for the Village's Water Network.

Segment	Quantity	Unit of Measure	Primary Replacement Cost Method	Replacement Cost
Equipment	2	Assets	CPI	$10,673
Fire Hydrants	34	Assets	CPI	$194,688
Valves	67	Assets	CPI	$144,583
Watermains	12,375	Meters	CPI	$1,907,555
Total			CPI	**$2,257,499**

The graph below displays the total replacement cost of each asset segment in Oil Springs's water network inventory.

Figure 20: Water Network Replacement Cost

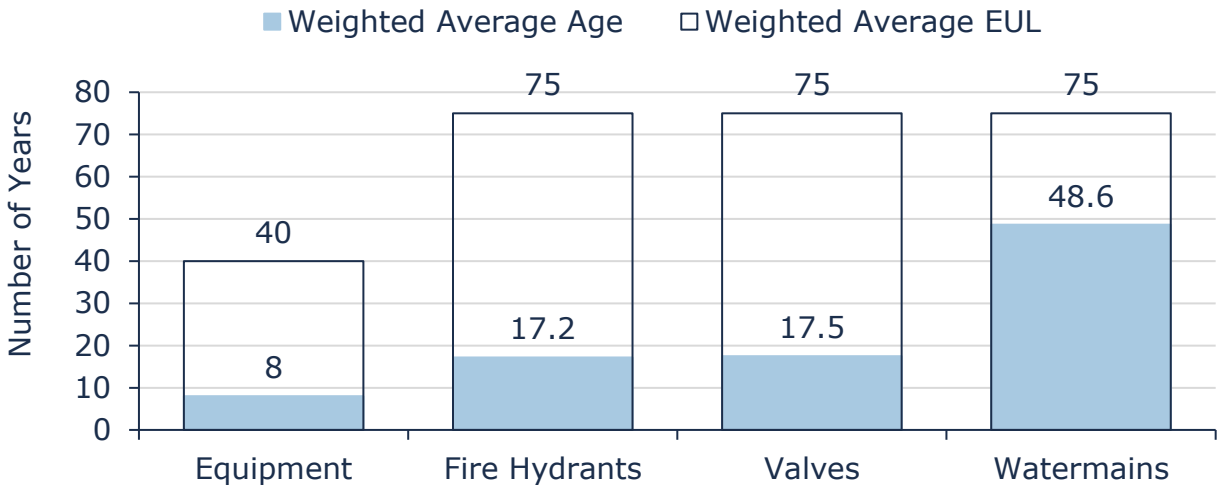


Each asset's replacement cost should be reviewed periodically to determine whether adjustments are needed to more accurate represent realistic capital requirements.

Asset Condition & Age

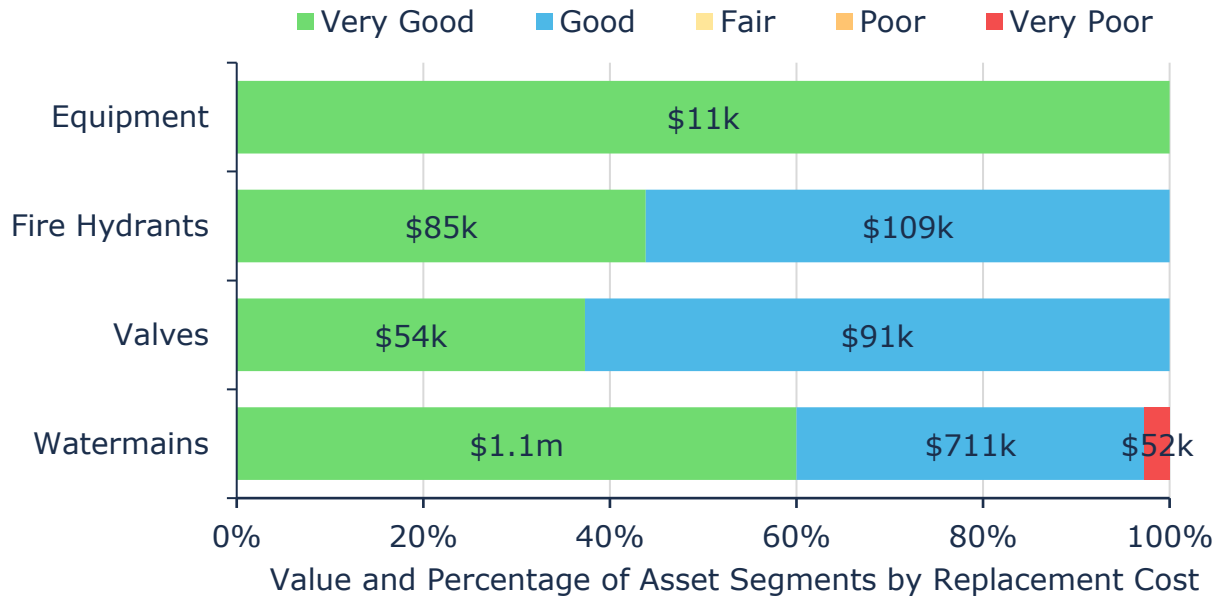
The table below identifies the current average condition, the average age, and the estimated useful life for each asset segment. The average condition (%) is a weighted value based on replacement cost.

Figure 21: Water Network Average Age vs Average EUL



The graph below visually illustrates the average condition for each asset segment on a very good to very poor.

Figure 22: Water Network Condition Breakdown



To ensure that the municipal water network continues to provide an acceptable level of service, the Village should monitor the average condition of all assets. If the average condition declines, staff should re-evaluate their lifecycle management strategy to determine what combination of maintenance, rehabilitation and

replacement activities is required to increase the overall condition of the water network.

Each asset's estimated useful life should also be reviewed to determine whether adjustments need to be made to better align with the observed service life.

Current Approach to Condition Assessment

Accurate and reliable condition data allows staff to determine the remaining service life of assets and identify the most cost-effective approach to managing assets.

The last external assessment of the water network was performed in 2023. OMI/Jacobs, the Operating Authority (OA) maintains a comprehensive water distribution maintenance program. Oil Springs' staff are kept informed of upcoming schedules and repairs to the water network and they perceive monthly operating reports summarizing the repairs and maintenance activities.[2]

Lifecycle Management Strategy

To ensure that municipal assets are performing as expected and meeting the needs of customers, it is important to establish a lifecycle management strategy to proactively manage asset deterioration. The following table outlines the Village's current lifecycle management strategy.

Figure 23: Water Network Current Lifecycle Strategy

Maintenance / Rehabilitation / Replacement
• Routine maintenance activities includes inspections, flushing, minor repairs, turning valves and replacement of old water meters. •Hydrants are tested annually while valves are turned once a year and hydrants are turned twice a year. • At least once a year, the Operating Authority provides a long term forecast of major infrastructure maintenance, rehabilitation and renewal activities. • Replacement is considered when an asset has significantly deteriorated or failed, and when continued rehabilitation is no longer cost-effective.

[2] *Village of Oil Springs Drinking Water Quality Management Standard (DWQMS) Operational Plan, 2024. Retrieved from https://www.oilsprings.ca/media/l3ob430j/o-s-dwqms-operational-plan-2024.pdf*

Forecasted Capital Requirements

The annual capital requirement represents the average amount per year that Oil Springs should allocate towards funding rehabilitation and replacement needs. The following graph identifies capital requirements over the next 80 years. This projection is used as it ensures that every asset has gone through one full iteration of replacement. The forecasted requirements are aggregated into 5-year bins and the trend line represents the average capital requirement of $30 thousand.

Figure 24: Water Network Forecasted Capital Replacement Requirements

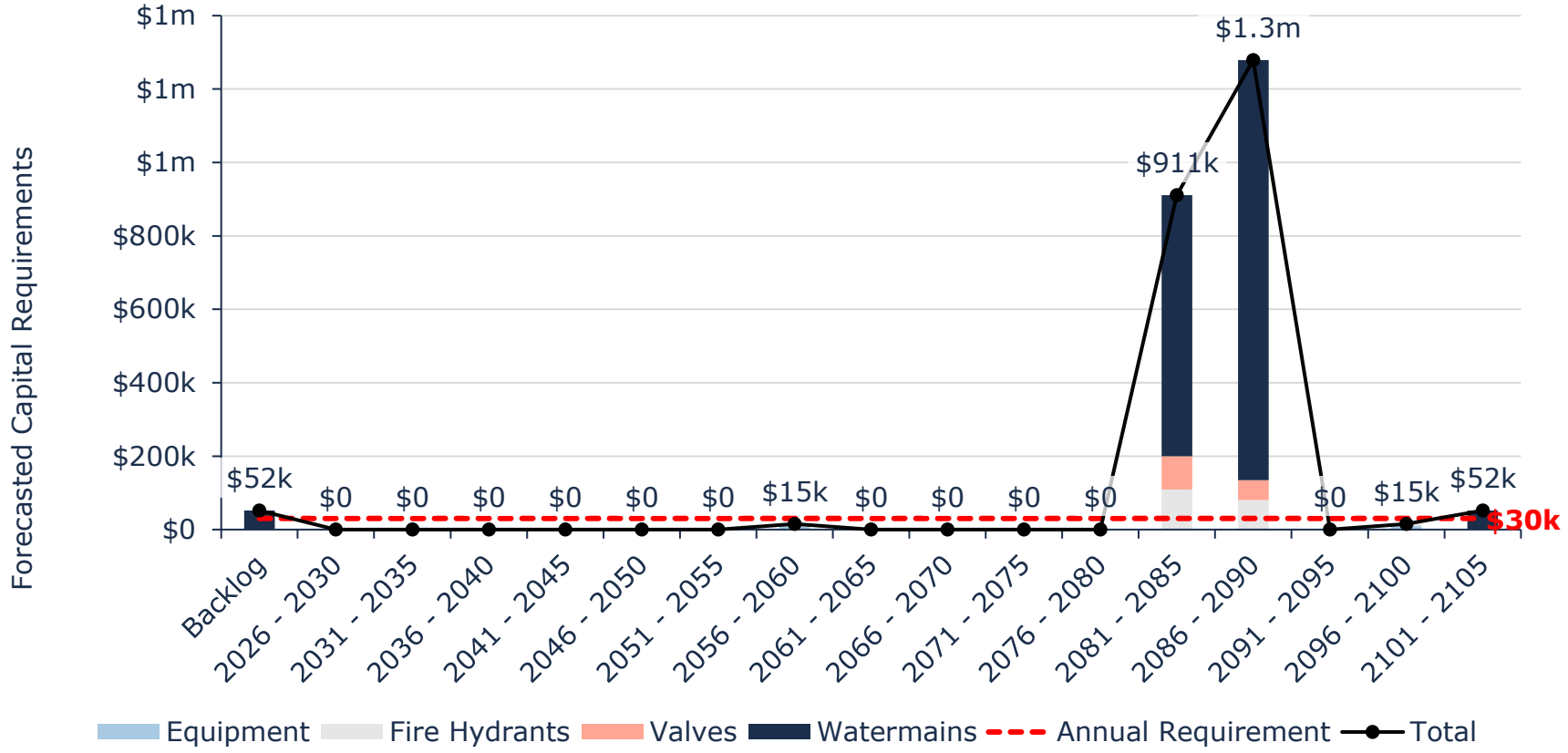


Table 13 Water Network System-Generated 10-Year Capital Costs below summarizes the projected cost of lifecycle activities (capital activities only) that may need to be undertaken over the next 10 years to support current levels of service.

Table 12 Water Network System-Generated 10-Year Capital Costs

Segment	Backlog	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Equipment	-	-	-	-	-	-	-	-	-	-	-
Fire Hydrants	-	-	-	-	-	-	-	-	-	-	-
Valves	-	-	-	-	-	-	-	-	-	-	-
Watermains	$52k	-	-	-	-	-	-	-	-	-	-
Total	**$52k**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

These projections are generated in Citywide and rely on the data available in the asset register. Assessed condition data and replacement costs were used to assist in forecasting replacement needs for water network assets.

Risk & Criticality

The risk matrix provides a visual representation of the relationship between the probability of failure and the consequence of failure for the assets within this asset category based on available inventory data. See Appendix M: Risk Rating Criteria for the criteria used to determine the risk rating of each asset.

Figure 25: Water Network Risk Matrix

1 - 4 Very Low $1,931,931 (86%)	5 - 7 Low $273,778 (12%)	8 - 9 Moderate $51,790 (2%)	10 - 14 High - (0%)	15 - 25 Very High - (0%)

This is a high-level model that has been developed based on information currently available and should be reviewed and adjusted to reflect an evolving understanding of both the probability and consequences of asset failure.

The asset-specific attributes that municipal staff utilize to define and prioritize the criticality of water assets are documented below:

Probability of Failure (POF)	Consequence of Failure (COF)
Condition	Replacement Cost (Economic)
Material Type	Diameter (Operational)

The identification of critical assets allows the Village to determine appropriate risk mitigation strategies and treatment options. Risk mitigation may include asset-specific lifecycle strategies, condition assessment strategies, or simply the need to collect better asset data.

Risks to Current Asset Management Strategies

The following section summarizes key trends, challenges, and risks to water system that the Municipality is currently facing:

Capital Funding Strategies

Financial constraints present a significant challenge for the Village particularly when there are insufficient funds to replace or upgrade key infrastructure. At present, there is a funding gap to implement all lifecycle activities as needed. This gap can result in underfunded major projects leading to delays and deterioration of the water network, increasing the risk of failure during severe weather events and leading to safety hazards.

Levels of Service

The following tables identify the Village's metrics to identify their current level of service for the Water Network..

Community Levels of Service

The following table outlines the qualitative descriptions that determine the community levels of service provided by the water network.

Table 13 Water Network Community Levels of Service

Service Attribute	Qualitative Description	Current LOS
Scope	Description, which may include maps, of the user groups or areas of the municipality that are connected to the municipal water system	In the Village of Oil Springs, the water system provides service to around 698 residents through 298 connections, covering approximately 98% of the Village's population.
Reliability	Description of boil water advisories and service interruptions	No Boil Water Advisory notice was issued in 2023

Technical Levels of Service

The following table outlines the quantitative metrics that determine the technical level of service provided by the water network.

Table 14 Water Network Technical Levels of Service

Service Attribute	Technical Metric	Current LOS
Scope	% of properties connected to the municipal water system	98%[3]
	% of properties where fire flow is available	98%[3]
Reliability	# of connection-days per year due to water main breaks compared to the total number of properties connected to the municipal water system	0
	# 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	0
Performance	Capital Reinvestment Rate (Annual)	0.4%

283 households are connected to the municipal water system and fire flow.

Appendix D: Sanitary Sewer Network

The Village sewer distribution system is managed and maintained through a partnership with Jacobs/OMI. The Lagoon collection system consists of two pumping stations and two facultative lagoons

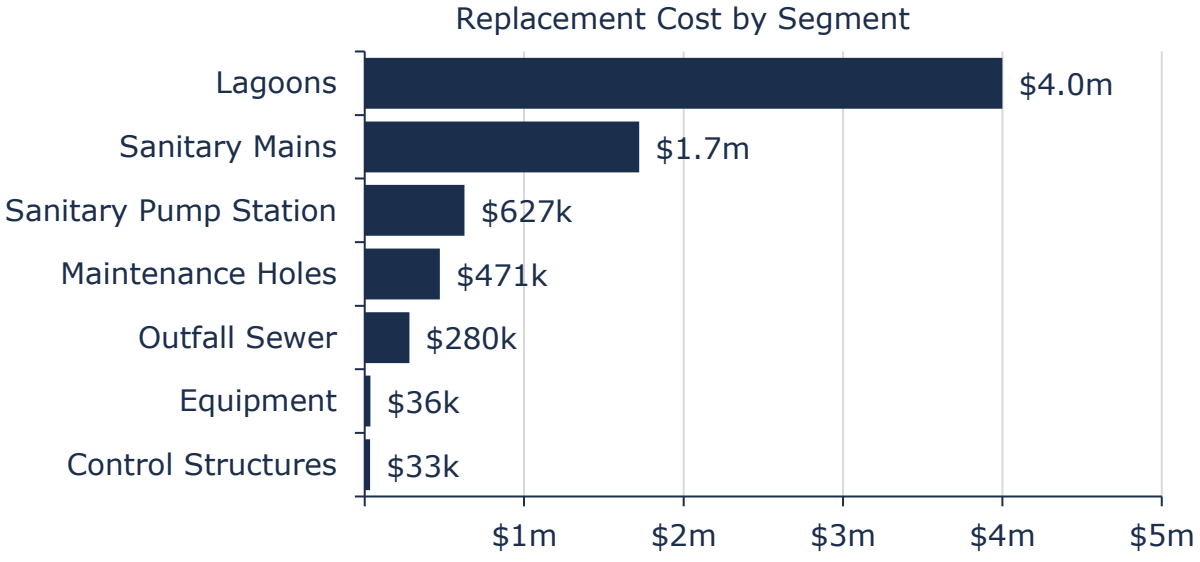
Inventory & Valuation

The table below includes the quantity, replacement cost method and total replacement cost of each asset segment for the Village's Sanitary Network.

Segment	Quantity	Unit of Measure	Primary Replacement Cost Method	Replacement Cost
Control Structures	2	Assets	CPI	$33,319
Equipment	4	Assets	CPI	$35,666
Lagoons	2	Assets	CPI	$4,000,000
Maintenance Holes	76	Meters	CPI	$471,307
Outfall Sewer	807	Meters	CPI	$279,774
Sanitary Mains	31	Assets	CPI	$1,720,973
Sanitary Pump Station	12	Assets	CPI	$626,772
Total	**8,731**			**$7,167,810**

The graph below displays the total replacement cost of each asset segment in Oil Springs's Sanitary Sewer Network inventory.

Figure 26: Sanitary Sewer Network Replacement Cost

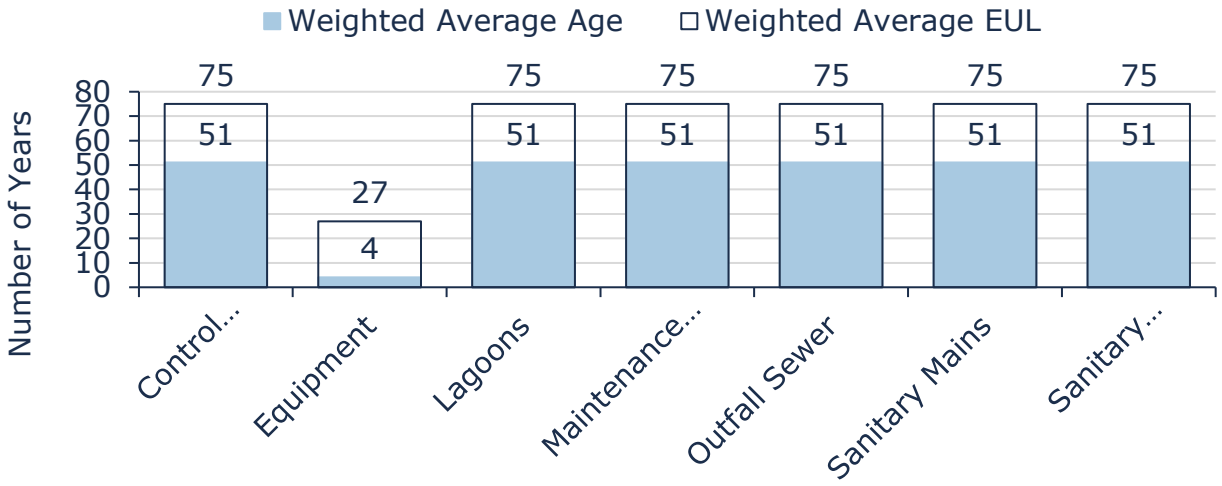


Each asset's replacement cost should be reviewed periodically to determine whether adjustments are needed to more accurate represent realistic capital requirements.

Asset Condition & Age

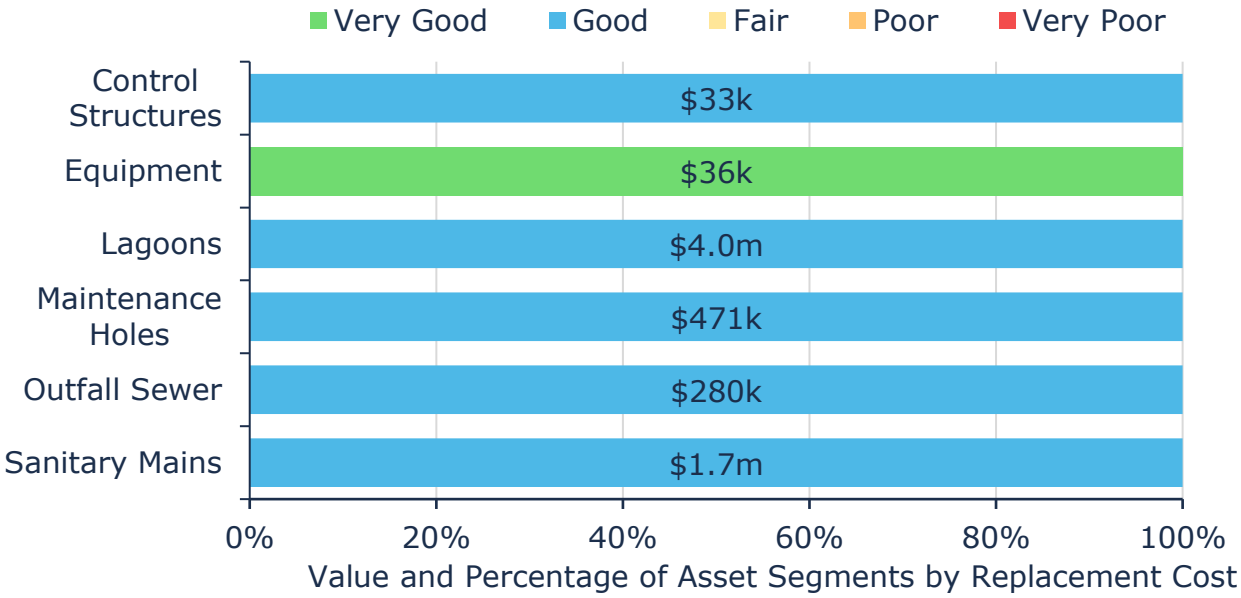
The table below identifies the current average condition, the average age, and the estimated useful life for each asset segment. The average condition (%) is a weighted value based on replacement cost.

Figure 27: Sanitary Sewer Network Average Age vs Average EUL



The graph below visually illustrates the average condition for each asset segment on a very good to very poor scale.

Figure 28: Sanitary Sewer Network Condition Breakdown



To ensure that the municipal Sanitary Sewer Network continues to provide an acceptable level of service, the Village should monitor the average condition of all

assets. If the average condition declines, staff should re-evaluate their lifecycle management strategy to determine what combination of maintenance, rehabilitation and replacement activities is required to increase the overall condition of the sanitary sewer network.

Each asset's estimated useful life should also be reviewed to determine whether adjustments need to be made to better align with the observed service life.

Current Approach to Condition Assessment

Accurate and reliable condition data allows staff to determine the remaining service life of assets and identify the most cost-effective approach to managing assets.

Jacobs/OMI are the operators of the wastewater system and conducted an external assessment in 2023. The assessment results help inform budgetary decisions for repairs, maintenance and replacement of sanitary sewer assets. The operators provide monthly reports to Oil Spring on the operation of the wastewater treatment system summarizing the repairs and maintenance activities.[4]

Lifecycle Management Strategy

To ensure that municipal assets are performing as expected and meeting the needs of customers, it is important to establish a lifecycle management strategy to proactively manage asset deterioration. The following table outlines the Village's current lifecycle management strategy.

Figure 29: Sanitary Sewer Network Current Lifecycle Strategy

Maintenance / Rehabilitation / Replacement

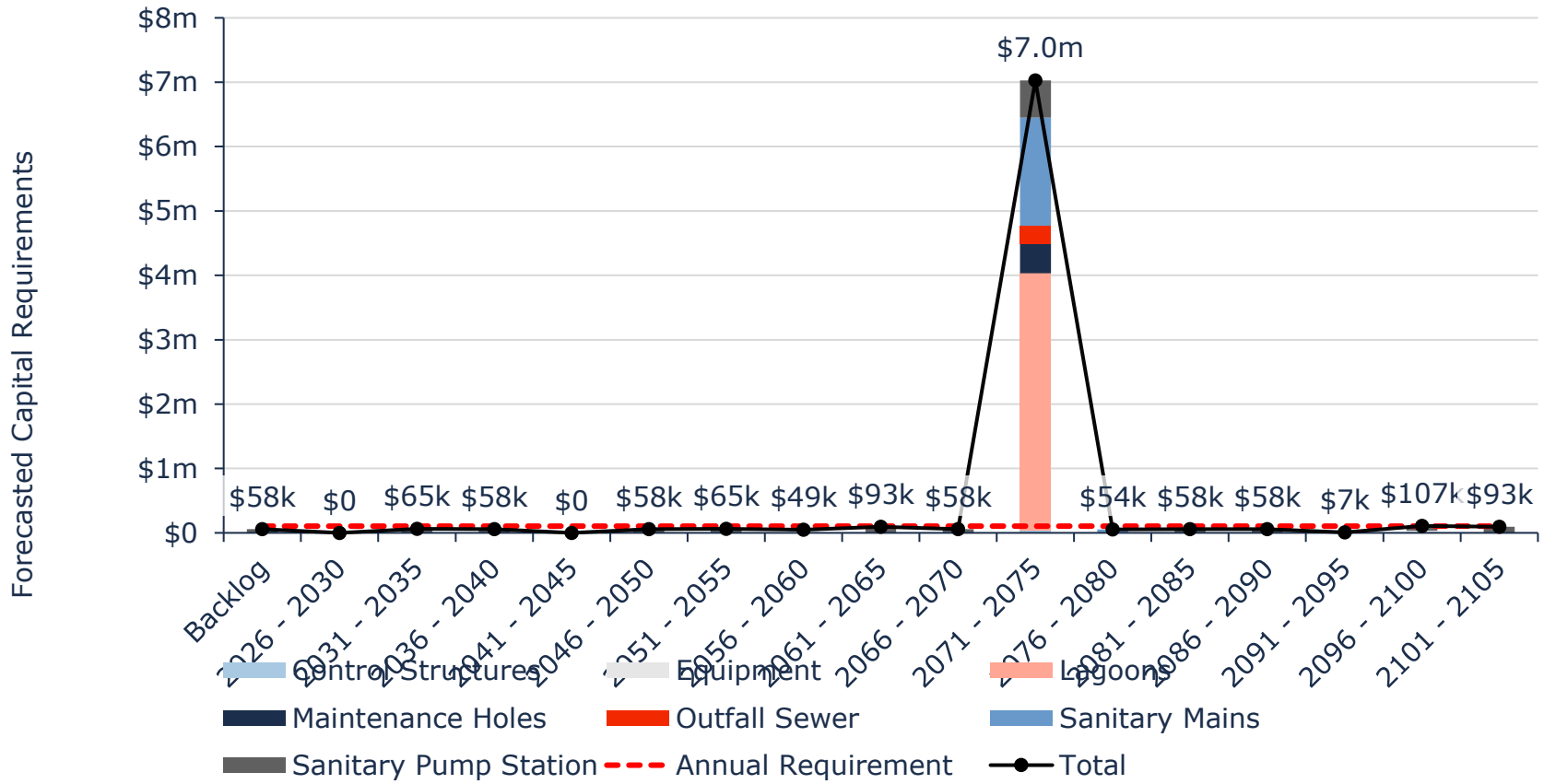
- Routine maintenance activities includes annual inspection, and repairs are scheduled as per recommendations of the inspection reports
- Manholes are annually inspected. Flushing is performed once a year.
- To extend the useful life of the existing lagoon system, the Village plans to implement a routine pumping and dredging program as its primary strategy. This approach is dependent on future grant funding availability.
- Replacement is considered when an asset has significantly deteriorated or failed, and when continued rehabilitation is no longer cost-effective. Assets that require frequent and costly repairs are prioritized for replacement to ensure efficiency and reliability of the sanitary sewer network.

[4] *Wastewater Treatment System – Monthly Report of Operations, April 2024. Village of Oil Springs. Retrieved from https://oilsprings.diligent.community/home/public/document/12222*

Forecasted Capital Requirements

The annual capital requirement represents the average amount per year that Oil Springs should allocate towards funding rehabilitation and replacement needs. The following graph identifies capital requirements over the next 80 years. This projection is used as it ensures that every asset has gone through one full iteration of replacement. The forecasted requirements are aggregated into 5-year bins and the trend line represents the average capital requirements at $104 thousand.

Figure 30: Sanitary Sewer Network Forecasted Capital Replacement Requirements



The Table below summarizes the projected cost of lifecycle activities (capital activities only) that may need to be undertaken over the next 10 years to support current levels of service.

Table 15 Sanitary Sewer Network System-Generated 10-Year Capital Costs

Segment	Backlog	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Control Structures	-	-	-	-	-	-	-	-	-	-	-
Equipment	-	-	-	-	-	-	-	-	-	-	-
Lagoons	-	-	-	-	-	-	-	-	-	-	-
Maintenance Holes	-	-	-	-	-	-	-	-	-	-	-
Outfall Sewer	-	-	-	-	-	-	-	-	-	-	-
Sanitary Mains	-	-	-	-	-	-	-	-	-	-	-
Sanitary Pump Station	$58k	-	-	-	-	-	$7k	-	$58k	-	-
Total	**$58k**	**-**	**-**	**-**	**-**	**-**	**$7k**	**-**	**$58k**	**-**	**-**

These projections are generated in Citywide and rely on the data available in the asset register. Assessed condition data and replacement costs were used to assist in forecasting replacement needs for sanitary network assets.

Risk & Criticality

The risk matrix provides a visual representation of the relationship between the probability of failure and the consequence of failure for the assets within this asset category based on available inventory data. See Appendix M: Risk Rating Criteria for the criteria used to determine the risk rating of each asset.

Figure 31: Sanitary Sewer Network Risk Matrix

1 - 4 Very Low $1,015,641 (14%)	5 - 7 Low $1,200,451 (17%)	8 - 9 Moderate $906,987 (13%)	10 - 14 High $4,044,731 (56%)	15 - 25 Very High - (0%)

This is a high-level model that has been developed based on information currently available and should be reviewed and adjusted to reflect an evolving understanding of both the probability and consequences of asset failure. The asset-specific attributes that municipal staff utilize to define and prioritize the criticality of water assets are documented below:

Probability of Failure (POF)	Consequence of Failure (COF)
Condition	Replacement Cost (Economic)
Material	Diameter (Operational)

The identification of critical assets allows the Village to determine appropriate risk mitigation strategies and treatment options. Risk mitigation may include asset-specific lifecycle strategies, condition assessment strategies, or simply the need to collect better asset data.

Risks to Current Asset Management Strategies

The following section summarizes key trends, challenges, and risks to sanitary service delivery that the Municipality is currently facing:

Capital Funding Strategies

Major capital projects for rehabilitation and replacement of the Sanitary Sewer Network are heavily dependent on grant funding. When grants are unavailable, these critical projects may be deferred, leading to aging infrastructure and increased repair costs. Developing an annual capital funding strategy would reduce reliance on grants and help ensure timely investment in asset renewal, minimizing the risk of deferred maintenance and service disruptions.

Climate Change & Extreme Weather Events

Climate change and extreme weather events like intense flooding pose significant risks to the Village's sanitary sewer system. These events can overwhelm the system, leading to potential blockages, backflows, and increased risk of contamination. The infrastructure will become more vulnerable to damage from higher water volumes, erosion, and stress on aging systems. As such events become more frequent, the likelihood of system failure and costly repairs escalates, potentially compromising public health and environmental safety.

Levels of Service

The following tables identify the Village's metrics to identify their current level of service for the Water Network.

Community Levels of Service

The following table outlines the qualitative descriptions that determine the community levels of service provided by the Sanitary Sewer Network.

Table 16 Sanitary Sewer Network Community Levels of Service

Service Attribute	Qualitative Description	Current LOS
Scope	Description, which may include maps, areas of the municipality that are connected to the municipal wastewater system	In the Village of Oil Springs, the sanitary system serves approximately 698 residents through a network of sewer connections, covering around 98% of the Village's population.
Reliability	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.	Not Applicable
	Description of the frequency and volume of overflows in combined sewers in the municipal wastewater system that occur in habitable areas or beaches.	
	Description of how stormwater can get into sanitary sewers in the municipal wastewater system, causing sewage to overflow into streets or backup into homes.	Stormwater can enter into sanitary sewers due to cracks in sanitary mains or through indirect connections (e.g. weeping tiles). In the case of heavy rainfall events, sanitary sewers may experience a volume of water and sewage that exceeds its capacity. In some cases, this can cause water and/or sewage to overflow backup into homes. The disconnection of weeping tiles from sanitary mains and the use of sump pumps and pits directing stormwater to the storm drain system help to reduce the chance of overflow.

	Description of how sanitary sewers in the municipal wastewater system are designed to be resilient to avoid stormwater infiltration	The municipality adheres to design standards that incorporate appropriate overflows when constructing or replacing sanitary sewers. These standards have been determined with consideration of the minimization of sewage overflows and backups.
Performance	Description of the effluent that is discharged from sewage treatment plants in the municipal wastewater system.	Effluent refers to water pollution that is discharged from a wastewater treatment plant, and may include suspended solids, total phosphorous and biological oxygen demand. The Environmental Compliance Approval (ECA) identifies the effluent criteria for municipal wastewater treatment plants.

Technical Levels of Service

The following table outlines the quantitative metrics that determine the technical level of service provided by the Sanitary Sewer Network.

Table 17 Sanitary Sewer Network Technical Levels of Service

Service Attribute	Technical Metric	Current LOS
Scope	% of properties connected to the municipal wastewater systems	98%[5]
Reliability	# 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	Not Applicable
	# of connection-days per year with sanitary main backups compared to the total number of properties connected to the municipal wastewater system	1
	# of effluent violations per year due to wastewater discharge compared to the total number of properties connected to the municipal wastewater system	1
Performance	Capital Reinvestment Rate (Annual)	0.2%

[5] 283 private dwellings total according to 2021 Statcan

Appendix E: Storm Network

The Village is responsible for owning and maintaining a storm network consisting of storm mains, maintenance holes and catch basins.

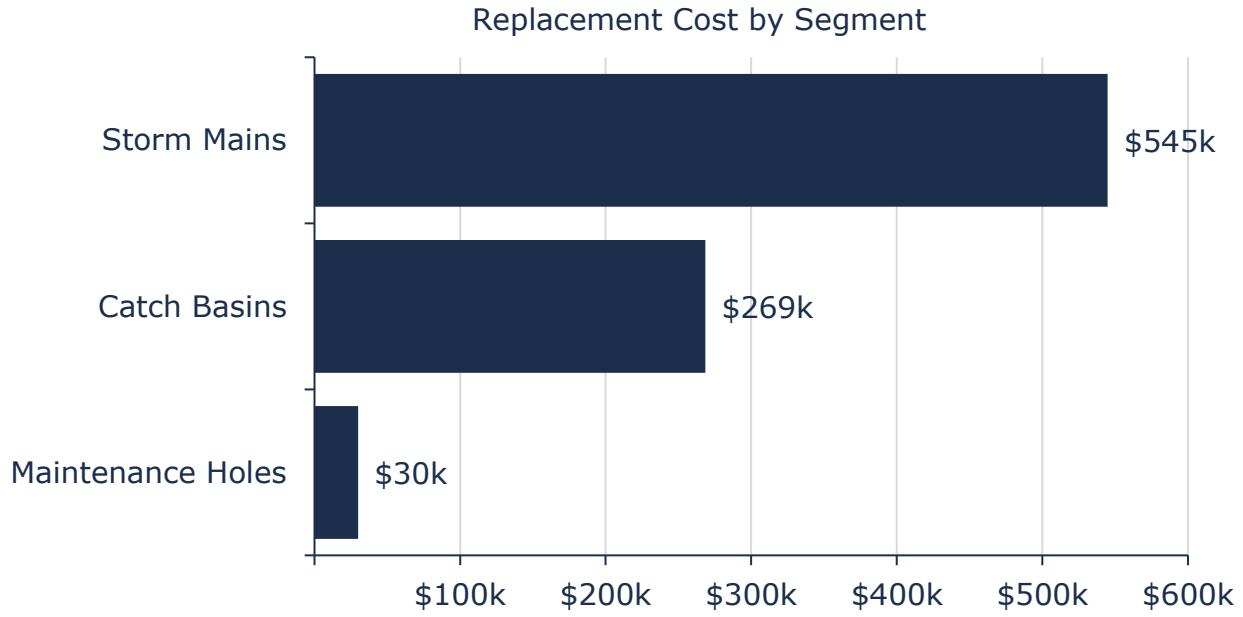
Inventory & Valuation

The table below includes the quantity, replacement cost method and total replacement cost of each asset segment for the Village's Storm Network.

Segment	Quantity	Unit of Measure	Primary Replacement Cost Method	Replacement Cost
Catch Basins	134	Assets	CPI	$268,538
Maintenance	5	Assets	CPI	$29,971
Storm Mains	4,574	Length	CPI	$544,816
Total				**$843,324**

The graph below displays the total replacement cost of each asset segment in Oil Springs's Storm Network inventory.

Figure 32: Storm Network Replacement Cost

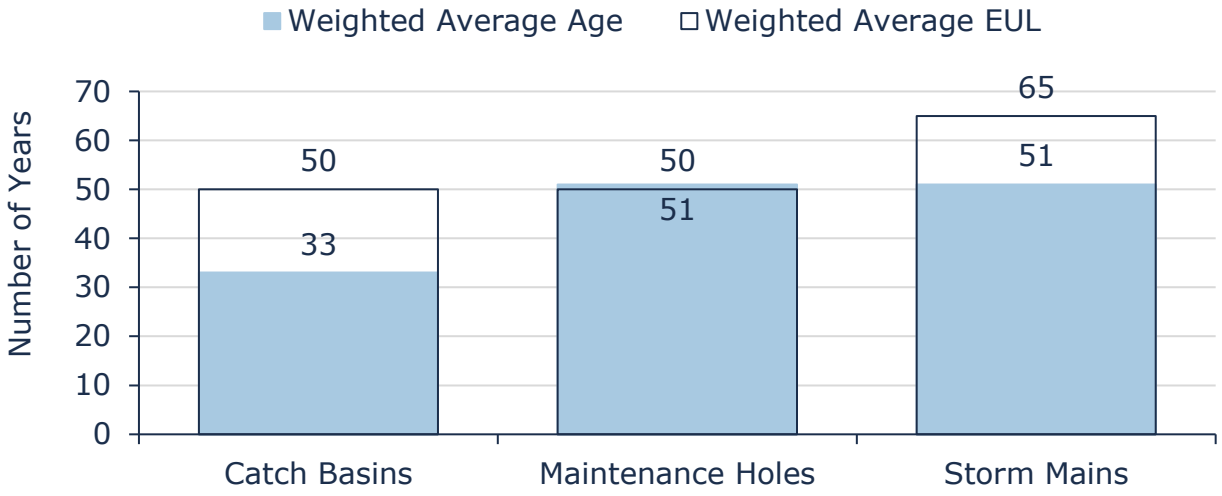


Each asset's replacement cost should be reviewed periodically to determine whether adjustments are needed to more accurate represent realistic capital requirements.

Asset Condition & Age

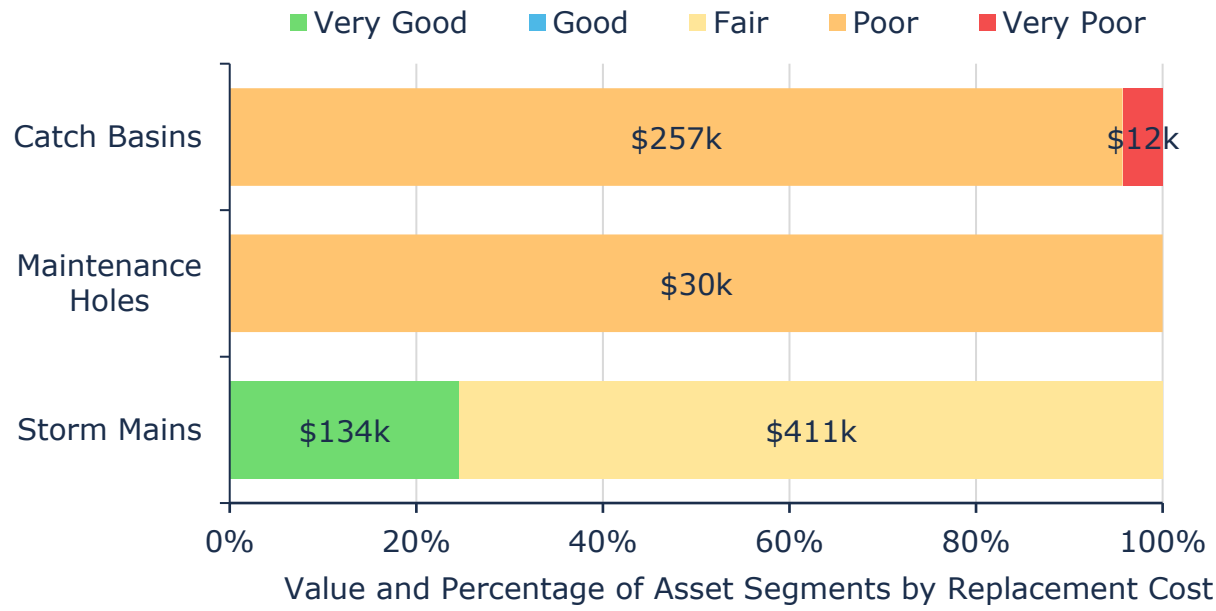
The table below identifies the current average condition, the average age, and the estimated useful life for each asset segment. The average condition (%) is a weighted value based on replacement cost.

Figure 33: Storm Network Average Age vs Average EUL



The graph below visually illustrates the average condition for each asset segment on a very good to very poor.

Figure 34: Storm Network Condition Breakdown



To ensure that the municipal Storm Network continues to provide an acceptable level of service, the Village should monitor the average condition of all assets. If the average condition declines, staff should re-evaluate their lifecycle management strategy to determine what combination of maintenance, rehabilitation and

replacement activities is required to increase the overall condition of the Storm network.

Each asset's estimated useful life should also be reviewed to determine whether adjustments need to be made to better align with the observed service life.

Current Approach to Condition Assessment

Accurate and reliable condition data allows staff to determine the remaining service life of assets and identify the most cost-effective approach to managing assets. Jacobs/OMI conducts the assessment of the stormwater system with the last one completed in 2016.

Lifecycle Management Strategy

To ensure that municipal assets are performing as expected and meeting the needs of customers, it is important to establish a lifecycle management strategy to proactively manage asset deterioration. The following table outlines the Village's current lifecycle management strategy.

Figure 35: Storm Network Current Lifecycle Strategy

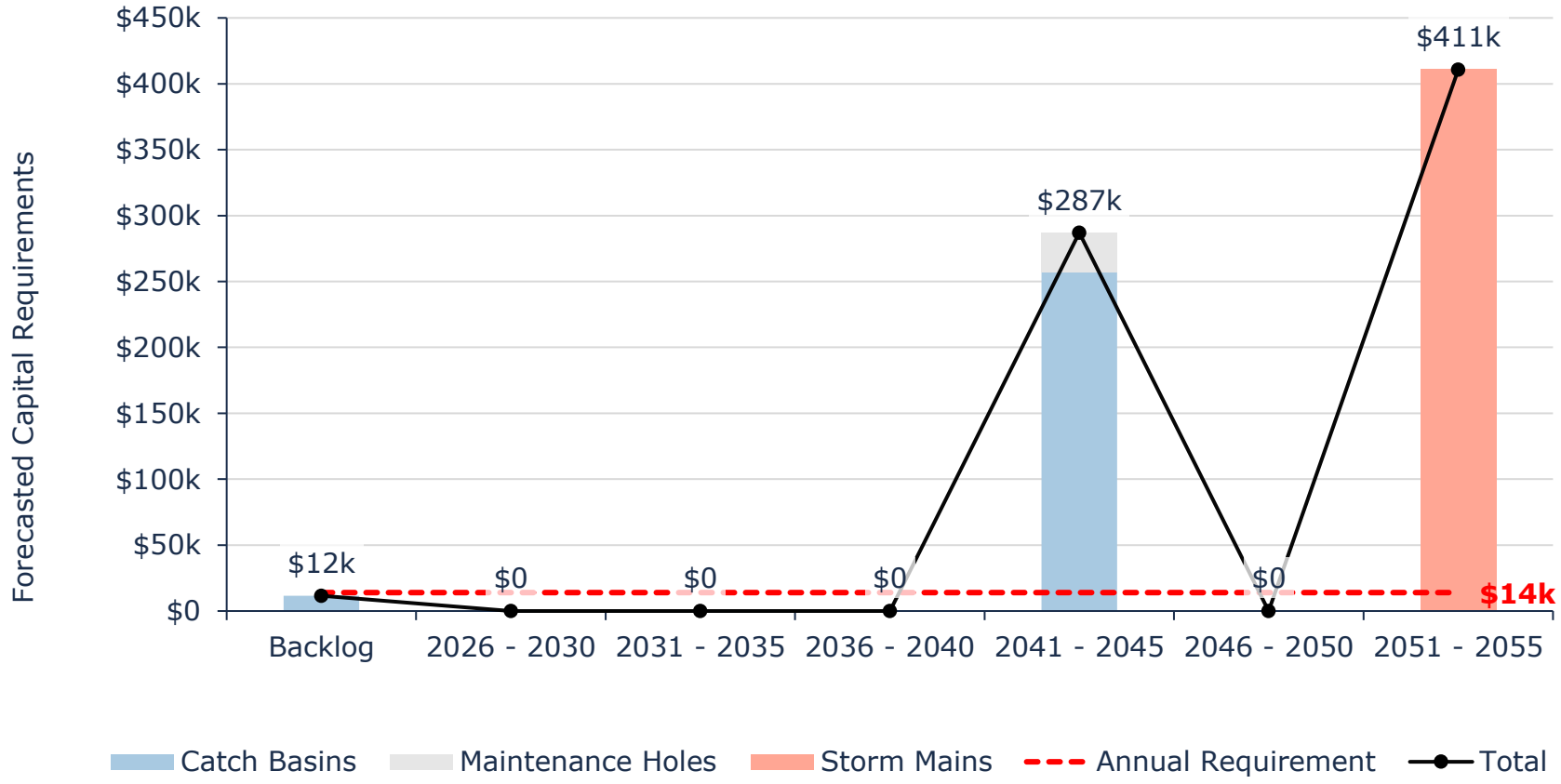
Maintenance / Rehabilitation / Replacement

- Inspections are done on a yearly basis.
- Routine maintenance includes minor repairs which are initiated based on yearly inspections and visual observations
- Rehabilitation activities include repairing catch basins, CCTV inspection of storm sewers and flushing.
- Replacement is considered when an asset has significantly deteriorated or failed, and when continued rehabilitation is no longer cost-effective. Assets that require frequent and costly repairs are prioritized for replacement to ensure efficiency and reliability of the storm network

Forecasted Capital Requirements

The annual capital requirement represents the average amount per year that Oil Springs should allocate towards funding rehabilitation and replacement needs. The following graph identifies capital requirements over the next 30 years. This projection is used as it ensures that every asset has gone through one full iteration of replacement. The forecasted requirements are aggregated into 5-year bins and the trend line represents the average capital requirements at $14 thousand.

Figure 36: Storm Network Forecasted Capital Replacement Requirements



The Table below summarizes the projected cost of lifecycle activities (capital activities only) that may need to be undertaken over the next 10 years to support current levels of service.

Table 18 Storm Network System-Generated 10-Year Capital Costs

Segment	Backlog	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Catch Basins	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Maintenance Holes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Storm Mains	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

These projections are generated in Citywide and rely on the data available in the asset register. Assessed condition data and replacement costs were used to assist in forecasting replacement needs for storm sewer lines assets.

Risk & Criticality

The risk matrix provides a visual representation of the relationship between the probability of failure and the consequence of failure for the assets within this asset category based on available inventory data. See Appendix M: Risk Rating Criteria for the criteria used to determine the risk rating of each asset.

Figure 37: Storm Network Risk Matrix

1 - 4 Very Low	5 - 7 Low	8 - 9 Moderate	10 - 14 High	15 - 25 Very High
$488,585 (58%)	$260,750 (31%)	$42,200 (5%)	$51,790 (6%)	- (0%)

This is a high-level model developed by Village staff and it should be reviewed and adjusted to reflect an evolving understanding of both the probability and consequences of asset failure. The asset-specific attributes that Village staff utilize to define and prioritize the criticality of the storm network are documented below:

Probability of Failure (POF)	Consequence of Failure (COF)
Condition	Replacement Cost (Economic)
Material Type	Diameter (Operational)

The identification of critical assets allows the Village to determine appropriate risk mitigation strategies and treatment options. Risk mitigation may include asset-specific lifecycle strategies, condition assessment strategies, or simply the need to collect better asset data.

Risks to Current Asset Management Strategies

The following section summarizes key trends, challenges, and risks to service delivery that the Village is currently facing:

Climate Change & Extreme Weather Events

Climate change and extreme weather events significantly strain a Village's storm network by intensifying storm severity, leading to issues such as washouts around maintenance holes. These conditions compromise the system's integrity, increasing the likelihood of failures and overwhelming its capacity. Consequently, this can result in flooding and substantial property damage, highlighting the need for reinforcing the network's infrastructure to better manage these environmental challenges.

Infrastructure Reinvestment

With the increasing impact of climate change, lifecycle maintenance activities have to be more frequently performed. The lack reinvestment in the Village's storm network can lead to risks, though there has been recent effort in setting up reserve funds. The current funding gap can result in underfunded major projects, such as expansions to new subdivisions, which would require additional funding to complete. This can lead to delayed replacements and a deteriorating storm network, increasing the risk of failure during severe weather events and leading to potential safety hazards and escalated emergency repair costs.

Levels of Service

The following tables identify the Village's metrics to identify their current level of service for the Water Network.

Community Levels of Service

The following table outlines the qualitative descriptions that determine the community levels of service provided by the Storm Network.

Table 19 Storm Network Community Levels of Service

Service Attribute	Qualitative Description	Current LOS
Scope	Description, which may include map, of the user groups or areas of the municipality that are protected from flooding, including the extent of protection provided by the municipal stormwater system	The stormwater management system protects properties from flooding caused by rainfall and snowmelt. It ensures safe conveyance of stormwater away from roadways, mitigates pollution from runoff, controls discharge volume to reduce erosion and sedimentation, and addresses climate change impacts

Technical Levels of Service

The following table outlines the quantitative metrics that determine the technical level of service provided by the Storm Network.

Table 20 Storm Network Technical Levels of Service

Service Attribute	Technical Metric	Current LOS
Scope	% of properties in municipality resilient to a 100-year storm.	TBD[6]
	% of the municipal stormwater management system resilient to a 5-year storm	TBD[7]
Performance	Capital Reinvestment Rate (Annual)	0.0%

[6] *While data is not currently available for this metric, the percentage of properties resilient to a 100-year storm event is expected to be low, based on system capacity and historical performance.*

[7] *While data is not currently available for this metric is not currently available, the system is expected to demonstrate high resilience to 5-year storm events given existing performance and capacity.*

Appendix F: Buildings

Oil Springs owns and maintains several facilities that provide key services to the community.

- Administration Buildings including a municipal office, community hall, post office and shop
- Fire services building
- Covered Salt storage facility

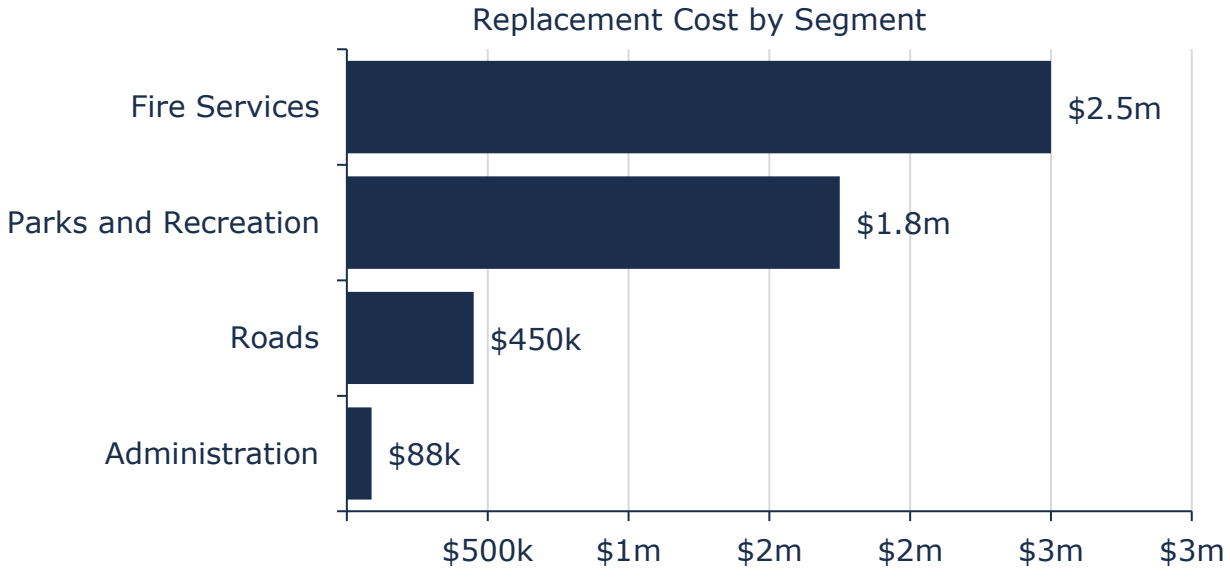
Inventory & Valuation

The table below includes the quantity, replacement cost method and total replacement cost of each asset segment in the Village's Buildings inventory.

Segment	Quantity	Unit of Measure	Primary Replacement Cost Method	Replacement Cost
Administration	1	Assets	CPI	$88,094
Fire Services	1	Assets	CPI	$2,500,000
Parks and Recreation	1	Assets	User-Defined	$1,750,000
Roads	1	Assets	User-Defined	$450,000
Total	**4**	**Assets**		**$4,788,094**

The graph below displays the total replacement cost of each asset segment in Oil Springs's buildings inventory.

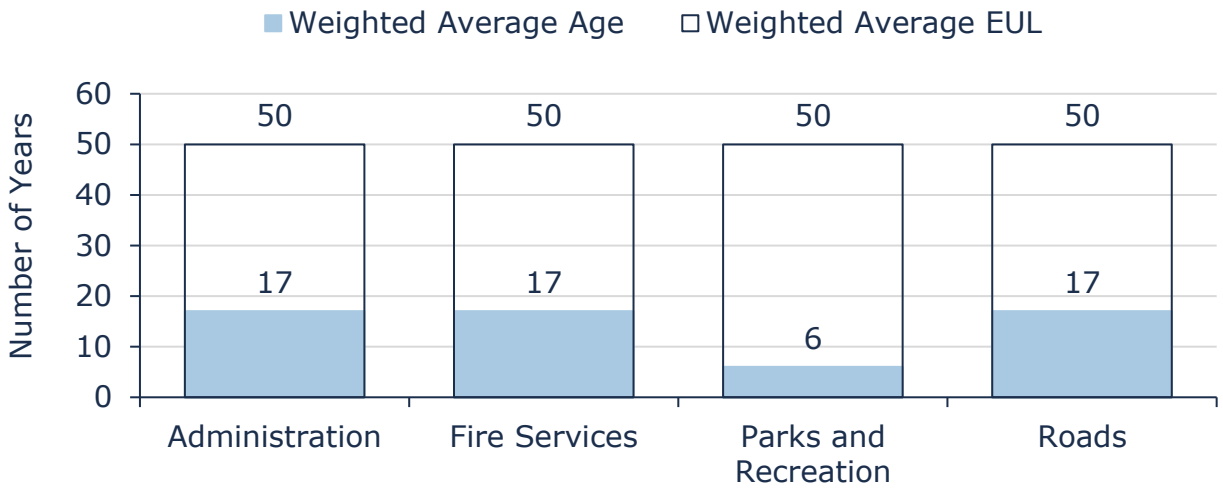
Figure 38: Buildings Replacement Cost



Asset Condition & Age

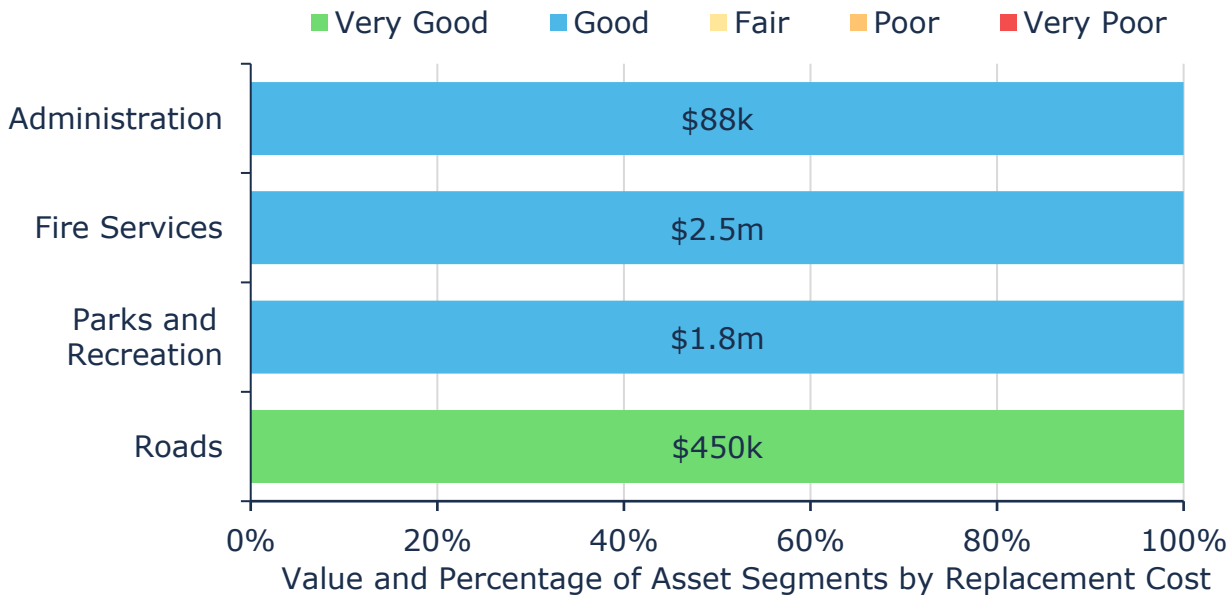
The graph below identifies the average age, and the estimated useful life for each asset segment. The values are weighted based on replacement cost.

Figure 39: Buildings Average Age vs Average EUL



The graph below visually illustrates the average condition for each asset segment on a very good to very poor.

Figure 40: Buildings Condition Breakdown



To ensure that the municipal buildings continue to provide an acceptable level of service, the Village should monitor the average condition of all assets. If the average condition declines, staff should re-evaluate their lifecycle management strategy to determine what combination of maintenance, rehabilitation and replacement activities is required to increase the overall condition of the buildings.

Each asset's estimated useful life should also be reviewed to determine whether adjustments need to be made to better align with the observed service life.

Current Approach to Condition Assessment

Accurate and reliable condition data allows staff to determine the remaining service life of assets and identify the most cost-effective approach to managing assets.

Municipal Buildings undergo monthly inspections to ensure compliance with health and safety standards. More detailed assessments are carried out by external consultants to provide an in-depth evaluation of the building's condition and safety.

Lifecycle Management Strategy

To ensure that municipal assets are performing as expected and meeting the needs of customers, it is important to establish a lifecycle management strategy to proactively manage asset deterioration. The following table outlines the Village's current lifecycle management strategy.

Figure 41: Buildings Current Lifecycle Strategy

Maintenance / Rehabilitation / Replacement

- Routine maintenance include monthly inspections to identify and address safety, accessibility, and structural issues. HVAC are inspected twice a year. Minor maintenance and repairs are done as needed.
- Rehabilitation activities for buildings involve replacement of air conditioner, furnace and vinyl cladding of buildings.
- Replacement is considered when a building's condition has significantly deteriorated, and when maintenance and rehabilitation efforts are no longer cost-effective. Buildings nearing the end of their expected service life or those requiring frequent and costly repairs are prioritized for replacemen

Forecasted Capital Requirements

The annual capital requirement represents the average amount per year that Oil Springs should allocate towards funding rehabilitation and replacement needs. The following graph identifies capital requirements over the next 80 years. This projection is used as it ensures that every asset has gone through one full iteration of replacement. The forecasted requirements are aggregated into 5-year bins and the trend line represents the average capital requirements at $96 thousand.

Figure 42: Buildings Forecasted Capital Replacement Requirements

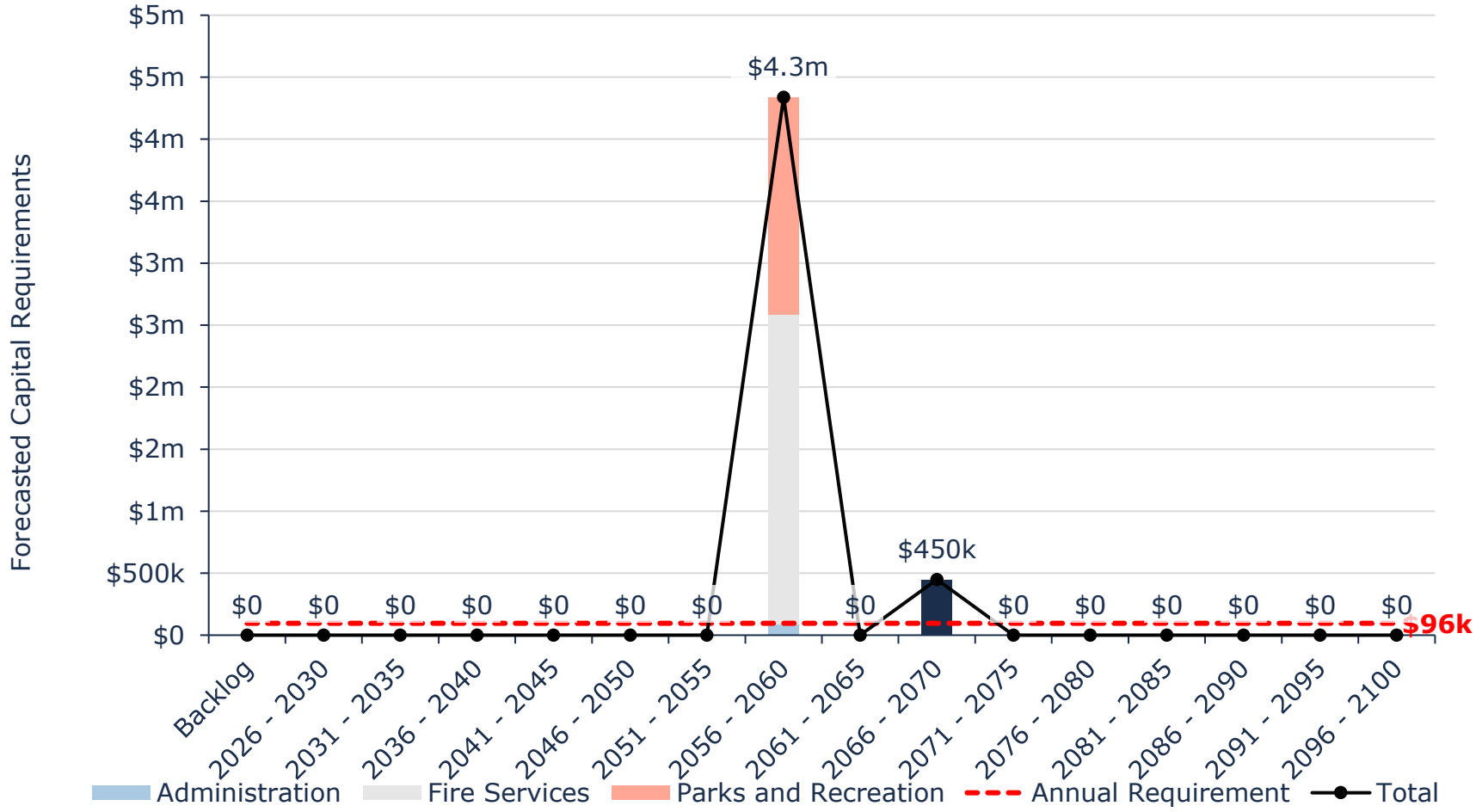


Table 22 below summarizes the projected cost of lifecycle activities (capital activities only) that may need to be undertaken over the next 10 years to support current levels of service.

Table 21 Buildings System-Generated 10-Year Capital Costs

Segment	Backlog	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Administration	-	-	-	-	-	-	-	-	-	-	-
Fire Services	-	-	-	-	-	-	-	-	-	-	-
Parks & Recreation	-	-	-	-	-	-	-	-	-	-	-
Roads	-	-	-	-	-	-	-	-	-	-	-
Total	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

These projections are generated in Citywide and rely on the data available in the asset register, which was limited to asset age, replacement cost, and useful life.

Risk & Criticality

The risk matrix provides a visual representation of the relationship between the probability of failure and the consequence of failure for the assets within this asset category based on available inventory data. See Appendix M: Risk Rating Criteria for the criteria used to determine the risk rating of each asset.

Figure 43: Buildings Risk Matrix

1 - 4 Very Low	5 - 7 Low	8 - 9 Moderate	10 - 14 High	15 - 25 Very High
$471,683 (10%)	$66,411 (1%)	- (0%)	$4,250,000 (89%)	- (0%)

This is a high-level model developed by Village staff and it should be reviewed and adjusted to reflect an evolving understanding of both the probability and consequences of asset failure. The asset-specific attributes that Village staff utilize to define and prioritize the criticality of buildings are documented below:

Probability of Failure (POF)	Consequence of Failure (COF)
Condition	Replacement Cost (Economic)
	Service type (Operational)

The identification of critical assets allows the Village to determine appropriate risk mitigation strategies and treatment options. Risk mitigation may include asset-specific lifecycle strategies, condition assessment strategies, or simply the need to collect better asset data.

Risks to Current Asset Management Strategies

The following section summarizes key trends, challenges, and risks to service delivery that the Village is currently facing:

Data Confidence for Planning

The Village faces a significant risk due to the lack of comprehensive asset data for its municipal buildings. Without accurate and up-to-date information on building conditions, maintenance history, and structural components, effective asset management planning becomes challenging. This data gap may result in inadequate maintenance schedules, unanticipated repair costs, and a lack of strategic investment in building upgrades.

Climate Change & Extreme Weather

The Village recognizes that climate change presents growing risks to municipal buildings, particularly through extreme weather events like flooding and heavy rainfall. These conditions can strain the structural integrity of public buildings, disrupt essential services, and increase maintenance costs. As climate patterns shift, the Village faces challenges in ensuring the long-term safety and functionality of its buildings, which are vulnerable to these unpredictable environmental changes.

Levels of Service

By comparing the cost, performance (average condition) and risk year-over-year, the Village will be able to evaluate how their services/assets are trending.

Community Levels of Service

The following table outlines the qualitative descriptions that determine the community levels of service provided by municipal buildings.

Table 22 Buildings Community Levels of Service

Service Attribute	Technical Metric	Current LOS
Scope	Description of the current condition of municipal buildings and the plans that are in place to maintain or improve the provided level of service	The overall condition of the buildings in the Village is good. Village staff are looking to have a formal building condition assessments to identify required maintenance and rehabilitation activities to ensure the state of the buildings remains in adequate condition

Technical Levels of Service

The quantitative metrics that determine the technical level of service provided by the buildings in Oil Springs are going to be the analysis of reinvestment rates, asset performance and asset risk levels.

Table 23 Buildings Technical Levels of Service

Service Attribute	Technical Metric	Current LOS
Scope	Average Condition Rating	Good (75%)
	Average Risk Rating	Low (6.69)
Performance	Capital Reinvestment Rate (Annual)	0.0%

Appendix G: Parks and Recreation

Oil Springs's Parks and Recreation infrastructure consists of equipment and signs in Ward Park, East End Park, and Hart Park.

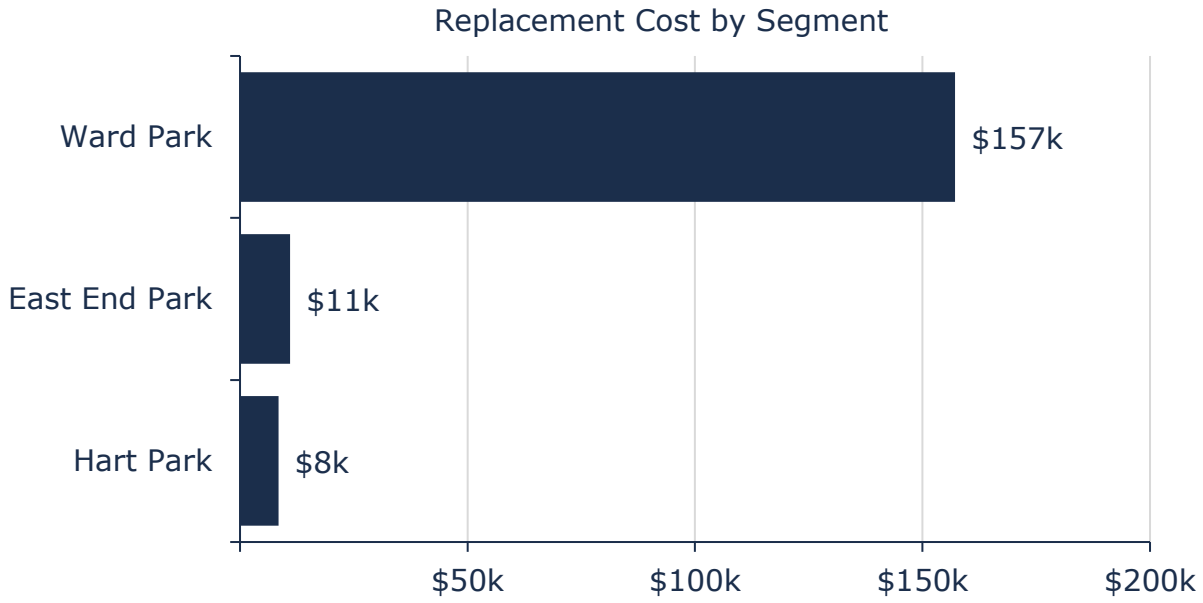
Asset Inventory & Valuation

The table below includes the quantity, replacement cost method and total replacement cost of each asset segment for the Village's Parks and Recreation assets.

Segment	Quantity	Unit of Measure	Primary Replacement Cost Method	Replacement Cost
East End Park	1	Assets	CPI	$10,997
Hart Park	1	Assets	CPI	$8,464
Ward Park	2	Assets	CPI	$157,142
Total	**4**	**Assets**		**$176,603**

The graph below displays the replacement cost of each asset segment in the Village's parks and recreation inventory.

Figure 44: Parks and Recreation Replacement Cost

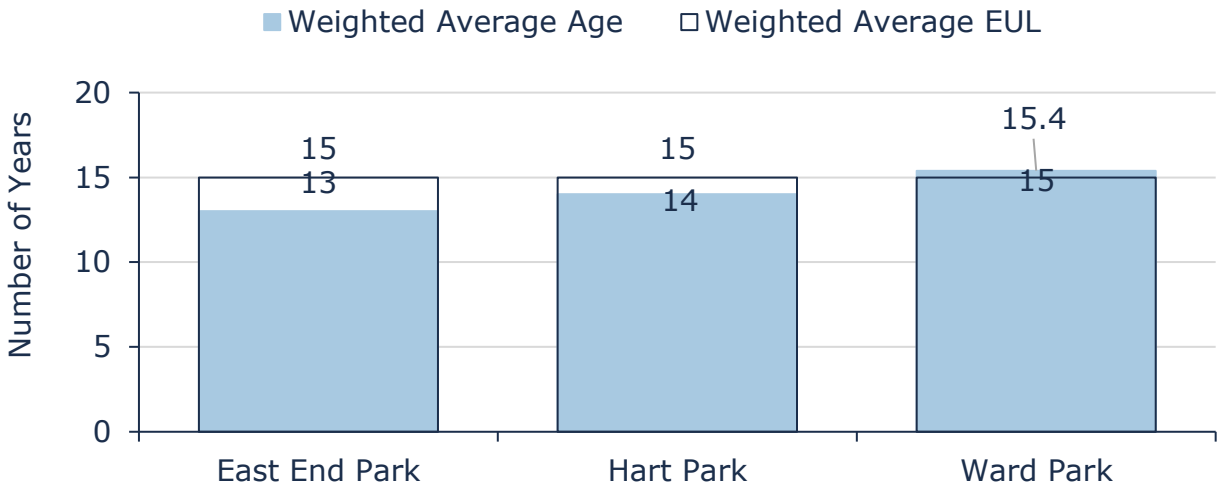


Each asset's replacement cost should be reviewed periodically to determine whether adjustments are needed to represent capital requirements more accurately.

Asset Condition & Age

The graph below identifies the average age, and the estimated useful life for each asset segment. The values are weighted based on replacement cost.

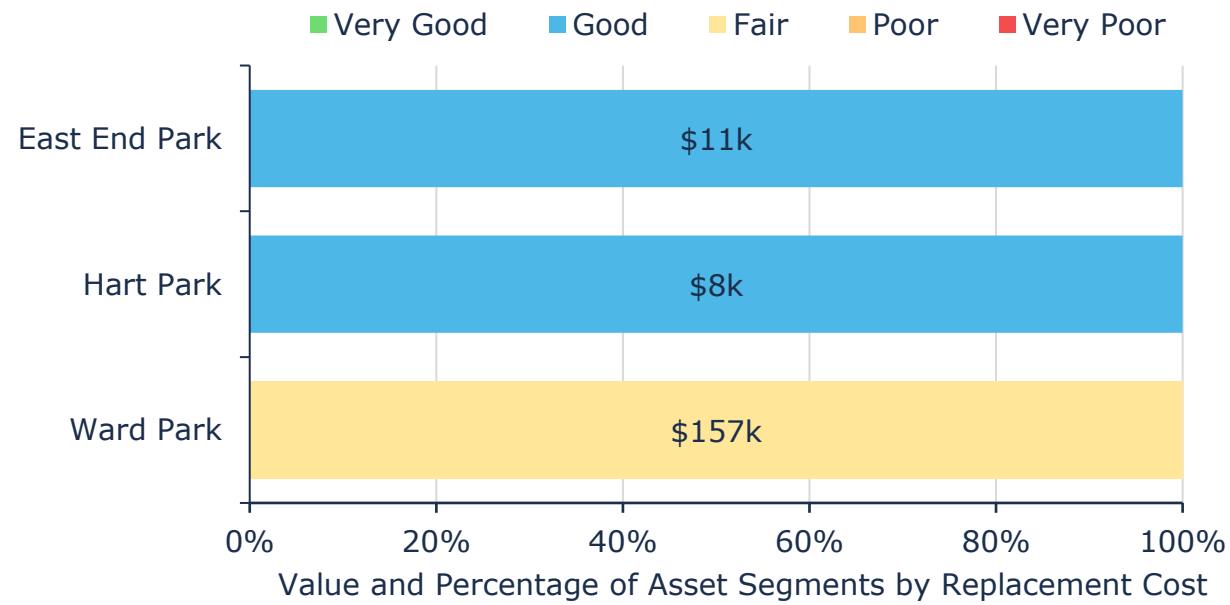
Figure 45: Parks and Recreation Average Age vs Average EUL



Each asset's estimated useful life should also be reviewed periodically to determine whether adjustments need to be made to better align with the observed length of service life for each asset type.

The graph below visually illustrates the average condition for each asset segment on a very good to very poor scale.

Figure 46: Parks and Recreation Condition Breakdown



To ensure that the Village's Parks and Recreation assets continue to provide an acceptable level of service, the Village should monitor the average condition of all assets. If the average condition declines, staff should re-evaluate their lifecycle

management strategy to determine what combination activities is required to increase the overall condition of the parks and recreations.

Current Approach to Condition Assessment

Accurate and reliable condition data allows staff to determine the remaining service life of assets and identify the most cost-effective approach to managing assets. An external assessment of Parks and Recreation assets was conducted in 2023 to confirm compliance with safety and maintenance standards.

Lifecycle Management Strategy

To ensure that municipal assets are performing as expected and meeting the needs of customers, it is important to establish a lifecycle management strategy to proactively manage asset deterioration. The following figures outline Oil Springs's current lifecycle management strategy.

Figure 47: Parks and Recreation Current Lifecycle Strategy

Maintenance / Rehabilitation / Replacement

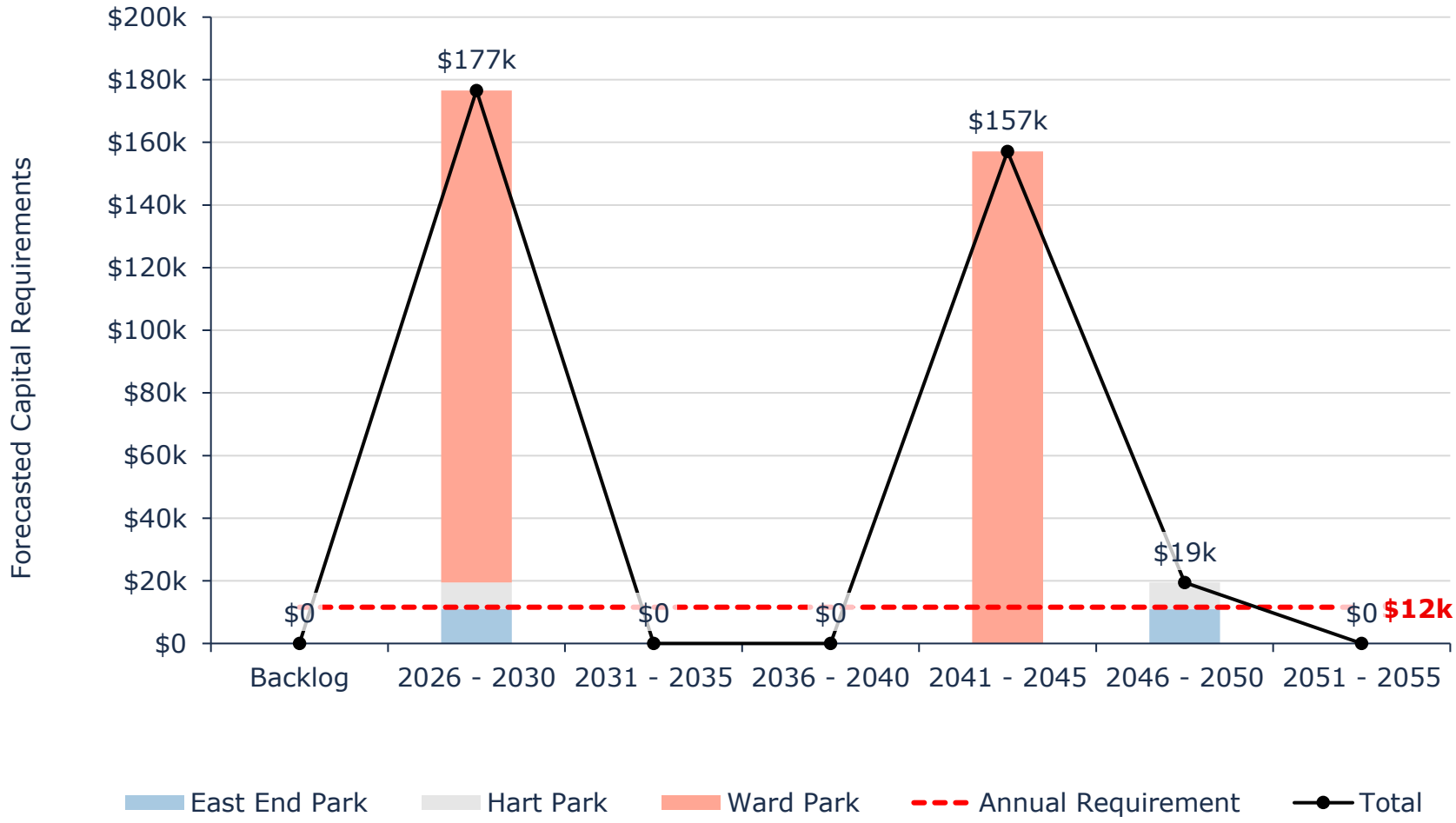
- Routine maintenance of parks and recreation assets includes inspections, minor repairs, vegetation and ground maintenance
- Insurance inspections and safety concerns are the trigger points to have maintenance activities.
- Replacement is considered when the equipment are unsafe for children's use and when an asset's condition has significantly deteriorated, and ongoing maintenance is no longer cost-effective. Assets nearing the end of their expected service life or requiring frequent and costly repairs are prioritized for replacement

Forecasted Capital Requirements

Figure 50 illustrates the cyclical short-, medium- and long-term infrastructure replacement requirements for the Village's Parks and Recreation infrastructure. This analysis was run until 2055 to capture at least one iteration of replacement for the longest-lived asset in the asset register. Oil Springs's average annual requirements (red dotted line) total $12 thousand for all parks and recreation assets. Although actual spending may fluctuate substantially from year to year, this figure is a useful benchmark value for annual capital expenditure targets (or allocations to reserves) to ensure projects are not deferred and replacement needs are met as they arise.

These projections and estimates are based on asset replacement costs and age analysis. They are designed to provide a long-term, portfolio-level overview of capital needs and should be used to support improved financial planning over several decades.

Figure 48: Parks and Recreation Forecasted Capital Replacement Requirements



It is unlikely that all Parks and Recreation assets will need to be replaced as forecasted. Coordinated projects may help drive replacements and rehabilitations.

Table 25 below summarizes the projected cost of lifecycle activities (capital replacement only) that will need to be undertaken over the next 10 years to support current levels of service. These projections are generated in Citywide

and rely on the data available in the asset register, which was limited to asset age, replacement cost, and useful life.

Table 24 Parks and Recreation System-Generated 10-Year Capital Costs

Segment	Backlog	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
East End Park	-	-	-	-	$11k	-	-	-	-	-	-
Hart Park	-	-	-	-	$8k	-	-	-	-	-	-
Ward Park	-	$31k	$126k	-	-	-	-	-	-	-	-
Total	**-**	**$31k**	**$126k**	**-**	**$19k**	**-**	**-**	**-**	**-**	**-**	**-**

Consistent data updates, especially condition, will improve the alignment between the system-generated expenditure requirements, and the Village's capital expenditure forecasts.

Risk & Criticality

The following risk matrix provides a visual representation of the relationship between the probability of failure and the consequence of failure for the assets within this asset category based on available inventory data. See Appendix M: Risk Rating Criteria for the criteria used to determine the risk rating of each asset.

Figure 49: Parks and Recreation Risk Matrix

1 - 4 Very Low $19,461 (11%)	5 - 7 Low - (0%)	8 - 9 Moderate $30,927 (18%)	10 - 14 High - (0%)	15 - 25 Very High $126,215 (71%)

This is a high-level model developed by Village staff and it should be reviewed and adjusted to reflect an evolving understanding of both the probability and consequences of asset failure. The asset-specific attributes that Village staff utilize to define and prioritize the criticality of parks and recreations are documented below:

Probability of Failure (POF)	Consequence of Failure (COF)
Condition	Replacement Cost (Economic)

The identification of critical assets allows the Village to determine appropriate risk mitigation strategies and treatment options. Risk mitigation may include asset-specific lifecycle strategies, condition assessment strategies, or simply the need to collect better asset data.

Risks to Current Asset Management Strategies

The following section summarizes key trends, challenges, and risks to service delivery that the Village is currently facing:

Climate Change & Extreme Weather Events

Climate change and extreme weather events present a risk to a Village's parks and recreation assets. The increasing frequency and intensity of storms and fluctuating water levels can rapidly age and deteriorate outdoor equipment. These weather conditions not only accelerate the wear and tear on these assets but also pose safety risks to the public and increase maintenance costs. As a result, the Village must consider these impacts and consider upgrades and replacements which mitigate the impacts of these environmental changes on its infrastructure.

Levels of Service

The following tables identify Oil Springs's metrics to identify the current level of service for the parks and recreation assets. By comparing the cost, performance (average condition) and risk year-over-year the Village will be able to evaluate how their services/assets are trending.

Community Levels of Service

The following table outlines the quantitative metrics that determine the community level of service provided by the municipal Parks and recreations.

Table 25 Parks and recreations Community Levels of Service

Service Attribute	Technical Metric	Current LOS
Scope	Description of the current condition of parks and recreation assets and the plans that are in place to maintain or improve the provided level of service	The overall condition of parks and recreation assets in the Village is fair. A significant budget has been allocated to parks and recreation for the year 2024 to improve and maintain the assets.

Technical Levels of Service

The following table outlines the quantitative metrics that determine the technical level of service provided by the municipal Parks and recreations.

Table 26 Parks and recreations Technical Levels of Service

Service Attribute	Technical Metric	Current LOS
Scope	Average Condition Rating	Fair (59%)
	Average Risk Rating	Moderate (9.85)
Performance	Capital Reinvestment Rate (Annual)	0.0%

Appendix H: Machinery & Equipment

To maintain the quality stewardship of Oil Springs's infrastructure and support the delivery of services, municipal staff own and employ various types of equipment. This includes:

- Administration equipment to support municipal services
- Equipment for the fire department to effectively respond to emergencies
- Parks and Recreation equipment including a refrigerator
- Transportation equipment including a mower

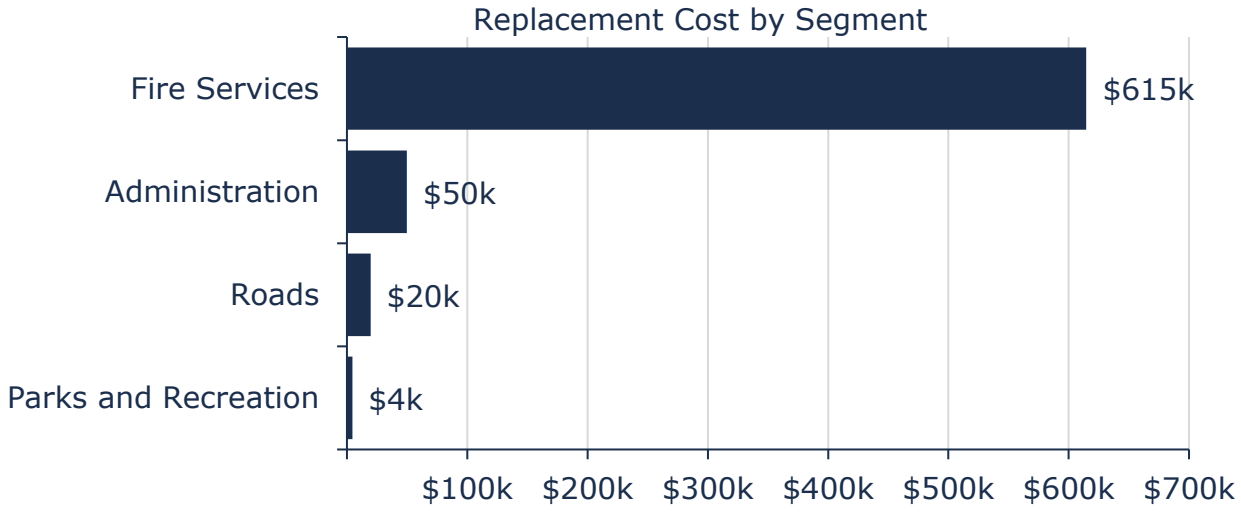
Inventory & Valuation

The table below includes the quantity, replacement cost method and total replacement cost of each asset segment in the Village's Machinery & Equipment inventory.

Segment	Quantity	Unit of Measure	Primary Replacement Cost Method	Replacement Cost
Administration	4	Assets	CPI	$49,738
Fire Services	64	Assets	CPI	$614,620
Parks and Recreation	1	Assets	CPI	$4,499
Roads	2	Assets	CPI	$19,612
Total	**71**	**Assets**		**$688,469**

The graph below displays the total replacement cost of each asset segment in the Oil Springs's Machinery & Equipment inventory.

Figure 50: Machinery & Equipment Replacement Costs

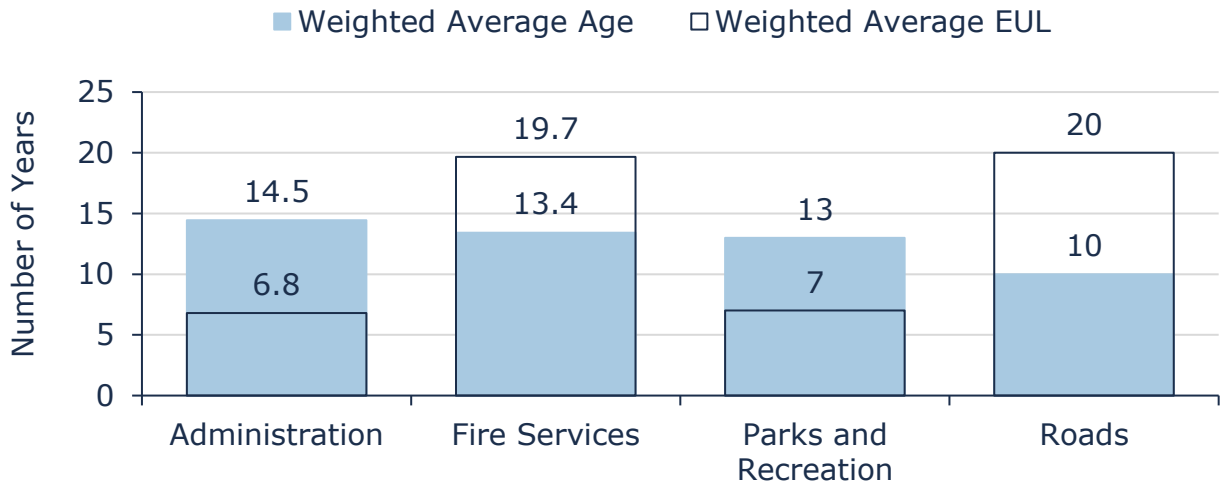


Each asset's replacement cost should be reviewed periodically to determine whether adjustments are needed to more accurate represent capital requirements.

Asset Condition & Age

The graph below identifies the average age and the estimated useful life for each asset segment. The values are weighted based on replacement cost.

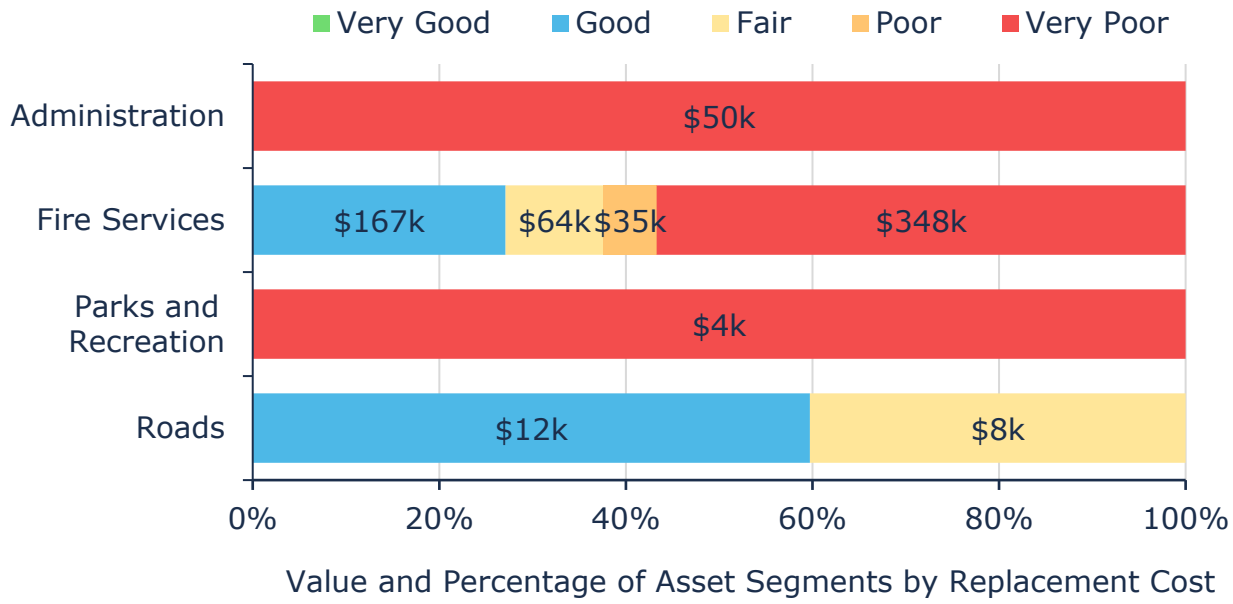
Figure 51: Machinery & Equipment Average Age vs Average EUL



Each asset's estimated useful life should also be reviewed periodically to determine whether adjustments need to be made to better align with the observed length of service life for each asset type.

The graph below visually illustrates the average condition for each asset segment on a very good to very poor scale.

Figure 52: Machinery & Equipment Condition Breakdown



To ensure that the Village's equipment continues to provide an acceptable level of service, Oil Springs should continue to monitor the average condition. If the average condition declines, staff should re-evaluate their lifecycle management strategy to determine what combination of maintenance, rehabilitation and replacement activities is required to increase the overall condition.

Current Approach to Condition Assessment

Accurate and reliable condition data allows staff to determine the remaining service life of assets and identify the most cost-effective approach to managing assets. The current approach consists of annual condition assessments by municipal staff to ensure they remain in optimal working condition.

Lifecycle Management Strategy

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

Figure 53: Machinery & Equipment Current Lifecycle Strategy

Maintenance / Rehabilitation / Replacement

- Routine maintenance for machinery and equipment includes inspections, repairs and oil changes as needed. These activities are initiated based on findings from inspections completed by internal staff that identify safety or structural issues
- Replacement of machinery and equipment is considered when an asset's condition has significantly deteriorated and maintenance is no longer cost-effective. Assets nearing the end of their expected service life or those requiring frequent and costly repairs are prioritized for replacement.

Forecasted Capital Requirements

The following graph identifies capital requirements over the next 30 years. This projection is used as it ensures that every asset has gone through one full iteration of replacement. The forecasted requirements are aggregated into 5-year bins and the trend line represents the average annual capital requirements at $41 thousand.

Figure 54: Machinery & Equipment Forecasted Capital Replacement Requirements

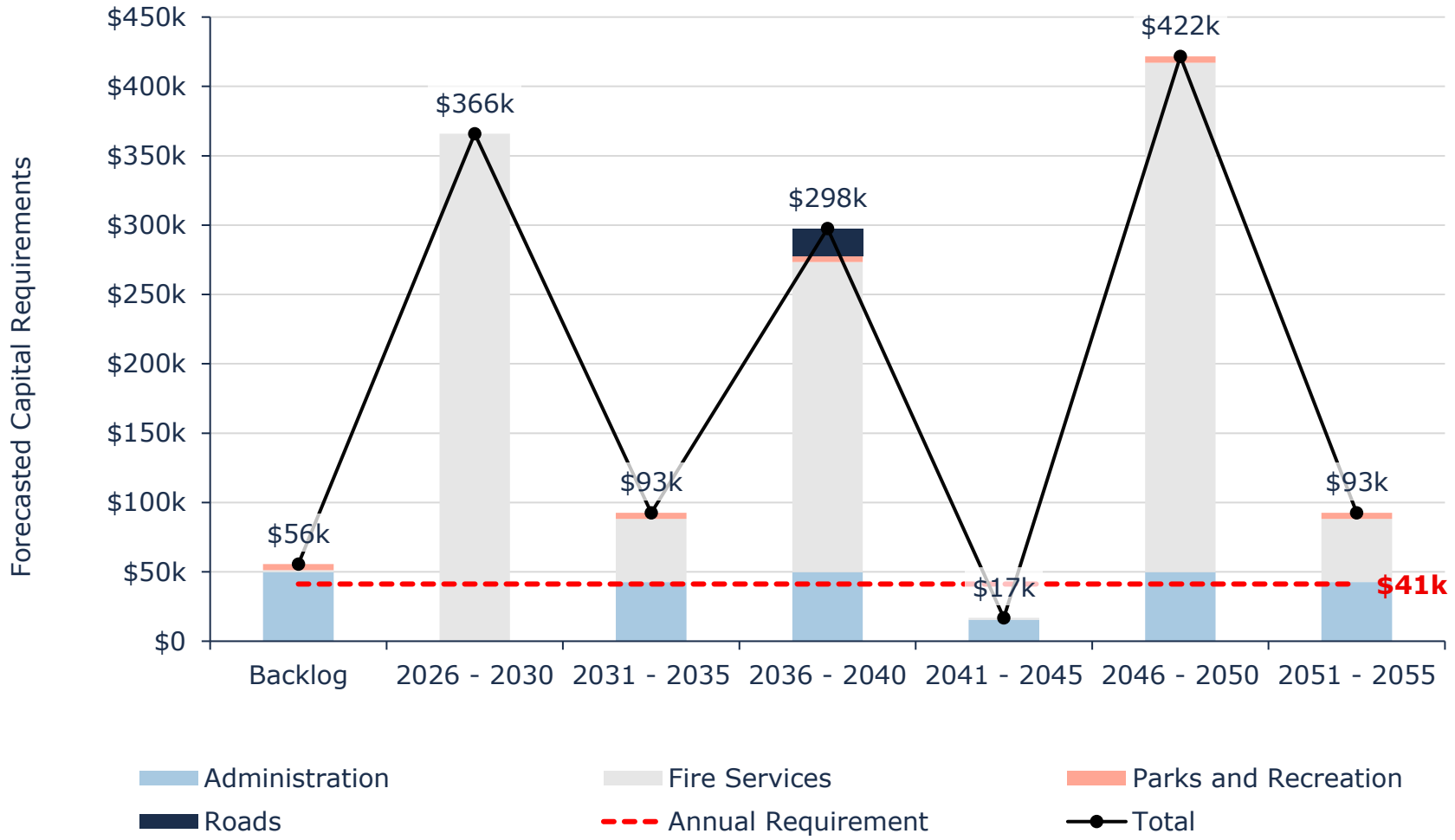


Table 28 below summarizes the projected cost of lifecycle activities (capital replacement only) that may need to be undertaken over the next 10 years to support current levels of service. These projections are generated in Citywide and rely on the data available in the asset register.

Table 27 Machinery & Equipment System-Generated 10-Year Capital Costs

Segment	Backlog	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Administration	$50k	-	-	-	-	-	$15k	-	$27k	-	-
Fire Services	$1k	-	-	-	$366k	-	$18k	-	-	-	$28k
Parks and Recreation	$4k	-	-	-	-	-	-	-	$4k	-	-
Roads	-	-	-	-	-	-	-	-	-	-	-
Total	**$56k**	**-**	**-**	**-**	**$366k**	**-**	**$33k**	**-**	**$32k**	**-**	**$28k**

As no assessed condition data was available for the equipment, only age was used to determine forthcoming replacement needs. These projections can be different from actual capital forecasts. Consistent data updates, especially condition, will improve the alignment between the system-generated expenditure requirements, and the Village's capital expenditure forecasts.

Risk & Criticality

The risk matrix provides a visual representation of the relationship between the probability of failure and the consequence of failure for the assets within this asset category based on available inventory data. See Appendix M: Risk Rating Criteria for the criteria used to determine the risk rating of each asset.

Figure 55: Machinery & Equipment Risk Matrix

1 - 4 Very Low	5 - 7 Low	8 - 9 Moderate	10 - 14 High	15 - 25 Very High
$176,312 (26%)	$28,413 (4%)	$109,456 (16%)	$27,279 (4%)	$347,009 (50%)

This is a high-level model developed by Village staff and it should be reviewed and adjusted to reflect an evolving understanding of both the probability and consequences of asset failure. The asset-specific attributes that Village staff utilize to define and prioritize the criticality of machinery and equipment are documented below:

Probability of Failure (POF)	Consequence of Failure (COF)
Condition	Replacement Cost (Economic)
	Service Type (Operational)

The identification of critical assets allows the Village to determine appropriate risk mitigation strategies and treatment options. Risk mitigation may include asset-specific lifecycle strategies, condition assessment strategies, or simply the need to collect better asset data.

Risks to Current Asset Management Strategies

The following section summarizes key trends, challenges, and risks to service delivery that the Village is currently facing:

Climate Change & Extreme Weather Events

As climate change intensifies and extreme weather events become more frequent, the Village's machinery and equipment are required to operate for extended hours. This increased usage accelerates wear and tear, leading to more frequent breakdowns and higher maintenance costs. Additionally, the prolonged use of machinery and equipment can reduce their lifespan, leading to earlier replacements and increased costs for the Village. This highlights the importance of thorough maintenance practices and the need to invest in durable equipment that can withstand extreme weather conditions.

Levels of Service

By comparing the cost, performance (average condition) and risk year-over-year, Oil Springs will be able to evaluate how their services/assets are trending.

Community Levels of Service

The following table outlines the qualitative metrics that determine the community level of service provided by equipment.

Table 28 Machinery & Equipment Community Levels of Service

Service Attribute	Technical Metric	Current LOS
Scope	Description of the current condition of municipal machinery & equipment and the plans that are in place to maintain or improve the provided level of service	The overall condition of machinery & equipment in the Village is fair. Village staff work to ensure all machinery & equipment assets remain in an adequate state of repair, with particular emphasis on safety.

Technical Levels of Service

The following table outlines the quantitative metrics that determine the technical level of service provided by machinery and equipment.

Table 29 Machinery & Equipment Technical Levels of Service

Service Attribute	Technical Metric	Current LOS
Scope	Average Condition Rating	Fair (42%)
	Average Risk Rating	High (10.72)
Performance	Capital Reinvestment Rate (Annual)	0.0%

Appendix I: Fleet

Vehicles allow staff to efficiently deliver municipal services and personnel. Municipal vehicles are used to support several service areas, including:

- Transportation vehicles for road maintenance and winter control activities
- Protection vehicles for emergency services

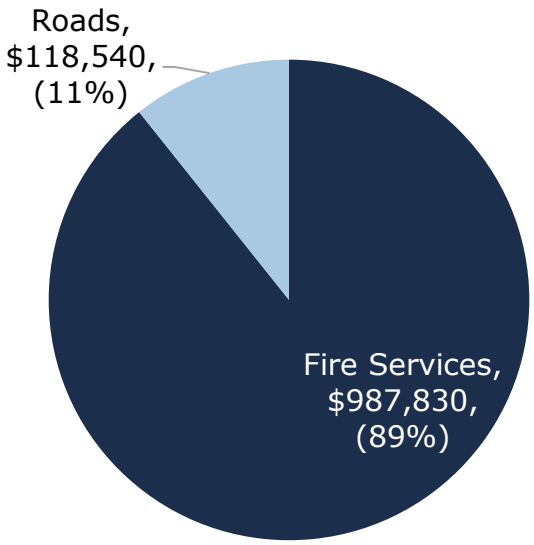
Inventory & Valuation

The table below includes the quantity, replacement cost method and total replacement cost of each asset segment in the Village's Vehicles inventory.

Segment	Quantity	Unit of Measure	Primary Replacement Cost Method	Replacement Cost
Fire Services	4	Assets	CPI	$987,830
Roads	12	Assets	CPI	$118,540
Total	**12**	**Assets**		**$1,106,370**

The graph below displays the total replacement cost of each asset segment in the vehicle inventory.

Figure 56: Fleet Replacement Costs

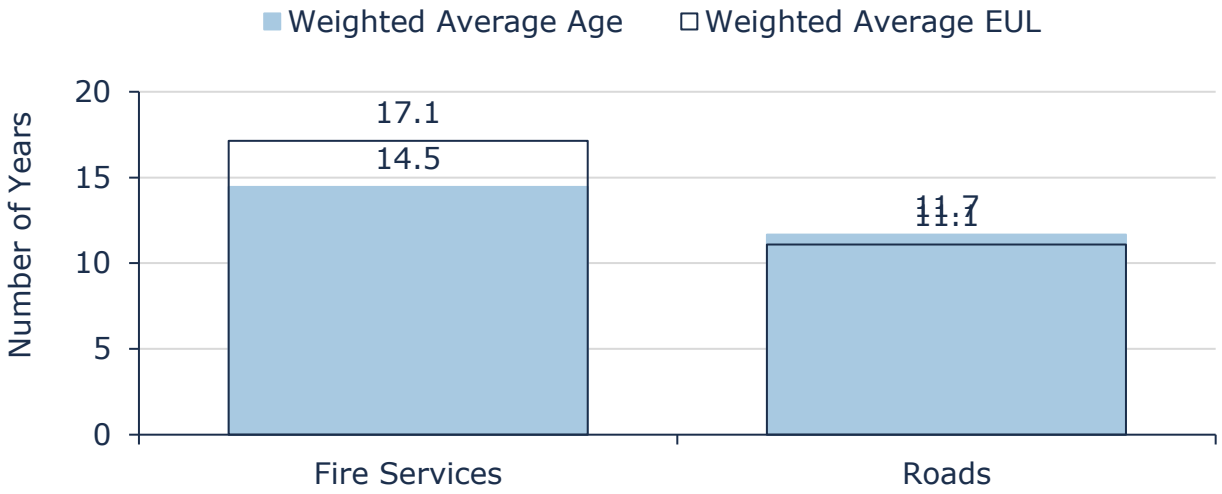


Each asset's replacement cost should be reviewed periodically to determine whether adjustments are needed to represent capital requirements more accurately.

Asset Condition & Age

The graph below identifies the average age and the estimated useful life for each asset segment. The values are weighted based on replacement cost.

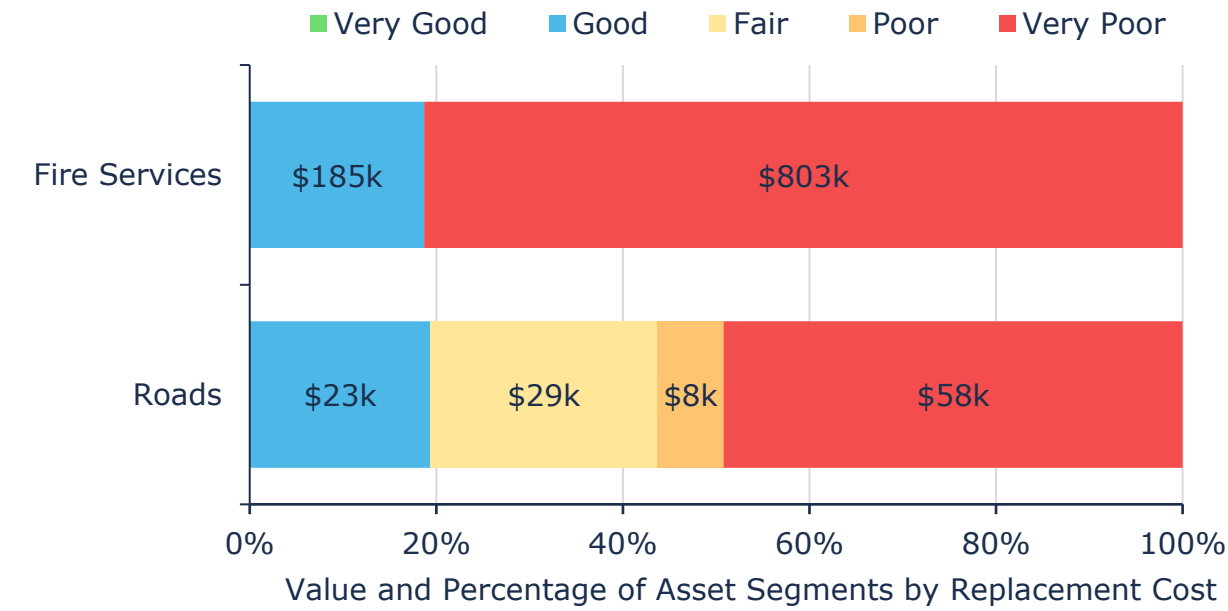
Figure 57: Vehicles Average Age vs Average EUL



Each asset's estimated useful life should also be reviewed periodically to determine whether adjustments need to be made to better align with the observed length of service life for each asset type.

The graph below visually illustrates the average condition for each asset segment on a very good to very poor scale.

Figure 58: Vehicles Condition Breakdown



To ensure that the Village's vehicles continue to provide an acceptable level of service, the Village should monitor the average condition of all assets. If the average condition declines, staff should re-evaluate their lifecycle management

strategy to determine what combination of maintenance, rehabilitation and replacement activities is required to increase the overall condition of the vehicles.

Current Approach to Condition Assessment

Accurate and reliable condition data allows staff to determine the remaining service life of assets and identify the most cost-effective approach to managing assets. Vehicles within the Village undergo annual inspections which informs the replacement schedule of the assets. These assessments ensure compliance with safety standards, operational reliability, and alignment with lifecycle plans.

Lifecycle Management Strategy

The condition or performance of assets will deteriorate over time. To ensure vehicles are performing as expected, it is important to establish a lifecycle management strategy to proactively manage asset deterioration.

Figure 61: Vehicles Current Lifecycle Strategy

Maintenance / Rehabilitation / Replacement

- Routine maintenance for vehicle assets includes inspections, minor repairs as needed, and oil changes.
- Replacement of vehicle assets is considered when their condition has significantly deteriorated, making ongoing maintenance no longer cost-effective. Vehicles nearing the end of their expected service life or those requiring frequent and costly repairs are prioritized for replacement.

Forecasted Capital Requirements

The annual capital requirement represents the average amount per year that the Village should allocate towards funding rehabilitation and replacement needs. The following graph identifies capital requirements over the next 30 years. This projection is used as it ensures that every asset has gone through one full iteration of replacement. The forecasted requirements are aggregated into 5-year bins and the trend line represents the average annual capital requirements at $75 thousand.

Figure 59: Vehicle Forecasted Capital Replacement Requirements

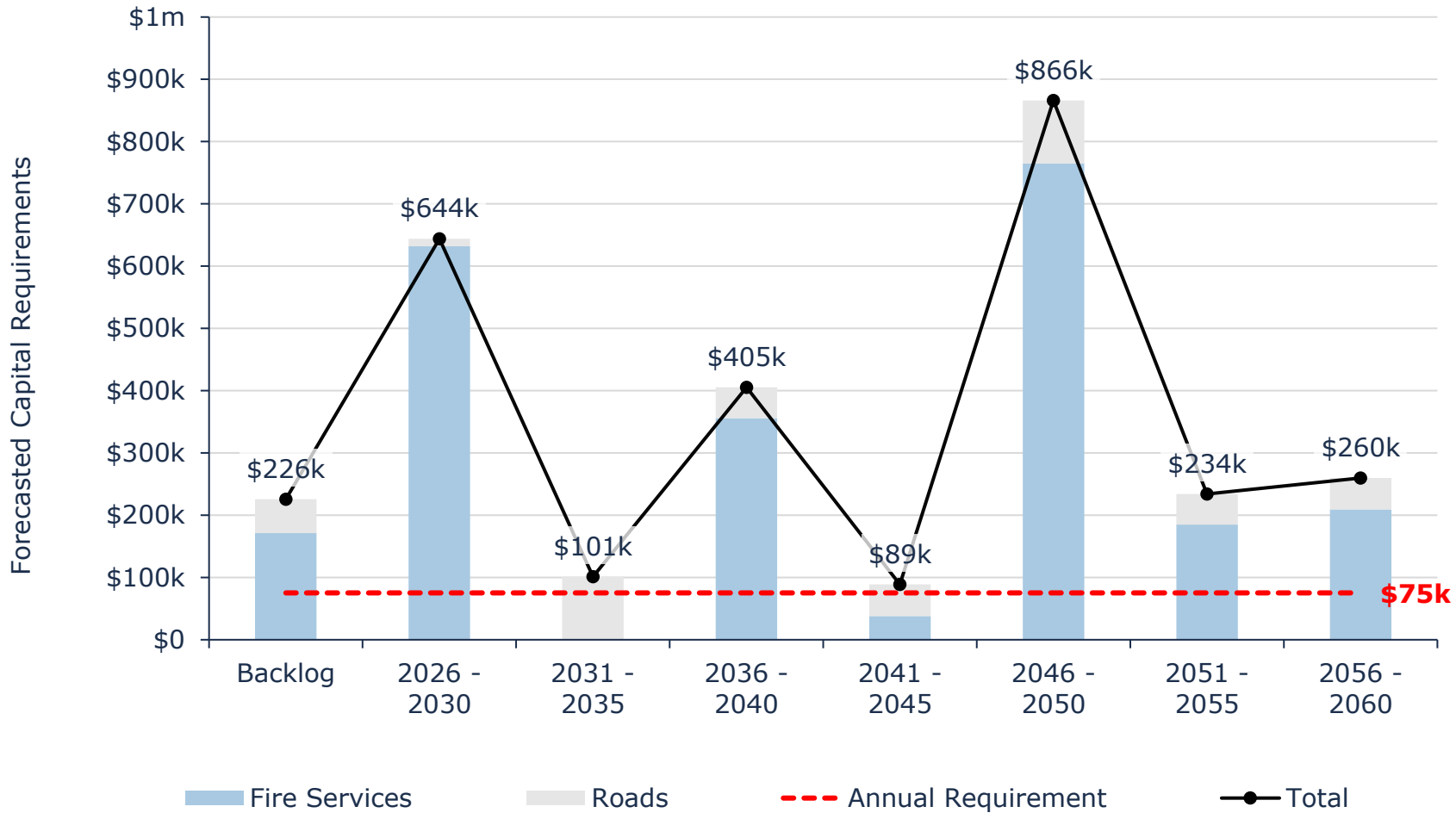


Table 31 below summarizes the projected cost of lifecycle activities (capital replacement only) that may need to be undertaken over the next 10 years to support current levels of service. These projections are generated in Citywide and rely on the data available in the asset register.

Table 30 Vehicles System-Generated 10-Year Capital Costs

Segment	Backlog	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Fire Services	$171k	-	$38k	-	$594k	-	-	-	-	-	-
Roads	$55k	-	-	$4k	-	$8k	$33k	$20k	$16k	$9k	$23k
Total	**$226k**	**-**	**$38k**	**$4k**	**$594k**	**$8k**	**$33k**	**$20k**	**$16k**	**$9k**	**$23k**

As no assessed condition data was available for the vehicles, only age was used to determine forthcoming replacement needs. These projections can be different from actual capital forecasts. Consistent data updates, especially condition, will improve the alignment between the system-generated expenditure requirements, and the Village's capital expenditure forecasts.

Risk & Criticality

The risk matrix provides a visual representation of the relationship between the probability of failure and the consequence of failure for the assets within this asset category based on available inventory data. See Appendix M: Risk Rating Criteria for the criteria used to determine the risk rating of each asset.

Figure 60: Vehicles Risk Matrix

1 - 4 Very Low $60,233 (5%)	5 - 7 Low $24,996 (2%)	8 - 9 Moderate $184,787 (17%)	10 - 14 High $71,480 (6%)	15 - 25 Very High $764,874 (69%)

This is a high-level model developed by Village staff and it should be reviewed and adjusted to reflect an evolving understanding of both the probability and consequences of asset failure. The asset-specific attributes that Village staff utilize to define and prioritize the criticality of vehicles are documented below:

Probability of Failure (POF)	Consequence of Failure (COF)
Condition	Replacement Cost (Economic)
	Service Type (Operational)

The identification of critical assets allows the Village to determine appropriate risk mitigation strategies and

treatment options. Risk mitigation may include asset-specific lifecycle strategies, condition assessment strategies, or simply the need to collect better asset data.

Risks to Current Asset Management Strategies

The following section summarizes key trends, challenges, and risks to service delivery that the Village is currently facing:

Climate Change & Extreme Weather Events

As extreme weather events become more frequent, vehicles like graders and snowplows in a Village are pushed to operate longer hours. This increased workload accelerates wear and tear, leading to more frequent maintenance and shorter lifespans for these essential vehicles. The rising operational costs and need for early replacements highlight the importance of durable, well-maintained vehicle assets to handle the challenges posed by changing weather patterns effectively.

Levels of Service

By comparing the cost, performance (average condition) and risk year-over-year, the Village will be able to evaluate how their services/assets are trending.

Community Levels of Service

The qualitative descriptions that determine the community levels of service provided by municipal vehicles are based on the service usage outlined below:

Table 31 Vehicles Community Levels of Service

Service Attribute	Technical Metric	Current LOS
Scope	Description of the current condition of municipal vehicles and the plans that are in place to maintain or improve the provided level of service	The overall condition of the vehicles in the Village is poor. The fleet supports municipal operations such as fire services, road maintenance (snow clearing and salting) and general transportation needs.

Technical Levels of Service

The following table outlines the quantitative metrics that determine the technical level of service provided by vehicles.

Table 32 Vehicles Technical Levels of Service

Service Attribute	Technical Metric	Current LOS
Scope	Average Condition Rating	Poor (35%)
	Average Risk Rating	Very High (15.82)
Performance	Capital Reinvestment Rate (Annual)	0.0%

Appendix J: Levels of Service Images

Bridge Images

The condition scale for bridges utilized is from 0 to 100 from Very Poor to Very Good. See the following images for the Village's 2 bridges in Very Good conditions.

18/19 Side Road Bridge (BCI = 86.6 Very Good)

Main Street Bridge (BCI = 98.8 Very Good)

Appendix K: Impacts of Growth

Description of Growth Assumptions

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

Oil Springs Official Plan (2006)

The Village of Oil Springs Official Plan provides a framework for managing growth and development while aligning with provincial policies and Lambton County planning guidelines. It aims to address local needs by promoting efficient land use patterns that respect the municipality's historic development while ensuring cost-effective service delivery.

The plan emphasizes balanced residential, commercial, and industrial growth while protecting natural features and agricultural lands. Residential expansion is limited to areas where municipal services such as water supply, sewage systems, roads, and community facilities can be provided economically. Growth will only occur where there is a demonstrated need to accommodate future population increases.

Environmental protection is a cornerstone of the plan. Development is restricted in areas of significant ecological value, including wetlands, habitats for endangered or threatened species, and other sensitive natural features. The plan also supports sustainable practices to preserve these areas for future generations.

Additionally, the plan addresses rural area policies by supporting agricultural practices and mixed-use developments within designated zones.

Lambton County Official Plan (Consolidated 2020)

The Lambton County Official Plan, adopted on September 17, 2017, and updated as of September 18, 2020, provides a strategic framework for guiding growth and development across the County, including Oil Springs. It emphasizes efficient land use, environmental protection, and sustainable resource allocation.

Oil Springs is projected to grow modestly during the planning period to 2031, with an estimated increase of 5 dwellings per year. By 2031, its population is expected to range between 549 and 808, reflecting stable trends and limited demand for expansion. Growth is directed to urban areas like Oil Springs to optimize existing infrastructure such as water systems, roads, and parks. Residential development is encouraged only where services can be provided economically, ensuring efficient resource use while maintaining the village's rural character. Additionally, Oil Springs is encouraged to leverage its historical significance in the petroleum industry for economic development and tourism.

Impact of Growth on Lifecycle Activities

The lifecycle management approach and funding assumptions contained within this Asset Management Plan have been developed in consideration of the Village's anticipated modest growth outlook and existing financial constraints. Based on the Lambton County Official Plan projections, Oil Springs is expected to experience limited population and development growth over the planning horizon, with an estimated increase of approximately five dwellings per year to 2031. As a result, significant expansion-related infrastructure requirements are not anticipated in the near term, and future growth is expected to be accommodated primarily through the use and optimization of existing infrastructure systems.

The Village's asset management approach continues to prioritize maintaining current service levels while balancing affordability considerations for residents. Given the limited tax base and modest growth projections, the Village has elected to maintain existing funding practices, which emphasize prioritizing capital investments based on risk, condition, and criticality, while continuing to pursue external funding opportunities such as grants to supplement municipal resources where available.

Future population and economic growth assumptions informed the preparation of the lifecycle management analysis by supporting a continued focus on maintaining and optimizing existing assets rather than planning for significant system expansion. This approach aligns with the policy direction of both the Village and County Official Plans, which encourage development patterns that utilize existing infrastructure efficiently and support cost-effective service delivery.

Appendix L: Condition Assessment Guidelines

The foundation of good asset management practice is accurate and reliable data on the current condition of infrastructure. Assessing the condition of an asset at a single point in time allows staff to have a better understanding of the probability of asset failure due to deteriorating condition.

Condition data is vital to the development of data-driven asset management strategies. Without accurate and reliable asset data, there may be little confidence in asset management decision-making which can lead to premature asset failure, service disruption and suboptimal investment strategies. To prevent these outcomes, the Village's condition assessment strategy should outline several key considerations, including:

- The role of asset condition data in decision-making
- Guidelines for the collection of asset condition data
- A schedule for how regularly asset condition data should be collected

Role of Asset Condition Data

The goal of collecting asset condition data is to ensure that data is available to inform maintenance and renewal programs required to meet the desired level of service. Accurate and reliable condition data allows municipal staff to determine the remaining service life of assets, and identify the most cost-effective approach to deterioration, whether it involves extending the life of the asset through remedial efforts or determining that replacement is required to avoid asset failure.

In addition to the optimization of lifecycle management strategies, asset condition data also impacts the Village's risk management and financial strategies. Assessed condition is a key variable in the determination of an asset's probability of failure. With a strong understanding of the probability of failure across the entire asset portfolio, the Village can develop strategies to mitigate both the probability and consequences of asset failure and service disruption. Furthermore, with condition-based determinations of future capital expenditures, the Village can develop long-term financial strategies with higher accuracy and reliability.

Guidelines for Condition Assessment

Whether completed by external consultants or internal staff, condition assessments should be completed in a structured and repeatable fashion, according to consistent and objective assessment criteria. Without proper guidelines for the completion of condition assessments there can be little confidence in the validity of condition data and asset management strategies based on this data.

Condition assessments must include a quantitative or qualitative assessment of the current condition of the asset, collected according to specified condition rating criteria, in a format that can be used for asset management decision-making. As a result, it is important that staff adequately define the condition rating criteria that

should be used and the assets that require a discrete condition rating. When engaging with external consultants to complete condition assessments, it is critical that these details are communicated as part of the contractual terms of the project.

There are many options available to the Village to complete condition assessments. In some cases, external consultants may need to be engaged to complete detailed technical assessments of infrastructure. In other cases, internal staff may have sufficient expertise or training to complete condition assessments.

Developing a Condition Assessment Schedule

Condition assessments and general data collection can be both time-consuming and resource intensive. It is not necessarily an effective strategy to collect assessed condition data across the entire asset inventory. Instead, the Village should prioritize the collection of assessed condition data based on the anticipated value of this data in decision-making. The International Infrastructure Management Manual (IIMM) identifies four key criteria to consider when making this determination:

- Relevance: every data item must have a direct influence on the output that is required
- Appropriateness: the volume of data and the frequency of updating should align with the stage in the assets life and the service being provided
- Reliability: the data should be sufficiently accurate, have sufficient spatial coverage and be appropriately complete and current
- Affordability: the data should be affordable to collect and maintain

Appendix M: Risk Rating Criteria

Risk Definitions

Risk	Integrating a risk management framework into your asset management program requires the translation of risk potential into a quantifiable format. This will allow you to compare and analyze individual assets across your entire asset portfolio. Asset risk is typically defined using the following formula: **Risk = Probability of Failure (POF) x Consequence of Failure (COF)**
Probability of Failure (POF)	The probability of failure relates to the likelihood that an asset will fail at a given time. The current physical condition and service life remaining are two commonly used risk parameters in determining this likelihood.
POF - Structural	The likelihood of asset failure due to aspects of an asset such as load carrying capacity, condition or breaks
POF - Functional	The likelihood of asset failure due to its performance
POF - Range	**1 - Rare 2 - Unlikely 3 - Possible 4 - Likely 5 - Almost Certain**
Consequences of Failure (COF)	The consequence of failure describes the overall effect that an asset's failure will have on an organization's asset management goals. Consequences of failure can range from non-eventful to impactful: a small diameter water main break in a subdivision may cause several rate payers to be without water service for a short time. However, a larger trunk water main may break outside a hospital, leading to significantly higher consequences.
COF - Financial	The monetary consequences of asset failure for the organization and its customers
COF - Social	The consequences of asset failure on the social dimensions of the community
COF - Environmental	The consequence of asset failure on an asset's surrounding environment
COF - Operational	The consequence of asset failure on the Town's day-to-day operations
COF - Health & safety	The consequence of asset failure on the health and well-being of the community
COF - Economic	The consequence of asset failure on strategic planning
COF - Range	**1 - Insignificant 2 - Minor 3 - Moderate 4 - Major 5 - Severe**