Municipality of Dysart et al

# 2025 Asset Management Plan

This Asset Management Program was prepared by:


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

# Key Statistics

Replacement cost of asset portfolio

$265 million

Percentage of assets in fair or better condition

78%

Annual capital infrastructure deficit

$3.9 million

Recommended timeframe for eliminating annual infrastructure deficit

10 Years

Proposed Level of Service

Current Condition

Actual Reinvestment Rate

0.99%

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# Executive Summary

Municipal infrastructure provides the foundation for the economic, social, and environmental health and growth of a community through the delivery of services. The goal of asset management is to balance delivering critical services in a cost-effective manner. This involves the development and implementation of asset management strategies and long-term financial planning.

The overall replacement cost of the asset categories owned by Dysart et al total $265 million. 78% of all assets analysed are in fair or better condition. Assessed condition data was available for all roads and bridge assets, for the remaining assets, assessed condition data was unavailable, and asset age was used to approximate condition. Generally, age misstates the true condition of assets, making assessments essential to accurate asset management planning, and a recurring recommendation.

The development of a long-term, sustainable financial plan requires an analysis of whole lifecycle costs. Using a combination of proactive lifecycle strategies (roads) and replacement only strategies (all other assets) to determine the lowest cost option to maintain the current level of service, a sustainable financial plan was developed.

To meet capital replacement and rehabilitation needs for existing infrastructure, prevent future infrastructure backlogs, and achieve long-term sustainability, the Municipality's average annual capital requirement totals $6.5 million. Based on a historical analysis of sustainable capital funding sources, the Municipality is committing approximately $2.6 million towards capital projects or reserves per year.

Addressing annual infrastructure funding shortfalls is a difficult and long-term endeavour for municipalities. Considering the Municipality's current funding position, it will require many years to reach full funding for current assets. Short phase-in periods to meet these funding targets may place too high a burden on taxpayers too quickly, whereas a phase-in period beyond 20 years may see a continued deterioration of infrastructure, leading to larger backlogs.

To close annual deficits for capital contributions from tax revenues for asset needs, it is recommended the Municipality review the feasibility of implementing a 2.2% annual increase in revenues over a 10-year phase-in period, to be allocated in addition to the $2.4 million allocated from tax revenues and other sustainable sources.

To close annual deficit for capital contributions from waste water revenues for asset needs, it is recommended the Municipality review the feasibility of implementing a 5.1% annual increase respectively in revenues over a 10-year phase-in period.

In addition to annual needs, there is also an infrastructure backlog of $22.7 million, comprising assets that remain in service beyond their estimated useful life. It is highly unlikely that all such assets are in a state of disrepair, requiring immediate replacements or full reconstruction. This makes targeted and consistent condition assessments integral to refining long-term replacement and backlog estimates.

The Municipality has established risk frameworks and levels of service targets to assist in effectively prioritizing infrastructure projects and select the appropriate lifecycle interventions—such as rehabilitation or replacement—based on asset condition and criticality. Preliminary risk models, integrated with the Municipality's asset register, generate risk matrices that classify assets by risk profile, supporting informed decision-making.

Proposed levels of service are designed to be realistic and achievable within the planning horizon, balancing community expectations, fiscal capacity, regulatory compliance, corporate goals, and long-term sustainability. Recognizing that asset data was financially driven and the Municipality is still working to better align the operations data. This ensures levels of service are both data-informed and operationally grounded, creating a robust foundation for continued advancement in asset management.

# 1 About this Document

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

## 1.1 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 | | | | ✓ |

## 1.2 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 Municipality can ensure that public infrastructure is managed to support the sustainable delivery of services.

## 1.3 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.

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

# 2 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 ratepayers receive 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 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. The strategic plan has a direct, and cascading impact on asset management planning and reporting.

## 2.1 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.

### 2.1.1 Strategic Plan

The strategic plan has a direct, and cascading impact on asset management planning and reporting, making it a foundational element. Developing alignment with corporate goals and objectives through service delivery and lifecycle management ensures the Municipality has line of sight to achieve their strategic objectives.

### 2.1.2 Asset Management Policy

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

### 2.1.3 Asset Management Strategy

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

## 2.2 Key Concepts in Asset Management

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

### 2.2.1 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.

### 2.2.2 Deriving Replacement Costs

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

- **User-Defined Cost and Cost/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 Municipality incurred. As assets age, and new products and technologies become available, cost inflation becomes a less reliable method.

### 2.2.3 Estimated Useful Life & Service Life Remaining

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

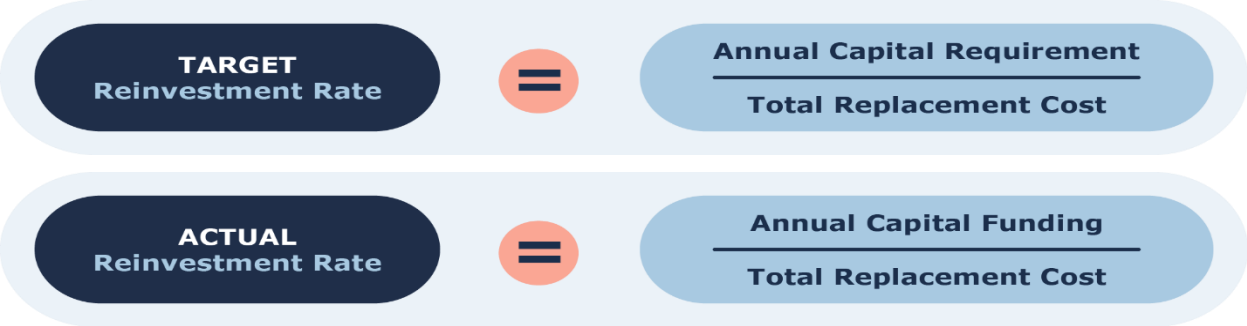
By using an asset's in-service date and its EUL, the Municipality can determine the service life remaining (SLR) for each asset. Using condition data and the asset's SLR, the Municipality can more accurately forecast when it will require replacement. The SLR is calculated as follows:

*Figure 1 Service Life Remaining Calculation*

### 2.2.4 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 Municipality can determine the extent of any existing funding gap. The reinvestment rate is calculated as follows:

*Figure 2 Target and Actual Reinvestment Calculations*




### 2.2.5 Deriving Asset Condition

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 Municipality's asset portfolio.

The table below outlines the condition rating system used to determine asset condition. This rating system is aligned with the Canadian Infrastructure Report Card. When assessed condition data is not available, age and EUL are used to approximate asset condition.

*Table 2 Standard Condition Rating Scale*

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

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 J: 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.

### 2.2.6 Lifecycle Management Strategies

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

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

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

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

The Municipality's approach to lifecycle management is described within each asset category outlined in this AMP. 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.

*Table 3 Lifecycle Strategy Example*

| Lifecycle Activity | Description | Example (Roads) | Cost |
|---|---|---|---|
| Maintenance | Activities that prevent defects or deteriorations from occurring | Crack Seal | $ |
| Rehabilitation/ Renewal | Activities that rectify defects or deficiencies that are already present and may be affecting asset performance | Mill & Re-surface | $$ |
| Replacement/ Reconstruction | Asset end-of-life activities that often involve the complete replacement of assets | Full Reconstruction | $$$ |

### 2.2.7 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

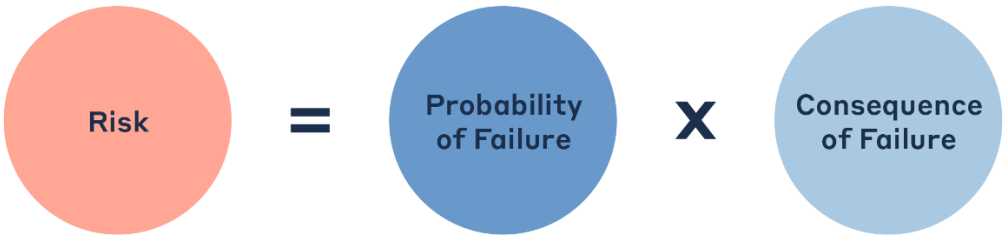
assets are created equal. Some are more important than others, and their failure or disrepair poses more risk to the community than that of others. For example, a road with a high volume of traffic that provides access to critical services poses a higher risk than a low volume rural road. By identifying 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. This AMP includes a high-level evaluation of asset risk and criticality through qualitative and quantitative methodologies.

### Qualitative Approach to Risk

The qualitative risk assessment involves the documentation of risks to the delivery of services that the municipality faces given the current state of the infrastructure and asset management strategies. These risks can be understood as corporate level risks.

### Quantitative Approach to Risk

Asset risk is defined using the following formula:




The probability of failure relates to the likelihood that an asset will fail at a given time. The probability of failure focuses on two highly imperative impacts for risk assessment – structural and functional impacts. Structural impacts are related to the structural aspects of an asset such as load carrying capacity, condition, or breaks; whereas the functional impacts can include parameters, slope, traffic count, and other impacts that can affect the performance of an asset.

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.

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.

## 2.2.8 Climate Change

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

The report revealed that between 1948 and 2016, the average temperature increase across Canada was 1.7°C; moreover, during this period, Northern Canada experienced a 2.3°C increase. The temperature increase in Canada has doubled that of the global average. If emissions are not significantly reduced, the

temperature could increase by 6.3°C in Canada by the year 2100 compared to 2005 levels. Observed precipitation changes in Canada include an increase of approximately 20% between 1948 and 2012.

By the late 21st century, the projected increase could reach an additional 24%. During the summer months, some regions in Southern Canada are expected to experience periods of drought at a higher rate. Extreme weather events and climate conditions are more common across Canada. Recorded events include droughts, flooding, cold extremes, warm extremes, wildfires, and record minimum arctic sea ice extent.

The changing climate poses a significant risk to the Canadian economy, society, environment, and infrastructure. 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. To achieve the sustainable delivery of services, climate change considerations should be incorporated into asset management practices.

### 2.2.9 Impacts of Growth

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

As growth-related assets are constructed or acquired, they should be integrated into the Municipality's asset management program. While the addition of residential units will add to the existing assessment base and offset some of the costs associated with growth, the Municipality will need to review the lifecycle costs of growth-related infrastructure, and these costs should be considered in long-term funding strategies.

### 2.2.10 Levels of Service

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

These measures include a combination of those that have been outlined in O. Reg. 588/17 in addition to performance measures identified by the Municipality as worth measuring and evaluating. The Municipality measures the level of service provided at two levels: Community Levels of Service, and Technical Levels of Service.

#### Community Levels of Service

Community levels of service are a simple, plain language description or measure of the service that the community receives. For core asset categories (roads, water, wastewater, stormwater) the province, through O. Reg. 588/17, has provided qualitative descriptions that are required to be included in this AMP. For non-core

asset categories, the Municipality has determined the qualitative descriptions that will be used to determine the community level of service provided. These descriptions can be found in the Levels of Service subsection within each asset category.

## Technical Levels of Service

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

For core asset categories (roads, bridges and culverts, waste water, storm water) the province, through O. Reg. 588/17, has provided technical metrics.

## Current and Proposed Levels of Service

In developing an effective asset management plan, it is imperative to establish clear levels of service across key service areas to ensure the efficient and sustainable delivery of municipal services. The Municipality established current levels of service as well as proposed levels of service over a 10-year period, in accordance with O. Reg. 588/17.

Proposed levels of service are realistic and achievable within the timeframe outlined by the Municipality. They were determined with consideration of a variety of community expectations, fiscal capacity, regulatory requirements, corporate goals, and long-term sustainability. The Municipality will identify a lifecycle management and financial strategy which will allow these targets to be achieved.

## Annual Review

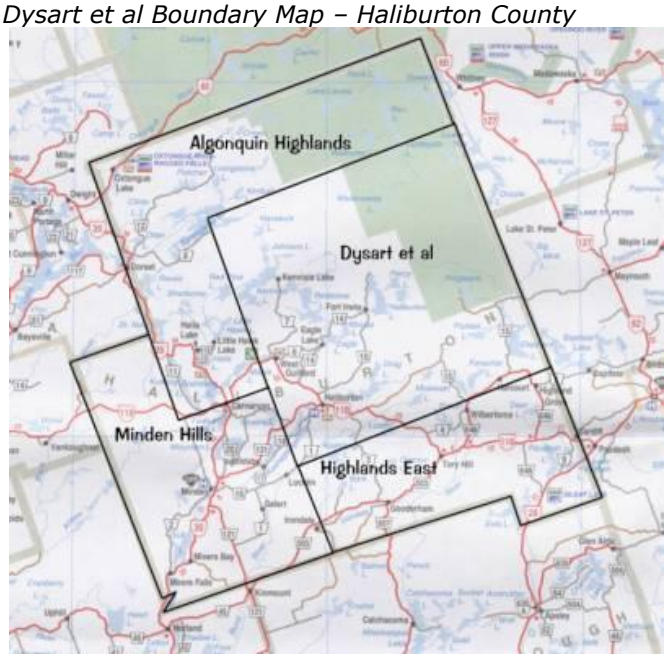
The annual review must address the municipality's progress in implementing its asset management plan, any factors impeding the municipality's ability to implement its asset management plan as well as a strategy to address any of the identified factors.

# 3 Community Profile

The Municipality of Dysart et al is a lower-tier municipality located within Haliburton County, Ontario. Situated in Central Ontario, it encompasses a vast area characterized by stunning landscapes, including lakes, forests, and rugged terrain.

The Municipality of Dysart et al is the common name used in reference to the United Townships of Dysart, Dudley, Harcourt, Guilford, Harburn, Bruton, Havelock, Eyre and Clyde. The "et al" (Latin for "and others") serves as an abbreviation for the eight other townships besides Dysart.

*Figure 3 Municipality of Dysart et al Boundary Map – Haliburton County*




The municipality's economy is primarily driven by tourism, with its pristine lakes and abundant outdoor recreational opportunities attracting visitors year-round. The region's thriving cottage industry and the presence of Algonquin Provincial Park further contribute to its economic vitality. Additionally, the forestry and agriculture sectors play significant roles in the local economy.

The Municipality of Dysart et al is committed to ongoing protection of its natural environment and sustainable practices. The region's focus on eco-tourism and responsible development ensures that future generations can continue to enjoy the pristine beauty of this special place.

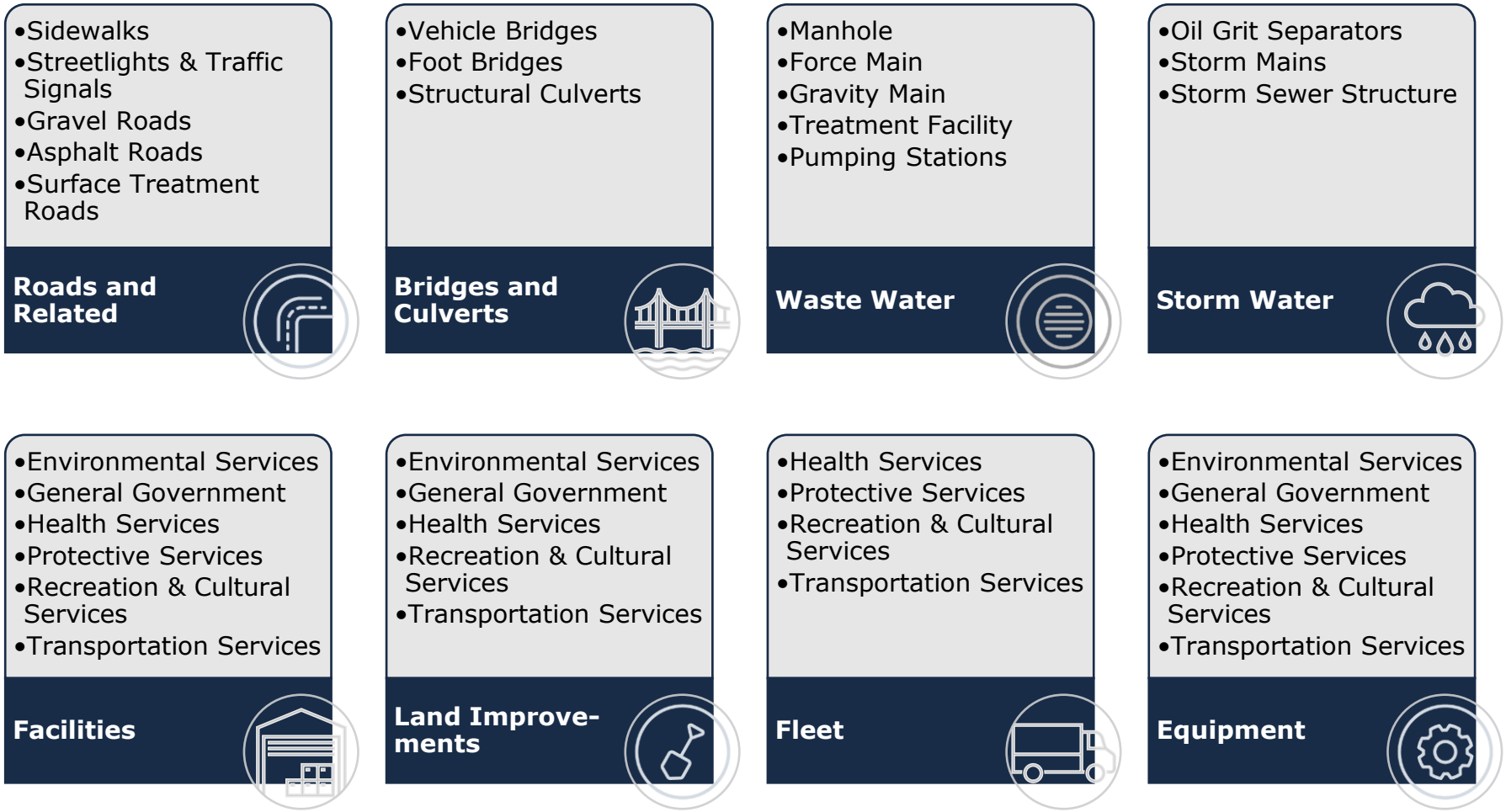
*Table 4 Municipality of Dysart et al & Ontario Census Information*

| Census Characteristic | Municipality of Dysart et al | Ontario |
|---|---|---|
| Population 2021 | 7,182 | 14,223,942 |
| Population Change 2016-2021 | 14.4% | 5.8% |
| Total Private Dwellings | 7,298 | 5,929,250 |
| Population Density | 4.9/km$^2$ | 15.9/km$^2$ |
| Land Area | 297.47 km$^2$ | 892,411.76 km$^2$ |

# 4 Inventory & Valuation

The Municipality's inventory has an asset hierarchy of categories and segments as outlined below where the dark blue headings are the categories and the listings in grey are the segments.

*Figure 4 Asset Hierarchy*



## 4.1 State of the Infrastructure

The table below outlines the current state of each asset category as well as shows the current service trend. The service trend arrows show an overall downward trend based on current funding levels and average condition historical decline.

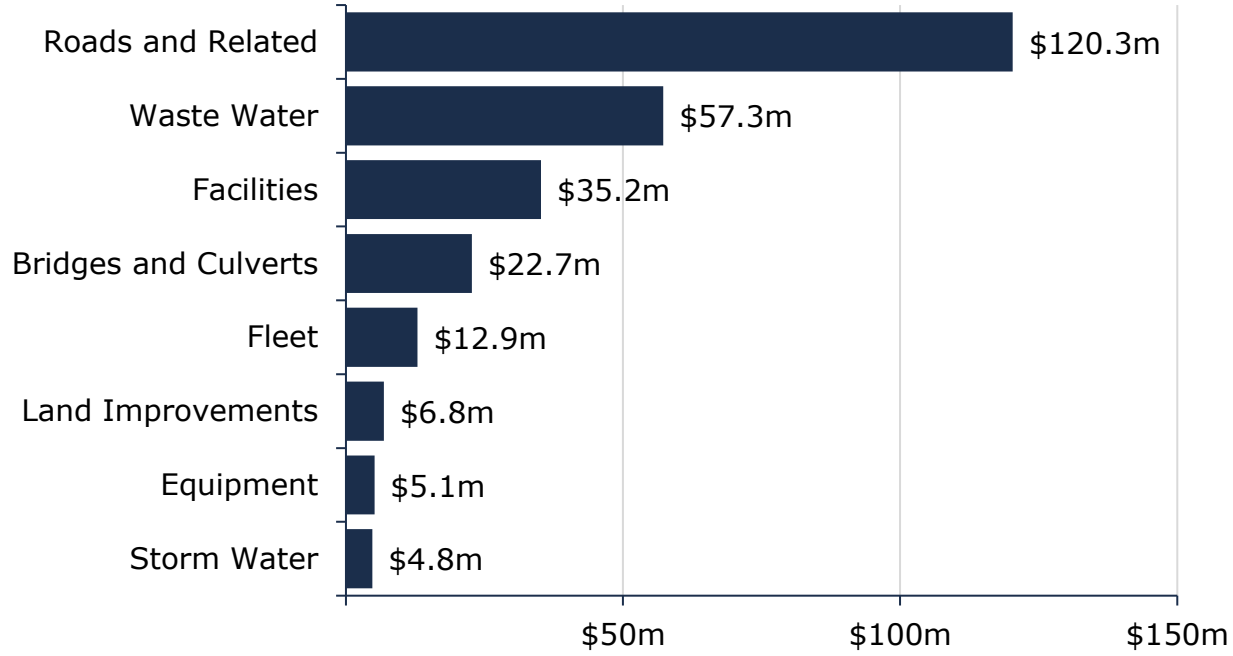
*Table 5 State of the Infrastructure*

| Asset Category | Replacement Cost | Asset Condition | Service Trend |
|---|---|---|---|
| Roads and Related | $120,320,526 | Good (70%) | |
| Bridges and Culverts | $22,720,736 | Fair (60%) | |
| Equipment | $5,147,059 | Good (61%) | |
| Facilities | $35,175,993 | Good (63%) | |
| Fleet | $12,899,437 | Good (75%) | |
| Land Improvements | $6,831,117 | Good (68%) | |
| Storm Water | $4,779,895 | Good (75%) | |
| Waste Water | $57,267,273 | Good (69%) | |
| **Overall** | **$265,142,036** | **Good (68%)** | |

## 4.2 Total Replacement Cost

The asset categories analysed in this AMP have a total replacement cost of $265 million based on inventory data up to the end of 2024. This total was determined based on a combination of user-defined costs and historical cost inflation. This estimate reflects replacement of historical assets with similar, not necessarily identical, assets available for procurement today.

*Figure 5 Current Replacement Cost by Asset Category*

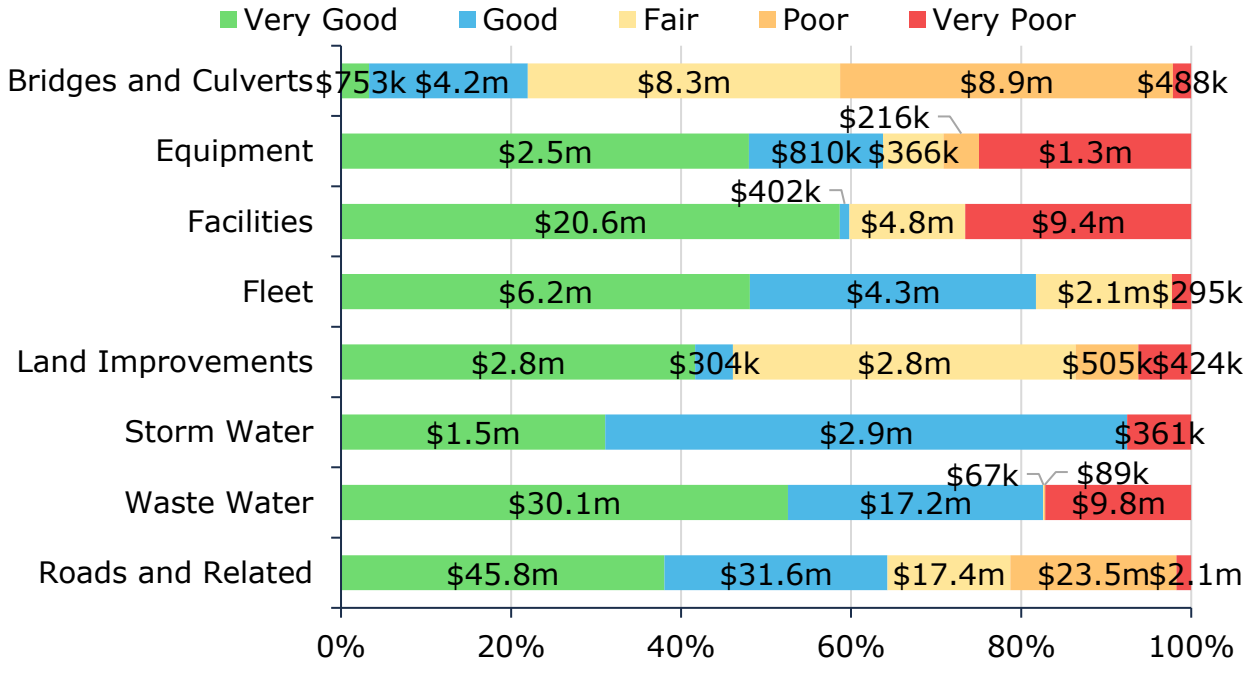



# 5 Condition & Age

## 5.1 Condition of Asset Portfolio

The current condition of the assets is central to all asset management planning. Collectively, 78% of assets in Dysart et al are in fair or better condition. This estimate relies on both age-based and field condition data. The breakdown of the condition of each asset category is shown in the figure below.

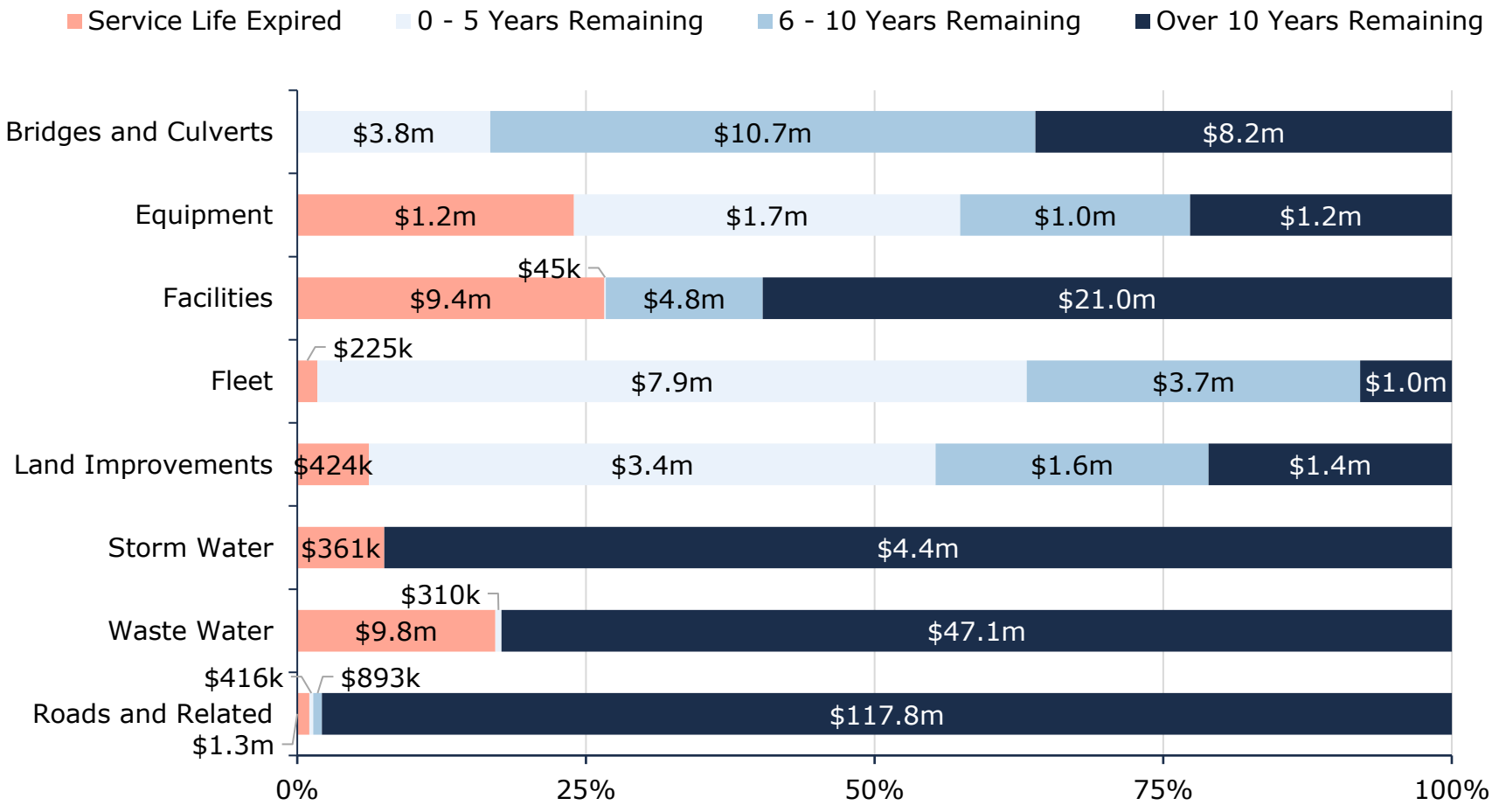
*Figure 6 Asset Condition by Asset Category*



## 5.2 Service Life Remaining

Based on asset age, available assessed condition data and estimated useful life, 15% of the Municipality's assets will require replacement within the next 10 years. Details of the capital requirements are identified in each asset section and are based on the proposed levels of service.

*Figure 7 Service Life Remaining by Category*



# 6 Risk & Criticality

## 6.1 Qualitative Risk

The Municipality has noted key trends, challenges, and risks to service delivery that they are currently facing:

**Aging Infrastructure**
The current lifecycle management strategies are considered more reactive than proactive. It is a challenge to find the right balance between maintenance, capital rehabilitation, and reconstruction. In the absence of mid-lifecycle rehabilitative events, most assets are simply maintained with the goal of full replacement once they reach end-of-life. These strategies will require sustainable annual funding to minimize the deferral of capital works.

**Capital Funding Strategies**
Major capital rehabilitation and replacement projects are often entirely dependent on the availability of grant funding opportunities. When grants are not available, rehabilitation and replacement projects are often deferred.

## 6.2 Quantitative Risk

The overall risk breakdown for Dysart et al's asset inventory is portrayed in the figure below.

*Figure 8 Overall Asset Risk Breakdown*

| 1 - 4 | 5 - 7 | 8 - 9 | 10 - 14 | 15 - 25 |
|---|---|---|---|---|
| **Very Low** | **Low** | **Moderate** | **High** | **Very High** |
| $110,195,709 | $47,356,318 | $33,226,914 | $41,567,266 | $32,795,829 |
| (42%) | (18%) | (13%) | (16%) | (12%) |

Reviewing the list of very high-risk assets to evaluate how best to mitigate the level of risk the Municipality is experiencing will help advance Dysart et al's asset management program.

# 7 Climate & Growth

## 7.1 Dysart et al Climate Profile

The Municipality of Dysart et al., situated in Haliburton County, Ontario is expected to face several challenges due to climate change. According to Climatedata.ca, a collaboration supported by Environment and Climate Change Canada (ECCC), suggests the following trends for Dysart et al.:

**Higher Average Annual Temperature:**

- Between the years 1971 and 2000 the annual average temperature was 4.2ºC.
- Under a high emissions scenario, the annual average temperatures are projected to increase by 7.1ºC by the year 2050 and by 11.0ºC by the end of the century.

**Increase in Total Annual Precipitation:**

- Under a high emissions scenario, Dysart et al. is projected to experience a 12% increase in precipitation by the year 2080 and an 17% increase by the end of the century.

**Increase in Frequency of Extreme Weather Events:**

- Dysart et al. is expected to experience more frequent and intense weather events.

## 7.2 Impacts of Growth

The demand for infrastructure and services will change over time based on a combination of internal and external factors. Understanding the key drivers of growth and demand will allow the Municipality 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.

### 7.2.1 Dysart et al Official Plan (October 2018)

The Municipality of Dysart et al adopted an Official Plan to establish practical and clear objectives and policies in accordance with the Ontario Planning Act. The Official Plan is to provide a detailed and comprehensive document that complements and conforms to the County Official Plan and which guides and directs the use of land in the Municipality. This Plan was prepared to assist decision making by both the public and private sectors. Public administrators may use the Plan to identify public undertakings which will be required and to assign appropriate budget, timing, and locational priorities. Private interests, by being informed of the long-term objectives of the Municipality, may make decisions on their operations in the context of consistent and predictable public policies.

The Official Plan has been approved with modification as of May 18th, 2018 and office consolidated April 2024.

The policy framework is based upon direction from the Provincial Policy Statement, and the County of Haliburton Official Plan. It is also based upon the various background studies that have been prepared to support this Plan, as well as, specific initiatives undertaken by the Municipality, including the Community Visioning Exercise (2007), the Streetscape Project (2009), the Municipal Cultural Plan (2012) and the economic development initiative (2015-2016).

The Municipality manages the unique character of the planning area, protect significant and sensitive resources, protect the health and safety of residents and achieve efficient development and land use patterns. The Municipality is comprised of a mix of settlement areas and rural lands. Rural lands include waterfront areas and rural areas.

The settlement areas that are designated in the Plan are:

- Haliburton Village Urban Policy area; and
- the hamlets of Eagle Lake, Harcourt and West Guilford.

Haliburton village is the primary service centre for the Municipality and as such, the most intensely developed type of settlement area in the Municipality. Development of an urban scale and form will be directed to this settlement area. Land use patterns will strengthen the function of the central business district, while encouraging a compact form. Opportunities for intensification and redevelopment will be encouraged and promoted

The following tables outlines the recorded population and private dwellings for Dysart et al, based on Census data.

| Historical Figures | 2011 | 2016 | 2021 |
|---|---|---|---|
| Population | 5,966 | 6,280 | 7,182 |
| Population Change | 8.0% | 5.5% | 14.4% |
| Private Dwellings | 7,093 | 7,083 | 7,298 |

This population growth may result in incremental service demands that will impact levels of service. The Municipality plans to address these pressures through established planning processes such as development of master plans for specific services.

### 7.2.2 Impact of Growth on Lifecycle Activities

As the municipality's population is expected to remain the same with potential moderate increases and declines in the coming years, demand will evolve, and it is likely that funding will need to be reprioritized. As growth-related assets are constructed, retired, or acquired, they should be integrated into the AMP. Furthermore, the municipality will need to review the lifecycle costs of growth-related infrastructure. These costs should be considered in long-term funding strategies that are designed to maintain the current level of service.

# 8 Levels of Service

The Municipality's Strategic Plan provides the overarching framework that guides all aspects of municipal operations, including asset management planning and reporting. Each strategic pillar influences asset management decisions by shaping priorities for infrastructure investment, service delivery, and long-term financial sustainability.

**Sustainable Growth & Environment** - Asset management planning supports this pillar by ensuring infrastructure and assets are managed in ways that minimize environmental impact, promote energy efficiency, and enhance the community's resilience to climate change.

**Infrastructure Planning & Investment** - This pillar is directly linked to asset management, as it focuses on the responsible stewardship of municipal assets. Through data-driven planning, lifecycle costing, and evidence-based decision-making, the Municipality ensures that infrastructure investments align with community needs and long-term sustainability.

**Economic Development & Prosperity** - Reliable infrastructure and well-maintained assets create the foundation for economic growth. Asset management supports this pillar by prioritizing investments that enable business development, attract visitors, and enhance overall community prosperity.

**Governance & Operational Excellence** - Asset management planning strengthens governance and accountability by providing transparent, accurate information on the condition, performance, and value of municipal assets. Regular reporting supports informed decision-making and continuous improvement in municipal operations.

**A Vibrant Community with Great Services** - Well-managed assets are essential to delivering consistent, high-quality municipal services. Asset management ensures that community facilities, roads, parks, and other infrastructure continue to meet service level expectations and contribute to a vibrant, livable community.

By aligning asset management planning and reporting with these strategic pillars, the Municipality ensures that infrastructure investments not only meet current needs but also advance the community's long-term vision and mission.

*Figure 9 Dysart et al's Vision and Mission*


The Municipality's values form the foundation of its Strategic Plan and guide all decision-making, operations, and service delivery. These values not only shape how the Municipality interacts with residents, businesses, and visitors but also influence how assets are managed, maintained, and invested in. By embedding these principles into asset management planning and reporting, the Municipality ensures that infrastructure decisions reflect community priorities, promote transparency and sustainability, and support the long-term vision of a vibrant, inclusive, and environmentally responsible community.

*Figure 10 Municipal Values*


## 8.1 Stakeholder Engagement

The Municipality of Dysart et al conducted a community engagement survey to better understand resident perspectives on municipal services, infrastructure, and spending priorities. A total of 136 responses were received, with the majority identifying as full-time property owners (74%), followed by seasonal residents

(10%). Participation reflected the municipality's diverse geography, with 64% of respondents residing in rural areas, 24% in urban areas, and 11% in semi-urban areas. Overall, the survey represents participation from just under 2% of the total municipal population.

While this relatively low response rate limits the broader applicability of the results, the feedback still provides valuable insight into the perspectives of engaged residents. Respondents expressed the highest levels of satisfaction with bridges, outdoor spaces, parks, trails, emergency vehicles, and roads. Conversely, the areas of greatest dissatisfaction were community centres and sidewalks.

A staff workshop on levels of service was held to review and discuss the survey results. During the session, staff acknowledged the low participation rate and noted that it offers limited direction for Council decision-making. Discussion highlighted that dissatisfaction with sidewalks primarily stems from their limited availability, with Council historically hesitant to expand the network to preserve the municipality's "rural road" character. In contrast, dissatisfaction with community centres is partly linked to ongoing community interest in the development of a public swimming pool, a project recognized as desirable but currently cost-prohibitive.

The results of the community engagement survey, while limited, provide meaningful insight into resident priorities and perceptions of municipal service performance. These findings will help inform ongoing asset management planning by highlighting areas where service levels may not align with community expectations and by identifying assets that contribute most to resident satisfaction. As the Municipality continues to refine its Levels of Service framework, future engagement efforts will be important to gather broader input and ensure that infrastructure investment and maintenance decisions reflect the evolving needs and values of the community

# Current Levels of Service

The Municipality of Dysart et al has defined their current levels of service for each infrastructure category by breaking it down into 4 service attributes scope, quality, reliability and sustainability. Each of these attributes are defined as follows:

Scope – Is a description of the services being provided and the assets that are utilized to provide the services.

Quality - A measure of the overall performance and effectiveness of a service, reflecting how well it meets defined standards and community expectations.

Reliability - Ensuring that assets are well-maintained, enabling services to be delivered consistently with minimal interruptions.

Sustainability – The practice of meeting present needs without compromising the ability of future generations to meet their own, by prioritizing long-term planning, resource efficiency, and responsible decision-making. This is measured utilizing risk and financial parameters.

Based on an analysis of each asset category the current level of service is provided in each asset section.

## 8.2 Proposed Levels of Service

Through a comprehensive assessment the proposed levels of service for the Municipality have been developed. To ensure long-term sustainability and overall achievability the following were utilized / developed as part of the analysis.

Data-Driven Decision Making – Use data analytics to inform decision-making processes and identify areas for improvement.

Flexibility and Adaptability – Design the methodology to be flexible, allowing for adjustments based on evolving priorities.

Continuous Improvement – Establish a process for continuous review and improvement of the LOS methodology itself.

### 8.2.1 Scenarios

The scenarios that were used to analyse Dysart et al inventory were run for 100-years to ensure all the lifecycles were included at least once. They are also all based on the data available in the asset management system which outlines estimated useful life, condition as well as replacement costs.

#### Scenario 1: Current Capital Reinvestment Rate

Purpose: This scenario builds upon the current capital reinvestment, where the total amount of investment being made into capital improvements (like replacement or major rehabilitations) remains the same. In this scenario, the focus is on the impact that current investment levels have on the condition of the infrastructure over time.

Key Focus: The annual investment stays constant, and the condition of the infrastructure is evaluated based on that level of reinvestment.

Outcome: This helps to see if the current capital reinvestment levels are enough to maintain the infrastructure in a sustainable way over the long term.

#### Scenario 2: Current Condition Target

Purpose: This scenario aims to achieve a specific, target condition level for the infrastructure, where the goal is to maintain the current average condition of the infrastructure in each asset category. By fixing the condition, the model determines what the required annual investment would be to maintain that target.

Key Focus: This scenario focuses on achieving a targeted condition level (current condition) and determining how much investment would be necessary to maintain that condition.

Outcome: This scenario gives insights into how much investment would be needed to keep the infrastructure at its current condition service level.

#### Scenario 3: Current Lifecycle Activities

Purpose: This scenario examines the current state of the infrastructure based on existing lifecycle practices. It looks at how the infrastructure is currently being maintained, the condition it's in, and projects the amount of annual investment needed to be made in each asset category.

Key Focus: The condition of the infrastructure and the annual investment levels based on currently identified lifecycle activities.

Outcome: This scenario provides a baseline for understanding how the infrastructure is currently outlined to be maintained. It helps identify whether there are any gaps between outlined practices and financial needs.

### 8.2.2 Results

Scenario 1: Current Capital Reinvestment - this scenario utilizes the current capital reinvestment within each asset category. The current annual investment was held, and the condition was determined. The table below summarizes the results of each asset category and overall.

*Table 6 Scenario 1 Results Current Capital Reinvestment*

| Asset Category | Current Annual Capital Reinvestment | Scenario Average Condition Results |
|---|---|---|
| Roads | $1,649,948 | 54% |
| Roads Related | $8,000 | 7% |
| Bridges and Culverts | $86,000 | 13% |
| Storm Water | $27,000 | 39% |
| Facilities | $198,890 | 27% |
| Equipment | $236,000 | 42% |
| Fleet | $175,000 | 12% |
| Land Improvements | $37,000 | 12% |
| **Tax Funded Total** | **$2,417,838** | **39%** |
| Waste Water | $194,133 | 27% |
| **Overall** | **$2,611,971** | **37%** |

Scenario 2: Current Condition Target - this scenario utilizes a target of the average condition within each asset category. The condition value was held, and the required annual reinvestment was then determined. The table below summarizes the results of each asset category and overall.

*Table 7 Scenario 2 Results Current Condition Target*

| Asset Category | Current Average Condition | Annual Capital Reinvestment Results |
|---|---|---|
| Roads | 69% | $2,072,015 |
| Roads Related | 71% | $302,462 |
| Bridges and Culverts | 60% | $530,229 |
| Storm Water | 75% | $59,813 |
| Facilities | 63% | $715,707 |
| Equipment | 61% | $333,234 |
| Fleet | 75% | $1,098,665 |
| Land Improvements | 68% | $414,200 |
| **Tax Funded Total** | **67%** | **$5,526,325** |
| Waste Water | 69% | $1,021,227 |
| **Overall** | **68%** | **$6,547,552** |

Scenario 3: Current Lifecycle Activities - this scenario utilizes the current lifecycle activities outlined as current practice within each asset category. The condition and annual investment were then determined. The table below summarizes the results of each asset category and overall.

*Table 8 Scenario 3 Results Current Lifecycle Activities*

| Asset Category | Scenario Average Condition Results | Annual Capital Reinvestment Results |
|---|---|---|
| Roads | 78% | $2,325,255 |
| Roads Related | 80% | $330,972 |
| Bridges and Culverts | 78% | $568,534 |
| Storm Water | 77% | $69,403 |
| Facilities | 78% | $863,349 |
| Equipment | 76% | $419,193 |
| Fleet | 76% | $1,135,945 |
| Land Improvements | 76% | $432,732 |
| **Tax Funded Total** | **78%** | **$6,145,383** |
| Waste Water | 77% | $1,190,568 |
| **Overall** | **78%** | **$7,335,952** |

### 8.2.3 Proposed Level of Service Summary

The Municipality of Dysart et al is taking a strategic and proactive approach to ensuring the long-term sustainability of its municipal services. By focusing on the condition and performance of the assets that support these services, the Municipality aims to strike an effective balance between service quality, reliability, and financial sustainability. This practical approach helps prevent over-investment in infrastructure that may not be sustainable, while ensuring that community needs continue to be met.

Dysart et al has made significant progress in improving the accuracy and reliability of its asset management system, which serves as the foundation for informed decision-making related to capital planning, maintenance, and long-term financial forecasting. These improvements strengthen the Municipality's ability to prioritize investments and manage infrastructure responsibly.

In support of this direction, the Municipality has chosen to target maintaining the current condition of each asset category (Scenario 2). This target reflects a commitment to preserving existing service levels while managing costs effectively. By maintaining assets in their current condition, Dysart et al can ensure that the infrastructure supporting municipal services remains reliable, safe, and aligned with community expectations.

# 9 Financial Management

## 9.1 Financial Strategy

Each year, Dysart et al makes important investments in its infrastructure's maintenance, renewal, rehabilitation, and replacement to ensure assets remain in a state of good repair. However, spending needs typically exceed fiscal capacity. In fact, most municipalities continue to struggle with annual infrastructure deficits. Achieving full-funding for infrastructure programs will take many years and should be phased-in gradually to reduce burden on the community.

This financial strategy is designed for the Municipality's existing asset portfolio and is premised on two key inputs: the average annual capital requirements and the average annual funding typically available for capital purposes. The annual requirements are based on the replacement cost of assets and their serviceable life, and the target proposed level of service of maintaining an average condition of fair. This figure is calculated for each individual asset and aggregated to develop category-level values.

The annual funding available is determined by the amount of revenue that is allocated consistently to either that years capital program or to reserves for future capital purposes. For Dysart et al, the approved 2025 budget values were used to project available funding going forward.

Only reliable and predictable sources of funding are used to benchmark funds that may be available on any given year. The funding sources include:

- Revenue from taxation allocated to reserves for capital purposes
- Revenue from wastewater rates allocated to capital reserves
- The Canada Community Building Fund (CCBF)
- The Ontario Community Infrastructure Fund (OCIF)

Although provincial and federal infrastructure programs can change with evolving policy, CCBF and OCIF are considered as permanent and predictable. Through the development of proposed levels of service, the Municipality has established the long-term target of maintaining the current condition of the infrastructure.

### 9.1.1 Annual Capital Requirements

The annual requirements represent the amount the Municipality should allocate annually to each asset category to meet replacement needs as they arise, prevent infrastructure backlogs, and achieve long-term sustainability.

The table below outlines the total average annual capital requirements for existing assets in each asset category, based on the proposed levels of service selected to maintain the current average condition for all asset categories.

*Table 9 Annual Capital Requirements*

| Asset Category | Current Average Condition | Annual Capital Requirements |
|---|---|---|
| Roads | 69% | $2,072,015 |
| Roads Related | 71% | $302,462 |
| Bridges and Culverts | 60% | $530,229 |
| Storm Water | 75% | $59,813 |
| Facilities | 63% | $715,707 |
| Equipment | 61% | $333,234 |
| Fleet | 75% | $1,098,665 |
| Land Improvements | 68% | $414,200 |
| **Tax Funded Total** | **67%** | **$5,526,325** |
| Waste Water | 69% | $1,021,227 |
| **Overall** | **68%** | **$6,547,552** |

### 9.1.2 Current Funding Levels

The table below summarizes how current funding levels compare with funding required for each asset category. At existing levels, the Municipality is funding 40% of its annual capital requirements for all infrastructure analyzed. This creates a total annual funding deficit of $3.9 million.

*Table 10 Current Funding Levels*

| Asset Category | Annual Capital Requirements | Annual Funding Available | Annual Infrastructure Deficit |
|---|---|---|---|
| Roads | $2,072,015 | $1,649,948 | $422,067 |
| Roads Related | $302,462 | $8,000 | $294,462 |
| Bridges and Culverts | $530,229 | $86,000 | $444,229 |
| Storm Water | $59,813 | $27,000 | $32,813 |
| Facilities | $715,707 | $198,890 | $516,817 |
| Equipment | $333,234 | $236,000 | $97,234 |
| Fleet | $1,098,665 | $175,000 | $923,665 |
| Land Improvements | $414,200 | $37,000 | $377,200 |
| **Tax Funded Total** | **$5,526,325** | **$2,417,838** | **$3,108,487** |
| Waste Water | $1,021,227 | $194,133 | $827,094 |
| **Overall** | **$6,547,552** | **$2,611,971** | **$3,935,581** |

### 9.1.3 Closing the Gap

Eliminating annual infrastructure funding shortfalls is a difficult and long-term endeavour for municipalities. Considering the Municipality's current funding position, it will require many years to reach full funding for current assets.

This section outlines how Dysart et al can close the annual funding deficits using own-source revenue streams, i.e., property taxation and waste water rates. Funding 100% of annual capital requirements ensures that major capital events, including replacements, are completed as required. Under this scenario, projects are unlikely to be deferred to future years. This delivers the proposed level of service of maintaining current average condition.

## Full Funding Requirements Tax Revenues

In 2025, Dysart et al will have an annual tax revenue of $12,800,977. As illustrated in the following table, without consideration of any other sources of revenue or cost containment strategies, full funding would require a 24.3% tax increase over time.

While shorter phase-in periods may place too high a burden on taxpayers, a phase-in period beyond 20 years may see a continued deterioration of infrastructure, leading to larger backlogs. Several scenarios have been developed using phase-in periods ranging from five to twenty years; this is outlined in the table below.

*Table 11 Full Funding Requirements Tax Revenues*

| Phase In Period | 5 Years | 10 Years | 15 Years | 20 Years |
|---|---|---|---|---|
| % Increase in Annual Taxation | 4.4% | 2.2% | 1.5% | 1.1% |

## Full Funding Requirements Waste Water Rate Revenues

For 2025, Dysart et al's forecasted waste water rate revenues total $1,275,000. Annual capital requirements for waste water total $1,021,227, against available funding of $194,133. This creates a funding deficit of $827,094. To close this annual gap, the Municipality's waste water revenues would need to increase by 64.9%.

As with tax revenues, short phase-in periods may require excessive rate increases, whereas more protracted timeframes may lead to larger backlogs and more unpredictable spending on emergency repairs and replacements.

*Table 12 Full Funding Requirements Waste Water Rate Revenues*

| Phase In Period | 5 Years | 10 Years | 15 Years | 20 Years |
|---|---|---|---|---|
| % Increase in Annual Taxation | 10.5% | 5.1% | 3.4% | 2.5% |

## 9.2 Ten-Year Financial Plan

The Municipality is working with a clear long-term financial strategy aimed at reaching sustainable funding levels for its tax-funded assets, and waste water services in 10-years. The Municipality is still operating with an infrastructure deficit until full funding is reached. The table below shows a 10-year capital projection for each asset category. The proposed funding projection only incorporates capital increases; it does not include any increases necessary due to operational needs or any growth projections. Integration with the budget will help to ensure alignment between the asset management program forecasts and operations.

*Table 13 Ten-Year Financial Plan from Citywide*

| Category | Backlog | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Roads and Related | $1.3m | $53k | $1.9m | $1.6m | $1.6m | $1.6m | $1.6m | $2.3m | $1.8m | $1.5m | $1.5m |
| Bridges and Culverts | - | $488k | - | - | $3.3m | - | $2.5m | $3.1m | - | $3.8m | $1.3m |
| Equipment | $1.2m | $144k | $116k | $269k | $544k | $568k | $340k | $306k | $267k | $142k | $232k |
| Facilities | $9.4m | - | - | - | - | $45k | - | $4.7m | - | - | - |
| Fleet | $225k | $70k | $264k | $2.8m | $2.2m | $2.3m | $880k | $1.3m | $1.4m | $167k | $247k |
| Land Improvements | $424k | - | $505k | $144k | $2.7m | - | $159k | $341k | $44k | $1.1m | $7k |
| Storm Water | $361k | - | - | - | - | - | - | - | - | - | - |
| **Total** | **$12.9m** | **$755k** | **$2.8m** | **$4.8m** | **$10.3m** | **$4.6m** | **$5.4m** | **$12.0m** | **$3.5m** | **$6.7m** | **$3.3m** |
| Waste Water | $9.8m | $89k | $52k | $169k | - | - | - | - | - | - | - |
| **Total** | **$22.7m** | **$844k** | **$2.8m** | **$5.0m** | **$10.3m** | **$4.6m** | **$5.4m** | **$12.0m** | **$3.5m** | **$6.7m** | **$3.3m** |

*Table 14 Proposed Funding 10-year Projection*

| Funding | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 |
|---|---|---|---|---|---|---|---|---|---|---|
| Tax | $2.7m | $3.0m | $3.3m | $3.6m | $3.9m | $4.2m | $4.5m | $4.9m | $5.2m | $5.5m |
| Waste Water | $259k | $327k | $399k | $475k | $554k | $638k | $725k | $817k | $914k | $1.0m |

The tax funding projection includes the OCIF and CCBF value for 2025 and all values are in today's dollars; there is no inflation incorporated.

# 10 Recommendations

Review feasibility of adopting a full-funding scenario that achieve 100% of average annual requirements for the asset categories analyzed. This involves:

- Implementing an additional 2.2% annual tax increase over a 10-year phase-in period and allocating the full increase in revenue toward capital expenditures
- Implementing an additional 5.1% rate increase for waste water over a 10-year period
- Continued allocation of OCIF and CCBF funding as previously outlined

NOTE: Although difficult to capture, inflation costs, supply chain issues, and fluctuations in commodity prices will also influence capital expenditures.

Continuously review, refine, and calibrate lifecycle and risk profiles to better reflect actual practices and improve capital projections. In particular:

- the timing of various lifecycle events, the triggers for treatment, anticipated impacts of each treatment, and costs
- the various attributes used to estimate the likelihood and consequence of asset failures, and their respective weightings

Asset management planning is highly sensitive to replacement costs. Periodically update replacement costs based on recent projects, invoices, or estimates, as well as condition assessments, 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.

Like replacement costs, an asset's established serviceable life can have dramatic impacts on all projections and analyses, including condition, long-range forecasting, and financial recommendations. Periodically reviewing and updating these values to better reflect in-field performance and staff judgement is recommended.

Risk models can play an important role in identifying high-value assets, and developing an action plan which may include repair, rehabilitation, replacement, or further evaluation through condition assessments. As a result, project selection and the development of multi-year capital plans can become more strategic and objective. Initial models have been built into Citywide for all asset groups. As the data evolves and new attribute information is obtained, these models should also be refined and updated.

The annual review requirements in O.Reg. 588/17 state the Municipality must address their progress in implementing its asset management plan, any factors impeding the ability to implement its asset management plan as well as a strategy to address any of the identified factors.

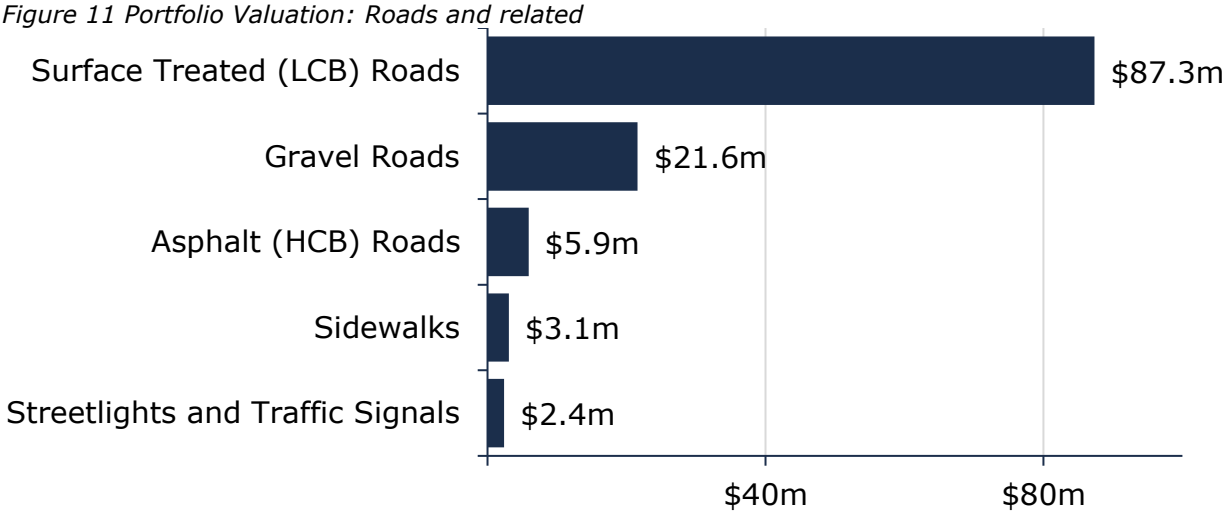
# Appendix A: Roads and Related

The road network is a critical component of the provision of safe and efficient transportation services. It includes all municipally owned and maintained roadways in addition to supporting roadside infrastructure including sidewalks and streetlights.

## Asset Inventory & Costs

The table below includes the quantity, total replacement cost and annual capital requirements of each asset segment in the Municipality's roads and related infrastructure inventory.

*Figure 11 Portfolio Valuation: Roads and related*

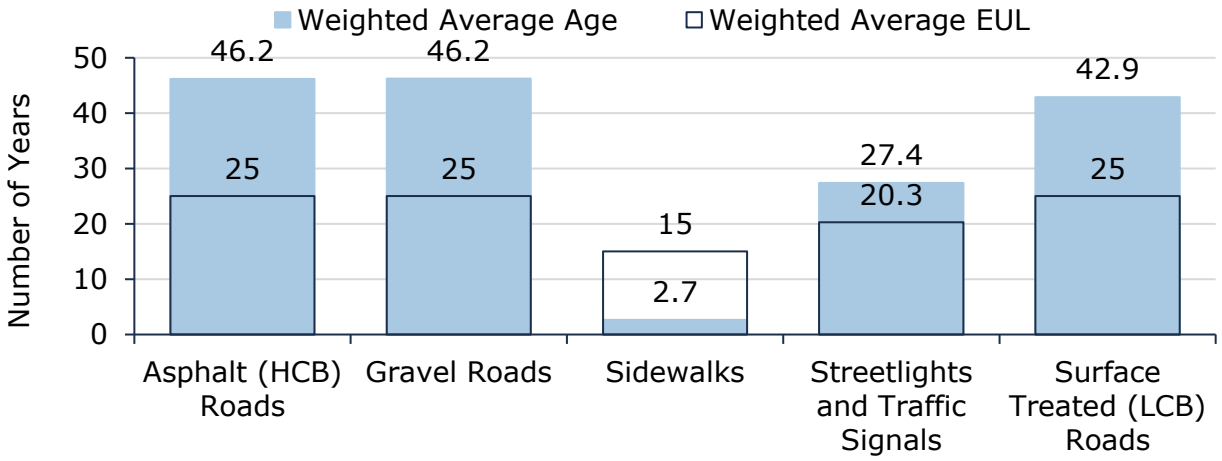



Each asset's replacement cost should be reviewed periodically to determine whether adjustments are needed to more accurate represent realistic capital requirements.

## Asset Condition & Age

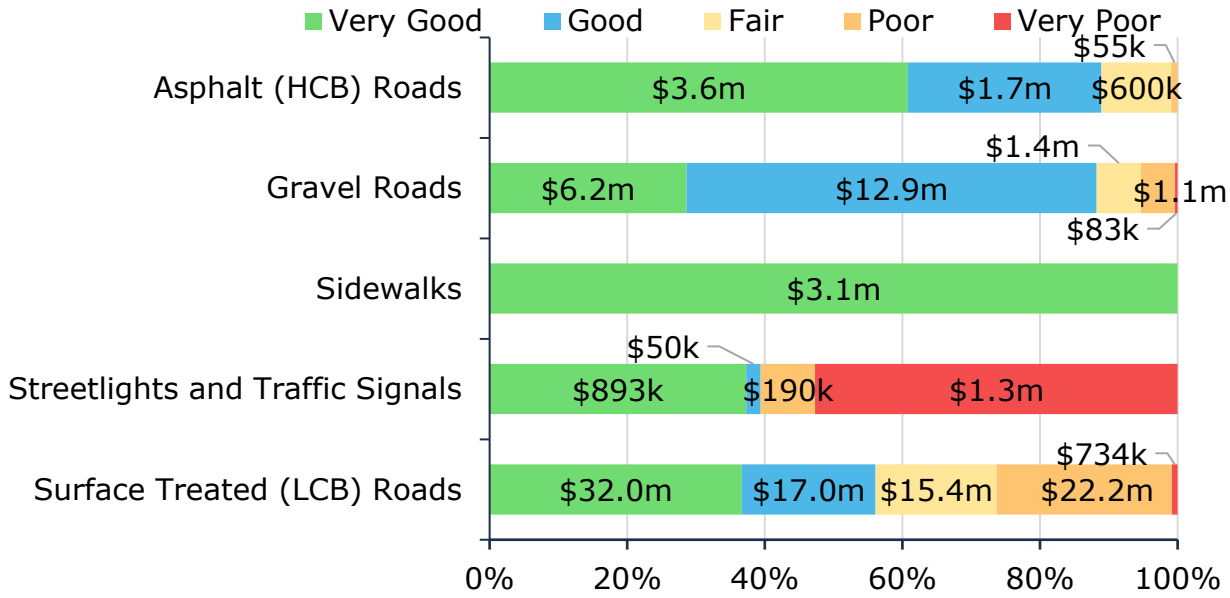
The graph below identifies the average age, and the estimated useful life for each asset segment. It is all weighted by replacement cost.

*Figure 12 Roads and Related 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 13 Roads and Related Condition Breakdown*




To ensure that Dysart et al's roads continue to provide an acceptable level of service, the Municipality 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 roads.

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 more confidently determine the remaining service life of assets and identify the most cost-effective approach to managing assets. The following describes the Municipality's current approach: Staff review the roads condition on an annual basis and utilizing specialized software scenarios are run to optimize the lifecycle activities

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

*Table 15 Condition Scale: Roads*

| Condition | Rating |
|---|---|
| Very Good | 80-100 |
| Good | 65-80 |
| Fair | 50-65 |
| Poor | 25-50 |
| Very Poor | 0-25 |

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

*Table 16 Roads and Related Lifecycle Strategy*

| Activity Type | Description of Current Strategy |
|---|---|
| Maintenance | Cold patching and pot hole repairs are completed on an as-needed basis when identified during road patrols. |
| Maintenance | Regular re-gravelling and dust control is completed on gravel roads in the municipality. |
| Rehabilitation | No formal rehabilitation activities are in place for HCB roads. For LCB roads single overlays and surface replacements. |
| Replacement | Roads replacements are in coordination with underground infrastructure replacement projects is also a large factor in determining when to replace a road. |

# Risk & Criticality

The following risk breakdown 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 2024 inventory data.

*Figure 14 Risk Breakdown: Roads and related*

| 1 - 4 | 5 - 7 | 8 - 9 | 10 - 14 | 15 - 25 |
|---|---|---|---|---|
| **Very Low** | **Low** | **Moderate** | **High** | **Very High** |
| $56,553,033 | $41,679,454 | $18,231,957 | $2,594,386 | $1,261,696 |
| (47%) | (35%) | (15%) | (2%) | (1%) |

This is a high-level model developed for the purposes of this AMP and Municipal staff should review and adjust the risk model 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 the roads and related are documented in Appendix K: Risk Rating Criteria.

The identification of critical assets allows the Municipality 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.

# Levels of Service

The framework created by the Municipality for levels of service is a valuable tool for assessing and managing the performance of their assets and/or services provided by their assets. Proposed levels of service for the Municipality have been developed through engagement with staff.

## Current Levels of Service

The following tables identify the Municipality's current level of service for the roads and related. These metrics include the technical and community level of service metrics that are required as part of O. Reg. 588/17 as well as any additional performance measures that the Municipality has selected.

*Table 17 Current Levels of Service: Roads and Related*

| Community LOS | | Service Attribute | Technical LOS | |
|---|---|---|---|---|
| Description, which may include maps, of the road network in the municipality and its level of connectivity | Refer to Appendix I: Level of Service Maps | Scope | Replacement Cost | $ 120,320,526 |
| | | | Lane-km of arterial roads (MMS classes 1 and 2) per land area (km/km2) | 0 |
| | | | Lane-km of collector roads (MMS classes 3 and 4) per land area (km/km2) | 145.5 lane km / 297.47 km2 = 0.489 |
| | | | Lane-km of local roads (MMS classes 5 and 6) per land area (km/km2) | 479.9 lane km / 297.47 km2 = 1.613 |
| Description or images that illustrate the different levels of road class pavement condition | Roads support comfortable passage of vehicles. Descriptions of roads in different condition states are provided in Table 15 Condition Scale: Roads | Quality | For paved roads in the Municipality, the average pavement condition index value | 69 |
| | | | For paved roads in the Municipality, the average ride comfort index value | 6.5 |
| | | | Number of centreline kilometres of paved roads with a condition index < 50 | 59 km |
| | | | Number of centreline kilometres of paved roads with a ride comfort index < 5 | 19.0 km |
| | | | For unpaved roads in the Municipality, the average surface condition | 75 |
| | | | For unpaved roads in the Municipality, the average ride comfort index value | 6.65 |
| | | | Number of centreline kilometres of unpaved roads with condition index < 50 | 6.3 |

| Community LOS | | Service Attribute | Technical LOS | |
|---|---|---|---|---|
| | | | Number of centreline kilometres of unpaved roads with ride comfort index < 5 | 18.1 |
| | | | Number of sidewalk deficiencies rated non-compliant in most recent sidewalk condition assessment. | 24 |
| | | | % of guiderail with a condition rating of Fair or better | Not available |
| | | | % of signs with a rating of Good | 66% |
| Reliability | Roads are available year-round. | Reliability | Centreline-kilometre-days of unplanned road closures | Not available |
| Sustainability | Services are meeting present needs without compromising the ability of future generations to meet their own, by prioritizing long-term planning, resource efficiency, and responsible decision-making. | Sustainability | % Very High Risk | 1.0% |
| | | | % of current capital reinvestment rate, to target capital reinvestment rate | 70% |
| | | | % funded of targeted reserves and reserve funds balance | 33.1% |
| | | | Annual Capital Reinvestment | $1,657,948 |

## Proposed Levels of Service

The scenarios that were used to analyse Dysart et al inventory were run for 100-years to ensure all the lifecycles were included. They are also all based on the data available in the asset management system which outlines estimated useful life and condition as well as replacement costs which all the results are based on.

Scenario 1: Current Capital Reinvestment Rate - this scenario utilizes the current capital reinvestment within each asset category. The current annual investment was held, and the condition was determined.

Scenario 2: Maintain Current Condition - this scenario utilizes a target of the current average condition of the infrastructure within each asset category. The condition value was held, and the annual investment was then determined.

Scenario 3: Current Lifecycle Activities - this scenario utilizes the current lifecycle activities outlined as current practice within each asset category. The condition and annual investment were then determined.

The table below outlines the results for each scenario for the Roads and related.

*Table 18 Proposed Levels of Service: Roads*

| Scenarios | Replacement Cost | Average Condition | Annual Capital Reinvestment |
|---|---|---|---|
| Scenario 1 - Current Capital Investment Rate | $114,851,270 | Fair (55%) | $1,649,948 |
| Scenario 2 - Maintain Current Condition | $114,851,270 | Good (69%) | $2,072,015 |
| Scenario 3 – Lifecycle | $114,851,270 | Good (78%) | $2,325,255 |

*Table 19 Proposed Levels of Service: Roads Related*

| Scenarios | Replacement Cost | Average Condition | Annual Capital Reinvestment |
|---|---|---|---|
| Scenario 1 - Current Capital Investment Rate | $5,469,256 | Very Poor (7%) | $8,000 |
| Scenario 2 - Maintain Current Condition | $5,469,256 | Good (71%) | $302,462 |
| Scenario 3 – Lifecycle | $5,469,256 | Very Good (80%) | $330,972 |

# Recommendations

- Moving forward with the scenario 2 of maintaining current average condition in the roads and related
- Continue to align the other related infrastructure of streetlights and sidewalks with the operational data available or currently under development

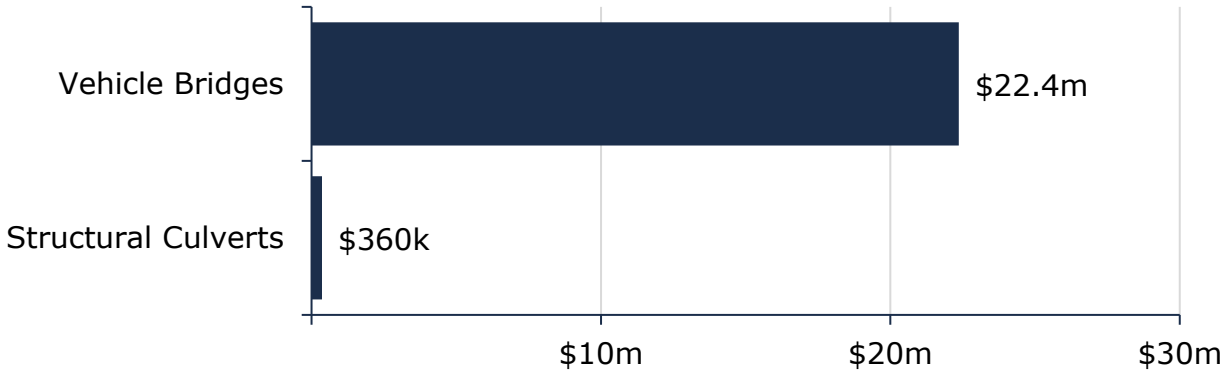
# Appendix B: Bridges and Culverts

Bridges and structural culverts are part of the transportation network allowing passage of vehicle and other traffic over water barriers. They serve the same users as roads and related assets (i.e., vehicle traffic, pedestrians and cyclists).

## Asset Inventory & Costs

The table below includes the quantity, total replacement cost and annual capital requirements of each asset segment in the Municipality's bridges and culverts inventory.

*Figure 15 Portfolio Valuation: Bridges and Culverts*

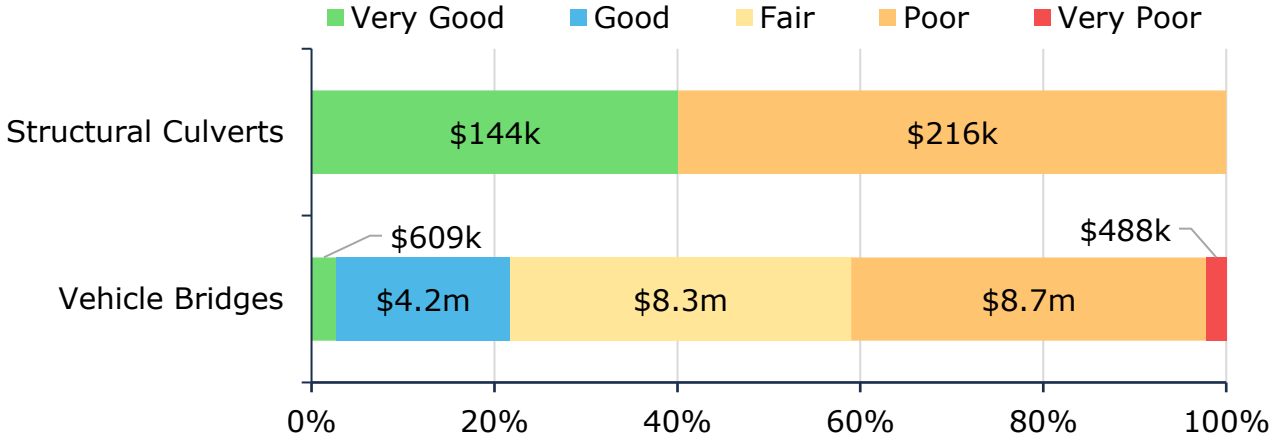



Each asset's replacement cost should be reviewed periodically to determine whether adjustments are needed to more accurate represent realistic capital requirements.

## Asset Condition & Age

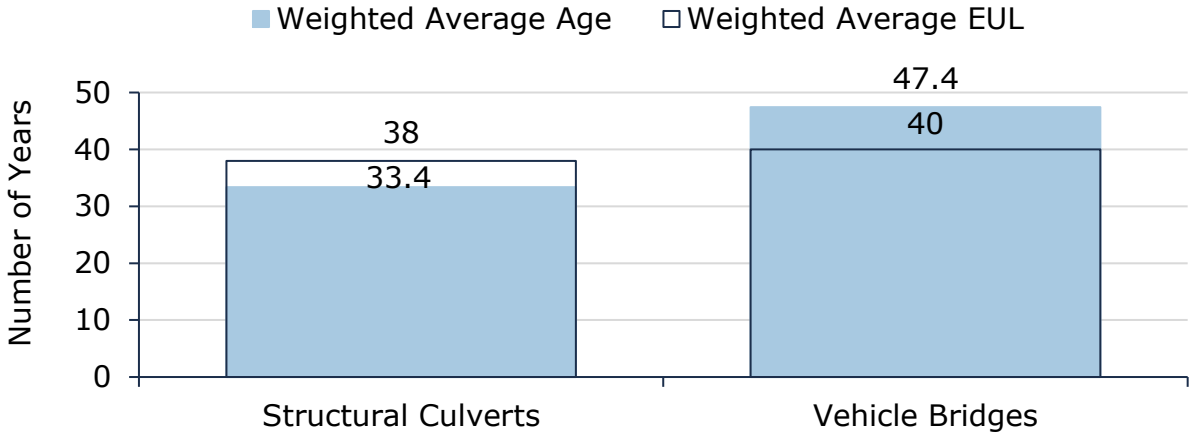
The average condition (%) is a weighted value based on replacement cost. The graph below visually illustrates the average condition for each asset segment on a very good to very poor.

*Figure 16 Asset Condition: Bridges and Culverts by Segment*



To ensure that the Municipality's bridges and culverts continue to provide an acceptable level of service, the Municipality 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 infrastructure.

*Figure 17 Estimated Useful Life vs. Asset Age: Bridges and Culverts*




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. Dysart et al's current approach is to assess all bridges and culverts every 2 years in accordance with the Ontario Structure Inspection Manual (OSIM).

The condition scale for bridges and culverts utilized is from 0 to 100 from Very Poor to Very Good.

*Figure 18 Bridges and Culverts Condition Images*

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

*Table 20 Bridges and Culverts Lifecycle Strategy*

| Activity Type | Description of Current Strategy |
|---|---|
| Maintenance | All maintenance and repair activities are driven by the results of inspections competed according to the Ontario Structure Inspection Manual (OSIM) |
| Replacement | Replacement occurs upon OSIM inspection recommendation and is subject to the availability of funding |

# Risk & Criticality

The following risk breakdown 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 2024 inventory data.

*Figure 19 Risk Breakdown: Bridges and Culverts*

| 1 - 4 | 5 - 7 | 8 - 9 | 10 - 14 | 15 - 25 |
|---|---|---|---|---|
| **Very Low** | **Low** | **Moderate** | **High** | **Very High** |
| $753,497 | $303,242 | $3,935,408 | $1,529,733 | $16,198,856 |
| (3%) | (1%) | (17%) | (7%) | (71%) |

This is a high-level model developed for the purposes of this AMP and Municipal staff should review and adjust the risk model 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 the bridges and culverts are documented in Appendix K: Risk Rating Criteria. The identification of critical assets allows the Municipality 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.

# Levels of Service

The framework created by the Municipality for levels of service is a valuable tool for assessing and managing the performance of their assets and/or services provided by their assets. Proposed levels of service for the Municipality have been developed through engagement with Municipal staff.

## Current Levels of Service

The following tables identify the Municipality's current level of service for the bridges and culverts. These metrics include the technical and community level of service metrics that are required as part of O. Reg. 588/17 as well as any additional performance measures that the Municipality has selected.

*Table 21 Current Levels of Service: Bridges and Culverts*

| Community LOS | | Service Attribute | Technical LOS | |
|---|---|---|---|---|
| Description of the traffic that is supported by municipal bridges (e.g., heavy transport vehicles, motor vehicles, emergency vehicles, pedestrians, cyclists). | Bridges and culverts serve a wide range of users, including passenger vehicles, emergency responders, pedestrians, cyclists, and heavy transport vehicles. | Scope | Replacement Cost | $22,720,736 |
| | | | Number of bridges in the municipal network | 17 |
| | | | Number of Structural Culverts in the municipal network | 2 |
| | | | % of bridges in the Municipality with loading or dimensional restrictions | 5.8% |
| Description or images of the condition of bridges & culverts and how this would affect use of the bridges & culverts | Refer to Figure 18 Bridges and Culverts Condition Images | Quality | Average bridge condition index value for bridges in the Municipality | 63 |
| | | | Average bridge condition index value for structural culverts in the Municipality | 55 |
| | | | % of bridges in the Municipality with loading or dimensional restrictions | 7% |
| | | | Number of structures with BCI < 40 | 2 |
| Bridges are available year-round. | | Reliability | Structure-days of unplanned bridge closures | Not Available |
| Services are meeting present needs without compromising the ability of future generations to meet their own, by prioritizing long-term planning, resource efficiency, and responsible decision-making. | | Sustainability | % Very High Risk | 71% |
| | | | % of current capital reinvestment rate, to target capital reinvestment rate | 16% |
| | | | % funded of targeted reserves and reserve funds balance | 65.3% |
| | | | Annual Capital Reinvestment | $ 86,000 |

## Proposed Levels of Service

The scenarios that were used to analyse Dysart et al inventory were run for 100-years to ensure all the lifecycles were included. They are also all based on the data available in the asset management system which outlines estimated useful life and condition as well as replacement costs which all the results are based on.

Scenario 1: Current Capital Reinvestment Rate - this scenario utilizes the current capital reinvestment within each asset category. The current annual investment was held, and the condition was determined.

Scenario 2: Maintain Current Condition - this scenario utilizes a target of the current average condition of the infrastructure within each asset category. The condition value was held, and the annual investment was then determined.

Scenario 3: Current Lifecycle Activities - this scenario utilizes the current lifecycle activities outlined as current practice within each asset category. The condition and annual investment were then determined.

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

*Table 22 Proposed Levels of Service: Bridges and Culverts*

| Scenarios | Replacement Cost | Average Condition | Annual Capital Reinvestment |
|---|---|---|---|
| Scenario 1 - Current Capital Investment Rate | $22,720,736 | Very Poor (13%) | $86,000 |
| Scenario 2 - Maintain Current Condition | $22,720,736 | Fair (60%) | $530,229 |
| Scenario 3 – Lifecycle | $22,720,736 | Good (78%) | $568,534 |

# Recommendations

Moving forward with the scenario 2 of maintaining current average condition for the bridges and culverts assets.

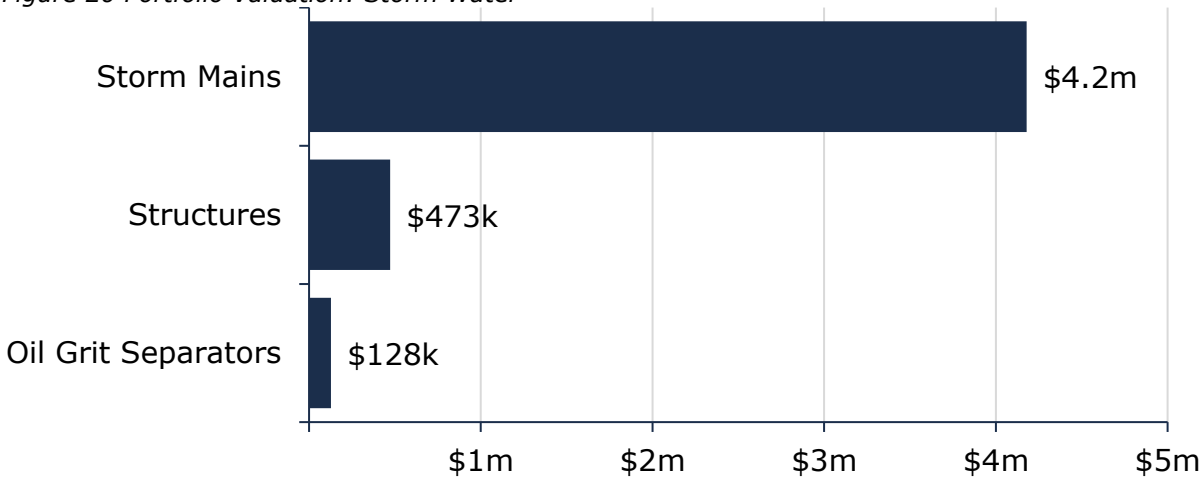
# Appendix C: Storm Water

The Municipality is responsible for owning and maintaining a stormwater network of 2.8 kms of storm sewer mains, catch basins and other supporting infrastructure.

## Asset Inventory & Costs

The table below includes the quantity, total replacement cost and annual capital requirements of each asset segment in the Municipality's stormwater network inventory.

*Figure 20 Portfolio Valuation: Storm Water*

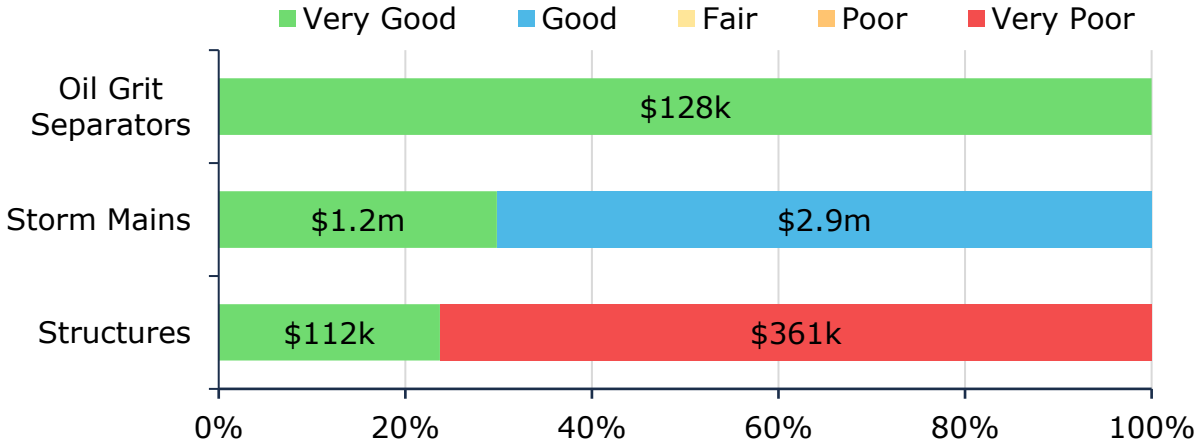



Each asset's replacement cost should be reviewed periodically to determine whether adjustments are needed to more accurate represent realistic capital requirements.

## Asset Condition & Age

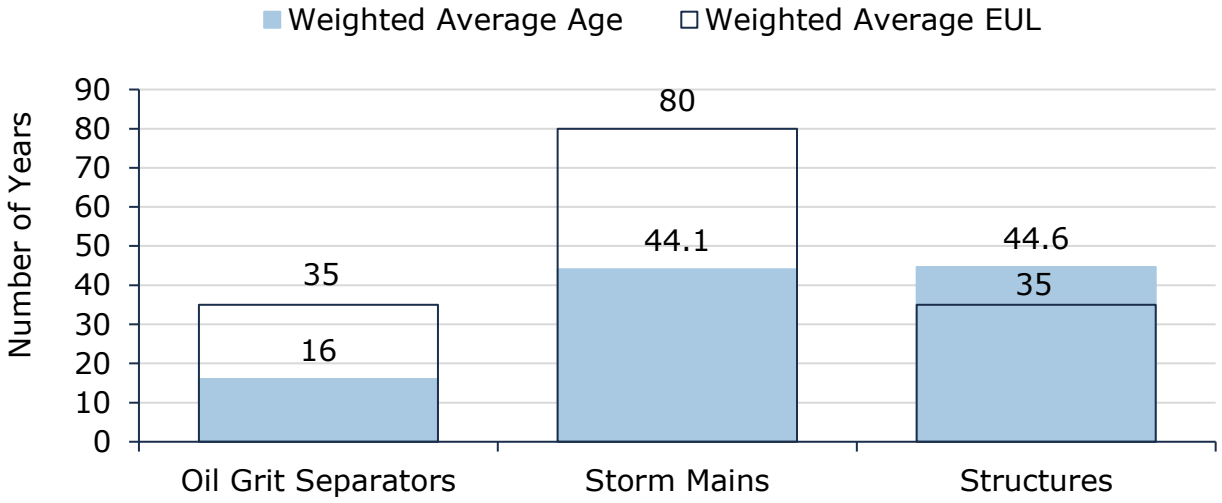
The average condition (%) is a weighted value based on replacement cost. The graph below visually illustrates the average condition for each asset segment on a very good to very poor.

*Figure 21 Asset Condition: Storm Water by Segment*



To ensure that the Municipality's stormwater network continues to provide an acceptable level of service, the Municipality 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 stormwater network.

*Figure 22 Estimated Useful Life vs. Asset Age: Storm Water*




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 more confidently determine the remaining service life of assets and identify the most cost-effective approach to managing assets. The following describes the Municipality's current approach:

- The municipality utilizes CCTV inspections to assess the condition of the mains

The following rating criteria is used to determine the current condition of storm water segments and forecast future capital requirements:

*Figure 23 Condition Scale: Storm Water*

| Condition | Rating |
|---|---|
| Very Good | 80-100 |
| Good | 60-80 |
| Fair | 40-60 |
| Poor | 20-40 |
| Very Poor | 0-20 |

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

*Table 23 Stormwater Network Lifecycle Strategy*

| Activity Type | Description of Current Strategy |
|---|---|
| Maintenance | Maintenance activities include storm main flushing and catch basin cleaning completed on an as-needed basis. |
| Rehabilitation/ Replacement | CCTV Inspections are used to prioritize replacements and coordination with other infrastructure |

# Risk & Criticality

The following risk breakdown 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 2024 inventory data.

*Figure 24 Risk Breakdown: Storm Water*

| 1 - 4 | 5 - 7 | 8 - 9 | 10 - 14 | 15 - 25 |
|---|---|---|---|---|
| **Very Low** | **Low** | **Moderate** | **High** | **Very High** |
| $240,219 | $360,500 | $1,245,369 | $2,933,807 | - |
| (5%) | (8%) | (26%) | (61%) | (0%) |

This is a high-level model developed for the purposes of this AMP and Municipal staff should review and adjust the risk model 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 the stormwater network are documented in Appendix K: Risk Rating Criteria. The identification of critical assets allows the Municipality 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.

# Levels of Service

The framework created by the Municipality for levels of service is a valuable tool for assessing and managing the performance of their assets and/or services provided by their assets. Proposed levels of service for the Municipality have been developed through engagement with Municipal staff.

## Current Levels of Service

The following table identify the Municipality's current level of service for the stormwater network. These metrics include the technical and community level of service metrics that are required as part of O. Reg. 588/17 as well as any additional performance measures that the Municipality has selected.

*Table 24 Current Levels of Service: Storm Water*

| Community LOS | | Service Attribute | Technical LOS | |
|---|---|---|---|---|
| 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 storm sewer system | Refer to Appendix H | Scope | Replacement Cost | $4,779,895 |
| | | | % of properties in municipality resilient to a 100-year storm | Not Available |
| | | | % of the municipal storm sewer management system resilient to a 5-year storm | Not Available |
| Stormwater is partially treated prior to discharge into waterbodies. Treatment can be coarse sediment removal by catch basins or coarse sediment, debris and floatable removal by oil grit separators. | | Quality | Number of blockages per year resulting in storm water backups | No known blockages |
| Description or images of the condition of storm water assets | Condition Description<br>• Very Good - Fit for the future<br>• Good - Adequate for now<br>• Fair - Requires attention<br>• Poor - Increased potential of affecting service<br>• Very Poor - Unfit for sustained service | | Average condition for the storm water system | 75 |
| Storm system conveys all flows without backups or surcharge | | Reliability | Number of surcharges per year | 0 |
| | | | % of system inspected with CCTV in past seven years | 100% |
| | | | % of oil grit separators inspected annually | 100% |
| | | | % of catch basins cleaned annually | 100% |

| Community LOS | | Service Attribute | Technical LOS | |
|---|---|---|---|---|
| Sustainability | Services are meeting present needs without compromising the ability of future generations to meet their own, by prioritizing long-term planning, resource efficiency, and responsible decision-making. | Sustainability | % Very High Risk | 0% |
| | | | % of current capital reinvestment rate, to target capital reinvestment rate | 45% |
| | | | % funded of targeted reserves and reserve funds balance | 47.8% |
| | | | Annual Capital Reinvestment | $ 27,000 |

## Proposed Levels of Service

The scenarios that were used to analyse Dysart et al inventory were run for 100-years to ensure all the lifecycles were included. They are also all based on the data available in the asset management system which outlines estimated useful life and condition as well as replacement costs which all the results are based on.

Scenario 1: Current Capital Reinvestment Rate - this scenario utilizes the current capital reinvestment within each asset category. The current annual investment was held, and the condition was determined.

Scenario 2: Maintain Current Condition - this scenario utilizes a target of the current average condition of the infrastructure within each asset category. The condition value was held, and the annual investment was then determined.

Scenario 3: Current Lifecycle Activities - this scenario utilizes the current lifecycle activities outlined as current practice within each asset category. The condition and annual investment were then determined.

The table below outlines the results for each scenario for the storm water assets.

*Table 25 Proposed Levels of Service: Storm Water*

| Scenarios | Replacement Cost | Average Condition | Annual Capital Reinvestment |
|---|---|---|---|
| Scenario 1 - Current Capital Investment Rate | $4,779,895 | Poor (39%) | $27,000 |
| Scenario 2 - Maintain Current Condition | $4,779,895 | Good (75%) | $59,813 |
| Scenario 3 – Lifecycle | $4,779,895 | Good (77%) | $69,403 |

# Recommendations

Moving forward with implementing the proposed levels of service of scenario 2 of maintaining the current average condition for the storm water infrastructure.

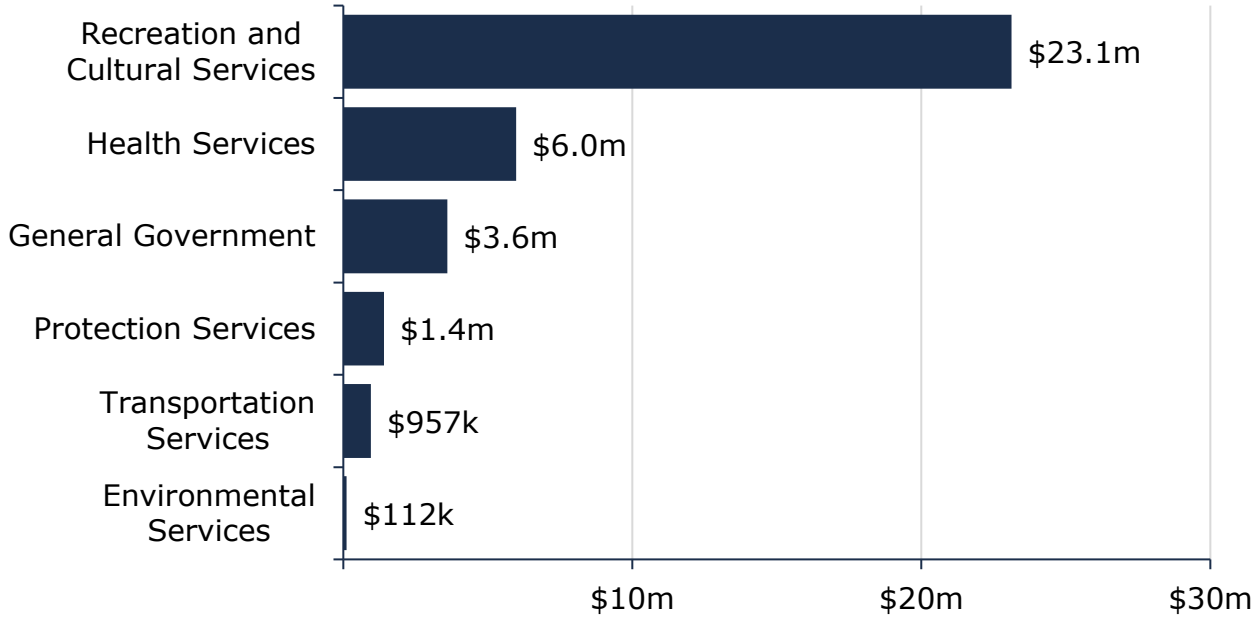
# Appendix D: Facilities

The Municipality of Dysart et al owns and The Municipality's facilities are used by a variety of users, including municipal staff, residents, visitors, and cultural organizations. The Municipality currently manages 42 facilities with a combined replacement cost of $35.2 million. Note: this section does not include waste water facilities they are in the waste water section.

## Asset Inventory & Costs

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

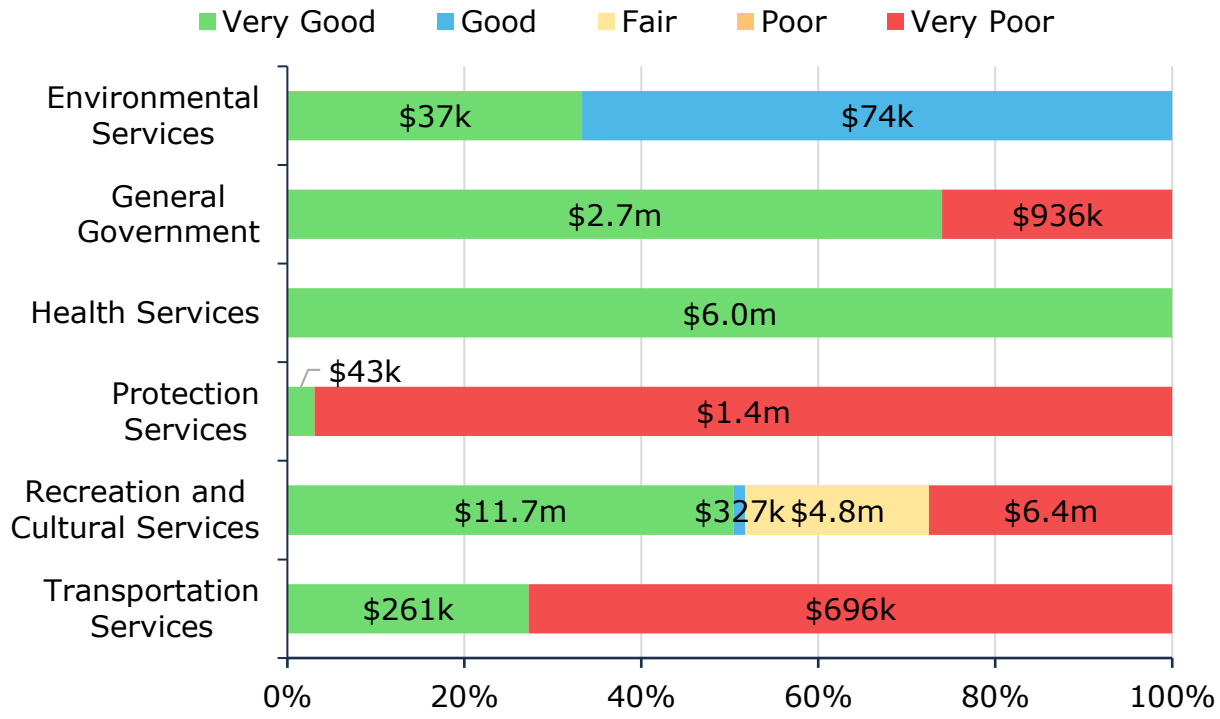
*Figure 25 Portfolio Valuation: Facilities*




## Asset Condition & Age

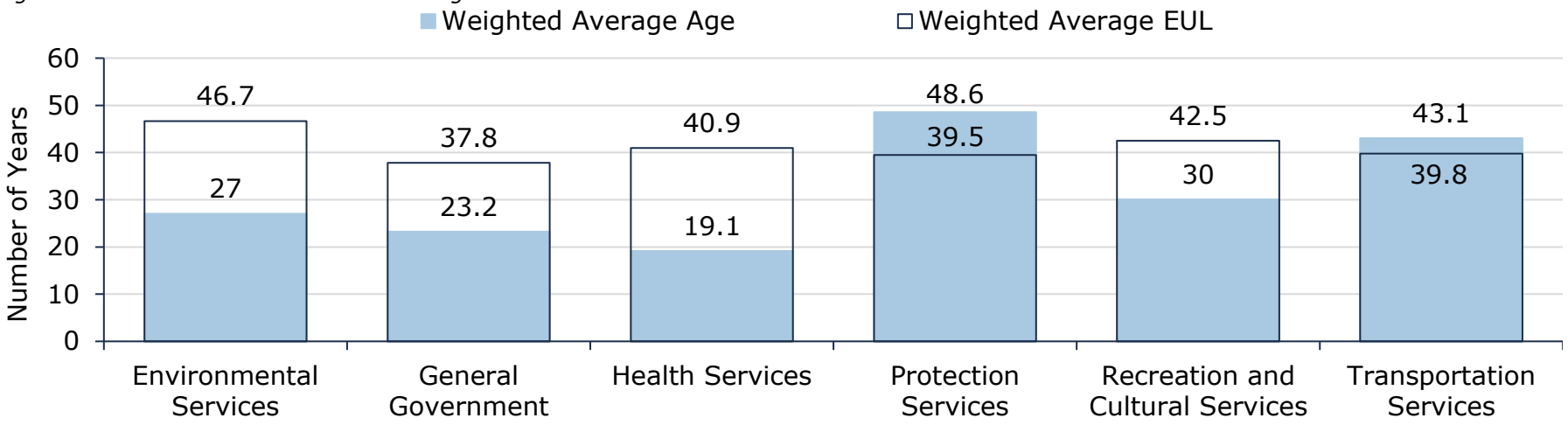
The average condition (%) is a weighted value based on replacement cost. The graph below visually illustrates the average condition for each asset segment on a very good to very poor.

*Figure 26 Asset Condition: Facilities by Service Area*




To ensure that the Municipality's facilities continue to provide an acceptable level of service, the Municipality 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 facilities.

*Figure 27 Estimated Useful Life vs. Asset Age: Facilities*




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 more confidently determine the remaining service life of assets and identify the most cost-effective approach to managing assets. There are no formal condition assessment programs in place for facilities. The following rating criteria is used to determine the current condition of facilities assets and forecast future capital requirements:

*Table 26 Condition Scale: Facilities*

| Condition | Rating |
|---|---|
| Very Good | 80-100 |
| Good | 60-80 |
| Fair | 40-60 |
| Poor | 20-40 |
| Very Poor | 0-20 |

# Asset Management Strategies

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

*Table 27 Facilities Lifecycle Strategy*

| Activity Type | Description of Current Strategy |
|---|---|
| Maintenance | Maintenance activities include regulatory inspection and maintenance by contractors annually on required systems. |
| Rehabilitation/ Replacement | Without the availability of up-to-date condition assessment information replacement activities are purely reactive in nature |

# Risk & Criticality

The following risk breakdown 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 2024 inventory data.

*Figure 28 Risk Breakdown: Facilities*

| 1 - 4 | 5 - 7 | 8 - 9 | 10 - 14 | 15 - 25 |
|---|---|---|---|---|
| **Very Low** | **Low** | **Moderate** | **High** | **Very High** |
| $20,880,151 (59%) | $207,885 (<1%) | $486,749 (1%) | $10,317,035 (29%) | $3,284,173 (9%) |

This is a high-level model developed for the purposes of this AMP and Municipal staff should review and adjust the risk model 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 the stormwater network are documented in Appendix K: Risk Rating Criteria. The identification of critical assets allows the Municipality 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.

# Levels of Service

The framework created by the Municipality for levels of service is a valuable tool for assessing and managing the performance of their assets and/or services provided by their assets. Proposed levels of service for the Municipality have been developed through engagement with Municipal staff.

## Current Levels of Service

The following tables identify the Municipality's current level of service for facilities. These metrics include the technical and community level of service metrics that are required as part of O. Reg. 588/17 as well as any additional performance measures that the Municipality has selected.

*Table 28 Current Levels of Service: Facilities*

| Community LOS | | Service Attribute | Technical LOS | |
|---|---|---|---|---|
| | | | Replacement Cost | $ 35,175,993 |
| | | | % of facilities that are accessible | 100% |
| High-level description of facilities and their intended use | The Municipality's facilities are used by a variety of users, including municipal staff, residents, visitors, and cultural organizations. | Scope | Square footage of facilities per service type | General Government Services: 6,119<br>Environmental Services: 625<br>Health Services: 20,334<br>Protection Services: 6,000<br>Recreation & Culture Services: 34,146<br>Transportation Services: 14,256 |
| The Municipality owns facilities that are accessible, safe, and meet a variety of service needs for the community | | | Average condition of facilities | Good (63%) |
| Description or images of the condition of facility assets | Condition Description<br>• Very Good - Fit for the future<br>• Good - Adequate for now<br>• Fair - Requires attention<br>• Poor - Increased potential of affecting service<br>• Very Poor - Unfit for sustained service | Quality | % of facilities with a condition rating of poor or below | 27% |
| Facilities are maintained and available for use when needed | | Reliability | Dollar value of unplanned maintenance activities | $42,218 |
| | | | Service days lost due to facility closures | 0 |

| Community LOS | Service Attribute | Technical LOS | |
|---|---|---|---|
| Services are meeting present needs without compromising the ability of future generations to meet their own, by prioritizing long-term planning, resource efficiency, and responsible decision-making. | Sustainability | % Very High Risk | 9.3% |
| | | % of current capital reinvestment rate, to target capital reinvestment rate | 27.7% |
| | | % funded of targeted reserves and reserve funds balance | 52.8% |
| | | Annual Capital Reinvestment | $ 198,890 |

## Proposed Levels of Service

The scenarios that were used to analyse Dysart et al inventory were run for 100-years to ensure all the lifecycles were included. They are also all based on the data available in the asset management system which outlines estimated useful life and condition as well as replacement costs which all the results are based on.

Scenario 1: Current Capital Reinvestment Rate - this scenario utilizes the current capital reinvestment within each asset category. The current annual investment was held, and the condition was determined.

Scenario 2: Maintain Current Condition - this scenario utilizes a target of the current average condition of the infrastructure within each asset category. The condition value was held, and the annual investment was then determined.

Scenario 3: Current Lifecycle Activities - this scenario utilizes the current lifecycle activities outlined as current practice within each asset category. The condition and annual investment were then determined.

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

*Table 29 Proposed Levels of Service: Facilities*

| Scenarios | Replacement Cost | Average Condition | Annual Capital Reinvestment |
|---|---|---|---|
| Scenario 1 - Current Capital Investment Rate | $35,175,993 | Poor (27%) | $198,890 |
| Scenario 2 - Maintain Current Condition | $35,175,993 | Good (63%) | $715,707 |
| Scenario 3 – Lifecycle | $35,175,993 | Good (78%) | $863,349 |

# Recommendations

- Moving forward with the scenario 2 of maintaining current average condition for facilities.
- A field assessment of the facilities will help to better reflect the current conditions of the system.

# Appendix E: Fleet

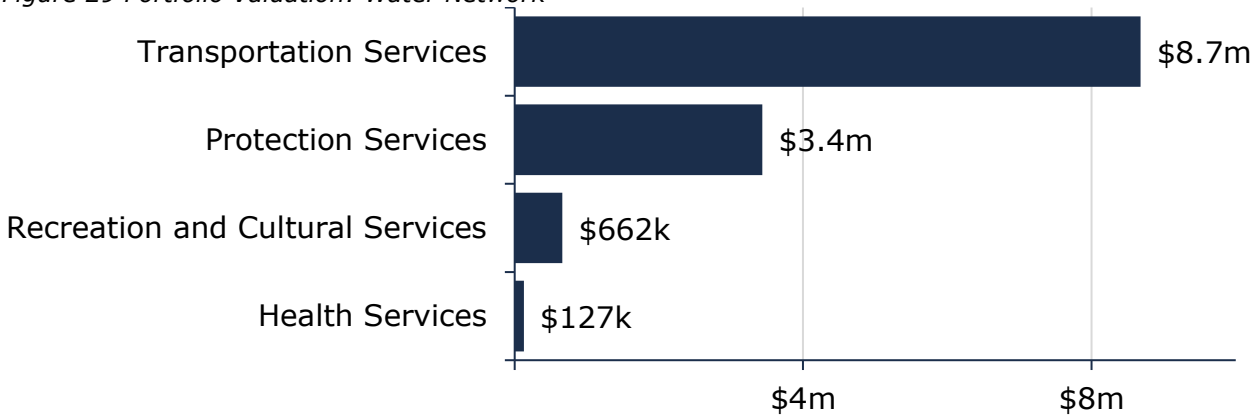
The fleet allows staff to efficiently deliver municipal services and personnel. The Municipal fleet is used to support several service areas, including:

- Snowplows for winter control activities
- fire rescue fleet to provide emergency services
- pick-up trucks to support the maintenance of the transportation network and address service requests for recreation

## Asset Inventory & Costs

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

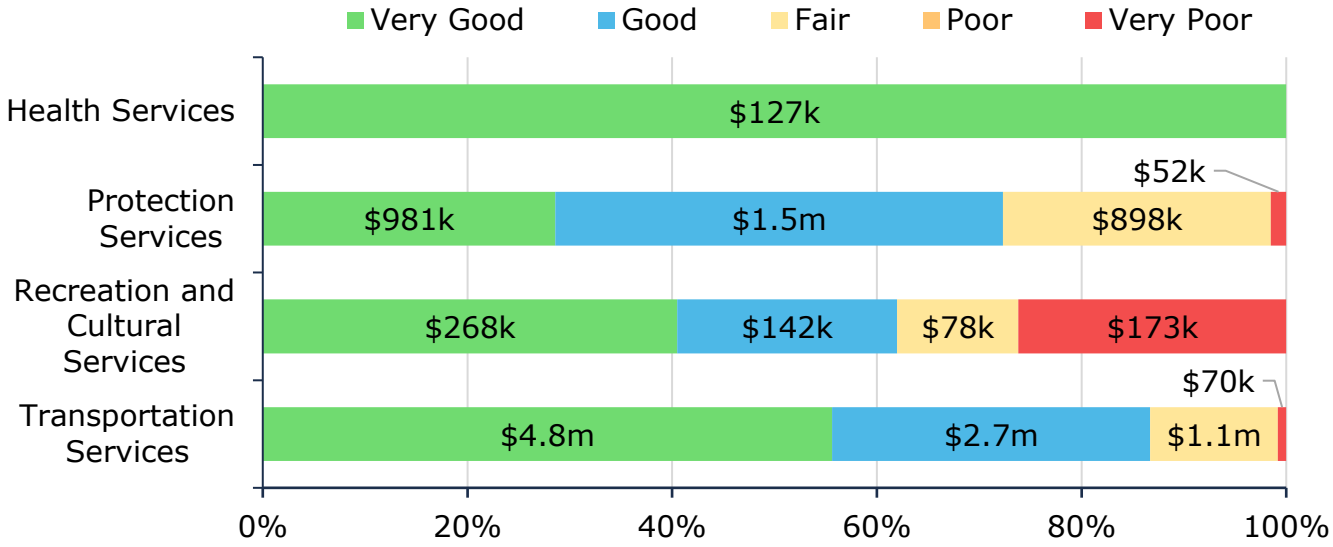
*Figure 29 Portfolio Valuation: Water Network*




## Asset Condition & Age

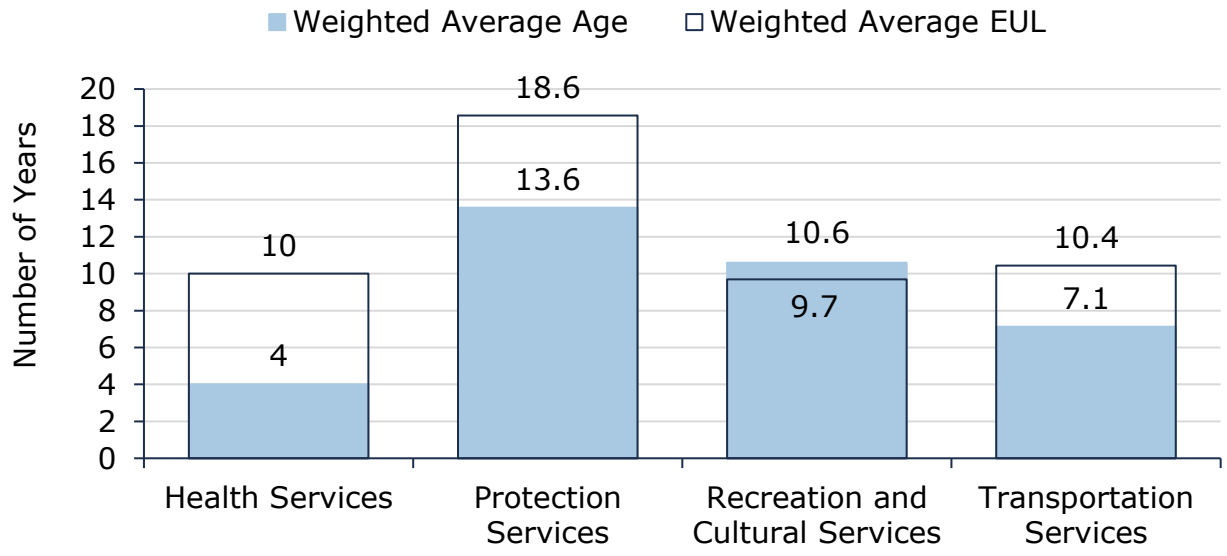
The average condition (%) is a weighted value based on replacement cost. The graph below visually illustrates the average condition for each asset segment on a very good to very poor scale.

*Figure 30 Asset Condition: Fleet by Segment*




To ensure that the Municipality's fleet continue to provide an acceptable level of service, the Municipality 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 fleet.

*Figure 31 Estimated Useful Life vs. Asset Age: Fleet*




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 more confidently determine the remaining service life of assets and identify the most cost-effective approach to managing assets. There are no formal condition assessment programs in place for the fleet assets.

The following rating criteria is used to determine the current condition of fleet assets and forecast future capital requirements:

*Figure 32 Conditon Scale: Fleet*

| Condition | Rating |
|---|---|
| Very Good | 80-100 |
| Good | 60-80 |
| Fair | 40-60 |
| Poor | 20-40 |
| Very Poor | 0-20 |

# Asset Management Strategies

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

*Table 30 Fleet Lifecycle Strategy*

| Activity Type | Description of Current Strategy |
|---|---|
| Maintenance | Vehicles are maintained by an internal mechanic based on mileage. |
| Rehabilitation/ Replacement | Based on life expectancy, maintenance cost and condition. |

# Risk & Criticality

The following risk breakdown 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 2024 inventory data.

*Figure 33 Risk Breakdown: Fleet*

| 1 - 4 Very Low | 5 - 7 Low | 8 - 9 Moderate | 10 - 14 High | 15 - 25 Very High |
|---|---|---|---|---|
| $5,694,562 (44%) | $1,427,421 (11%) | $670,589 (5%) | $4,253,546 (33%) | $853,319 (7%) |

This is a high-level model developed for the purposes of this AMP and Municipal staff should review and adjust the risk model 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 the stormwater network are documented in Appendix K: Risk Rating Criteria. The identification of critical assets allows the Municipality 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.

# Levels of Service

The framework created by the Municipality for levels of service is a valuable tool for assessing and managing the performance of their assets and/or services provided by their assets. Proposed levels of service for the Municipality have been developed through engagement with Municipal staff.

## Current Levels of Service

The following tables identify the Municipality's current level of service for the stormwater network. These metrics include the technical and community level of service metrics that are required as part of O. Reg. 588/17 as well as any additional performance measures that the Municipality has selected.

*Table 31 Current Levels of Service: Fleet*

| Community LOS | | Service Attribute | Technical LOS | |
|---|---|---|---|---|
| Description of services provided by municipally owned fleet | Fleet assets are used by the Municipality's staff to support delivery of a variety of services: transportation, recreation and culture, fire, and health. | Scope | Replacement Cost | $ 12,899,437 |
| | | | Total Number of Fleet | 64 |
| | | | Number of light duty vehicles | 17 |
| | | | Number of medium duty vehicles | 4 |
| | | | Number of heavy-duty vehicles | 7 |
| | | | Number of off-road or snow vehicles | 21 |
| | | | Number of trailers | 5 |
| | | | Number of fire fleet | 10 |
| Description or images of the condition of fleet assets | Condition Description<br>• Very Good - Fit for the future<br>• Good - Adequate for now<br>• Fair - Requires attention<br>• Poor - Increased potential of affecting service<br>• Very Poor - Unfit for sustained service | Quality | Average condition of fleet | Good (75%) |
| | | | % of fleet with condition rating of poor or below | 2% |
| Fleet vehicles function as expected. | | Reliability | Service days lost due to unplanned repairs | 220 |
| Services are meeting present needs without compromising the ability of future generations to meet their own, by prioritizing long-term planning, resource efficiency, and responsible decision-making. | | Sustainability | % Very High Risk | 6.6% |
| | | | % of current capital reinvestment rate, to target capital reinvestment rate | 16% |
| | | | % funded of targeted reserves and reserve funds balance | 7.1% |
| | | | Annual Capital Reinvestment | $ 175,000 |

## Proposed Levels of Service

The scenarios that were used to analyse Dysart et al inventory were run for 100-years to ensure all the lifecycles were included. They are also all based on the data available in the asset management system which outlines estimated useful life and condition as well as replacement costs which all the results are based on.

Scenario 1: Current Capital Reinvestment Rate - this scenario utilizes the current capital reinvestment within each asset category. The current annual investment was held, and the condition was determined.

Scenario 2: Maintain Current Condition - this scenario utilizes a target of the current average condition of the infrastructure within each asset category. The condition value was held, and the annual investment was then determined.

Scenario 3: Current Lifecycle Activities - this scenario utilizes the current lifecycle activities outlined as current practice within each asset category. The condition and annual investment were then determined.

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

*Table 32 Proposed Levels of Service: Fleet*

| Scenarios | Replacement Cost | Average Condition | Annual Capital Reinvestment |
|---|---|---|---|
| Scenario 1 - Current Capital Investment Rate | $12,899,437 | Very Poor (12%) | $175,000 |
| Scenario 2 - Maintain Current Condition | $12,899,437 | Good (75%) | $1,098,665 |
| Scenario 3 – Lifecycle | $12,899,437 | Good (76%) | $1,135,945 |

# Recommendations

Moving forward with the scenario 2 of maintaining current average condition for the Municipality's fleet.

# Appendix F: Equipment

To maintain the high quality of public infrastructure and support the delivery of core services, Municipal staff own and employ various types of equipment. This includes:

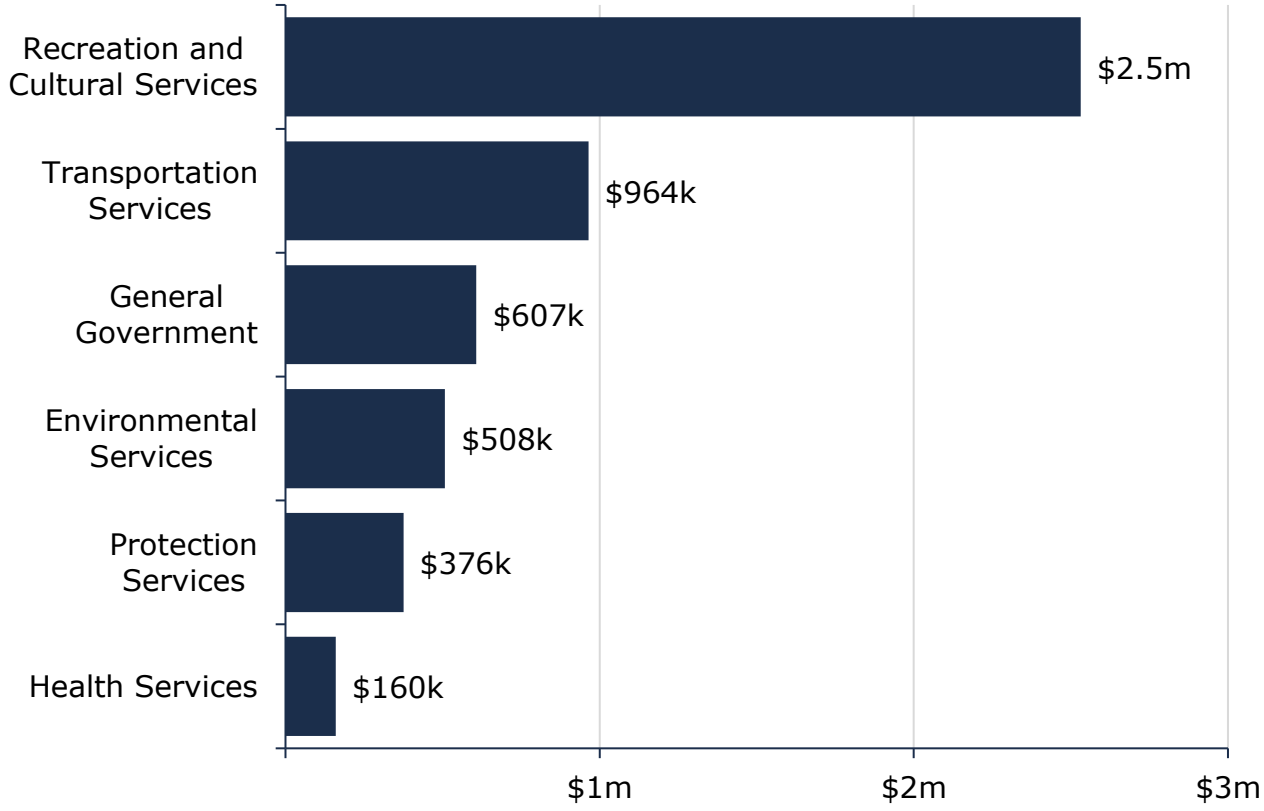
- General government equipment including computers and office equipment
- Recreational equipment
- Fire equipment to support the delivery of emergency services
- Plows to provide winter control activities

Keeping equipment in an adequate state of repair is important to maintain a high level of service.

## Asset Inventory & Costs

The municipality's equipment assets have a total replacement cost of $5.1 million.

*Figure 34 Portfolio Overview: Equipment*

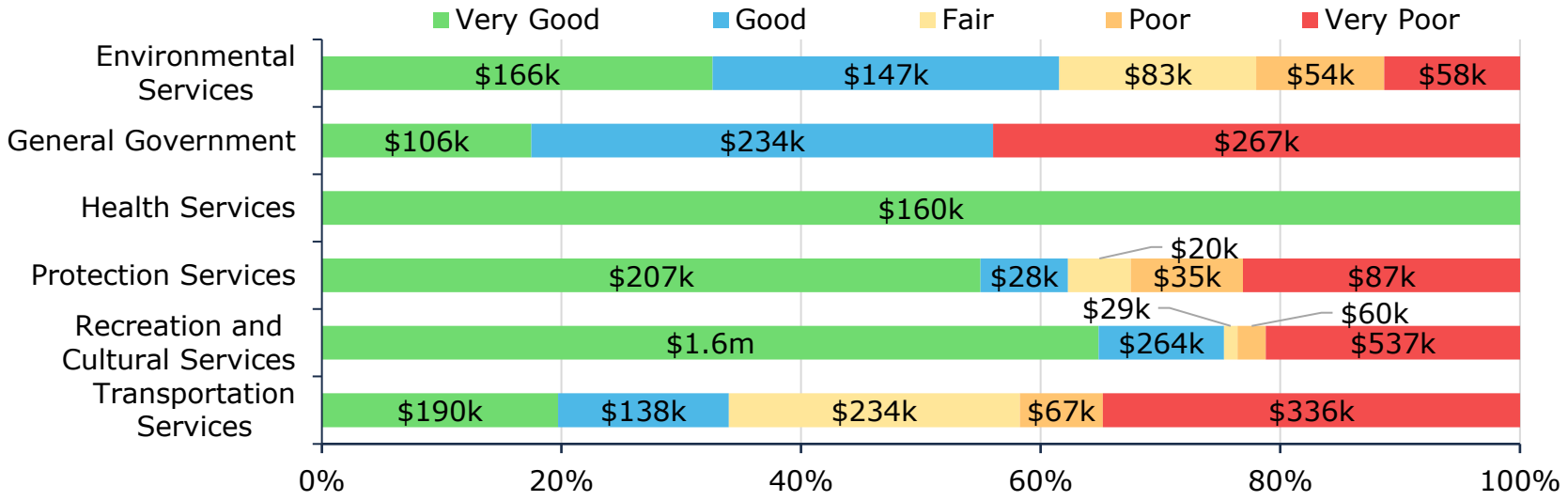



Each asset's replacement cost should be reviewed periodically to determine whether adjustments are needed to more accurate represent realistic capital requirements.

## Asset Condition & Age

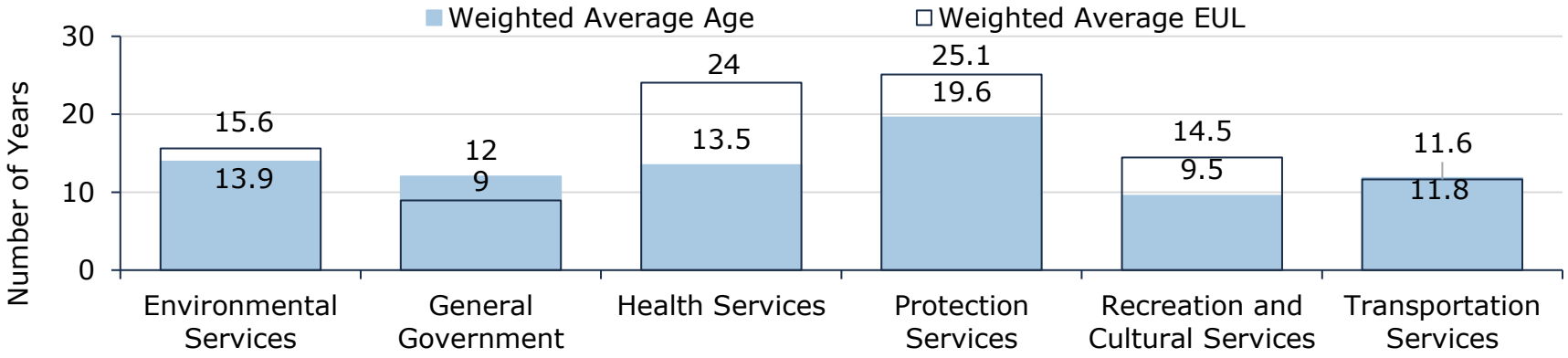
The average condition (%) is a weighted value based on replacement cost. The graph below visually illustrates the average condition for each asset segment on a very good to very poor.

*Figure 35 Asset Condition: Equipment by Segment*




To ensure that the Municipality's machinery and equipment continue to provide an acceptable level of service, the Municipality 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 machinery and equipment. The graph below displays the average weighted age in comparison to the weighted average estimated useful life for each asset segment.

*Figure 36 Estimated Useful Life vs. Asset Age: Equipment*



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 more confidently determine the remaining service life of assets and identify the most cost-effective approach to managing assets. There are no formal condition assessment programs in place for the equipment.

The following rating criteria is used to determine the current condition of equipment assets and forecast future capital requirements:

*Figure 37 Condition Scale: Equipment*

| Condition | Rating |
|---|---|
| Very Good | 80-100 |
| Good | 60-80 |
| Fair | 40-60 |
| Poor | 20-40 |
| Very Poor | 0-20 |

# Asset Management Strategies

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

*Table 33 Equipment Lifecycle Strategy*

| Activity Type | Description of Current Strategy |
|---|---|
| Maintenance | Equipment is maintained as needed; IT takes care of computer systems |
| Rehabilitation/ Replacement | Based on life expectancy and staff inspection when available |

# Risk & Criticality

The following risk breakdown 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 2024 inventory data.

*Figure 38 Risk Breakdown: Equipment*

| 1 - 4 Very Low | 5 - 7 Low | 8 - 9 Moderate | 10 - 14 High | 15 - 25 Very High |
|---|---|---|---|---|
| $2,972,734 (58%) | $995,934 (19%) | $126,724 (2%) | $711,359 (14%) | $340,308 (7%) |

This is a high-level model developed for the purposes of this AMP and Municipal staff should review and adjust the risk model 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 the equipment assets are documented in the Appendix K: Risk Rating Criteria. The identification of critical assets allows the Municipality 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.

# Levels of Service

The framework created by the Municipality for levels of service is a valuable tool for assessing and managing the performance of their assets and/or services provided by their assets. Proposed levels of service for the Municipality have been developed through engagement with Municipal staff.

## Current Levels of Service

The following tables identify the Municipality's current level of service for the equipment network. These metrics include the technical and community level of service metrics that are required as part of O. Reg. 588/17 as well as any additional performance measures that the Municipality has selected.

*Table 34 Current Levels of Service: Equipment*

| Community LOS | | Service Attribute | Technical LOS | |
|---|---|---|---|---|
| Description of services provided by municipally-owned equipment | Equipment is used by the Municipality's staff in all departments to support their work. | Scope | Replacement Cost | $ 5,147,059 |
| | | | Number of Assets | 148 |
| Description or images of the condition of equipment assets | Condition Description<br>• Very Good - Fit for the future<br>• Good - Adequate for now<br>• Fair - Requires attention<br>• Poor - Increased potential of affecting service<br>• Very Poor - Unfit for sustained service | Quality | Average condition of equipment | Good (61%) |
| | | | % of equipment with condition rating of poor or below | 29% |
| Equipment functions as expected. | | Reliability | Service days lost due to equipment breakdowns | 79 |
| Services are meeting present needs without compromising the ability of future generations to meet their own, by prioritizing long-term planning, resource efficiency, and responsible decision-making. | | Sustainability | % Very High Risk | 6.6% |
| | | | % of current capital reinvestment rate, to target capital reinvestment rate | 70.8% |
| | | | % funded of targeted reserves and reserve funds balance | 19.3% |
| | | | Annual Capital Reinvestment | $ 236,000 |

## Proposed Levels of Service

The scenarios that were used to analyse Dysart et al inventory were run for 100-years to ensure all the lifecycles were included. They are also all based on the data available in the asset management system which outlines estimated useful life and condition as well as replacement costs which all the results are based on.

Scenario 1: Current Capital Reinvestment Rate - this scenario utilizes the current capital reinvestment within each asset category. The current annual investment was held, and the condition was determined.

Scenario 2: Maintain Current Condition - this scenario utilizes a target of the current average condition of the infrastructure within each asset category. The condition value was held, and the annual investment was then determined.

Scenario 3: Current Lifecycle Activities - this scenario utilizes the current lifecycle activities outlined as current practice within each asset category. The condition and annual investment were then determined.

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

*Table 35 Proposed Levels of Service: Equipment*

| Scenarios | Replacement Cost | Average Condition | Annual Capital Reinvestment |
|---|---|---|---|
| Scenario 1 - Current Capital Investment Rate | $5,147,059 | Fair (42%) | $236,000 |
| Scenario 2 - Maintain Current Condition | $5,147,059 | Good (61%) | $333,234 |
| Scenario 3 – Lifecycle | $5,147,059 | Good (76%) | $419,193 |

# Recommendations

Moving forward with the scenario 2 of maintaining current average condition for the Municipality’s equipment assets.

# Appendix G: Land Improvements

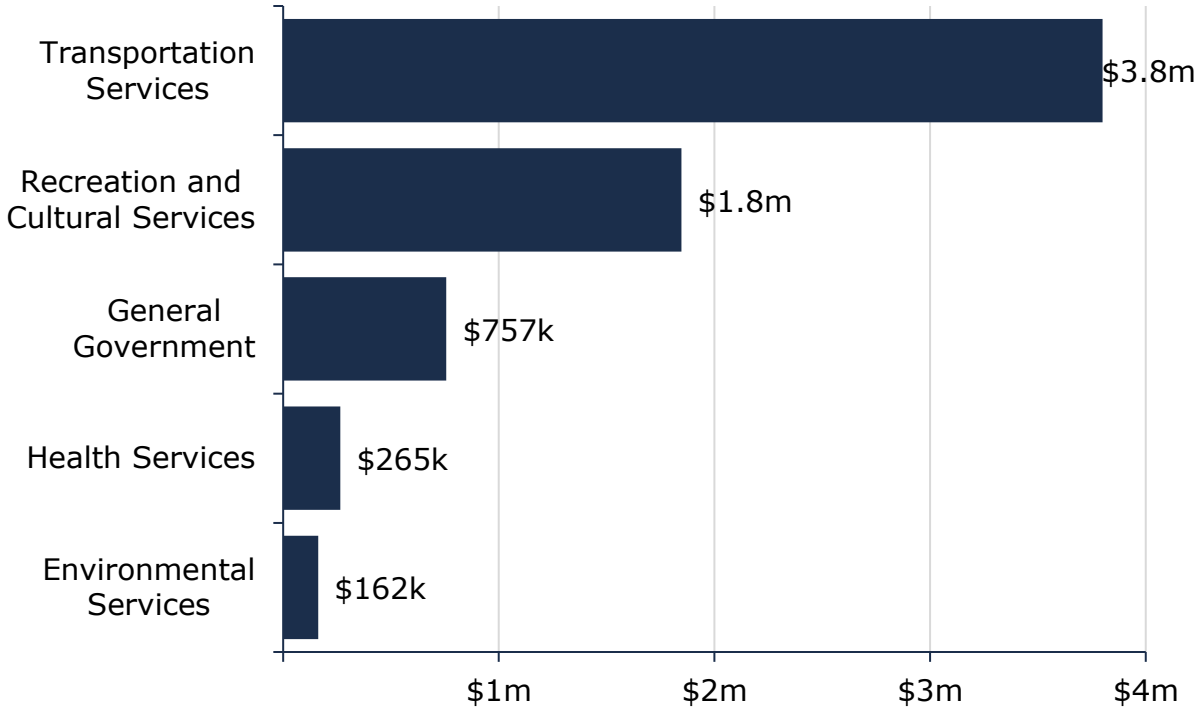
The Municipality of Dysart et al owns a small number of assets that are considered land improvements. This category includes:

- Parking lots for municipal facilities
- Fencing and signage
- Miscellaneous landscaping and other assets

## Asset Inventory & Costs

The municipality's land improvement assets have a replacement cost of $6.8 million.

*Figure 39 Portfolio Overview: Land Improvements*

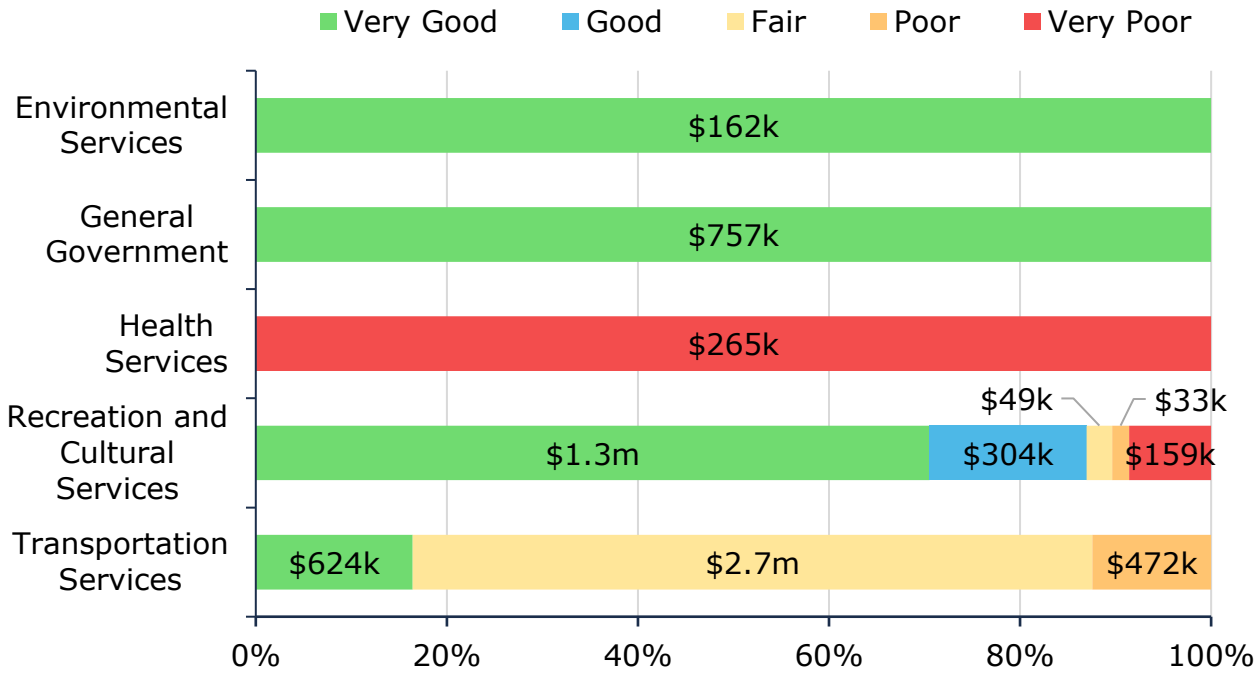



Each asset's replacement cost should be reviewed periodically to determine whether adjustments are needed to more accurate represent realistic capital requirements.

## Asset Condition & Age

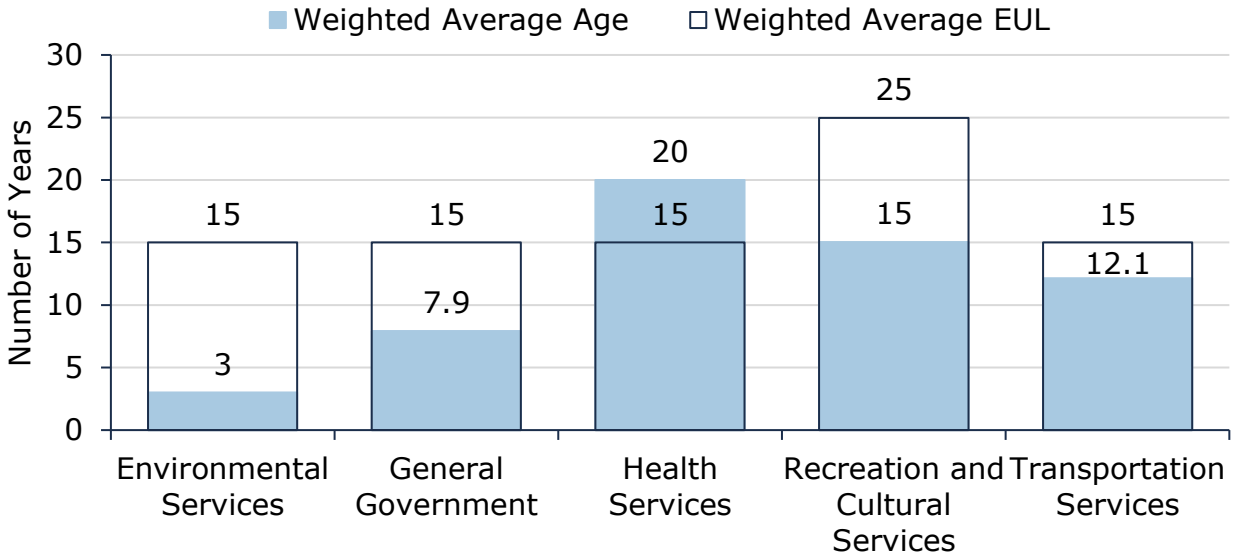
The average condition (%) is a weighted value based on replacement cost. The graph below visually illustrates the average condition for each asset segment on a very good to very poor.

*Figure 40 Asset Condition: Land Improvements*




To ensure that the Municipality's land improvements continue to provide an acceptable level of service, the Municipality 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

*Figure 41 Estimated Useful Life vs. Asset Age: Land Improvements*




of the land improvements. The graph displays the average weighted age in comparison to the weighted average estimated useful life for each asset segment.

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 more confidently determine the remaining service life of assets and identify the most cost-effective approach to managing assets. There are no formal condition assessment programs in place for the land improvements.

The following rating criteria is used to determine the current condition of land improvement assets and forecast future capital requirements:

*Figure 42 Condition Scale: Land Improvements*

| Condition | Rating |
|---|---|
| Very Good | 80-100 |
| Good | 60-80 |
| Fair | 40-60 |
| Poor | 20-40 |
| Very Poor | 0-20 |

# Asset Management Strategies

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

*Table 36 Land Improvements Lifecycle Strategy*

| Activity Type | Description of Current Strategy |
|---|---|
| Maintenance | Maintenance and repairs are as needed depending on the type of asset. |
| Rehabilitation/ Replacement | Based on life expectancy and staff inspection when available. |

# Risk & Criticality

The following risk breakdown 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 2024 inventory data.

*Figure 43 Risk Breakdown: Land Improvements*

| 1 - 4 Very Low | 5 - 7 Low | 8 - 9 Moderate | 10 - 14 High | 15 - 25 Very High |
|---|---|---|---|---|
| $2,119,237 (31%) | $1,193,882 (17%) | $501,001 (7%) | $833,084 (12%) | $2,183,913 (32%) |

This is a high-level model developed for the purposes of this AMP and Municipal staff should review and adjust the risk model 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 Land Improvements are documented in Appendix K: Risk Rating Criteria. The identification of critical assets allows the Municipality 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.

# Levels of Service

The framework created by the Municipality for levels of service is a valuable tool for assessing and managing the performance of their assets and/or services provided by their assets. Proposed levels of service for the Municipality have been developed through engagement with Municipal staff.

## Current Levels of Service

The following tables identify the Municipality's current level of service for the land improvement assets. These metrics include the technical and community level of service metrics that are required as part of O. Reg. 588/17 as well as any additional performance measures that the Municipality has selected.

*Table 37 Current Levels of Service: Land Improvements*

| Community LOS | | Service Attribute | Technical LOS | |
|---|---|---|---|---|
| Description of services provided by municipally owned land improvement assets | Land improvements consist mainly of outdoor assets at parks that support recreational activities of residents and visitors. | Scope | Replacement Cost | $ 6,831,117 |
| | | | Number of Assets | 61 |
| Description or images of the condition of land improvement assets | Condition Description<br>• Very Good - Fit for the future<br>• Good - Adequate for now<br>• Fair - Requires attention<br>• Poor - Increased potential of affecting service<br>• Very Poor - Unfit for sustained service | Quality | Average condition of equipment | Good (68%) |
| | | | Percentage of equipment with condition rating of poor or below | 14% |
| Land improvements function as expected. | | Reliability | Service days lost due to equipment breakdowns | 0 |
| Services are meeting present needs without compromising the ability of future generations to meet their own, by prioritizing long-term planning, resource efficiency, and responsible decision-making. | | Sustainability | % Very High Risk | 32.0% |
| | | | % of current capital reinvestment rate, to target capital reinvestment rate | 8.9% |
| | | | % funded of targeted reserves and reserve funds balance | 0% |
| | | | Annual Capital Reinvestment | $ 37,000 |

## Proposed Levels of Service

The scenarios that were used to analyse Dysart et al inventory were run for 100-years to ensure all the lifecycles were included. They are also all based on the data available in the asset management system which outlines estimated useful life and condition as well as replacement costs which all the results are based on.

Scenario 1: Current Capital Reinvestment Rate - this scenario utilizes the current capital reinvestment within each asset category. The current annual investment was held, and the condition was determined.

Scenario 2: Maintain Current Condition - this scenario utilizes a target of the current average condition of the infrastructure within each asset category. The condition value was held, and the annual investment was then determined.

Scenario 3: Current Lifecycle Activities - this scenario utilizes the current lifecycle activities outlined as current practice within each asset category. The condition and annual investment were then determined.

The table below outlines the results for each scenario for the land improvement assets.

*Table 38 Proposed Levels of Service: Land Improvements*

| Scenarios | Replacement Cost | Average Condition | Annual Capital Reinvestment |
|---|---|---|---|
| Scenario 1 - Current Capital Investment Rate | $6,831,117 | Very Poor (12%) | $37,000 |
| Scenario 2 - Maintain Current Condition | $6,831,117 | Good (68%) | $414,200 |
| Scenario 3 – Lifecycle | $6,831,117 | Good (76%) | $432,732 |

# Recommendations

Moving forward with the scenario 2 of maintaining current average condition for the Municipality's land improvement assets.

# Appendix H: Waste Water

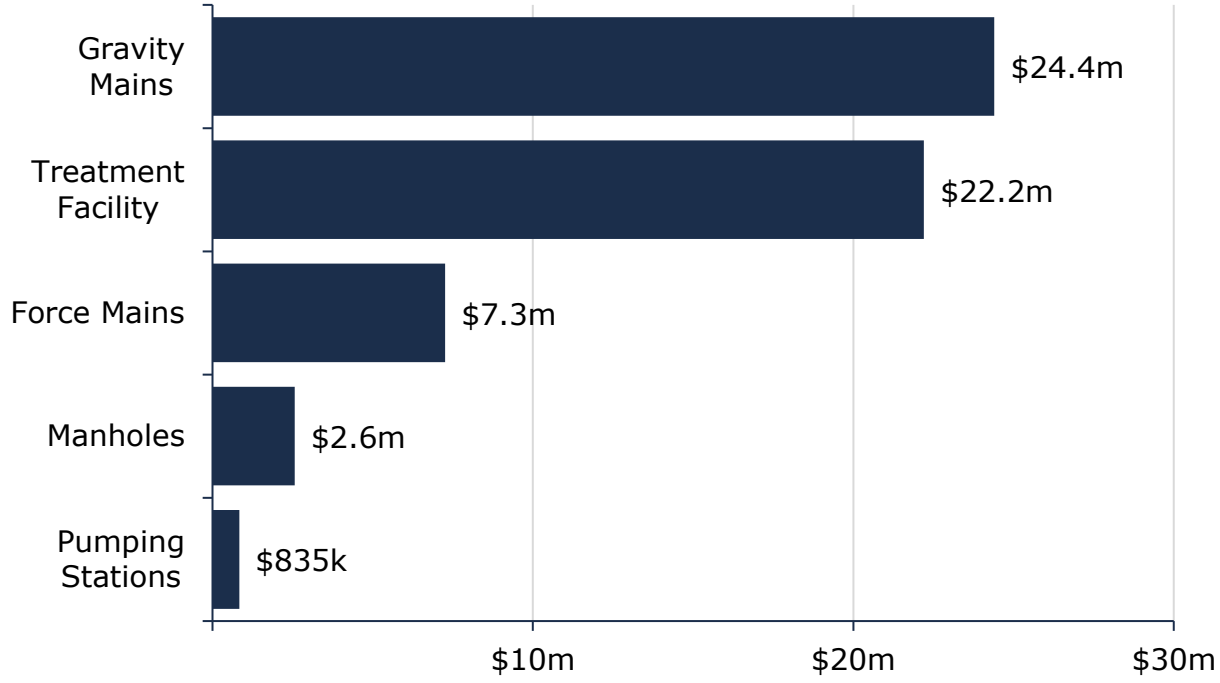
The waste water system provided by the Municipality includes the following:

- A treatment facility
- Pumping stations
- Gravity and force mains
- Manholes

## Asset Inventory & Costs

The Municipality's waste water inventory has an overall replacement cost of $57.3 million, with the collection system defined as 61% by replacement cost and the treatment facility as 39% of the overall value.

*Figure 44 Portfolio Overview: Waste Water*

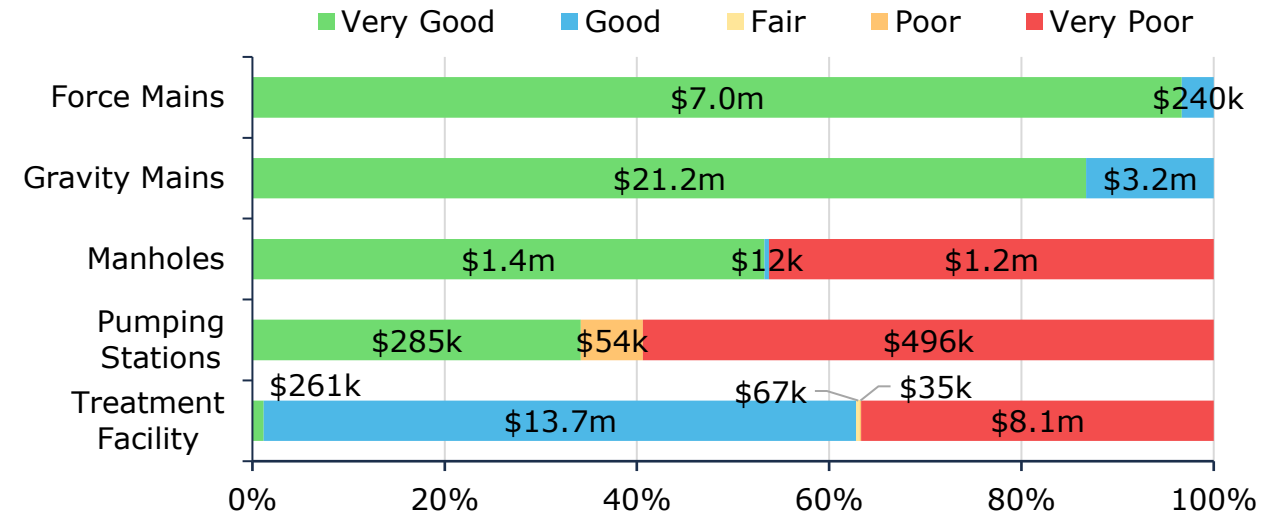



Each asset's replacement cost should be reviewed periodically to determine whether adjustments are needed to more accurate represent realistic capital requirements.

## Asset Condition & Age

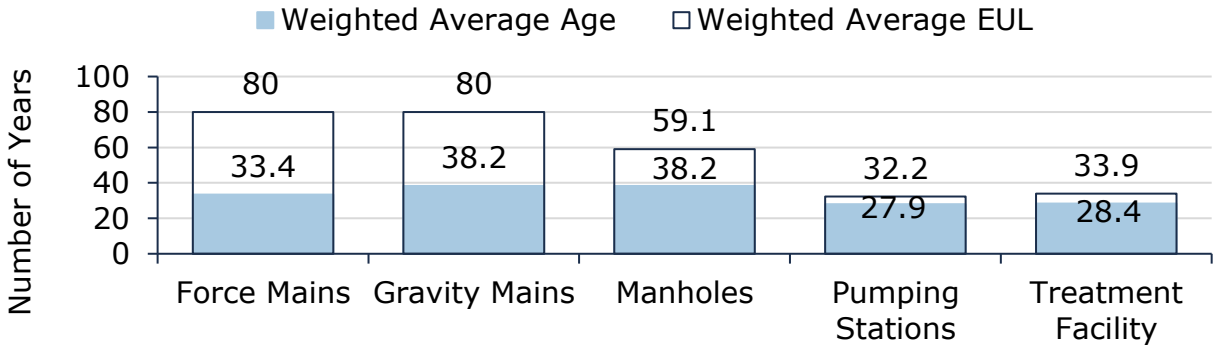
The average condition (%) is a weighted value based on replacement cost. The graph below visually illustrates the average condition for each asset segment on a very good to very poor scale.

*Figure 45 Asset Condition: Waste Water by Segment*




To ensure that the Municipality's waste water system continues to provide an acceptable level of service, the Municipality 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 waste water system. The graph below displays the average weighted age in comparison to the weighted average estimated useful life for each asset segment.

*Figure 46 Estimated Useful Life vs. Asset Age: Waste Water*




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 more confidently determine the remaining service life of assets and identify the most cost-effective approach to managing assets. The following describes the Municipality's current approach:

- A condition assessment was completed on the Sanitary Facilities in 2016 by an external contracted, but not the equipment and underground infrastructure
- There are no formal condition assessment programs in place for the sanitary mains

The following rating criteria is used to determine the current condition of sewer network assets and forecast future capital requirements:

*Figure 47 Condition Scale: Waste Water*

| Condition | Rating |
|---|---|
| Very Good | 80-100 |
| Good | 60-80 |
| Fair | 40-60 |
| Poor | 20-40 |
| Very Poor | 0-20 |

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

*Table 39 Waste Water Lifecycle Strategy*

| Activity Type | Description of Current Strategy |
|---|---|
| Maintenance | Main flushing is completed on the system on an as-needed basis |
| Replacement | In the absence of mid-lifecycle rehabilitative events, most mains are simply maintained with the goal of full replacement once it reaches its end-of-life. |
| Replacement | Replacement activities are identified based on an analysis of the main break rate as well as any issues identified during regular maintenance activities. |

# Risk & Criticality

The following risk breakdown 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 2024 inventory data.

*Figure 48 Risk Breakdown: Waste Water*

| 1 - 4<br>Very Low<br>$20,982,276<br>(37%) | 5 - 7<br>Low<br>$1,188,000<br>(2%) | 8 - 9<br>Moderate<br>$8,029,116<br>(14%) | 10 - 14<br>High<br>$18,394,316<br>(32%) | 15 - 25<br>Very High<br>$8,673,564<br>(15%) |
|---|---|---|---|---|

This is a high-level model developed for the purposes of this AMP and Municipal staff should review and adjust the risk model 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 the waste water assets are documented in Appendix K: Risk Rating Criteria. The identification of critical assets allows the Municipality 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.

# Levels of Service

The framework created by the Municipality for levels of service is a valuable tool for assessing and managing the performance of their assets and/or services provided by their assets. Proposed levels of service for the Municipality have been developed through engagement with Municipal staff.

## Current Levels of Service

The following tables identify the Municipality's current level of service for the waste water system. These metrics include the technical and community level of service metrics that are required as part of O. Reg. 588/17 as well as any additional performance measures that the Municipality has selected.

*Table 40 Current Levels of Service: Waste Water*

| Community LOS | | Service Attribute | Technical LOS | |
|---|---|---|---|---|
| Description, which may include maps, of the user groups or areas of the municipality that are connected to the municipal wastewater system. | Refer to Appendix I: Level of Service Maps | Scope | Replacement Cost | $57,267,273 |
| | | | Percentage of properties connected to the municipal wastewater system. | 6.1% |
| | | | Kilometers of gravity sewer lines | 16.3 |
| | | | Kilometers of force mains | 4.8 |
| | | | Number of sewage pumping stations | 12 |
| | | | Number of treatment plants | 1 |
| Effluent quality maintained in accordance with Environmental Compliance Approvals | | Quality | The number of effluent violations per year due to wastewater discharge compared to the total number of properties connected to the municipal wastewater system. | 0 |
| Description or images of the condition of waste water assets | Condition Description<br>• Very Good - Fit for the future<br>• Good - Adequate for now<br>• Fair - Requires attention<br>• Poor - Increased potential of affecting service<br>• Very Poor - Unfit for sustained service | | Number of bypass events per year | 0 |
| | | | % of gravity mains inspected with CCTV in past seven years | 100% |
| | | | Average condition of waste water assets | Good (69%) |
| | | | % of mains rated poor and below | 0% |

| Community LOS | | Service Attribute | Technical LOS | |
|---|---|---|---|---|
| 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. | The Municipality does not have combined wastewater and stormwater mains. Stormwater can get into wastewater mains either through infiltration through the mains themselves or directly from properties if downspouts or sump pumps are connected to the wastewater system. Routine maintenance, such as replacing rubber gaskets on manhole covers, is performed on an as-needed basis to manage infiltration. Regulation 588/17 requires municipalities to include in the community levels of service section a description of the effluent that is discharged from sewage treatment plants in the municipal wastewater system. This information is provided in detail in the Municipality's reporting to the Ministry of Environment, Conservation and Parks. The data is available at: https://data.ontario.ca/dataset/municipal-treated-wastewater-effluent | Reliability | The number of events per year where combined sewer flow in the municipal wastewater system exceeds system capacity compared to the total number of properties connected to the municipal wastewater system. | N/A |
| Description of how stormwater can get into sanitary sewers in the municipal wastewater system, causing sewage to overflow into streets or back up into homes. | All stormwater enters as I/I into the system. This can be from cracked pipes, seams in MHs, MH covers, damaged lateral connections, sump pumps and foundation drains (grandfathered) and illegal downspout connections. | | | |

| Community LOS | | Service Attribute | Technical LOS | |
|---|---|---|---|---|
| Description of how sanitary sewers in the municipal wastewater system are designed to be resilient to avoid events such as overflows and backups | Some sewers have higher levels of I/I in the system area and are prone to surcharge beyond a 2-year storm. The municipality is working to remove sources of I/I to improve system capacity to support growth and a 5-year return storm. | Reliability | The number of connection-days per year due to wastewater backups compared to the total number of properties connected to the municipal wastewater system. | 0 |
| Description of the effluent that is discharged from sewage treatment plants in the municipal wastewater system. | This information is provided in detail in the Municipality's reporting to the Ministry of Environment, Conservation and Parks. The data is available at: https://data.ontario.ca/dataset/municipal-treated-wastewater-effluent | | | |
| Services are meeting present needs without compromising the ability of future generations to meet their own, by prioritizing long-term planning, resource efficiency, and responsible decision-making. | | Sustainability | % Very High Risk | 15% |
| | | | % of current capital reinvestment rate, to target capital reinvestment rate | 19% |
| | | | % funded of targeted reserves and reserve funds balance | 12.7% |
| | | | Annual Capital Reinvestment | $194,133 |

## Proposed Levels of Service

The scenarios that were used to analyse Dysart et al inventory were run for 100-years to ensure all the lifecycles were included. They are also all based on the data available in the asset management system which outlines estimated useful life and condition as well as replacement costs which all the results are based on.

Scenario 1: Current Capital Reinvestment Rate - this scenario utilizes the current capital reinvestment within each asset category. The current annual investment was held, and the condition was determined.

Scenario 2: Maintain Current Condition - this scenario utilizes a target of the current average condition of the infrastructure within each asset category. The condition value was held, and the annual investment was then determined.

Scenario 3: Current Lifecycle Activities - this scenario utilizes the current lifecycle activities outlined as current practice within each asset category. The condition and annual investment were then determined.

The table below outlines the results for each scenario for the waste water assets.

*Table 41 Proposed Levels of Service: Waste Water*

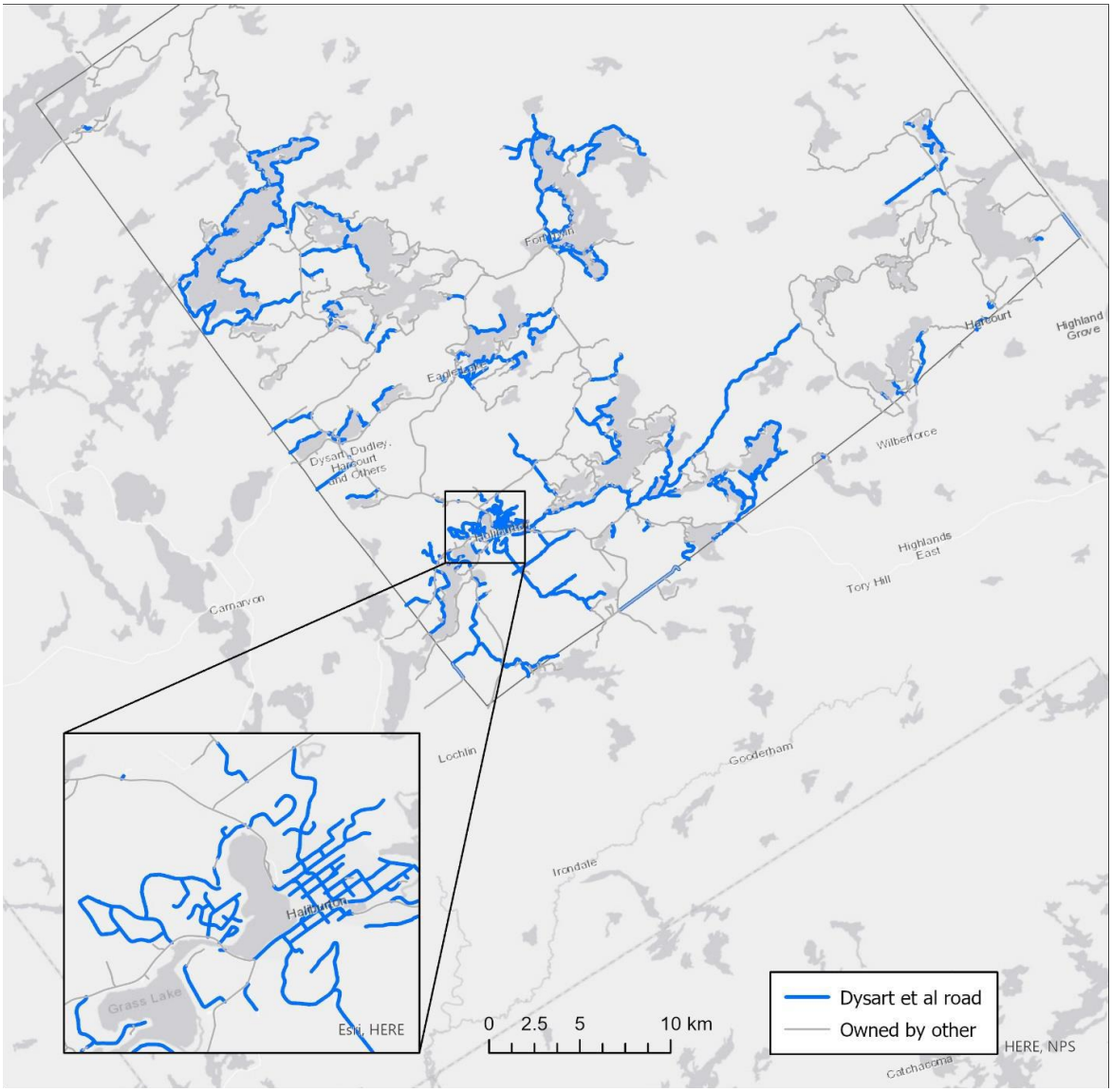
| Scenarios | Replacement Cost | Average Condition | Annual Capital Reinvestment |
|---|---|---|---|
| Scenario 1 - Current Capital Investment Rate | $57,267,273 | Poor (27%) | $194,133 |
| Scenario 2 - Maintain Current Condition | $57,267,273 | Good (69%) | $1,021,227 |
| Scenario 3 – Lifecycle | $57,267,273 | Good (77%) | $1,190,568 |

# Recommendations

Moving forward with implementing scenario 2 of maintaining current average condition for the Municipality’s waste water assets.

# Appendix I: Level of Service Maps

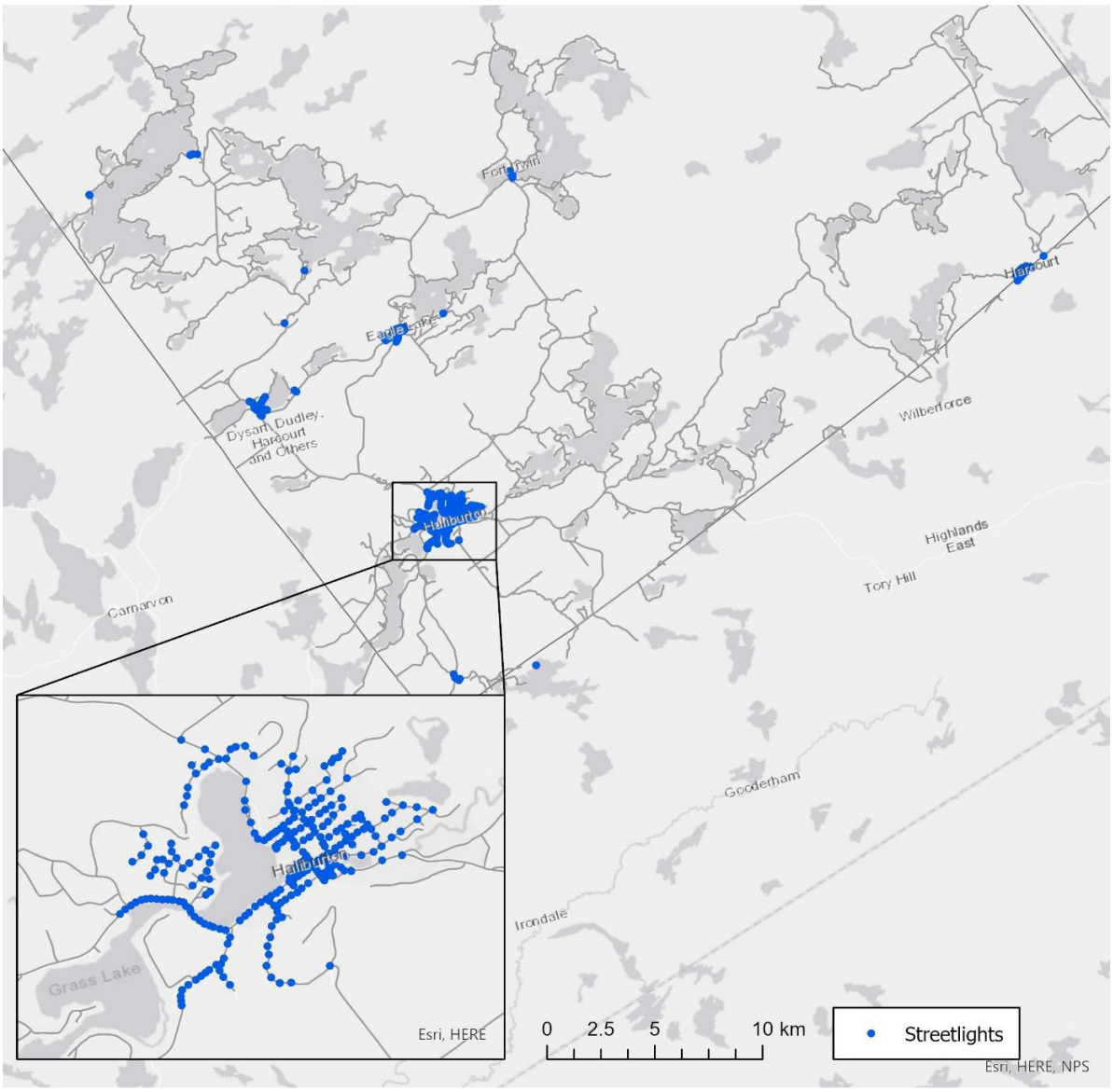
## Roads Map



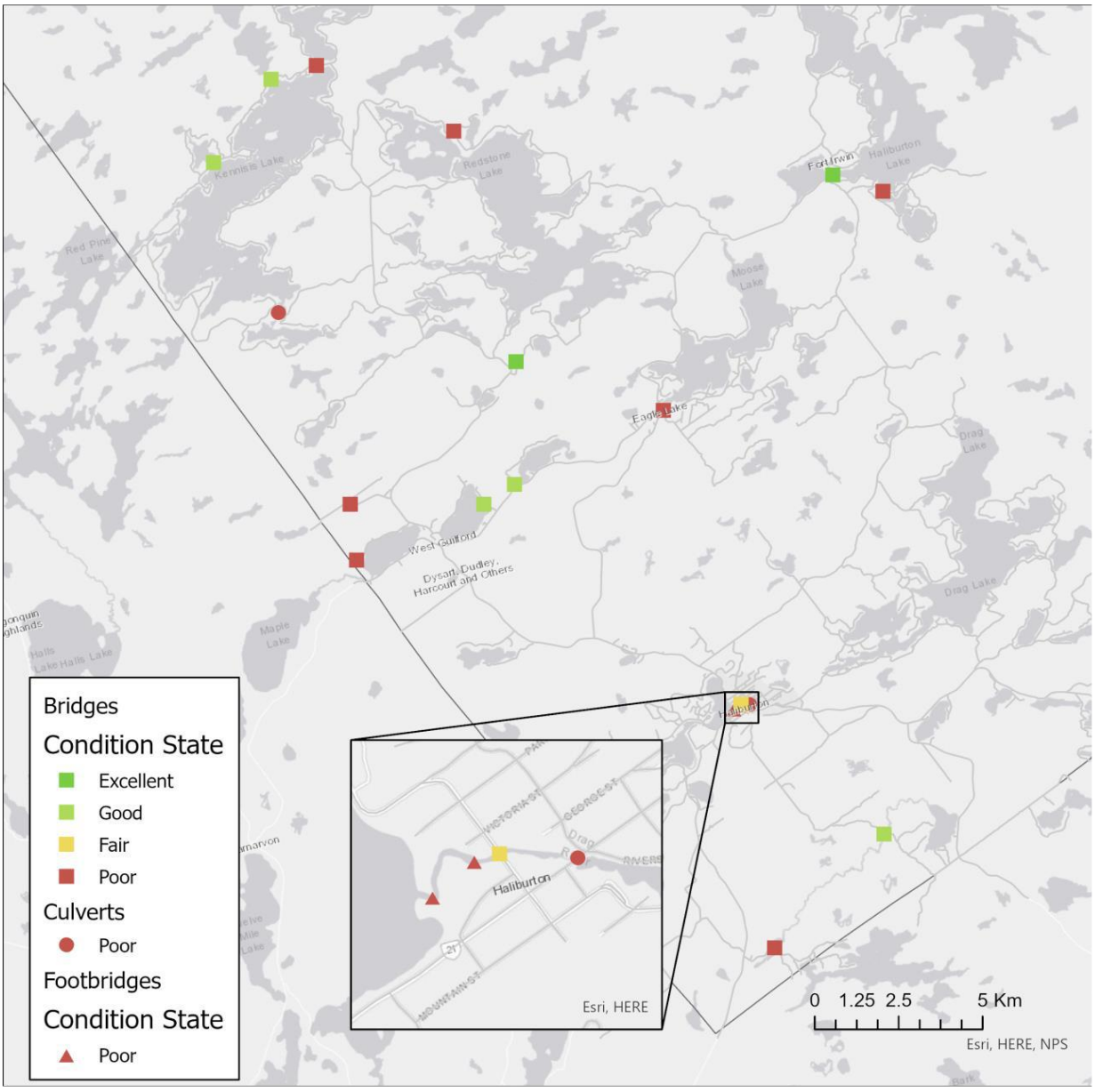
# Sidewalks


Head Lake
Drag River
Hamilton
0 0.1 0.2 0.4 km
Sidewalks
Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community

# Streetlights

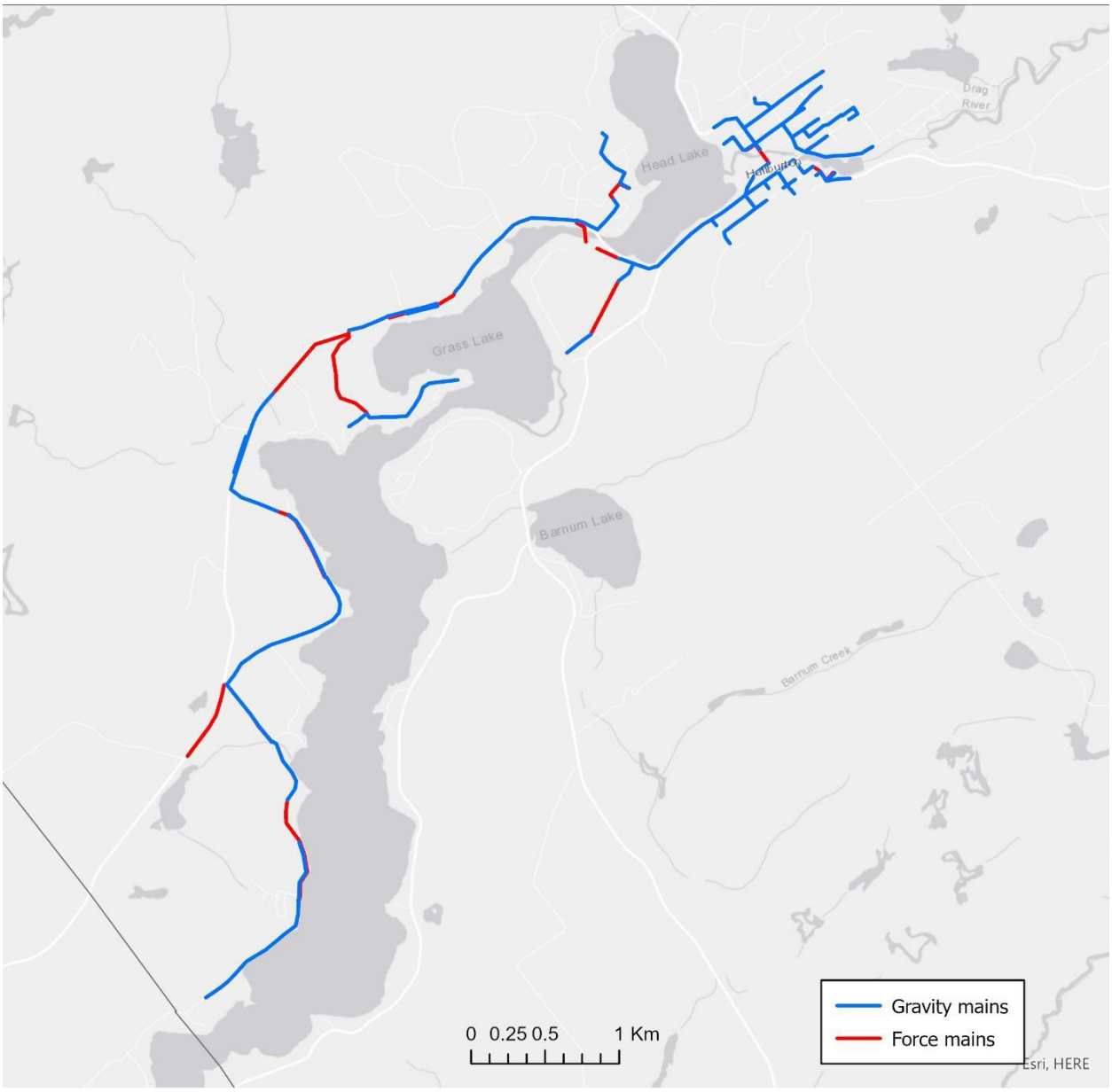


# Bridges and Culverts Locations



# Storm Water System Map

# Waste Water System Map



# Appendix J: 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 Municipality'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 Municipality'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 Municipality 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 Municipality 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 Municipality 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 Municipality 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:

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

# Appendix K: Risk Rating Criteria

## Probability of Failure

| Asset Category | Risk Criteria | Criteria Weighting | Value/Range | Probability of Failure Score |
|---|---|---|---|---|
| Roads, Bridges & Culverts | Condition | 80% | 80-100 | 1 |
| | | | 65-80 | 2 |
| | | | 50-65 | 3 |
| | | | 25-50 | 4 |
| | | | 0-25 | 5 |
| | % Service Life Remaining | 20% | >40% | 1 |
| | | | 30 - 40% | 2 |
| | | | 20 – 30% | 3 |
| | | | 10 – 20% | 4 |
| | | | <10% | 5 |
| All Others | Condition | 50% | 80-100 | 1 |
| | | | 60-79 | 2 |
| | | | 40-59 | 3 |
| | | | 20-39 | 4 |
| | | | 0-19 | 5 |
| | % Service Life Remaining | 50% | >40% | 1 |
| | | | 30 - 40% | 2 |
| | | | 20 – 30% | 3 |
| | | | 10 – 20% | 4 |
| | | | <10% | 5 |

# Consequence of Failure

| Asset Category | Risk Classification | Risk Criteria | Value/Range | Consequence of Failure Score |
|---|---|---|---|---|
| Roads | Economic (50%) | Functional Class | Local | 2 |
| | | | Collector | 4 |
| | Operational (50%) | AADT (50%) | 0-49 | 1 |
| | | | 50-499 | 2 |
| | | | 500-1999 | 3 |
| | | | 2000-4999 | 4 |
| | | | 5000- | 5 |
| | | 85th Percentile (Operating) Speed (50%) | 0-29 | 1 |
| | | | 30-49 | 2 |
| | | | 50-69 | 3 |
| | | | 70-79 | 4 |
| | | | 80- | 5 |
| Roads Related (streetlights, sidewalks, signs) | Economic (100%) | Replacement Cost ($) | < 25,000 | 1 |
| | | | 25,000-100,000 | 2 |
| | | | 100,000-250,000 | 3 |
| | | | 250,000-500,000 | 4 |
| | | | 500,000< | 5 |

| Asset Category | Risk Classification | Risk Criteria | Value/Range | Consequence of Failure Score |
|---|---|---|---|---|
| Bridges & Culverts | Economic (50%) | Replacement Cost ($) | < 25,000 | 1 |
| | | | 25,000-100,000 | 2 |
| | | | 100,000-250,000 | 3 |
| | | | 250,000-500,000 | 4 |
| | | | 500,000< | 5 |
| | Operational (50%) | AMP Segment | | 1 |
| | | | | 2 |
| | | | Foot Bridges | 3 |
| | | | Structural Culverts / Vehicle Bridges | 4 |
| | | | | 5 |
| Waste Water Linear | Economic (50%) | Diameter (mm) | 100 | 2 |
| | | | 250 / 200 | 3 |
| | | | 300 | 4 |
| | Operational (50%) | AMP Segment | Gravity Mains | 3 |
| | | | Force Mains | 4 |
| Waste Water Non-Linear | Economic (50%) | Replacement Cost ($) | < 25,000 | 1 |
| | | | 25,000-70,000 | 3 |
| | | | 70,000-350,000 | 5 |
| | | | 350,000-700,000 | 4 |
| | | | 700,000< | 5 |
| | Operational (50%) | AMP Segment | | 1 |
| | | | | 2 |
| | | | | 3 |
| | | | Pumping Stations | 4 |
| | | | Treatment Facility | 5 |

| Asset Category | Risk Classification | Risk Criteria | Value/Range | Consequence of Failure Score |
|---|---|---|---|---|
| Facilities | Economic (50%) | Replacement Cost ($) | < 25,000 | 1 |
| | | | 25,000-100,000 | 2 |
| | | | 100,000-250,000 | 3 |
| | | | 250,000-500,000 | 4 |
| | | | 500,000< | 5 |
| | Operational (25%) | AMP Segment | General Government | 1 |
| | | | Environmental / Health | 2 |
| | | | Recreation and Cultural | 3 |
| | | | Protection / Transportation | 4 |
| | | | | 5 |
| | Services (25%) | Condition (34%) | 80-100 | 1 |
| | | | 60-79 | 2 |
| | | | 40-59 | 3 |
| | | | 20-39 | 4 |
| | | | 0-19 | 5 |
| | | Risk of Facilities Closure (33%) | No | 1 |
| | | | | 2 |
| | | | | 3 |
| | | | Yes | 4 |
| | | | | 5 |
| | | Risk of Costly Repairs (33%) | No | 1 |
| | | | | 2 |
| | | | Yes | 3 |
| | | | | 4 |
| | | | | 5 |

| Asset Category | Risk Classification | Risk Criteria | Value/Range | Consequence of Failure Score |
|---|---|---|---|---|
| Storm Water Linear | Economic (50%) | Diameter (mm) | | 1 |
| | | | 250 | 2 |
| | | | 300 / 275 | 3 |
| | | | 550 | 4 |
| | | | >600 | 5 |
| | Operational (50%) | AMP Segment | | 1 |
| | | | | 2 |
| | | | Storm Mains | 3 |
| | | | | 4 |
| | | | | 5 |
| Storm Water Non-Linear | Economic (50%) | Replacement Cost ($) | < 25,000 | 1 |
| | | | 25,000-70,000 | 2 |
| | | | 70,000-350,000 | 3 |
| | | | 350,000-700,000 | 4 |
| | | | 700,000< | 5 |
| | Operational (50%) | AMP Segment | | 1 |
| | | | Storm Sewer Structure | 2 |
| | | | Oil Grit Separators | 3 |
| | | | | 4 |
| | | | | 5 |
| All Others | Economic (100%) | Replacement Cost ($) | < 25,000 | 1 |
| | | | 25,000-100,000 | 2 |
| | | | 100,000-250,000 | 3 |
| | | | 250,000-500,000 | 4 |
| | | | 500,000< | 5 |