

# Asset Management Plan

Township of Blandford-Blenheim

2021

This Asset Management Program was prepared by:



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

# Key Statistics

Replacement cost of  
asset portfolio

**\$139.7** million

Replacement cost of  
infrastructure per household

**\$49,590**

Percentage of assets in fair or  
better condition

**85%**

Percentage of assets with  
assessed condition data

**79%**

Annual capital  
infrastructure deficit

**\$1.2** million

Recommended timeframe  
for eliminating annual  
infrastructure deficit

**10** Years

Target reinvestment  
rate

**2.6%**

Actual reinvestment  
rate

**1.7%**

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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 critical services. The goal of asset management is to deliver an adequate level of service in the most cost-effective manner. This involves the development and implementation of asset management strategies and long-term financial planning.

## Scope

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

This AMP include the following asset categories:

### Asset Category

 Roads Network	 Bridges & Culverts
 Stormwater	 Buildings
 Machinery & Equipment	 Fleet
 Land Improvement	

With the development of this AMP the Town has achieved compliance with O. Reg. 588/17 to the extent of the requirements that must be completed by July 1, 2022. There are additional requirements concerning proposed levels of service and growth that must be met by July 1, 2024 and 2025.

## Findings

The overall replacement cost of the asset categories included in this AMP totals \$139.7 million. 85% of all assets analysed in this AMP are in fair or better condition and assessed condition data was available for 79% of assets. For the remaining 21% of assets, assessed condition data was unavailable, and asset age was used to approximate condition – a data gap that persists in most municipalities. Generally, age misstates the true condition of assets, making assessments essential to accurate asset management planning, and a recurring recommendation in this AMP.

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

To meet capital replacement and rehabilitation needs for existing infrastructure, prevent infrastructure backlogs, and achieve long-term sustainability, the Township's average annual capital requirement totals \$3.6 million. Based on a historical analysis of sustainable capital funding sources, the Township is committing approximately \$2.4 million towards capital projects or reserves per year. As a result, there is currently an annual funding gap of \$1.2 million.

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

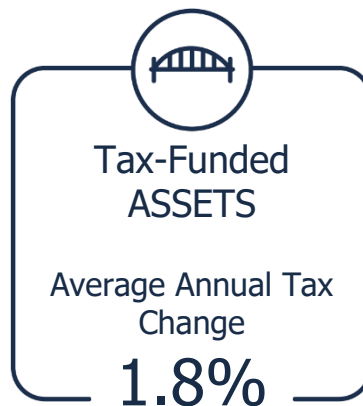


Annual Requirements  
Deficit Per Household



## Recommendations

A financial strategy was developed to address the annual capital funding gap. The following graphics shows annual tax/rate change required to eliminate the Township's infrastructure deficit based on a 10-year plan:



Recommendations to guide continuous refinement of the Township's asset management program. These include:

- Review data to update and maintain a complete and accurate dataset
- Develop a condition assessment strategy with a regular schedule
- Review and update lifecycle management strategies
- Development and regularly review short- and long-term plans to meet capital requirements
- Continue to measure current levels of service and identify sustainable proposed levels of service

# 1 Introduction & Context

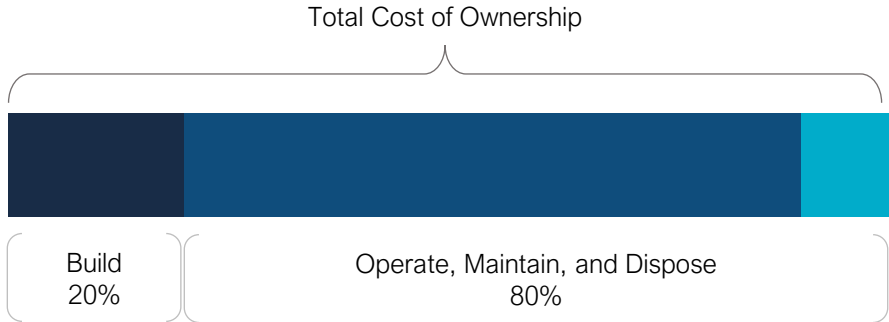
## Key Insights

- The goal of asset management is to minimize the lifecycle costs of delivering infrastructure services, manage the associated risks, while maximizing the value ratepayers receive from the asset portfolio
- The Township's asset management policy provides clear direction to staff on their roles and responsibilities regarding asset management
- An asset management plan is a living document that should be updated regularly to inform long-term planning
- Ontario Regulation 588/17 outlines several key milestone and requirements for asset management plans in Ontario between July 1, 2022 and 2025

# 1.1 An Overview of Asset Management

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

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



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

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

### 1.1.1 Asset Management Policy

An asset management policy represents a statement of the principles guiding the municipality’s approach to asset management activities. It aligns with the organizational strategic plan and provides clear direction to municipal staff on their roles and responsibilities as part of the asset management program.

The Township adopted a “Strategic Asset Management Policy” on June 5, 2019, in accordance with Ontario Regulation 588/17.

The objectives of the policy are to:

- Provide a consistent framework for implementing asset management throughout the organization
- Provide transparency and accountability and to demonstrate to stakeholders the legitimacy of decision-making processes

### 1.1.2 Asset Management Strategy

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

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

### 1.1.3 Asset Management Plan

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

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

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

# 1.2 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.

## 1.2.1 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.

<b>Lifecycle Activity</b>	<b>Description</b>	<b>Example (Roads)</b>	<b>Cost</b>
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	\$\$\$

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 Township'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.

## 1.2.2 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. These high-value assets should receive funding before others.

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

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

## 1.2.3 Levels of Service

A level of service (LOS) is a measure of what the Township 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 Township as worth measuring and evaluating. The Township 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, Bridges & Culverts, 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 Township 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 & Culverts, Water, Wastewater, Stormwater) the Province, through O. Reg. 588/17, has provided technical metrics that are required to be included in this AMP. For non-core asset categories, the Township has determined the technical metrics that will be used to determine the technical level of service provided. These metrics can be found in the Levels of Service subsection within each asset category.

## Current and Proposed Levels of Service

This AMP focuses on measuring the current level of service provided to the community. Once current levels of service have been measured, the Township plans to establish proposed levels of service over a 10-year period, in accordance with O. Reg. 588/17.

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

# 1.3 Ontario Regulation 588/17

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

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

**2019**

Strategic Asset Management Policy

**2024**

Asset Management Plan for Core and Non-Core Assets (same components as 2022)

**2022**

Asset Management Plan for Core Assets with the following components:

1. Current levels of service
2. Inventory analysis
3. Lifecycle activities to sustain LOS
4. Cost of lifecycle activities
5. Population and employment forecasts
6. Discussion of growth impacts

**2025**

Asset Management Policy Update and an Asset Management Plan for All Assets with the following additional components:

1. Proposed levels of service for next 10 years
2. Updated inventory analysis
3. Lifecycle management strategy
4. Financial strategy and addressing shortfalls
5. Discussion of how growth assumptions impacted lifecycle and financial



### 1.3.1 O. Reg. 588/17 Compliance Review

The following table identifies the requirements outlined in Ontario Regulation 588/17 for municipalities to meet by July 1, 2022. Next to each requirement a page or section reference is included in addition to any necessary commentary.

<b>Requirement</b>	<b>O. Reg. Section</b>	<b>AMP Section Reference</b>	<b>Status</b>
Summary of assets in each category	S.5(2), 3(i)	4.1.1 - 10.2.1	Complete
Replacement cost of assets in each category	S.5(2), 3(ii)	4.1.1 - 10.2.1	Complete
Average age of assets in each category	S.5(2), 3(iii)	4.1.3 - 10.2.3	Complete
Condition of core assets in each category	S.5(2), 3(iv)	4.1.2 – 10.2.2	Complete
Description of municipality’s approach to assessing the condition of assets in each category	S.5(2), 3(v)	4.1.2 – 10.2.2	Complete
Current levels of service in each category	S.5(2), 1(i-ii)	4.1.6 - 10.2.6	Complete
Current performance measures in each category	S.5(2), 2	4.1.6 - 10.2.6	Complete
Lifecycle activities needed to maintain current levels of service for 10 years	S.5(2), 4	4.1.4 - 10.2.4	Complete
Costs of providing lifecycle activities for 10 years	S.5(2), 4	Appendix B	Complete
Growth assumptions	S.5(2), 5(i-ii) S.5(2), 6(i-vi)	11.1 - 11.2	Complete

# 2 Scope and Methodology

## Key Insights

- This asset management plan includes 7 asset categories and is divided between tax-funded and rate-funded categories
- The source and recency of replacement costs impacts the accuracy and reliability of asset portfolio valuation
- 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

# 2.1 Asset categories included in this AMP

This asset management plan for the Township of Blandford-Blenheim is produced in compliance with Ontario Regulation 588/17. The July 2022 deadline under the regulation—the first of three AMPs—requires analysis of only core assets (roads, bridges & culverts, water, wastewater, and stormwater).

The AMP summarizes the state of the infrastructure for the Township’s asset portfolio, establishes current levels of service and the associated technical and customer oriented key performance indicators (KPIs), outlines lifecycle strategies for optimal asset management and performance, and provides financial strategies to reach sustainability for the asset categories listed below.

Asset Category	Source of Funding
Road Network	
Bridges & Culverts	
Stormwater	
Buildings	Tax Levy
Machinery & Equipment	
Vehicles	
Land Improvements	

# 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 Township incurred. As assets age, and new products and technologies become available, cost inflation becomes a less reliable method.

## 2.3 Estimated Useful Life and Service Life Remaining

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

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

$$\text{Service Life Remaining (SLR)} = \text{In Service Date} + \text{Estimated Useful Life (EUL)} - \text{Current Year}$$

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

$$\text{Target Reinvestment Rate} = \frac{\text{Annual Capital Requirement}}{\text{Total Replacement Cost}}$$

$$\text{Actual Reinvestment Rate} = \frac{\text{Annual Capital Funding}}{\text{Total Replacement Cost}}$$

## 2.5 Deriving Asset Condition

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

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

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

The analysis in this AMP is based on assessed condition data only as available. In the absence of assessed condition data, asset age is used as a proxy to determine asset condition. Appendix E includes additional information on the role of asset condition data and provides basic guidelines for the development of a condition assessment program.

# 3

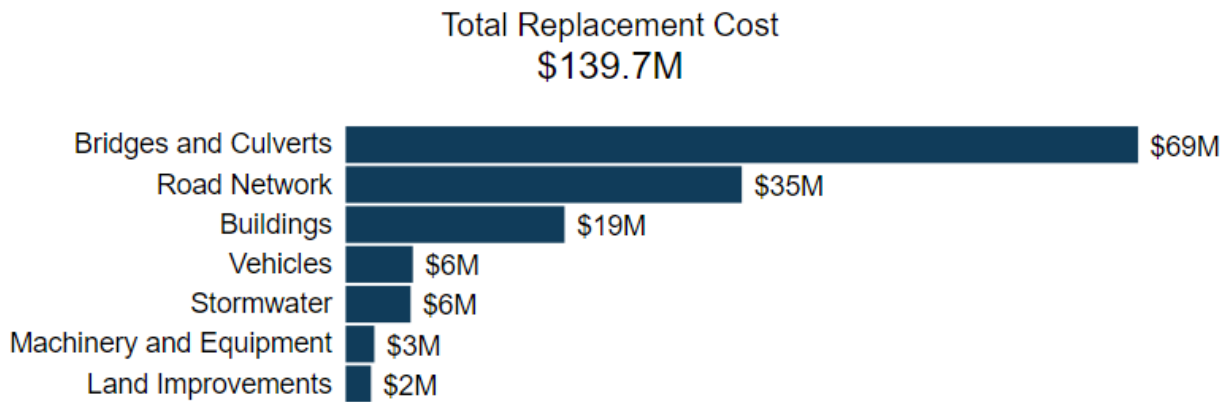
## Portfolio Overview

### Key Insights

- The total replacement cost of the Township's asset portfolio is \$139.7 million
- The Township's target re-investment rate is 2.6% and the actual re-investment rate is 1.7%, contributing to an expanding infrastructure deficit
- 85% of all assets are in fair or better condition
- 16.4% of assets are projected to require replacement in the next 10 years
- Average annual capital requirements total \$3.6 million per year across all assets

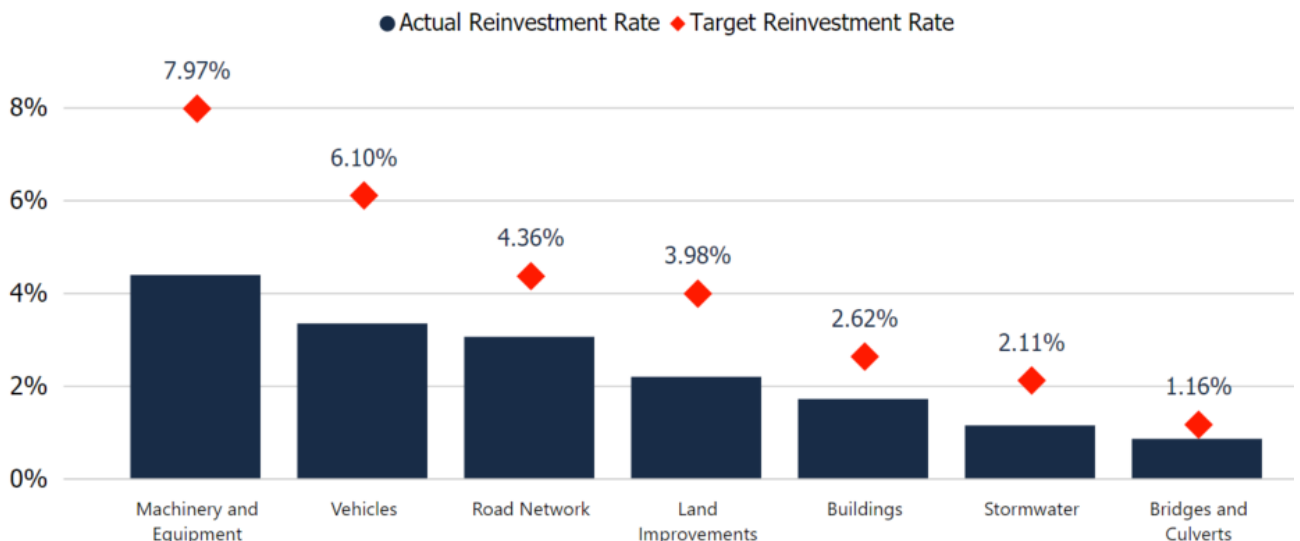
# 3.1 Total Replacement Cost of Asset Portfolio

The asset categories analysed in this AMP have a total replacement cost of \$139.7 million based on inventory data from 2020. 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.



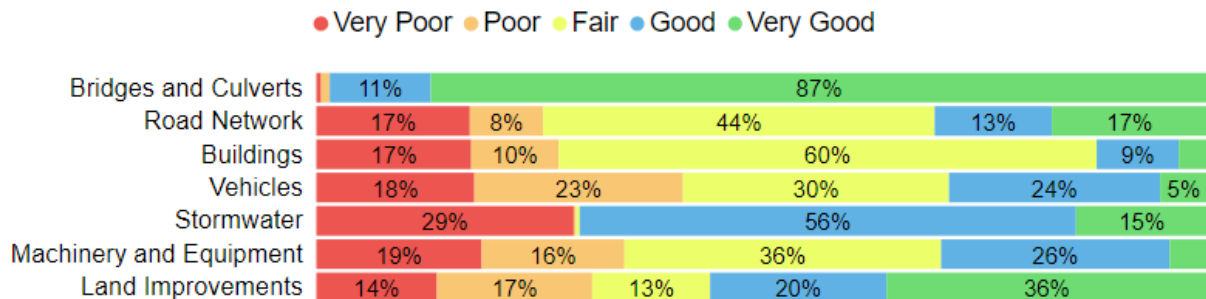
# 3.2 Target vs. Actual Reinvestment Rate

The graph below depicts funding gaps or surpluses by comparing target vs actual reinvestment rate. To meet the long-term replacement needs, the Township should be allocating approximately \$3.6 million annually, for a target reinvestment rate of 2.6%. Actual annual spending on infrastructure totals approximately \$2.4 million, for an actual reinvestment rate of 1.7%.



### 3.3 Condition of Asset Portfolio

The current condition of the assets is central to all asset management planning. Collectively, 85% of assets in Blandford-Blenheim are in fair or better condition. This estimate relies on both age-based and field condition data.



This AMP relies on assessed condition data for 79% of assets; for the remaining portfolio, age is used as an approximation of condition. Assessed condition data is invaluable in asset management planning as it reflects the true condition of the asset and its ability to perform its functions. The table below identifies the source of condition data used throughout this AMP.

Asset Category	Asset Segment	% of Assets with Assessed Condition	Source of Condition Data
Road Network	All	67%	2019 Road Needs Study
Bridges & Culverts	All	100%	2019 OSIM Report
Stormwater Network	All	0%	N/A
Buildings & Facilities	All	97%	Staff Assessments
Machinery & Equipment	All	86%	Staff Assessments
Vehicles	All	73%	Staff Assessments
Land Improvements	All	55%	Staff Assessments

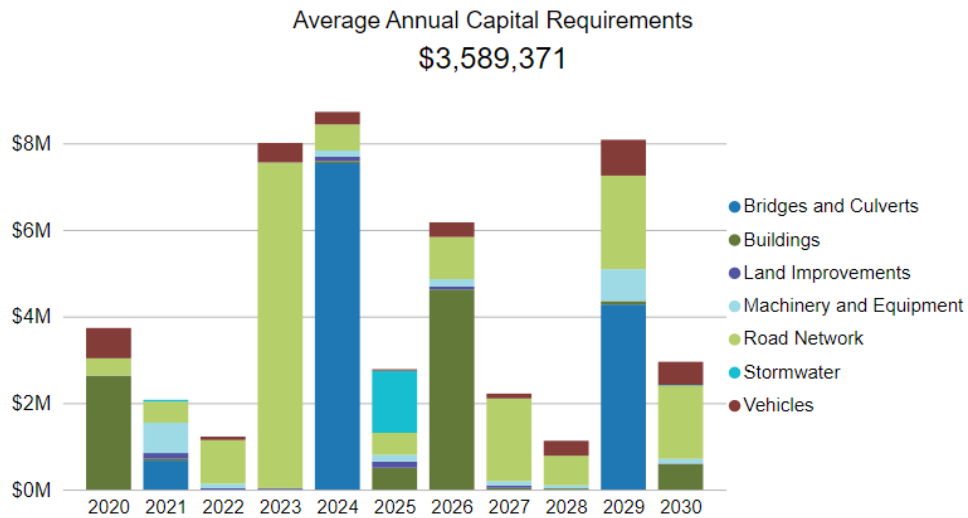


## 3.4 Service Life Remaining

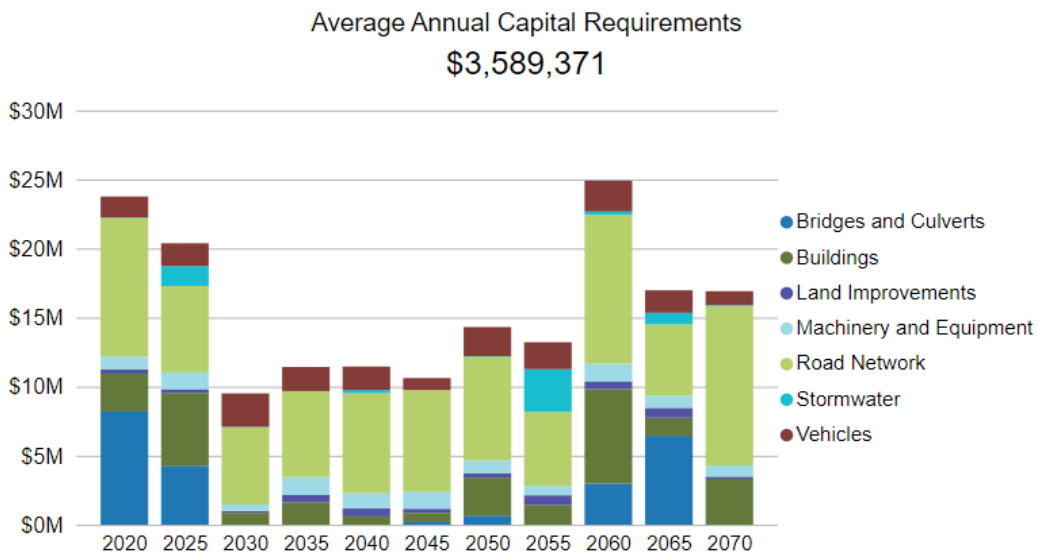
Based on asset age, available assessed condition data and estimated useful life, 16.4% of the Township's assets will require replacement within the next 10 years. Capital requirements over the next 10 years are identified in Appendix B.

## 3.5 Forecasted Capital Requirements

The development of a long-term capital forecast should include both asset rehabilitation and replacement requirements. With the development of asset-specific lifecycle strategies that include the timing and cost of future capital events, the Township can produce an accurate long-term capital forecast. The following graph identifies capital requirements over the next 10 years.



The following graph identifies capital requirements over the next 50 years.



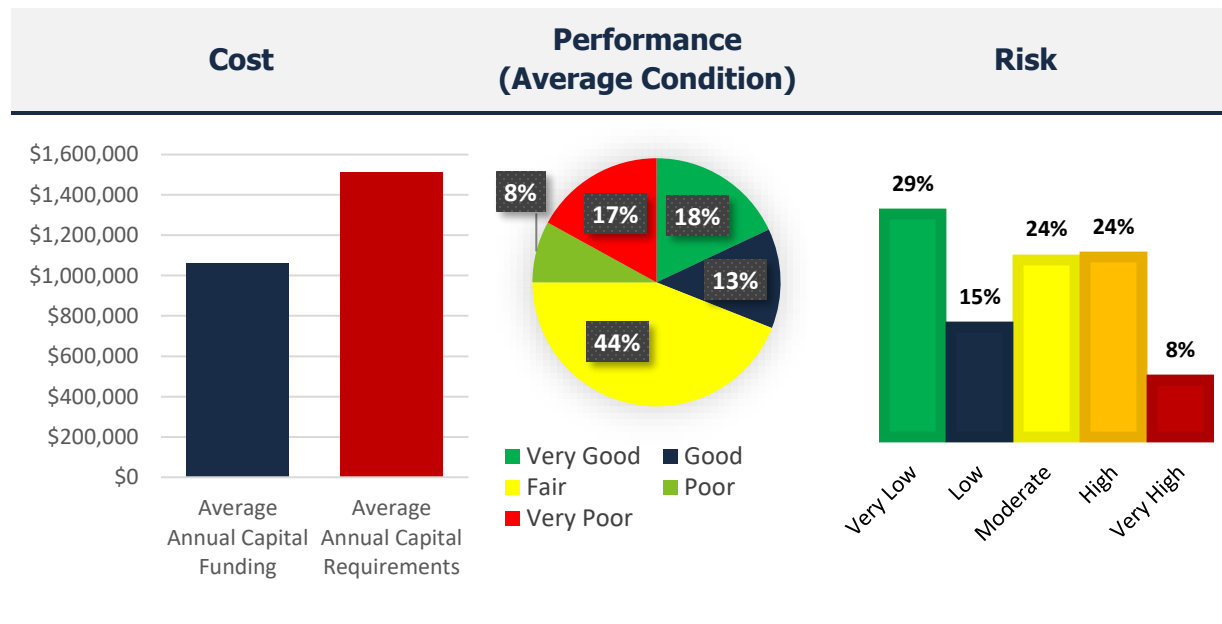
# 4 Road Network

## 4.1 Introduction

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, curbs & gutters, and streetlights.

The Township's roads and sidewalks are maintained by the Public Works department who is also responsible for winter snow clearing, ice control and snow removal operations.

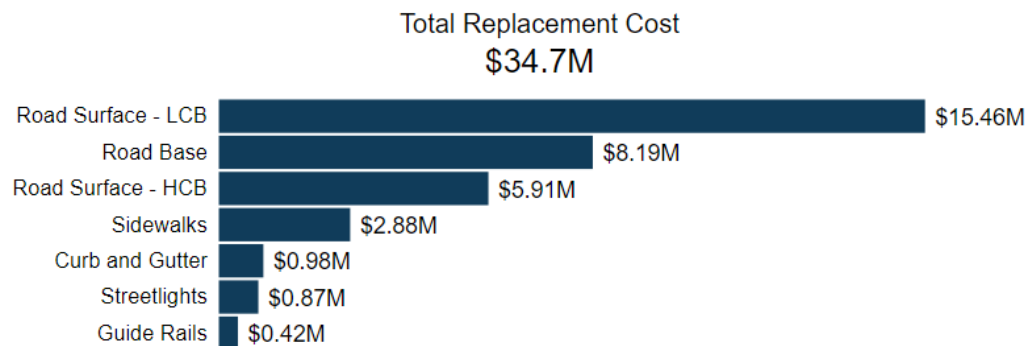
The table below outlines high-level service indicators for Roads.



## 4.2 Asset Inventory & Replacement Cost

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

Asset Segment	Quantity	Replacement Cost Method	Total Replacement Cost
Curb and Gutter	12,252 m	Cost/Unit	\$980,130
Guide Rails	36	User-Defined Cost	\$423,765
Road Base	98,724 m <sup>1</sup>	98% User-Defined Cost; 2% Cost/Unit	\$8,190,088
Road Surface - HCB	25,335 m	User-Defined Cost	\$5,905,450
Road Surface - LCB	93,796 m	User-Defined Cost	\$15,461,983
Sidewalks	2,169 m	User-Defined Cost	\$2,879,956
Streetlights	484	User-Defined Cost	\$870,000
<b>Total</b>			<b>\$34,711,372</b>

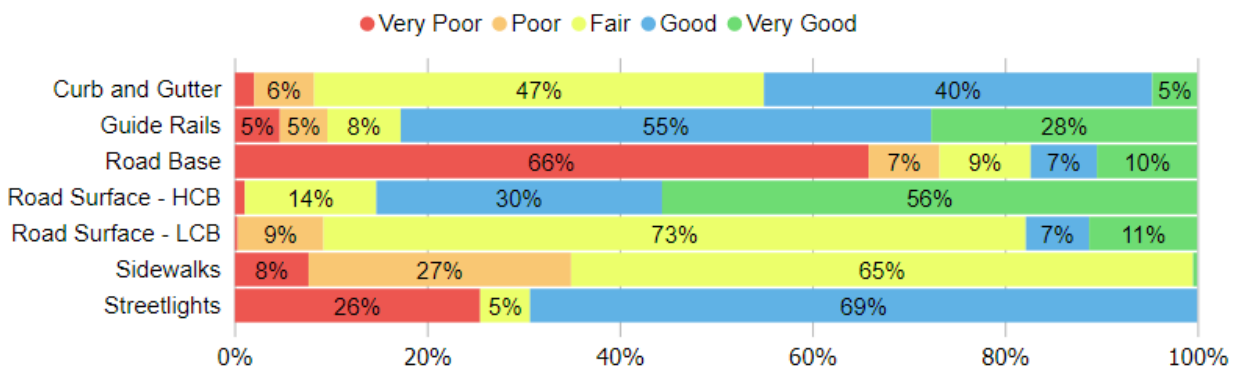


<sup>1</sup> Road base lengths and locations need to be confirmed as future work. Some HCB and LCB roads do not have an associated road base asset recorded in the asset inventory

## 4.3 Asset Condition

The table below identifies the current average condition and source of available condition data for each asset segment. The Average Condition (%) is a weighted value based on replacement cost.

Asset Segment	Average Condition (%)	Average Condition Rating	Condition Source
Curb and Gutter	61%	Good	100% Assessed
Guide Rails	71%	Good	72% Assessed
Road Base	23%	Poor	Age-Based
Road Surface - HCB	79%	Good	89% Assessed
Road Surface - LCB	63%	Good	87% Assessed
Sidewalks	50%	Fair	99.5% Assessed
Streetlights	50%	Fair	31% Assessed
<b>Average</b>	<b>59%</b>	<b>Fair</b>	<b>67% Assessed</b>



### 4.3.1 Current Approach to Condition Assessment

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

- Roads are assessed annually to inform maintenance, rehabilitation and replacement activities as well as capital planning.
- The last Road Needs Study was completed in 2019, and the Township will continue a suitable interval for completing these studies going forward.

## 4.4 Estimated Useful Life & Average Age

The Estimated Useful Life for Road Network assets has been assigned according to a combination of established industry standards and staff knowledge. The Average Age of each asset is based on the number of years each asset has been in-service. Finally, the Average Service Life Remaining represents the difference between the Estimated Useful Life and the Average Age, except when an asset has been assigned an assessed condition rating. Assessed condition may increase or decrease the average service life remaining.

<b>Asset Segment</b>	<b>Estimated Useful Life (Years)</b>	<b>Average Age (Years)</b>	<b>Average Service Life Remaining (Years)</b>
Curb and Gutter	50	20.6	29.5
Guide Rails	25-50	32.3	14.3
Road Base	50	35.2	14.3
Road Surface - HCB	23	29.0	14.7
Road Surface - LCB	15	31.8	11.2
Sidewalks	15-50	44.5	22.9
Streetlights	25	10.1	12.9
<b>Average</b>		<b>32.3</b>	<b>14.1</b>

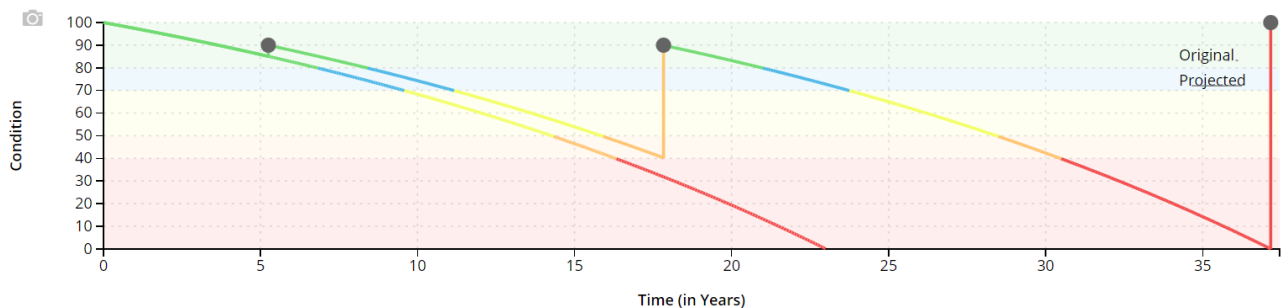
Each asset's Estimated Useful Life should be reviewed periodically to determine whether adjustments need to be made to better align with the observed length of service life for each asset type.

## 4.5 Lifecycle Management Strategy

The condition or performance of most assets will deteriorate over time. This process is affected by a range of factors including an asset's characteristics, location, utilization, maintenance history and environment. The following lifecycle strategies have been developed as a proactive approach to managing the lifecycle of paved roads. Instead of allowing the roads to deteriorate until replacement is required, strategic rehabilitation is expected to extend the service life of roads at a lower total cost.

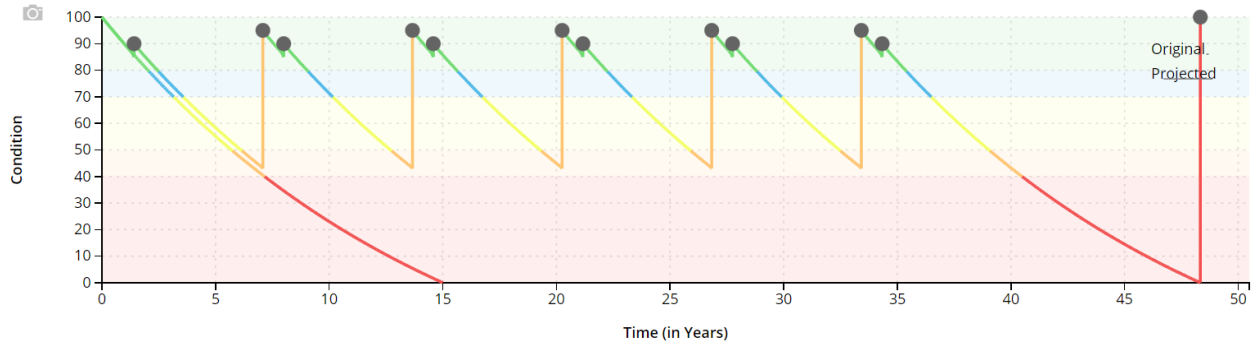
### 4.5.1 HCB Roads

Paved Roads Surface (HCB)		
Event Name	Event Class	Event Trigger
Crack Sealing	Preventative Maintenance	85% Condition
Surface Rehabilitation	Rehabilitation	40% Condition
Full Reconstruction	Replacement	0% Condition



### 4.5.2 LCB Roads

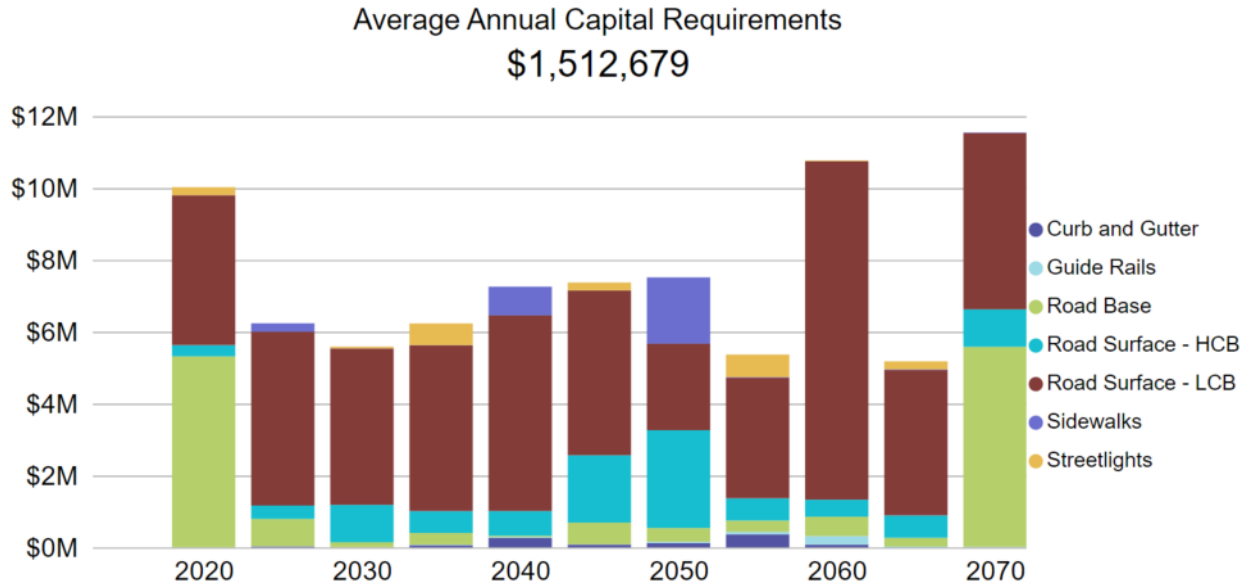
Paved Roads (LCB)		
Event Name	Event Class	Event Trigger
Crack Sealing	Preventative Maintenance	85% Condition (Repeated)
Single Surface Treatment	Rehabilitation	43% Condition (Repeated)
Full Reconstruction	Replacement	0% Condition



### 4.5.3 Forecasted Capital Requirements

Based on the lifecycle strategies identified previously for HCB and LCB Roads, and assuming the end-of-life replacement of all other assets in this category, the following graph forecasts capital requirements for the Road Network.

The annual capital requirement represents the average amount per year that the Township should allocate towards funding rehabilitation and replacement needs to meet future capital needs.



The projected cost of lifecycle activities that will need to be undertaken over the next 10 years to maintain the current level of service can be found in Appendix B.



# 4.6 Risk & Criticality

## 4.6.1 Risk Matrix

The following risk matrix provides a visual representation of the relationship between the probability of failure and the consequence of failure for the assets within this asset category based on 2020 inventory data. See Appendix D for the criteria used to determine the risk rating of each asset.



## 4.6.2 Risks to Current Asset Management Strategies

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



### Aging Infrastructure

As municipal roads continue to age, there are a handful of structures that are approaching their original useful life. The Township is surrounded by industrial farming sites, therefore heavy vehicles and machinery may contribute to accelerated deterioration of the road surface and base. This requires timely renewal programs in collaboration with regular condition assessments to maintain a suitable level of service.



### Extreme Weather

Extreme weather, specifically the freeze-thaw cycles, accelerates deterioration, further adding to the need to renew and maintain the road network. Additionally, the freeze-thaw cycles can lead to unexpected failures in the form of large potholes. To improve asset resiliency, staff should identify problem areas and improve drainage through enhanced lifecycle strategies.

## 4.7 Levels of Service

The following tables identify the Township’s current level of service for the Road 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 Township has selected for this AMP.

### 4.7.1 Community Levels of Service

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

Service Attribute	Qualitative Description	Current LOS (2020)
Scope	Description, which may include maps, of the road network in the municipality and its level of connectivity	See Appendix C
Quality	Description or images that illustrate the different levels of road class pavement condition	See Appendix C

## 4.7.2 Technical Levels of Service

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

<b>Service Attribute</b>	<b>Technical Metric</b>	<b>Current LOS (2020)</b>
Scope	Lane-km of arterial roads (MMS classes 1 and 2) per land area (km/km <sup>2</sup> )	0
	Lane-km of collector roads (MMS classes 3 and 4) per land area (km/km <sup>2</sup> )	0.83
	Lane-km of local roads (MMS classes 5 and 6) per land area (km/km <sup>2</sup> )	0.17
Quality	Average pavement condition index for paved roads in the municipality	HCB: 79% LCB: 63%
	Average surface condition for unpaved roads in the municipality (e.g. excellent, good, fair, poor)	68%
Performance	Capital reinvestment rate	3.1%

## 4.8 Recommendations

### Asset Inventory

- Review the road base asset lengths and reconcile with the road surfaces.

### Condition Assessment Strategies

- Continue undertaking Roads Needs Studies on a 3 to 5-year cycle to ensure condition information is up to date.
- Monitor the service life of roads to ensure that the Estimated Useful Life defined within CityWide reflects the true service life in the field.

### Lifecycle Management Strategies

- Implement the identified lifecycle management strategies for HCB and LCB roads to realize potential cost avoidance and maintain a high quality of road pavement condition.
- Evaluate the efficacy of the Township's lifecycle management strategies at regular intervals to determine the impact cost, condition and risk.

### Risk Management Strategies

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

### Levels of Service

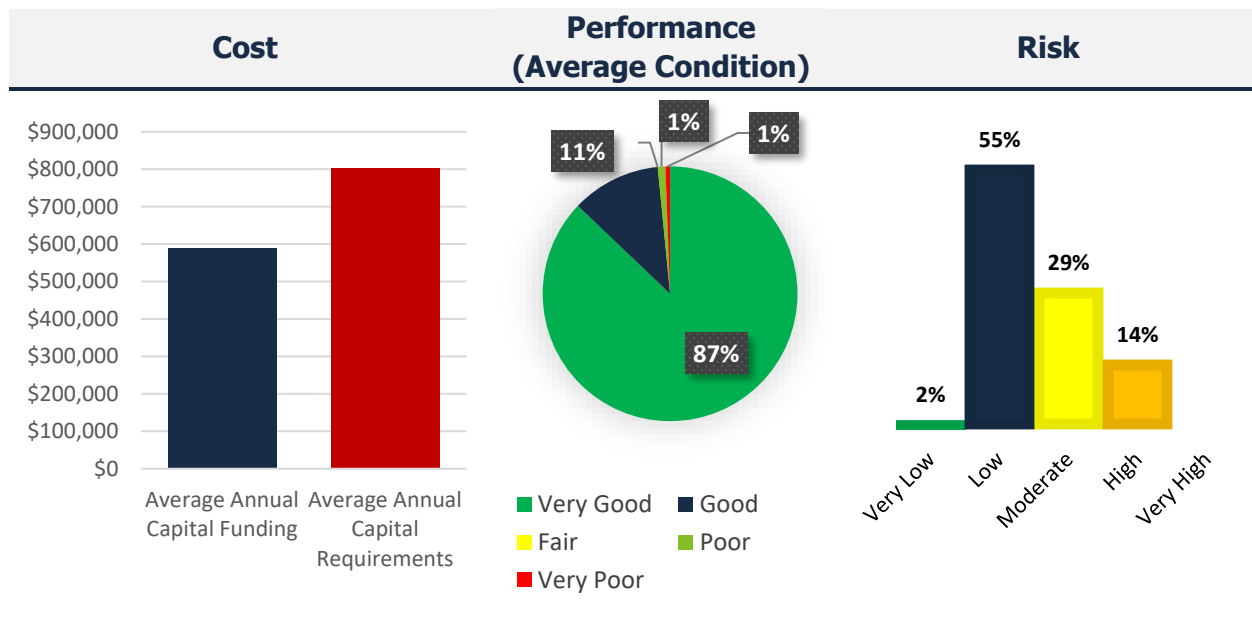
- Continue to measure current levels of service in accordance with the metrics identified in O. Reg. 588/17 and those metrics that the Township believes to provide meaningful and reliable inputs into asset management planning.
- Work towards identifying proposed levels of service as per O. Reg. 588/17 and identify the strategies that are required to close any gaps between current and proposed levels of service.

# 5 Bridges & Culverts

## 5.1 Introduction

Bridges & Culverts represent a critical portion of the transportation services provided to the community. The Department of Public Works is responsible for the maintenance of all bridges and culverts located across municipal roads with the goal of keeping structures in an adequate state of repair and minimizing service disruptions.

The table below outlines high-level service indicators for Bridges & Culverts.



## 5.2 Asset Inventory & Replacement Cost

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

Asset Segment	Quantity	Replacement Cost Method	Total Replacement Cost
Bridges	60	User-Defined Cost	\$66,320,000
Structural Culverts	14	User-Defined Cost	\$3,095,000
<b>Total</b>	<b>74</b>		<b>\$69,415,000</b>

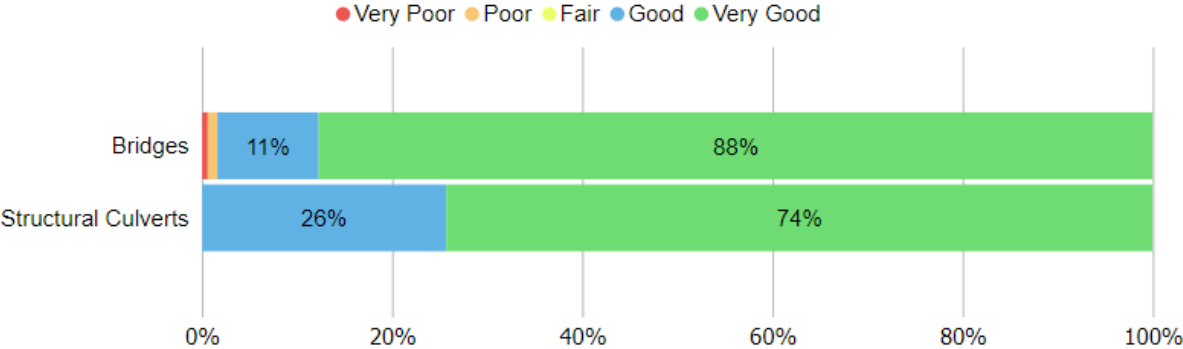
Total Replacement Cost  
\$69.4M



# 5.3 Asset Condition

The table below identifies the current average condition and source of available condition data for each asset segment. The Average Condition (%) is a weighted value based on replacement cost.

Asset Segment	Average Condition <sup>2</sup> (%)	Average Condition Rating	Condition Source
Bridges	93%	Very Good	100% Assessed
Structural Culverts	83%	Very Good	100% Assessed
<b>Average</b>	<b>93%</b>	<b>Very Good</b>	<b>100% Assessed</b>



To ensure that the Township’s Bridges & Culverts continues to provide an acceptable level of service, the Township 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 Bridges & Culverts.

## 5.3.1 Current Approach to Condition Assessment

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

<sup>2</sup> These condition scores are adapted from BCI values, and may not be a good representation of the true condition of bridges. Although the BCI scores are quite high, many bridges are requiring extensive capital work to maintain and rehabilitate.

- Condition assessments of all bridges and culverts with a span greater than or equal to 3 meters are completed every 2 years in accordance with the Ontario Structure Inspection Manual (OSIM).
- The most recent OSIM report was completed in 2019.



## 5.4 Estimated Useful Life & Average Age

The Estimated Useful Life for Bridges & Culverts assets has been assigned according to a combination of established industry standards and staff knowledge. The Average Age of each asset is based on the number of years each asset has been in-service. Finally, the Average Service Life Remaining represents the difference between the Estimated Useful Life and the Average Age, except when an asset has been assigned an assessed condition rating. Assessed condition may increase or decrease the average service life remaining.

<b>Asset Segment</b>	<b>Estimated Useful Life (Years)</b>	<b>Average Age (Years)</b>	<b>Average Service Life Remaining (Years)</b>
Bridges	30-100	48.5	74.9
Structural Culverts	30-100	38.0	68.4
<b>Average</b>		<b>46.5</b>	<b>76.8</b>

Each asset's Estimated Useful Life should 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.

# 5.5 Lifecycle Management Strategy

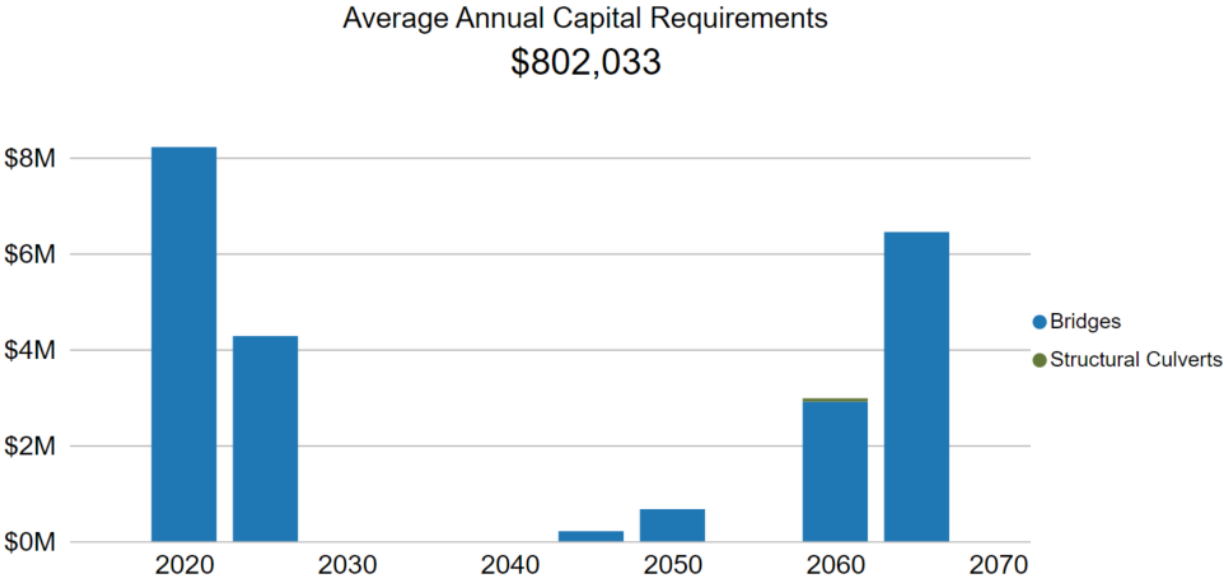
The condition or performance of most assets will deteriorate over time. To ensure that municipal assets are performing as expected and meeting the needs of customers, it is important to establish a lifecycle management strategy to proactively manage asset deterioration.

The following table outlines the Township’s current lifecycle management strategy.

Activity Type	Description of Current Strategy
Maintenance	Sweeping, mowing, and deck washing is completed annually every spring.
Rehabilitation and Replacement	All lifecycle activities are driven by cost considerations and the results of mandated structural inspections completed according to the Ontario Structure Inspection Manual (OSIM).

## 5.5.1 Forecasted Capital Requirements

The following graph forecasts long-term capital requirements, aggregated to five-year buckets. The annual capital requirement represents the average amount per year that the Township should allocate towards funding rehabilitation and replacement needs.



The projected cost of lifecycle activities that will need to be undertaken over the next 10 years to maintain the current level of service can be found in Appendix B.

# 5.6 Risk & Criticality

## 5.6.1 Risk Matrix

The following risk matrix provides a visual representation of the relationship between the probability of failure and the consequence of failure for the assets within this asset category based on 2020 inventory data. See Appendix D for the criteria used to determine the risk rating of each asset.



## 5.6.2 Risks to Current Asset Management Strategies

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

### Capital Funding Strategies



The Township owns a significant number of structural bridges and culverts. Some structures may not be used very often but remain critical to the public transportation system – many of them have very long detour distances. Maintenance activities may be difficult to complete on schedule due to staff capacity. Major capital rehabilitation projects for bridges and culverts are often dependant on the availability of grant funding opportunities. When grants are not available, bridge rehabilitation projects may be deferred. An annual capital funding strategy can reduce dependency on grant funding and help prevent deferral of capital works.

## 5.7 Levels of Service

The following tables identify the Township’s current level of service for Bridges & 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 Township has selected for this AMP.

### 5.7.1 Community Levels of Service

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

Service Attribute	Qualitative Description	Current LOS (2020)
Scope	Description of the traffic that is supported by municipal bridges (e.g. heavy transport vehicles, motor vehicles, emergency vehicles, pedestrians, cyclists)	Bridges and structural culverts are a key component of the municipal transportation network. The Township has one pedestrian bridge while the remainder host local traffic with motor vehicles, emergency vehicles, and occasionally heavy transport vehicle.
Quality	Description or images of the condition of bridges & culverts and how this would affect use of the bridges & culverts	See Appendix C

### 5.7.2 Technical Levels of Service

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

<b>Service Attribute</b>	<b>Technical Metric</b>	<b>Current LOS (2020)</b>
Scope	% of bridges in the Township with loading or dimensional restrictions	18%
	% of structural culverts in the Township with loading or dimensional restrictions	7%
Quality	Average bridge condition index value for bridges in the Township	93%
	Average bridge condition index value for structural culverts in the Township	83%
Performance	Capital re-investment rate	0.8%

# 5.8 Recommendations

## Asset Inventory

- Continue to review and validate inventory data, assessed condition data and replacement costs for all bridges and structural culverts upon the completion of OSIM inspections every 2 years.

## Risk Management Strategies

- Populate the “main deficiency” attribute to activate this metric within the risk model. This information can be obtained from reviewing structural element notes within OSIM report and summarizing to one of the drop-down options defined for the attribute in CityWide.
- Implement risk-based decision-making as part of asset management planning and budgeting processes. This should include the regular review of high-risk assets to determine appropriate risk mitigation strategies.
- Review risk models on a regular basis and adjust according to an evolving understanding of the probability and consequences of asset failure.

## Levels of Service

- Continue to measure current levels of service in accordance with the metrics identified in O. Reg. 588/17 and those metrics that the Township believe to provide meaningful and reliable inputs into asset management planning.
- Work towards identifying proposed levels of service as per O. Reg. 588/17 and identify the strategies that are required to close any gaps between current and proposed levels of service.

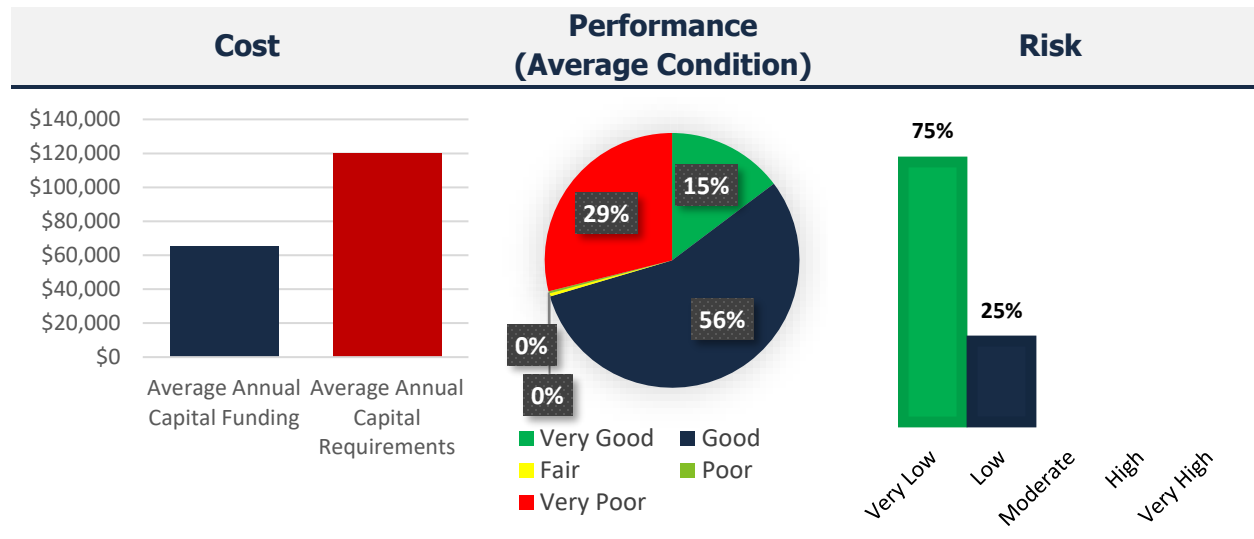
# 6 Stormwater Network

## 6.1 Introduction

The Township is responsible for owning and maintaining a Stormwater Network of an unknown length of storm sewer mains, catch basins, storm ponds, and other supporting infrastructure.

Staff are working towards improving the accuracy and reliability of their Stormwater inventory to assist with long-term asset management planning.

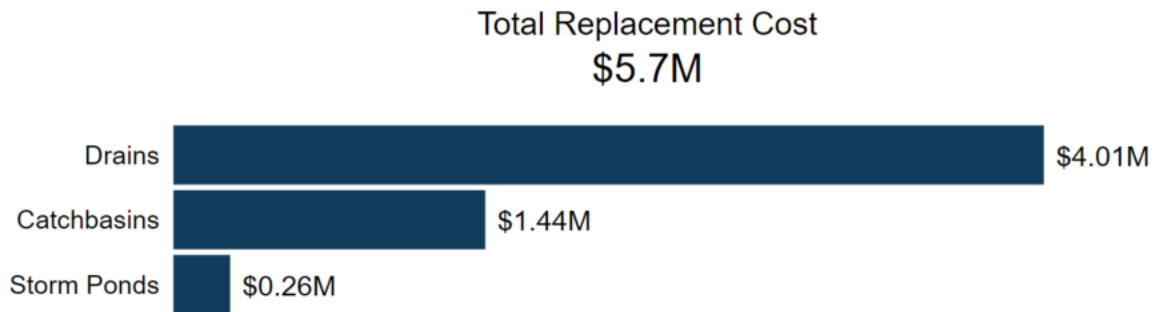
The table below outlines high-level service indicators for the Stormwater Network.



## 6.2 Asset Inventory & Replacement Cost

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

Asset Segment	Quantity	Replacement Cost Method	Total Replacement Cost
Catchbasins	513	User-Defined Cost	\$1,436,400
Drains	76	User-Defined Cost	\$4,007,236
Storm Ponds	11 hectares	User-Defined Cost	\$262,184
<b>Total</b>			<b>\$5,705,820</b>

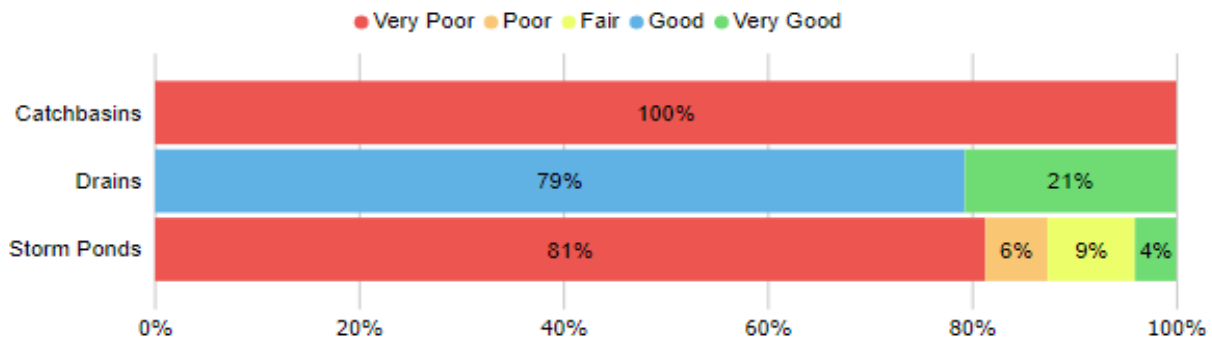




## 6.3 Asset Condition

The table below identifies the current average condition and source of available condition data for each asset segment. The Average Condition (%) is a weighted value based on replacement cost.

Asset Segment	Average Condition (%)	Average Condition Rating	Condition Source
Catchbasins	8%	Very Poor	Age-Based
Drains	80%	Good	Age-Based
Storm Ponds	10%	Very Poor	Age-Based
<b>Average</b>	<b>59%</b>	<b>Fair</b>	<b>Age-Based</b>



To ensure that the Township’s Stormwater Network continues to provide an acceptable level of service, the Township 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.

### 6.3.1 Current Approach to Condition Assessment

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

- There are no formal condition assessment programs in place for the stormwater network.
- Culverts are assessed as part of the road needs study, storm ponds are visually assessed on an annual basis, and catch basins are visually assessed every 2 years.
- As the Township refines the available asset inventory for the stormwater network a regular assessment cycle should be established.

## 6.4 Estimated Useful Life & Average Age

The Estimated Useful Life for Stormwater Network assets has been assigned according to a combination of established industry standards and staff knowledge. The Average Age of each asset is based on the number of years each asset has been in-service. Finally, the Average Service Life Remaining represents the difference between the Estimated Useful Life and the Average Age, except when an asset has been assigned an assessed condition rating. Assessed condition may increase or decrease the average service life remaining.

<b>Asset Segment</b>	<b>Estimated Useful Life (Years)</b>	<b>Average Age (Years)</b>	<b>Average Service Life Remaining (Years)</b>
Catchbasins	50	46.0	4.0
Drains	50	10.4	59.7 <sup>3</sup>
Storm Ponds	100	25.5	74.5
<b>Average</b>		<b>42.8</b>	<b>9.8</b>

Each asset's Estimated Useful Life should 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.

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<sup>3</sup> Drains were assessed by staff as mostly being in good condition, although age indicates failure is imminent. Because of the optimistic condition scores, the age is not a good indicator of remaining service life.

# 6.5 Lifecycle Management Strategy

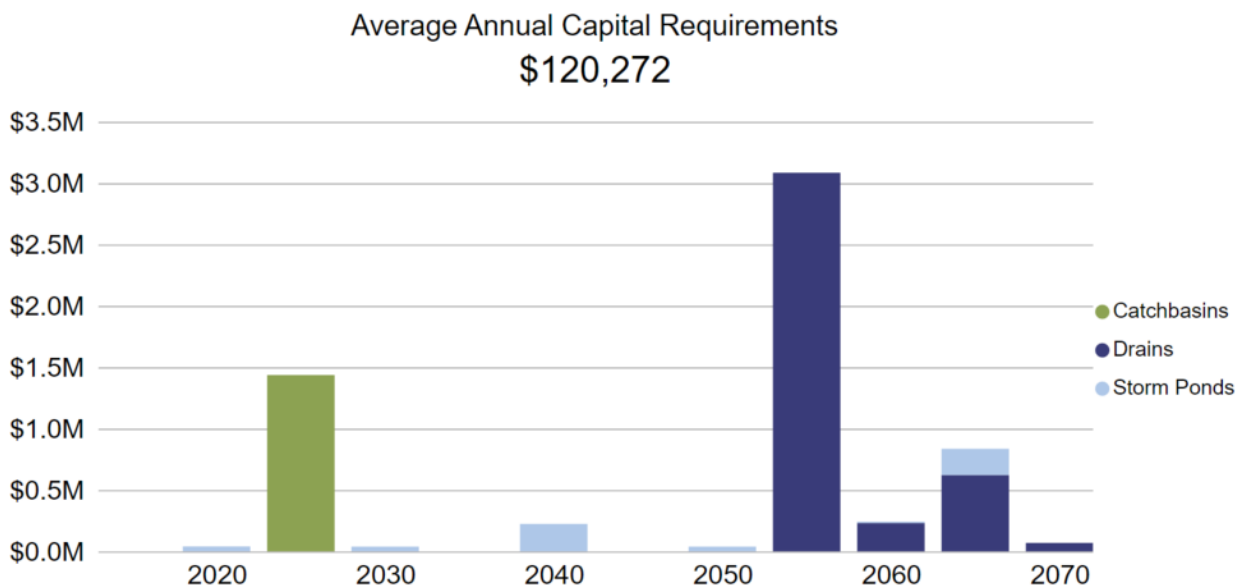
The condition or performance of most assets will deteriorate over time. To ensure that municipal assets are performing as expected and meeting the needs of customers, it is important to establish a lifecycle management strategy to proactively manage asset deterioration.

The following table outlines the Township’s current lifecycle management strategy.

Activity Type	Description of Current Strategy
Maintenance	Primary maintenance activities include catch basin cleaning, driveway culvert cleaning, and landscaping around the storm ponds.
Rehabilitation	Trenchless re-lining has the potential to reduce total lifecycle costs but would require a formal condition assessment program to determine viability.
Replacement	Without the availability of up-to-date condition assessment information replacement activities are mostly reactive in nature.

## 6.5.1 Forecasted Capital Requirements

The following graph forecasts long-term capital requirements, aggregated to five-year buckets. The annual capital requirement represents the average amount per year that the Township should allocate towards funding rehabilitation and replacement needs. Since all catchbasins were installed in the same year, age-based condition indicates all replacements will occur in the same year. In reality, the catchbasins will deteriorate at different rates, and the \$1.4 million spike will likely be spread over several years.



The projected cost of lifecycle activities that will need to be undertaken over the next 10 years to maintain the current level of service can be found in Appendix B.

## 6.6 Risk & Criticality

### 6.6.1 Risk Matrix

The following risk matrix provides a visual representation of the relationship between the probability of failure and the consequence of failure for the assets within this asset category based on 2020 inventory data. See Appendix D for the criteria used to determine the risk rating of each asset.

Consequence	5	0 Assets -\$0.00	0 Assets -\$0.00	0 Assets -\$0.00	0 Assets -\$0.00	0 Assets -\$0.00
	4	0 Assets -\$0.00	0 Assets -\$0.00	0 Assets -\$0.00	0 Assets -\$0.00	0 Assets -\$0.00
	3	1 Asset 1.00 unit(s) \$470,311.78	0 Assets -\$0.00	0 Assets -\$0.00	0 Assets -\$0.00	0 Assets -\$0.00
	2	0 Assets -\$0.00	8 Assets 16.00 unit(s) \$1,163,221.20	0 Assets -\$0.00	0 Assets -\$0.00	0 Assets -\$0.00
	1	7 Assets 6.25 m, unit(s), hectares \$369,972.38	27 Assets 53.00 unit(s) \$2,014,321.20	1 Asset 1.10 hectares \$22,491.00	2 Assets 0.10 hectares \$15,968.76	523 Assets 522.55 hectares, unit(s) \$1,649,533.38
		1	2	3	4	5
		Probability				

### 6.6.2 Risks to Current Asset Management Strategies

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



#### Extreme Weather

The stormwater network comprises of catchbasins, drains, and stormwater management ponds. This network was designed with standards that do not meet the needs of new development areas, generally providing a 1:2-year storm protection, rather than 1:5 as is typical. In recent years, the Township has experience more extreme rainfall events. The risk of surface flooding and road washouts will increase with these events if the system is not maintained adequately.

## 6.7 Levels of Service

The following tables identify the Township’s current level of service for 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 Township has selected for this AMP.

### 6.7.1 Community Levels of Service

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

<b>Service Attribute</b>	<b>Qualitative Description</b>	<b>Current LOS (2020)</b>
Scope	Description, which may include map, of the user groups or areas of the municipality that are protected from flooding, including the extent of protection provided by the municipal stormwater system	See Appendix C

### 6.7.2 Technical Levels of Service

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

<b>Service Attribute</b>	<b>Technical Metric</b>	<b>Current LOS (2020)</b>
Scope	% of properties in municipality resilient to a 100-year storm	93%
	% of the municipal stormwater management system resilient to a 5-year storm	67%
Performance	Capital reinvestment rate	1.1%

# 6.8 Recommendations

## Asset Inventory

- The Township’s Stormwater Network inventory remains at a basic level of maturity and staff do not have a high level of confidence in its accuracy or reliability. Several culverts have the same location and name within the Citywide inventory. Review the inventory to ensure there are no duplicate assets. The development of a comprehensive inventory of the stormwater network should be priority.

## Replacement Cost

- Estimate and populate new replacement costs using tender prices, internal studies, including material, labor, machinery, and engineering costs etc.

## Condition Assessment Strategies

- The development of a comprehensive inventory should be accompanied by a system-wide assessment of the condition of all assets in the Stormwater Network through CCTV inspections. In lieu of CCTV inspections consider developing a proxy condition score, as an alternative to assessed condition. Factors such as age, material, and number of blockages are typically used.
- Catchbasins should be assessed visually, to better project when replacements will need to take place. Relying on age alone unrealistically suggests all replacements will occur in the same year.

## Risk Management Strategies

- Implement risk-based decision-making as part of asset management planning and budgeting processes. This should include the regular review of high-risk assets to determine appropriate risk mitigation strategies.
- Populate the “ground type” metric to activate this risk metric. Surveys of land surrounding the area can be used to approximate the ground type.
- Review risk models on a regular basis and adjust according to an evolving understanding of the probability and consequences of asset failure.

## Lifecycle Management Strategies

- Document and review lifecycle management strategies for the Stormwater Network on a regular basis to achieve the lowest total cost of ownership while maintaining adequate service levels.

## Levels of Service

- Continue to measure current levels of service in accordance with the metrics that the Township has established in this AMP. Additional metrics can be established as they are determined to provide meaningful and reliable inputs into asset management planning.
- Work towards identifying proposed levels of service as per O. Reg. 588/17 and identify the strategies that are required to close any gaps between current and proposed levels of service.

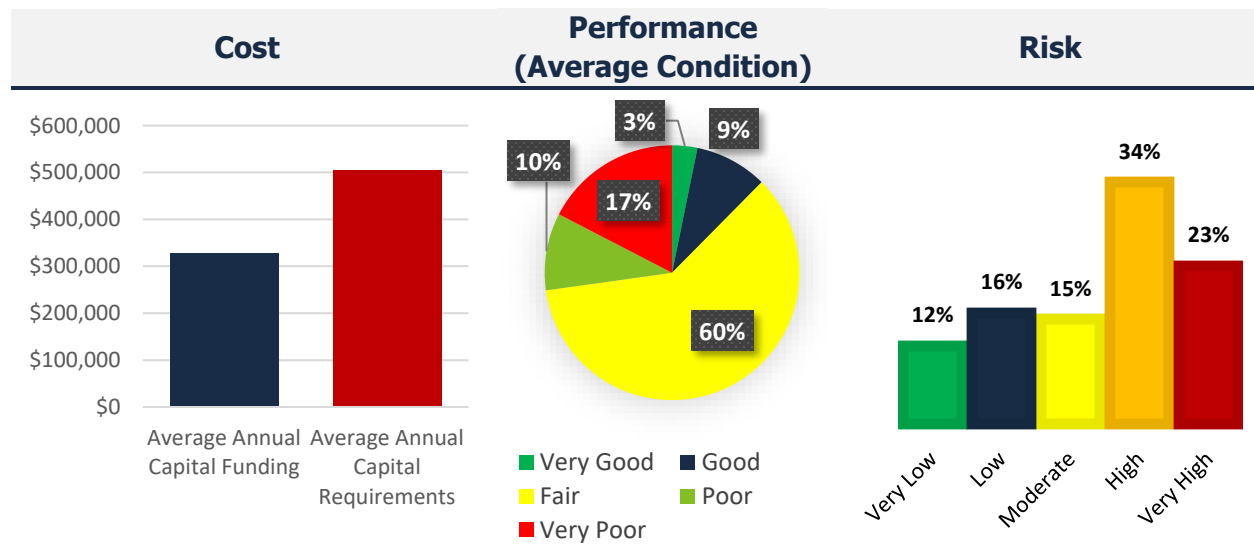
# 7 Buildings

## 7.1 Introduction

The Township of Blandford-Blenheim owns and maintains several facilities and recreation centres that provide key services to the community. These include:

- Administrative offices
- Fire stations and associated offices and facilities
- Public works garages and storage sheds
- An arena and community centres

The table below outlines high-level service indicators for Buildings & Facilities.

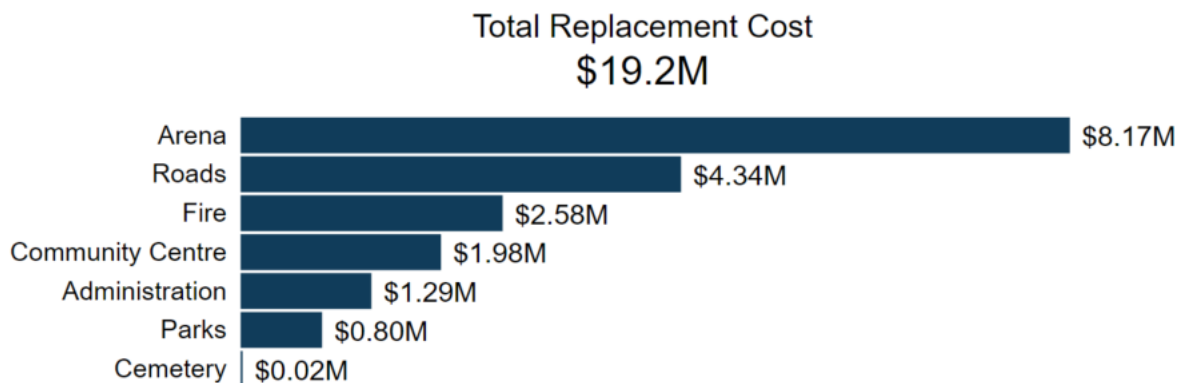




## 7.2 Asset Inventory & Replacement Cost

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

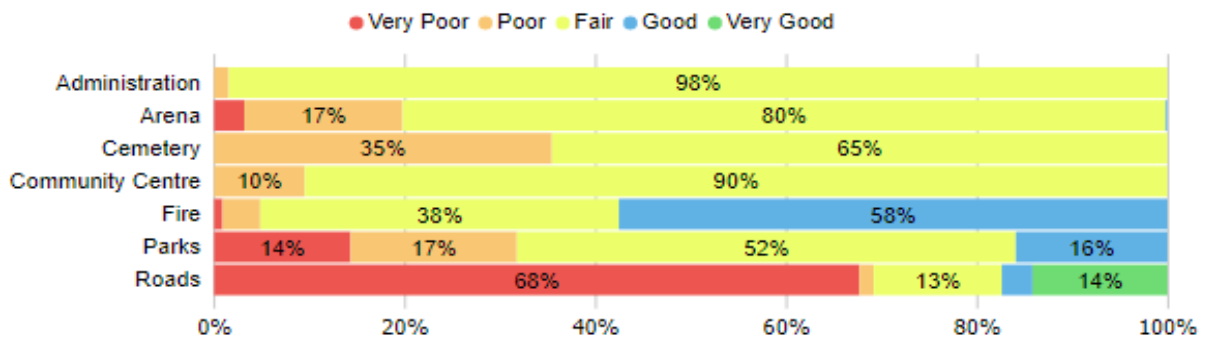
Asset Segment	Quantity (Components)	Replacement Cost Method	Total Replacement Cost
Administration	1 (5)	User-Defined Cost	\$1,290,179
Arena	1 (23)	97% User-Defined Cost; 3% CPI Tables	\$8,172,167
Cemetery	2 (2)	User-Defined Cost	\$20,728
Community Centre	2 (6)	User-Defined Cost	\$1,976,480
Fire	4 (27)	User-Defined Cost	\$2,583,798
Parks	4 (14)	User-Defined Cost	\$804,428
Roads	4 (15)	User-Defined Cost	\$4,341,465
			<b>\$19,189,245</b>



## 7.3 Asset Condition

The table below identifies the current average condition and source of available condition data for each asset segment. The Average Condition (%) is a weighted value based on replacement cost.

Asset Segment	Average Condition (%)	Average Condition Rating	Condition Source
Administration	57%	Fair	100% Assessed
Arena	54%	Fair	100% Assessed
Cemetery	50%	Fair	100% Assessed
Community Centre	57%	Fair	100% Assessed
Fire	69%	Good	100% Assessed
Parks	50%	Fair	100% Assessed
Roads	23%	Poor	86% Assessed
<b>Average</b>	<b>50%</b>	<b>Fair</b>	<b>97% Assessed</b>



To ensure that the Township's Buildings & Facilities continues to provide an acceptable level of service, the Township should monitor the average condition of all assets. If the average condition declines, staff should re-evaluate their lifecycle management strategy to determine what combination of maintenance, rehabilitation and replacement activities is required to increase the overall condition of the Buildings & Facilities.

### 7.3.1 Current Approach to Condition Assessment

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

- External engineering consultants conduct a formal assessment of the arena every 5 years.
- Other municipal buildings are assessed by municipal staff on an annual basis or more often as needed.

## 7.4 Estimated Useful Life & Average Age

The Estimated Useful Life for Buildings assets has been assigned according to a combination of established industry standards and staff knowledge. The Average Age of each asset is based on the number of years each asset has been in-service. Finally, the Average Service Life Remaining represents the difference between the Estimated Useful Life and the Average Age, except when an asset has been assigned an assessed condition rating. Assessed condition may increase or decrease the average service life remaining.

<b>Asset Segment</b>	<b>Estimated Useful Life (Years)</b>	<b>Average Age (Years)</b>	<b>Average Service Life Remaining (Years)</b>
Administration	15-40	14.3	16.8
Arena	10-51	12.5	14.2
Cemetery	10-40	29.4	13.7
Community Centre	15-50	20.4	20.9
Fire	10-40	27.3	13.3
Parks	30-50	34.5	30.1
Roads	10-50	19.0	15.1
<b>Average</b>		<b>21.6</b>	<b>16.9</b>

Each asset's Estimated Useful Life should 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.

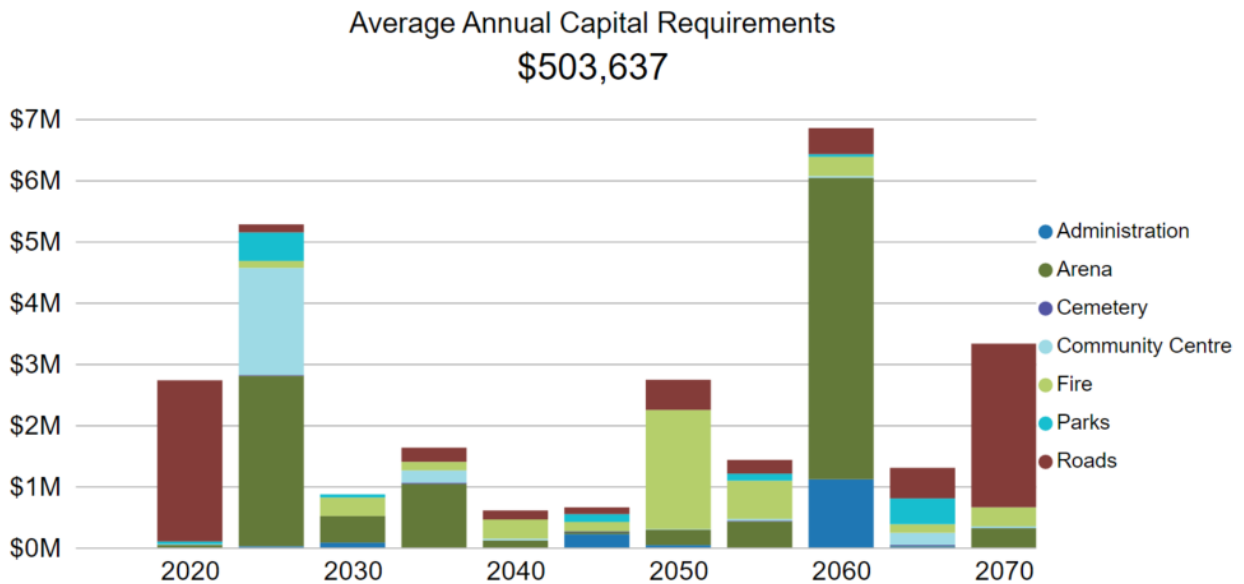
# 7.5 Lifecycle Management Strategy

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 Township’s current lifecycle management strategy.

Activity Type	Description of Current Strategy
Maintenance / Rehabilitation	<p>Municipal buildings are subject to regular inspections to identify health &amp; safety requirements as well as structural deficiencies that require additional attention.</p> <p>Critical buildings (Fire Stations etc.) have a detailed maintenance and rehabilitation schedule, while the maintenance of other facilities are dealt with on a case-by-case basis. Primary maintenance activities include regular cleaning.</p>
Replacement	<p>As a supplement to the knowledge and expertise of municipal staff the Township regularly works with contractors to complete assessments should inform the 10-year capital plan.</p>

## 7.5.1 Forecasted Capital Requirements

The following graph forecasts long-term capital requirements, aggregated to five-year buckets. The annual capital requirement represents the average amount per year that the Township should allocate towards funding rehabilitation and replacement needs.



The projected cost of lifecycle activities that will need to be undertaken over the next 10 years to maintain the current level of service can be found in Appendix B.

## 7.6 Risk & Criticality

### 7.6.1 Risk Matrix

The following risk matrix provides a visual representation of the relationship between the probability of failure and the consequence of failure for the assets within this asset category based on 2020 inventory data. See Appendix D for the criteria used to determine the risk rating of each asset.



### 7.6.2 Risks to Current Asset Management Strategies

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



#### Staff Capacity and COVID-19

Municipal facilities have had capacity and staffing constraints with the advent of COVID-19. More time is spent disinfecting the facilities, rather than using staff time for other facility needs. Additionally, public expectations are challenged with the limitations on user capacity and access, resulting in lower customer satisfaction. Specifically, the community buildings, halls, and arena have been affected the most from COVID-19.

## 7.7 Levels of Service

The following tables identify the Township’s current level of service for Buildings. 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 Township has selected for this AMP.

### 7.7.1 Community Levels of Service

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

Service Attribute	Qualitative Description	Current LOS (2020)
Accessibility	List of facilities that meet accessibility standards and any work that has been undertaken to achieve alignment	<p>The following buildings meet accessibility needs: Plattsville arena, Plattsville fire station, Drumbo roads crew shop, Drumbo Township office, Princeton Hall, Drumbo fire.</p> <p>The following buildings do not meet accessibility standards: Princeton fire, Bright fire, Blenheim roads crew buildings. These buildings require a push button for doors.</p>

### 7.7.2 Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS (2020)
Accessibility	% of buildings that meet AODA standards	67%
Sustainability and Affordability	O&M cost by municipal facility replacement cost	0.42%
	% of buildings in poor or very poor condition	27.2%
	Capital reinvestment rate	1.7%

# 7.8 Recommendations

## Condition Assessment Strategies

- The Township should implement regular condition assessments for all facilities to better inform short- and long-term capital requirements.
- It may be helpful to develop a deficiencies list and prioritize lifecycle activities by the risk each deficiency poses.

## Risk Management Strategies

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

## Levels of Service

- Continue measuring current levels of service in accordance with the metrics that the Township has established in this AMP. Additional metrics can be established as they are determined to provide meaningful and reliable inputs into asset management planning.
- Work towards identifying proposed levels of service as per O. Reg. 588/17 and identify the strategies that are required to close any gaps between current and proposed levels of service.

# 8

## Machinery & Equipment

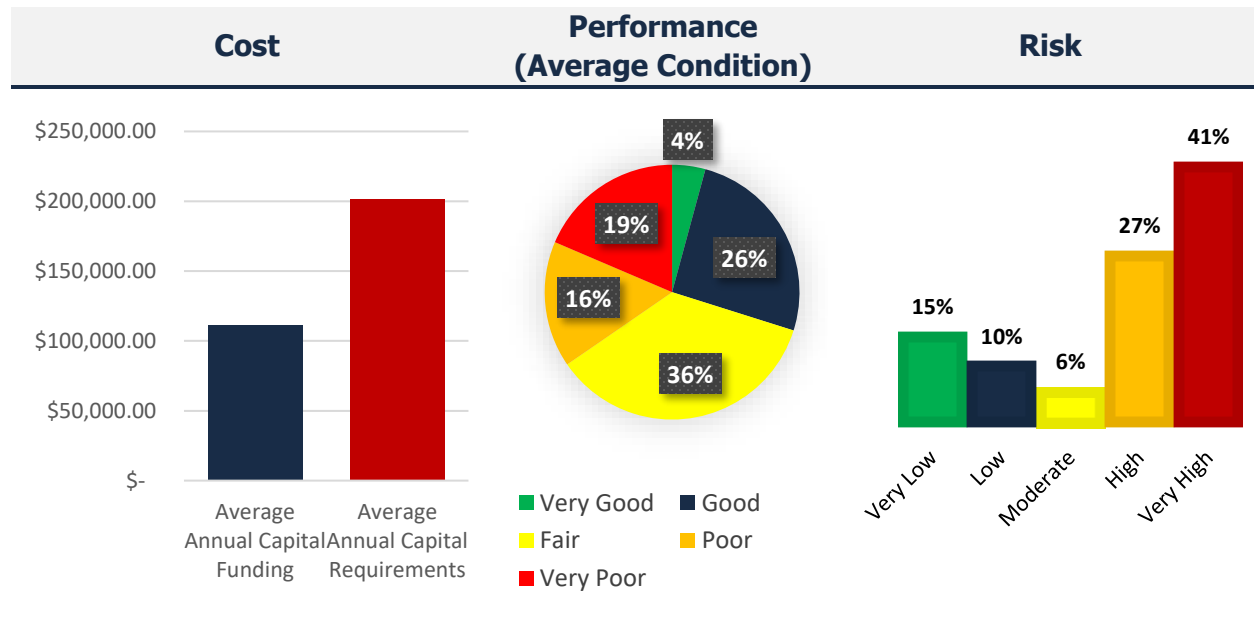
### 8.1 Introduction

In order to maintain the high quality of public infrastructure and support the delivery of core services, Township staff own and employ various types of machinery and equipment. This includes:

- Landscaping equipment to maintain public parks
- Fire equipment to support the delivery of emergency services
- Plows and other tools to provide winter control activities
- Zamboni and other equipment to maintain buildings and facilities

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

The table below outlines high-level service indicators for Machinery & Equipment.

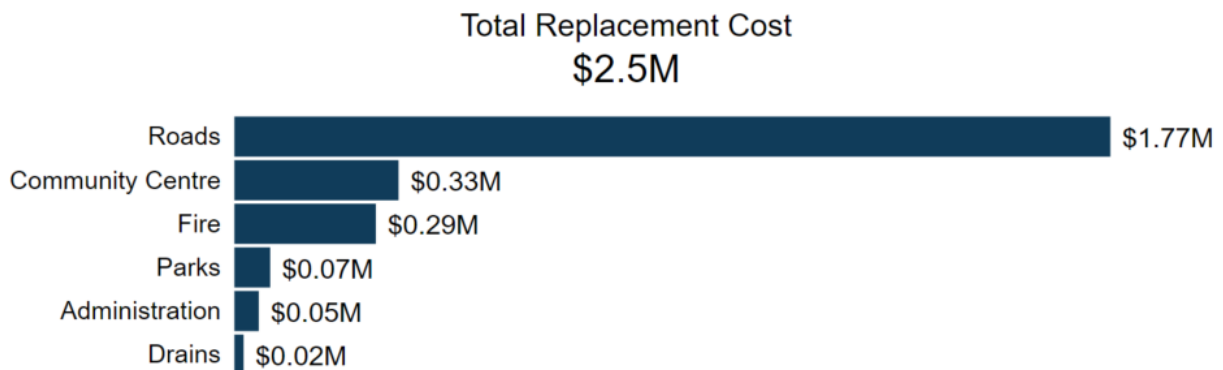




## 8.2 Asset Inventory & Replacement Cost

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

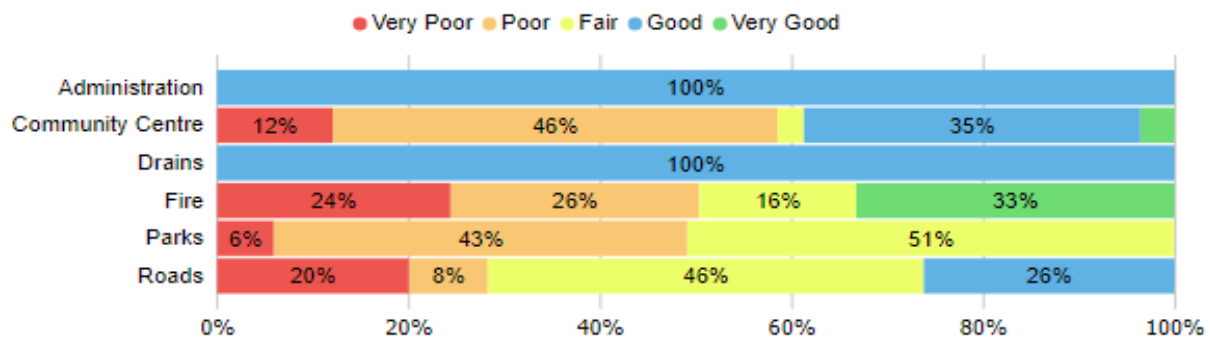
Asset Segment	Quantity	Replacement Cost Method	Total Replacement Cost
Administration	1	CPI Tables	\$49,802
Community Centre	13	User-Defined Cost	\$332,475
Drains	1	User-Defined Cost	\$19,042
Fire	126	User-Defined Cost	\$286,558
Parks	6	User-Defined Cost	\$72,837
Roads	43	User-Defined Cost	\$1,772,030
<b>Total</b>			<b>\$2,532,744</b>



## 8.3 Asset Condition

The table below identifies the current average condition and source of available condition data for each asset segment. The Average Condition (%) is a weighted value based on replacement cost.

Asset Segment	Average Condition (%)	Average Condition Rating	Condition Source
Administration	68%	Good	Age-Based
Community Centre	44%	Fair	100% Assessed
Drains	63%	Good	Age-Based
Fire	50%	Fair	67% Assessed
Parks	41%	Fair	100% Assessed
Roads	46%	Fair	90% Assessed
<b>Average</b>	<b>47%</b>	<b>Fair</b>	<b>86% Assessed</b>



To ensure that the Township's Machinery & Equipment continues to provide an acceptable level of service, the Township 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 & Equipment.

## 8.3.1 Current Approach to Condition Assessment

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

- Staff complete regular visual inspections of machinery & equipment to ensure they are in state of adequate repair.
- There are no formal condition assessment programs in place, although most machinery & equipment assets were assigned cursory condition ratings for this AMP.
- Fire Protection Services equipment is subject to a more rigorous inspection program in accordance with the guidelines provided by the National Fire Protection Association (NFPA).

## 8.4 Estimated Useful Life & Average Age

The Estimated Useful Life for Machinery & Equipment assets has been assigned according to a combination of established industry standards and staff knowledge. The Average Age of each asset is based on the number of years each asset has been in-service. Finally, the Average Service Life Remaining represents the difference between the Estimated Useful Life and the Average Age, except when an asset has been assigned an assessed condition rating. Assessed condition may increase or decrease the average service life remaining.

<b>Asset Segment</b>	<b>Estimated Useful Life (Years)</b>	<b>Average Age (Years)</b>	<b>Average Service Life Remaining (Years)</b>
Administration	15	4.8	10.3
Community Centre	20-42	13.6	13.1
Drains	10	3.8	6.3
Fire	5-15	2.8	6.8
Parks	7-21	7.1	5.3
Roads	10-14	10.5	4.3
		<b>8.5</b>	<b>7.3</b>

Each asset's Estimated Useful Life should 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.

# 8.5 Lifecycle Management Strategy

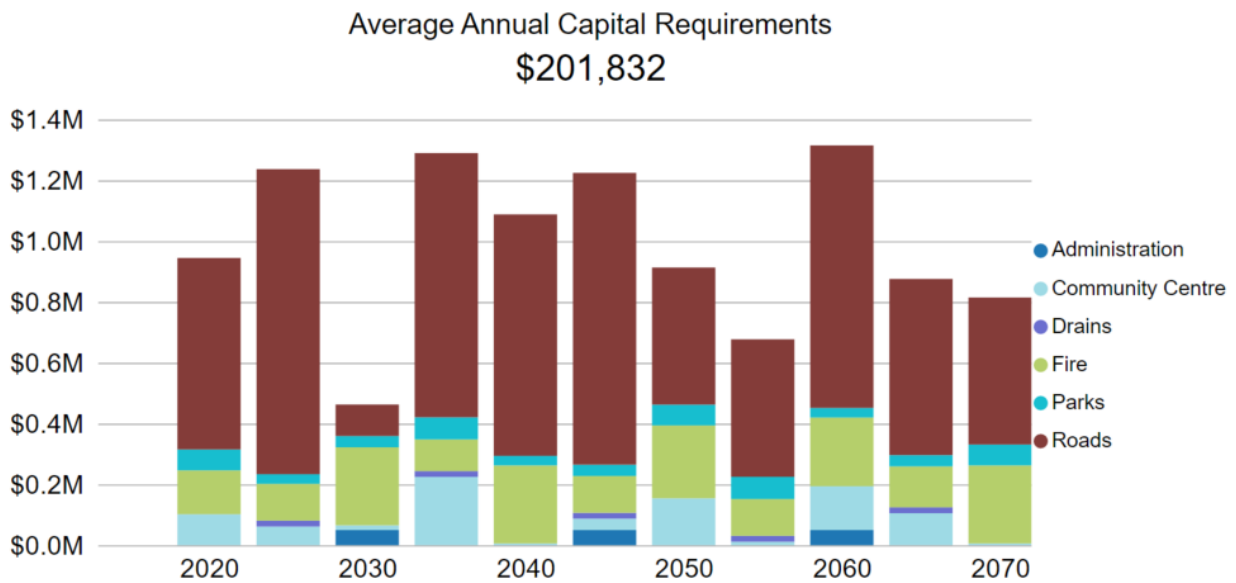
The condition or performance of most assets will deteriorate over time. To ensure that municipal assets are performing as expected and meeting the needs of customers, it is important to establish a lifecycle management strategy to proactively manage asset deterioration.

The following table outlines the Township’s current lifecycle management strategy.

Activity Type	Description of Current Strategy
Maintenance/ Rehabilitation	Maintenance program varies by department. Machinery & equipment is maintained according to manufacturer recommended actions and supplemented by the expertise of municipal staff. Fire Protection Services equipment is subject to a more rigorous maintenance program in accordance with the guidelines provided by the National Fire Protection Association (NFPA).
Replacement	The replacement of machinery & equipment depends on deficiencies identified by operators that may impact their ability to complete required tasks, in addition to the service life remaining.

## 8.5.1 Forecasted Capital Requirements

The following graph forecasts long-term capital requirements, aggregated to five-year buckets. The annual capital requirement represents the average amount per year that the Township should allocate towards funding rehabilitation and replacement needs.



The projected cost of lifecycle activities that will need to be undertaken over the next 10 years to maintain the current level of service can be found in Appendix B.

# 8.6 Risk & Criticality

## 8.6.1 Risk Matrix

The following risk matrix provides a visual representation of the relationship between the probability of failure and the consequence of failure for the assets within this asset category based on 2020 inventory data. See Appendix D for the criteria used to determine the risk rating of each asset.



## 8.6.2 Risks to Current Asset Management Strategies

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

### Aging Infrastructure

A significant portion of machinery and equipment assets are approaching the end of their useful life. As equipment age, they will not perform as efficiently and may lead to increased operating costs.



A related risk for the Township is the obsolescence of equipment. Machinery that is used by the Township are larger than they used to be. This is a risk because the buildings that house the equipment, as well as any attachments associated, will now have less available space. As the Township replaces the machinery and equipment with larger assets, there may be a risk of not meeting capacity or servicing requirements.

## 8.7 Levels of Service

The following tables identify the Township’s current level of service for Machinery & Equipment. 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 Township has selected for this AMP.

### 8.7.1 Community Levels of Service

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

Service Attribute	Qualitative Description	Current LOS (2020)
Affordability and Sustainability	Description of the current condition of machinery and equipment and the plans that are in place to maintain or improve provided level of service	Equipment is repaired proactively as it is informed by regular inspections before use.  A list of public works equipment undergoing annual maintenance calibration is provided in Appendix C.

### 8.7.2 Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS (2020)
Affordability and Sustainability	O&M cost by municipal machinery & equipment replacement cost	1.35%
	% of machinery & equipment in poor or very poor condition	34.6%
	Capital reinvestment rate	4.4%

## 8.8 Recommendations

### Replacement Costs

- Install a replacement cycle strategy for specialized equipment based on assessed condition or manufacturer recommendations.

### Condition Assessment Strategies

- Identify condition assessment strategies for high value and high-risk equipment.
- Review assets that have surpassed their estimated useful life to determine if immediate replacement is required or whether these assets are expected to remain in-service. Adjust the service life and/or condition ratings for these assets accordingly.

### Lifecycle Strategies

- Consider a replacement cycle strategy for specialized equipment based on assessed condition or manufacturer recommendations.

### Risk Management Strategies

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

### Levels of Service

- Continue measuring current levels of service in accordance with the metrics that the Township has established in this AMP. Additional metrics can be established as they are determined to provide meaningful and reliable inputs into asset management planning.
- Work towards identifying proposed levels of service as per O. Reg. 588/17 and identify the strategies that are required to close any gaps between current and proposed levels of service.

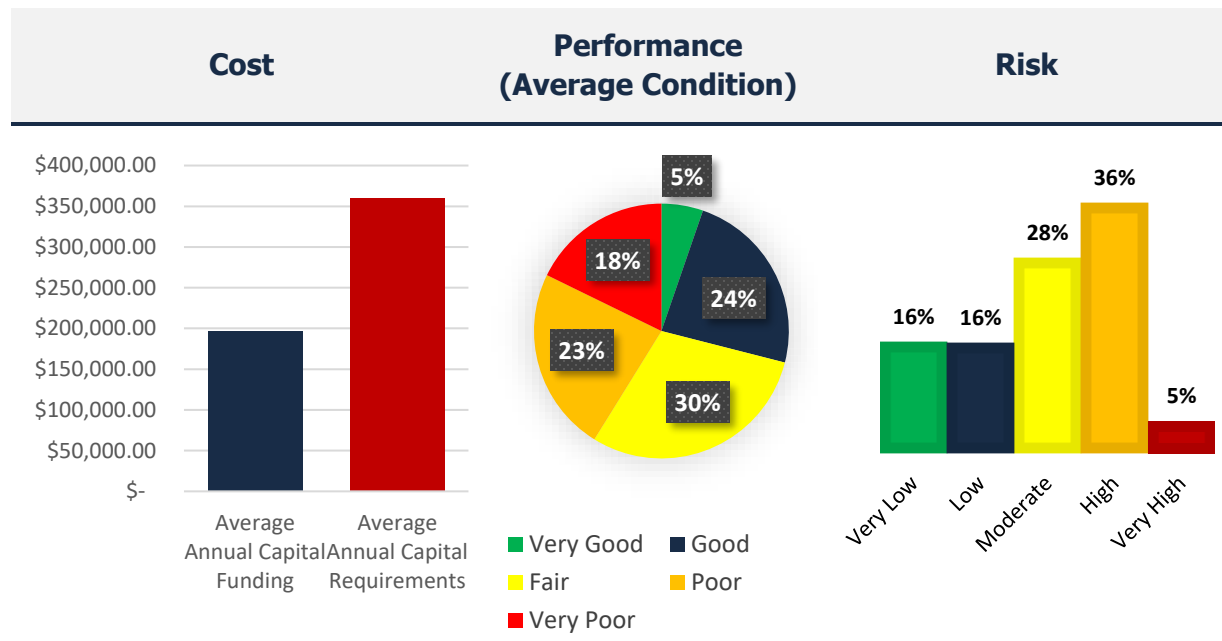
# 9 Vehicles

## 9.1 Introduction

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

- Tandem axle trucks for winter control and public works activities
- Fire rescue vehicles to provide emergency services
- Pick-up trucks to support the maintenance of the transportation network and address service requests for Environmental Services and Parks & Recreation

The table below outlines high-level service indicators for Vehicles.

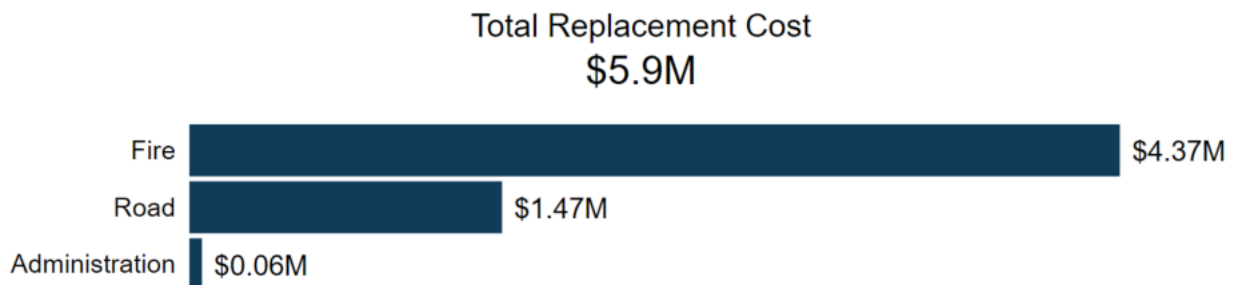




## 9.2 Asset Inventory & Replacement Cost

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

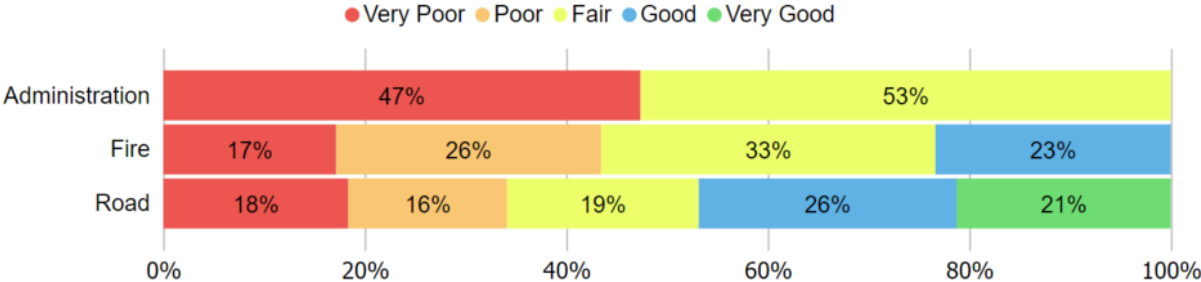
Asset Segment	Quantity	Replacement Cost Method	Total Replacement Cost
Administration	2	User-Defined Cost	\$60,170
Fire	12	82% User-Defined Cost; 18% CPI Tables	\$4,371,849
Road	8	User-Defined Cost	\$1,469,687
<b>Total</b>	<b>22</b>		<b>\$5,901,705</b>



# 9.3 Asset Condition

The table below identifies the current average condition and source of available condition data for each asset segment. The Average Condition (%) is a weighted value based on replacement cost.

Asset Segment	Average Condition (%)	Average Condition Rating	Condition Source
Administration	38%	Poor	Age-Based
Fire	47%	Fair	91% Assessed
Road	54%	Fair	18% Assessed
<b>Average</b>	<b>47%</b>	<b>Fair</b>	<b>73% Assessed</b>



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

## 9.3.1 Current Approach to Condition Assessment

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

- Staff complete regular safety inspections of vehicles to ensure they are in state of adequate repair prior to operation. Visual inspections are completed and documented daily for the 1 tonne trucks.
- The mileage of vehicles is used as a reference to determine remaining useful life and relative vehicle condition.
- Fire department vehicles are subject to a more rigorous inspection program in accordance with the guidelines provided by the National Fire Protection Association (NFPA)

## 9.4 Estimated Useful Life & Average Age

The Estimated Useful Life for Vehicles assets has been assigned according to a combination of established industry standards and staff knowledge. The Average Age of each asset is based on the number of years each asset has been in-service. Finally, the Average Service Life Remaining represents the difference between the Estimated Useful Life and the Average Age, except when an asset has been assigned an assessed condition rating. Assessed condition may increase or decrease the average service life remaining.

<b>Asset Segment</b>	<b>Estimated Useful Life (Years)</b>	<b>Average Age (Years)</b>	<b>Average Service Life Remaining (Years)</b>
Administration	4-7	4.7	2.9
Fire	4-27	14.7	10.4
Road	10	4.3	5.4
<b>Average</b>		<b>9.5</b>	<b>6.3</b>

Each asset's Estimated Useful Life should 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.

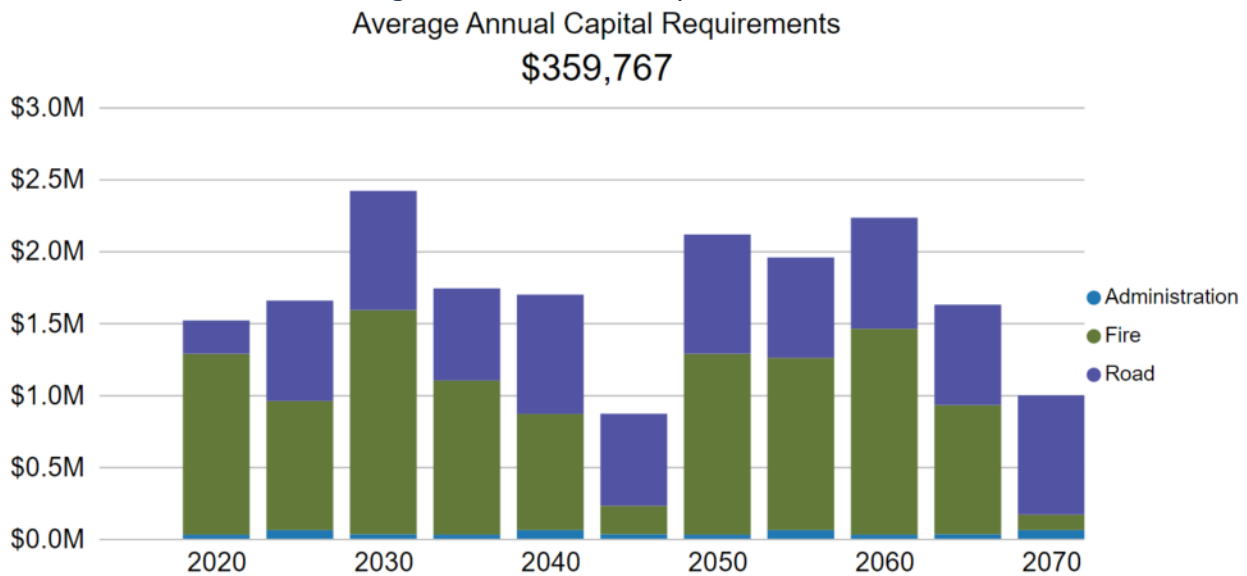
# 9.5 Lifecycle Management Strategy

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 Township’s current lifecycle management strategy.

Activity Type	Description of Current Strategy
Maintenance / Rehabilitation	Fire Protection Services equipment is subject to a more rigorous maintenance program in accordance with the guidelines provided by the National Fire Protection Association (NFPA).
	Annual preventative maintenance activities include system components check and additional detailed inspections.
	Municipal staff conduct oil changes per manual guidelines while other rehabilitation activities are performed by an external mechanic.
Replacement	Vehicle age (service life remaining), kilometres, and annual repair costs are taken into consideration when determining appropriate treatment options

## 9.5.1 Forecasted Capital Requirements

The following graph forecasts long-term capital requirements, aggregated to five-year buckets. The annual capital requirement represents the average amount per year that the Township should allocate towards funding rehabilitation and replacement needs.



The projected cost of lifecycle activities that will need to be undertaken over the next 10 years to maintain the current level of service can be found in Appendix B.

# 9.6 Risk & Criticality

## 9.6.1 Risk Matrix

The following risk matrix provides a visual representation of the relationship between the probability of failure and the consequence of failure for the assets within this asset category based on 2020 inventory data. See Appendix D for the criteria used to determine the risk rating of each asset.



## 9.6.2 Risks to Current Asset Management Strategies

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



### Aging Infrastructure & Funding Strategies

Several pick up trucks, and the dump truck, within the Township are approaching or have exceeded their 10-year useful life. As vehicles age, they will require exponentially increasing O&M costs to ensure compliance with MTO standards and to function adequately. As capital budgets become more constrained, more maintenance will be postponed, which will further amplify this risk.

## 9.7 Levels of Service

The following tables identify the Township’s current level of service for Vehicles. 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 Township has selected for this AMP.

### 9.7.1 Community Levels of Service

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

<b>Service Attribute</b>	<b>Qualitative Description</b>	<b>Current LOS (2020)</b>
Scope	Description of the MTO, CVOR, and Fire regulated vehicle inspection process	All Commercial Operator’s Registration (CVOR) vehicles are inspected and maintained by a certified, external mechanic. Pumper trucks are tested annually for certification.

### 9.7.2 Technical Levels of Service

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

<b>Service Attribute</b>	<b>Technical Metric</b>	<b>Current LOS (2020)</b>
Sustainability and Affordability	O&M cost by municipal vehicles replacement cost	2.89%
	% of vehicles in poor or very poor condition	41.2%
	Capital reinvestment rate	3.3%

## 9.8 Recommendations

### Condition Assessment Strategies

- Identify condition assessment strategies for high value and high-risk vehicles.
- Review assets that have surpassed their estimated useful life to determine if immediate replacement is required or whether these assets are expected to remain in-service. Adjust the service life and/or condition ratings for these assets accordingly.

### Risk Management Strategies

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

### Levels of Service

- Continue measuring current levels of service in accordance with the metrics that the Township has established in this AMP. Additional metrics can be established as they are determined to provide meaningful and reliable inputs into asset management planning.
- Work towards identifying proposed levels of service as per O. Reg. 588/17 and identify the strategies that are required to close any gaps between current and proposed levels of service.

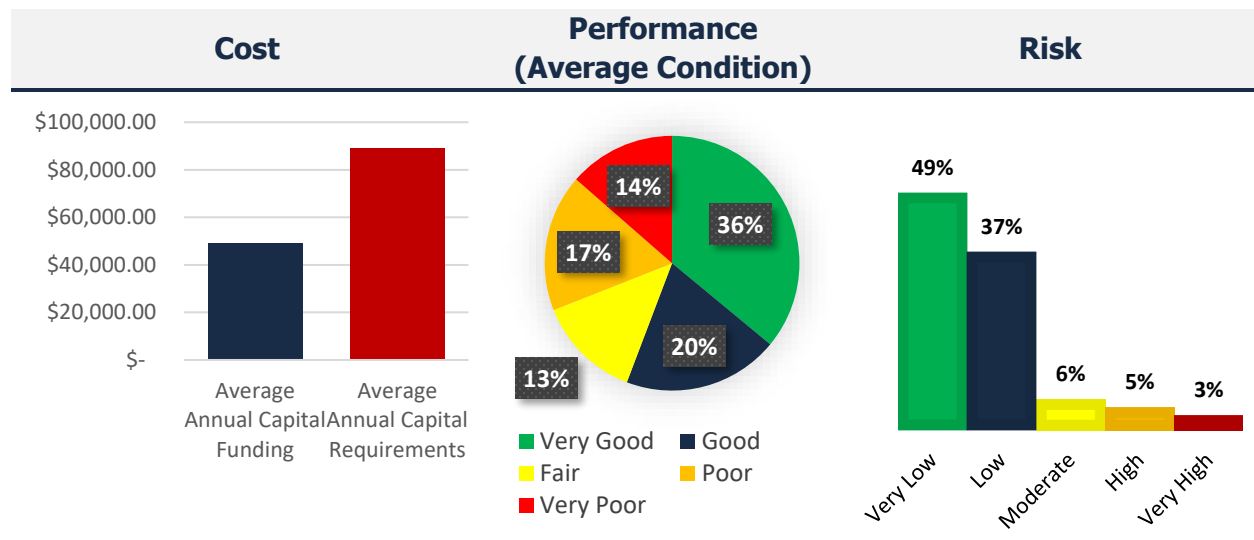
# 10 Land Improvements

## 10.1 Land Improvements

The Township of Blandford-Blenheim owns a small number of assets that are considered Land Improvements. This category includes:

- Parking lots
- Fencing and signage
- Miscellaneous landscaping and other assets

The table below outlines high-level service indicators for Land Improvements.

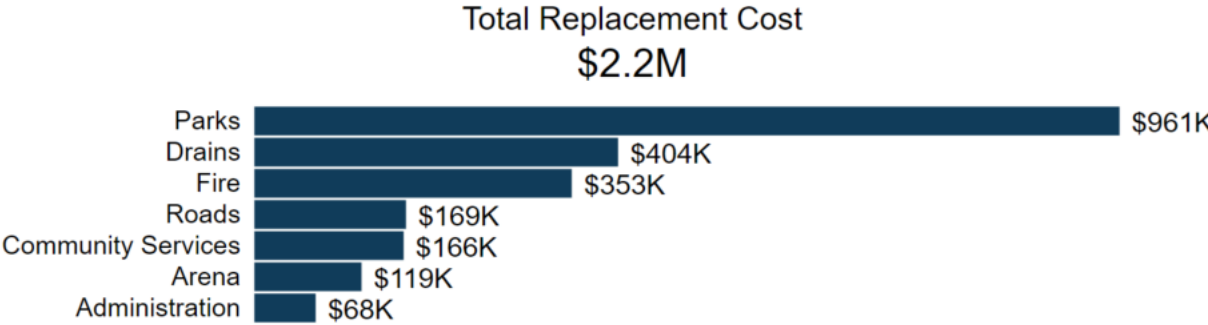




# 10.2 Asset Inventory & Replacement Cost

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

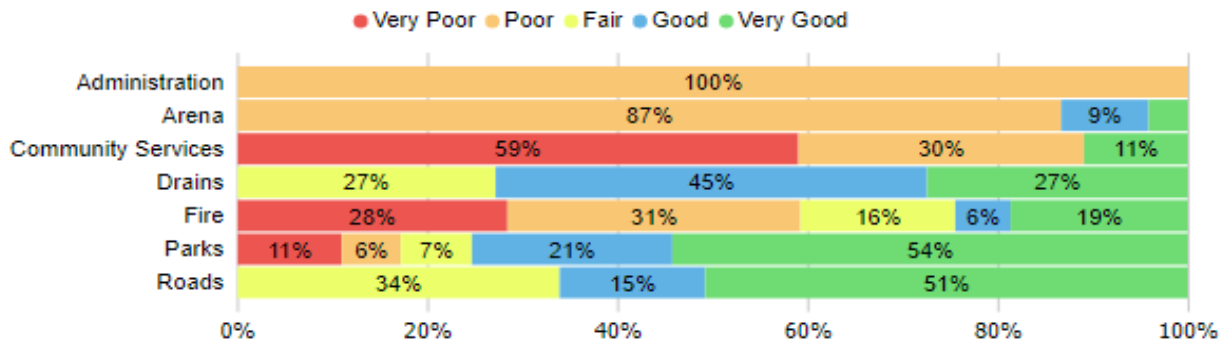
Asset Segment	Quantity	Replacement Cost Method	Total Replacement Cost
Administration	1	CPI Tables	\$68,334
Arena	5	CPI Tables	\$119,242
Community Services	7	CPI Tables	\$165,996
Drains	17	CPI Tables	\$404,043
Fire	16	CPI Tables	\$352,635
Parks	20	97% CPI Tables; 3% User-Defined Cost	\$960,804
Roads	7	CPI Tables	\$168,553
<b>Total</b>			<b>\$2,239,607</b>



## 10.3 Asset Condition

The table below identifies the current average condition and source of available condition data for each asset segment. The Average Condition (%) is a weighted value based on replacement cost.

Asset Segment	Average Condition (%)	Average Condition Rating	Condition Source
Administration	29%	Poor	100% Assessed
Arena	32%	Poor	96% Assessed
Community Services	17%	Very Poor	100% Assessed
Drains	72%	Good	80% Assessed
Fire	38%	Poor	58% Assessed
Parks	72%	Good	30% Assessed
Roads	76%	Good	41% Assessed
<b>Average</b>	<b>59%</b>	<b>Fair</b>	<b>55% Assessed</b>



To ensure that the Township's Land Improvements continues to provide an acceptable level of service, the Township 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 Land Improvements.

### 10.3.1 Current Approach to Condition Assessment

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

- Staff complete regular visual inspections of land improvements assets to ensure they are in a state of adequate repair. Health and safety hazards are documented.
- There are no formal condition assessment programs in place for land improvements, however, condition is collected on several land improvement components and grades are assigned to all baseball diamonds based on a specific standard for condition and replacement.
- Condition information is used to inform long-term capital planning.

## 10.4 Estimated Useful Life & Average Age

The Estimated Useful Life for Land Improvements assets has been assigned according to a combination of established industry standards and staff knowledge. The Average Age of each asset is based on the number of years each asset has been in-service. Finally, the Average Service Life Remaining represents the difference between the Estimated Useful Life and the Average Age, except when an asset has been assigned an assessed condition rating. Assessed condition may increase or decrease the average service life remaining.

<b>Asset Segment</b>	<b>Estimated Useful Life (Years)</b>	<b>Average Age (Years)</b>	<b>Average Service Life Remaining (Years)</b>
Administration	20	14.2	5.8
Arena	15-50	9.6	17.4
Community Services	20-25	27.3	8.8
Drains	50	13.8	39.1
Fire	10-50	11.5	16.3
Parks	10-45	15.8	15.1
Roads	20-50	4.7	22.0
<b>Total</b>		<b>14.2</b>	<b>21.0</b>

Each asset’s Estimated Useful Life should 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.

# 10.5 Lifecycle Management Strategy

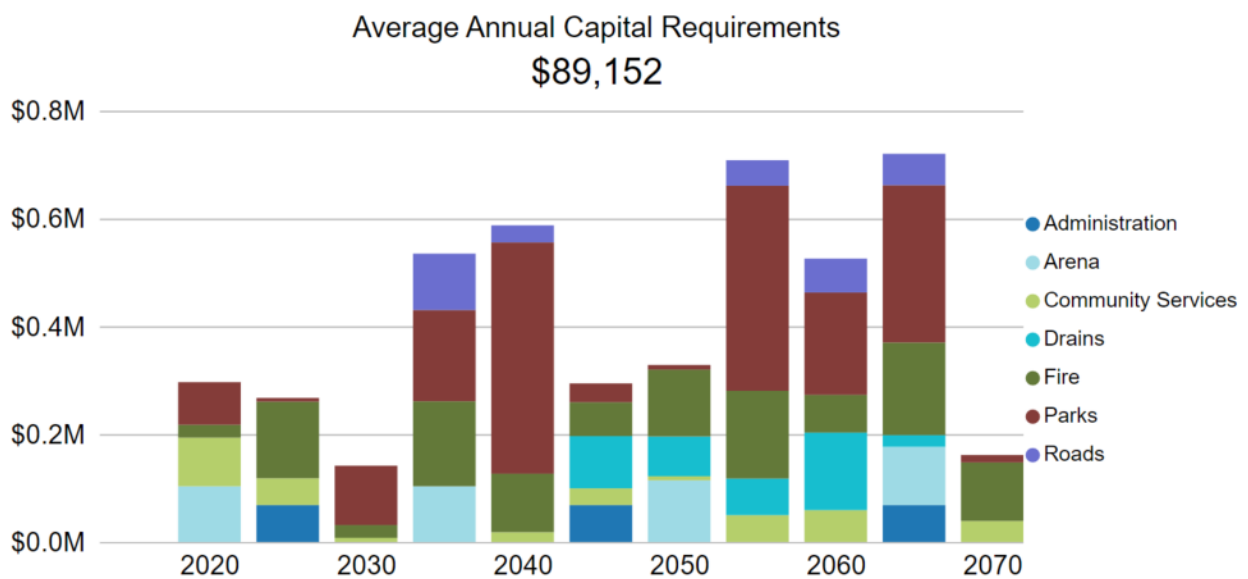
The condition or performance of most assets will deteriorate over time. To ensure that municipal assets are performing as expected and meeting the needs of customers, it is important to establish a lifecycle management strategy to proactively manage asset deterioration.

The following table outlines the Township’s current lifecycle management strategy.

Activity Type	Description of Current Strategy
Maintenance/ Rehabilitation	The Land Improvements asset category includes several unique asset types and lifecycle requirements are dealt with on a case-by-case basis. The primary maintenance activity for parks, soccer fields, and baseball diamonds is landscaping and cleaning.
Replacement	Large land improvement assets, such as bleachers, fences, and parking lots, have a 10-year capital planning horizon. Replacement is based on cost, health and safety considerations, public use, and condition.

## 10.5.1 Forecasted Capital Requirements

The following graph forecasts long-term capital requirements, aggregated to five-year buckets. The annual capital requirement represents the average amount per year that the Township should allocate towards funding rehabilitation and replacement needs.



The projected cost of lifecycle activities that will need to be undertaken over the next 10 years to maintain the current level of service can be found in Appendix B.

# 10.6 Risk & Criticality

## 10.6.1 Risk Matrix

The following risk matrix provides a visual representation of the relationship between the probability of failure and the consequence of failure for the assets within this asset category based on 2020 inventory data. See Appendix D for the criteria used to determine the risk rating of each asset.



## 10.6.2 Risks to Current Asset Management Strategies

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



### Regulatory Compliance & Aging Infrastructure

Playground structures require safety compliance, monitored through the CSA inspections. A concern for the Township is aging assets, risking playground elements not meeting safety requirements. Although this is not a concern currently, it may become critical over time if playground assets are not managed proactively.

## 10.7 Levels of Service

The following tables identify the Township’s current level of service for Land Improvements. 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 Township has selected for this AMP.

### 10.7.1 Community Levels of Service

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

<b>Service Attribute</b>	<b>Qualitative Description</b>	<b>Current LOS (2020)</b>
Safety	List of parks that meet safety and accessibility standards, and work undertaken to achieve alignment	See Appendix C

### 10.7.2 Technical Levels of Service

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

<b>Service Attribute</b>	<b>Technical Metric</b>	<b>Current LOS (2020)</b>
Sustainability and Affordability	% of land improvements in poor or very poor condition	31%
	Capital reinvestment rate	2.2%

# 10.8 Recommendations

## Replacement Costs

- Nearly all replacement costs used in this AMP were based on the inflation of historical costs. These costs should be evaluated to determine their accuracy and reliability. Replacement costs should be updated according to the best available information on the cost to replace the asset in today's value.

## Condition Assessment Strategies

- Identify condition assessment strategies for high value and high-risk assets.
- Consider developing a deficiencies list and prioritize lifecycle activities by the risk each deficiency poses.
- Review assets that have surpassed their estimated useful life to determine if immediate replacement is required or whether these assets are expected to remain in-service. Adjust the service life and/or condition ratings for these assets accordingly.

## Risk Management Strategies

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

## Levels of Service

- Continue measuring current levels of service in accordance with the metrics that the Township has established in this AMP. Additional metrics can be established as they are determined to provide meaningful and reliable inputs into asset management planning.
- Work towards identifying proposed levels of service as per O. Reg. 588/17 and identify the strategies that are required to close any gaps between current and proposed levels of service

# 11

## Impacts of Growth

### Key Insights

- Understanding the key drivers of growth and demand will allow the Township to more effectively plan for new infrastructure, and the upgrade or disposal of existing infrastructure
- Moderate population and employment growth is expected
- The costs of growth should be considered in long-term funding strategies that are designed to maintain the current level of service



# 11.1 Description of Growth Assumptions

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

## 11.1.1 Oxford County Official Plan (2021)

The Oxford County Planning Offices provides planning services for the eight municipalities that comprise the County. The County is responsible for maintaining the County Official Plan and growth forecasts. The current Official Plan was adopted by the County Council in 1995, with the latest consolidation of Official Plan amendments in March of 2021.

The County of Oxford anticipates population growth and economic activity during the planning period. The Plan aims to accommodate growth through efficient, environmentally sound, and financially responsible strategies that meet the needs of residents.

The following table outlines the population and employment forecasts allocated to Blandford-Blenheim.

<b>Projections</b>	<b>2016<sup>4</sup></b>	<b>2021</b>	<b>2026</b>	<b>2031</b>	<b>2036</b>
Population	7,700	7,900	8,000	8,200	8,400
Households	2,700	7,900	2,800	2,900	3,000
Employment	2,700	2,900	3,000	3,100	3,200

The County is expected to grow from 111,500 in 2016 to 124,200 by 2036. Blandford-Blenheim is expected to make up over 5% of the County’s growth, with the neighbouring City of Woodstock making up nearly 60% of growth.

## 11.2 Impact of Growth on Lifecycle Activities

By July 1, 2025, the Township’s asset management plan must include a discussion of how the assumptions regarding future changes in population and economic activity informed the preparation of the lifecycle management and financial strategy.

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<sup>4</sup> The 2016 Census identifies Blandford-Blenheim’s population as 7,399 with a total of 2,728 private dwellings.

In 2019, the Township finalized a Development Charges Background Study, conducted by Watson & Associates Economists Ltd. The study includes a schedule of developments charges for municipal services, including fire services, roads and related services, parks and recreation, and administration studies. The study also includes estimates of increased service needs attributable to anticipated development. A Development Charges Background Study can support planning for forecasted growth.

Planning for forecasted population growth may require the expansion of existing infrastructure and services. As growth-related assets are constructed or acquired, they should be integrated into the Township's AMP. While the addition of residential units will add to the existing assessment base and offset some of the costs associated with growth, the Township 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, at a minimum, maintain the current level of service.

# 12

## Financial Strategy

### Key Insights

- The Township is committing approximately \$2.4 million towards capital projects per year from sustainable revenue sources
- Given the annual capital requirement of \$3.6 million, there is currently a funding gap of \$1.2 million annually
- For tax-funded assets, we recommend increasing tax revenues by 1.8% each year for the next 10 years to achieve a sustainable level of funding

# 12.1 Financial Strategy Overview

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

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

1. The financial requirements for:
  - a. Existing assets
  - b. Existing service levels
  - c. Requirements of contemplated changes in service levels (none identified for this plan)
  - d. Requirements of anticipated growth (none identified for this plan)
2. Use of traditional sources of municipal funds:
  - a. Tax levies
  - b. User fees
  - c. Reserves
  - d. Debt
3. Use of non-traditional sources of municipal funds:
  - a. Reallocated budgets
  - b. Partnerships
  - c. Procurement methods
4. Use of Senior Government Funds:
  - a. Gas tax
  - b. Annual grants

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

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

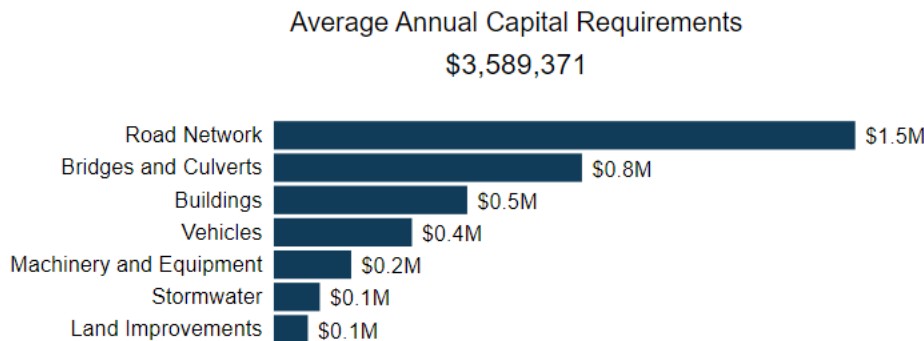
1. In order to reduce financial requirements, consideration has been given to revising service levels downward.

2. All asset management and financial strategies have been considered. For example:
  - a. If a zero-debt policy is in place, is it warranted? If not, the use of debt should be considered.
  - b. Do user fees reflect the cost of the applicable service? If not, increased user fees should be considered.

## 12.1.1 Annual Requirements & Capital Funding

### Annual Requirements

The annual requirements represent the amount the Township should allocate annually to each asset category to meet replacement needs as they arise, prevent infrastructure backlogs and achieve long-term sustainability. In total, the Township must allocate approximately \$3.6 million annually to address capital requirements for the assets included in this AMP.



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

However, for the Road Network, lifecycle management strategies have been developed to identify capital costs that are realized through strategic rehabilitation and renewal of the Township’s roads. The development of these strategies allows for a comparison of potential cost avoidance if the strategies were to be implemented. The following table compares two scenarios for the Road Network:

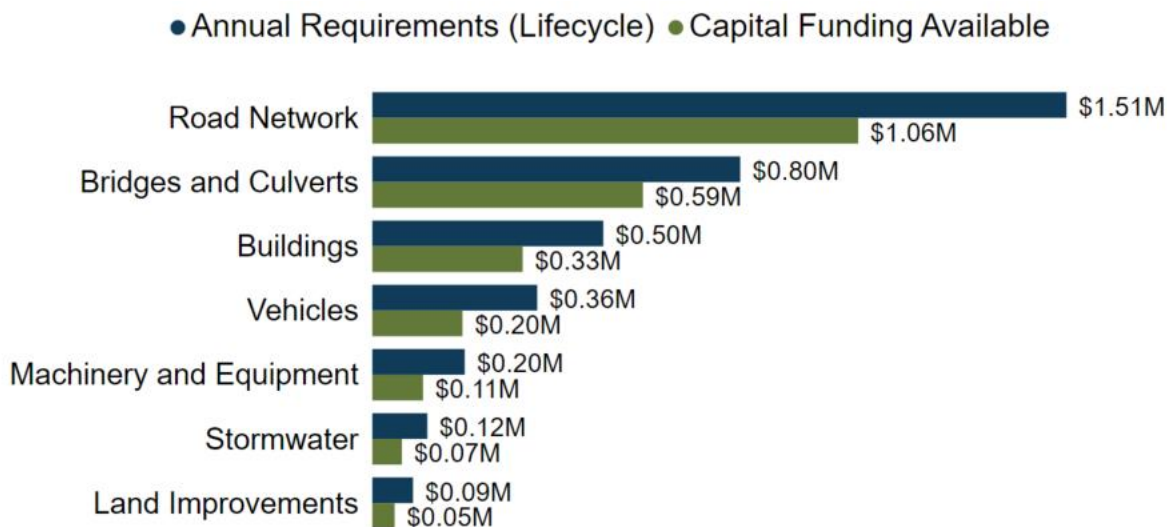
1. **Replacement Only Scenario:** Based on the assumption that assets deteriorate and – without regularly scheduled maintenance and rehabilitation – are replaced at the end of their service life.
2. **Lifecycle Strategy Scenario:** Based on the assumption that lifecycle activities are performed at strategic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

Asset Category	Annual Requirements (Replacement Only)	Annual Requirements (Lifecycle Strategy)	Difference
Road Network	\$1,579,753	\$1,512,679	\$67,074

The implementation of a proactive lifecycle strategy for roads leads to a potential annual cost avoidance of \$67,074 for the Road Network. This represents an overall reduction of the annual requirements for roads by 4%. As the lifecycle strategy scenario represents the lowest cost option available to the Township, we have used these annual requirements in the development of the financial strategy.

## Annual Funding Available

Based on a historical analysis of sustainable capital funding sources, the Township is committing approximately \$2.4 million towards capital projects per year from sustainable revenue sources. Given the annual capital requirement of \$3.6 million, there is currently a funding gap of \$1.2 million annually.



## 12.2 Funding Objective

We have developed a scenario that would enable Blandford-Blenheim to achieve full funding within 20 years for the following assets:

**Tax Funded Assets:** Road Network, Bridges & Culverts, Stormwater Network, Buildings, Machinery & Equipment, Land Improvements, and Vehicles.

**Note:** For the purposes of this AMP, we have excluded gravel roads since they are a perpetual maintenance asset and end of life replacement calculations do not normally apply. If gravel roads are maintained properly, they can theoretically have a limitless service life.

For each scenario developed we have included strategies, where applicable, regarding the use of cost containment and funding opportunities.

## 12.3 Financial Profile: Tax Funded Assets

### 12.3.1 Current Funding Position

The following tables show, by asset category, Blandford-Blenheim’s average annual asset investment requirements, current funding positions, and funding increases required to achieve full funding on assets funded by taxes.

Asset Category	Avg. Annual Requirement	Annual Funding Available					Total Available	Annual Deficit
		Taxes	Gas Tax	OCIF	Taxes to Reserves <sup>5</sup>	Woodstock Annexation Agreement <sup>6</sup>		
Road Network	1,513,000		229,000		510,000	320,000	1,059,000	454,000
Stormwater Network	120,000				40,000	25,000	65,000	55,000
Bridges & Culverts	802,000			150,000	271,000	169,000	590,000	212,000
Buildings	504,000	52,000			170,000	106,000	328,000	176,000
Machinery & Equipment	202,000				68,000	43,000	111,000	91,000
Land Improvements	89,000				30,000	19,000	49,000	40,000
Vehicles	360,000				121,000	76,000	197,000	163,000
	3,590,000	52,000	229,000	150,000	1,210,000	758,000	2,399,000	1,191,000

The average annual investment requirement for the above categories is \$3.6 million. Annual revenue currently allocated to these assets for capital purposes is \$2.4 million leaving an annual deficit of \$1.2 million. Put differently, these infrastructure categories are currently funded at 67% of their long-term requirements.

### 12.3.2 Full Funding Requirements

In 2020, Township of Blandford-Blenheim has annual tax revenues of \$5,314,000. As illustrated in the following table, without consideration of any other sources of revenue or cost containment strategies, full funding would require the following tax change over time:

<sup>5</sup> Transfer to Reserves – \$1.21 million is the average of the 2018 (\$1.2 million), 2019 (\$1.25 million), & 2020 budgeted (\$1.15 million) transfers to reserves for capital expenditure.

<sup>6</sup> Woodstock Annexation Agreement – Annual Capital Expenditure funding allocation of perpetual compensation agreement with the City of Woodstock (See note 14 in the [2020 Township of Blandford-Blenheim Financial Statements](#)).

<b>Asset Category</b>	<b>Tax Change Required for Full Funding</b>
Road Network	8.5%
Stormwater Network	1.0%
Bridges & Culverts	4.0%
Buildings & Facilities	3.3%
Machinery & Equipment	1.7%
Land Improvements	0.8%
Vehicles	3.1%
<b>Total</b>	<b>22.4%</b>

The following changes in costs and/or revenues over the next number of years should also be considered in the financial strategy:

- a) Blandford-Blenheim’s debt payments for these asset categories will be decreasing by \$258,000 over each of the next 5 years, 10 years, 15 years, and 20 years.
- b) Our recommendations include capturing the above changes and allocating them to the infrastructure deficit outlined above.

The table below outlines this concept and presents several options:

	<b>Without Capturing Changes</b>				<b>With Capturing Changes</b>			
	<b>5 Years</b>	<b>10 Years</b>	<b>15 Years</b>	<b>20 Years</b>	<b>5 Years</b>	<b>10 Years</b>	<b>15 Years</b>	<b>20 Years</b>
Infrastructure Deficit	1,191,000	1,191,000	1,191,000	1,191,000	933,000	933,000	933,000	933,000
Change in Debt Costs	N/A	N/A	N/A	N/A	-258,000	-258,000	-258,000	-258,000
Change in OCIF Grants	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>Resulting Infrastructure Deficit</b>	<b>1,191,000</b>	<b>1,191,000</b>	<b>1,191,000</b>	<b>1,191,000</b>	<b>933,000</b>	<b>933,000</b>	<b>933,000</b>	<b>933,000</b>
Tax Increase Required	22.4%	22.4%	22.4%	22.4%	17.6%	17.6%	17.6%	17.6%
<b>Annually</b>	<b>4.5%</b>	<b>2.2%</b>	<b>1.5%</b>	<b>1.1%</b>	<b>3.5%</b>	<b>1.8%</b>	<b>1.2%</b>	<b>0.9%</b>



## 12.3.3 Financial Strategy Recommendations

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

- a) when realized, reallocating the debt cost reductions to the infrastructure deficit as outlined above.
- b) increasing tax revenue by 1.8% each year for the next 10 years solely for the purpose of phasing in full funding to the asset categories covered in this section of the AMP.
- c) allocating the current gas tax and OCIF revenue as outlined previously.
- d) allocating the scheduled OCIF grant increases to the infrastructure deficit as they occur.
- e) reallocating appropriate revenue from categories in a surplus position to those in a deficit position.
- f) increasing existing and future infrastructure budgets by the applicable inflation index on an annual basis in addition to the deficit phase-in.

Notes:

1. As in the past, periodic senior government infrastructure funding will most likely be available during the phase-in period. By Provincial AMP rules, this periodic funding cannot be incorporated into an AMP unless there are firm commitments in place. We have included OCIF formula-based funding, if applicable, since this funding is a multi-year commitment<sup>7</sup>.
2. We realize that raising tax revenues by the amounts recommended above for infrastructure purposes will be very difficult to do. However, considering a longer phase-in window may have even greater consequences in terms of infrastructure failure.

Although this option achieves full capital expenditure funding on an annual basis in 10 years and provides financial sustainability over the period modeled, the recommendations do require prioritizing capital projects to fit the resulting annual funding available. Current data shows a backlog of \$81,000 for the Road Network, \$173,000 for Stormwater Network, \$311,000 for the Buildings & Facilities, \$62,000 for Machinery & Equipment, \$100,000 for Land Improvements and \$270,000 for Vehicles.

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

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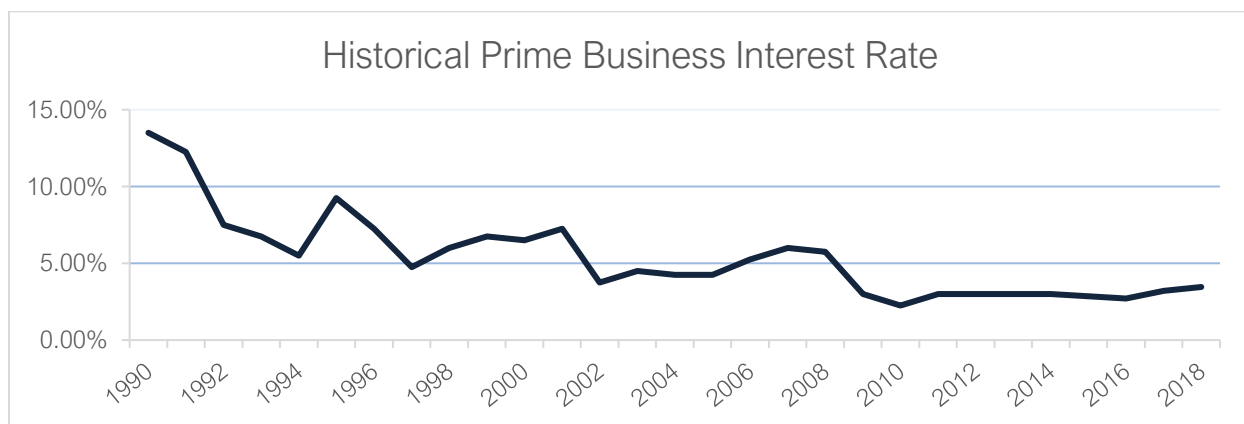
<sup>7</sup> The Town should take advantage of all available grant funding programs and transfers from other levels of government. While OCIF has historically been considered a sustainable source of funding, the program is currently undergoing review by the provincial government. Depending on the outcome of this review, there may be changes that impact its availability.

## 12.4 Use of Debt

For reference purposes, the following table outlines the premium paid on a project if financed by debt. For example, a \$1 million project financed at 3.0%<sup>8</sup> over 15 years would result in a 26% premium or \$260,000 of increased costs due to interest payments. For simplicity, the table does not consider the time value of money or the effect of inflation on delayed projects.

Interest Rate	Number of Years Financed					
	5	10	15	20	25	30
<b>7.0%</b>	22%	42%	65%	89%	115%	142%
<b>6.5%</b>	20%	39%	60%	82%	105%	130%
<b>6.0%</b>	19%	36%	54%	74%	96%	118%
<b>5.5%</b>	17%	33%	49%	67%	86%	106%
<b>5.0%</b>	15%	30%	45%	60%	77%	95%
<b>4.5%</b>	14%	26%	40%	54%	69%	84%
<b>4.0%</b>	12%	23%	35%	47%	60%	73%
<b>3.5%</b>	11%	20%	30%	41%	52%	63%
<b>3.0%</b>	9%	17%	26%	34%	44%	53%
<b>2.5%</b>	8%	14%	21%	28%	36%	43%
<b>2.0%</b>	6%	11%	17%	22%	28%	34%
<b>1.5%</b>	5%	8%	12%	16%	21%	25%
<b>1.0%</b>	3%	6%	8%	11%	14%	16%
<b>0.5%</b>	2%	3%	4%	5%	7%	8%
<b>0.0%</b>	0%	0%	0%	0%	0%	0%

It should be noted that current interest rates are near all-time lows. Sustainable funding models that include debt need to incorporate the risk of rising interest rates. The following graph shows where historical lending rates have been:



<sup>8</sup> Current municipal Infrastructure Ontario rates for 15-year money is 3.2%.

A change in 15-year rates from 3% to 6% would change the premium from 26% to 54%. Such a change would have a significant impact on a financial plan.

The following tables outline how Blandford-Blenheim has historically used debt for investing in the asset categories as listed. There is currently \$920,000 of debt outstanding for the assets covered by this AMP with corresponding principal and interest payments of \$258,000, well within its provincially prescribed maximum of \$1,321,000.

Asset Category	Current Debt Outstanding	Use of Debt in the Last Five Years				
		2015	2016	2017	2018	2019
Road Network	0	0	0	0	0	0
Stormwater Network	0	0	0	0	0	0
Bridges & Culverts	0	0	0	0	0	0
Buildings & Facilities	920,000	0	0	0	0	0
Machinery & Equipment	0	0	0	0	0	0
Land Improvements	0	0	0	0	0	0
Vehicles	0	0	0	0	0	0
<b>Total Tax Funded:</b>	<b>920,000</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

Asset Category	Principal & Interest Payments in the Next Ten Years					
	2021	2022	2023	2024	2025	2030
Road Network	0	0	0	0	0	0
Stormwater Network	0	0	0	0	0	0
Bridges & Culverts	0	0	0	0	0	0
Buildings & Facilities	258,000	250,000	243,000	236,000	0	0
Machinery & Equipment	0	0	0	0	0	0
Land Improvements	0	0	0	0	0	0
Vehicles	0	0	0	0	0	0
<b>Total Tax Funded:</b>	<b>258,000</b>	<b>250,000</b>	<b>243,000</b>	<b>236,000</b>	<b>0</b>	<b>0</b>

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

# 12.5 Use of Reserves

## 12.5.1 Available Reserves

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

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

By asset category, the table below outlines the details of the reserves currently available to Blandford-Blenheim.

<b>Asset Category</b>	<b>Balance on December 31, 2020</b>
Road Network	1,449,000
Stormwater Network	22,000
Bridges & Culverts	146,000
Buildings & Facilities	2,501,000
Machinery & Equipment	77,000
Land Improvements	124,000
Vehicles	191,000
<b>Total Tax Funded:</b>	<b>4,510,000</b>

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

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

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

## 12.5.2 Recommendation

In 2025, Ontario Regulation 588/17 will require Blandford-Blenheim to integrate proposed levels of service for all asset categories in its asset management plan update. We recommend that future planning should reflect adjustments to service levels and their impacts on reserve balances.

# 13

## Appendices

### Key Insights

- Appendix A includes a one-page report card with an overview of key data from each asset category
- Appendix B identifies projected 10-year capital requirements for each asset category
- Appendix C includes several maps and supporting information that have been used to visualize the current level of service
- Appendix D identifies the criteria used to calculate risk for each asset category
- Appendix E provides additional guidance on the development of a condition assessment program

# Appendix A: Infrastructure Report Card

Asset Category	Replacement Cost (millions)	Asset Condition	Financial Capacity	
Road Network	\$34.7	Fair	Annual Requirement:	\$1,512,679
			Funding Available:	\$1,059,000
			<b>Annual Deficit:</b>	<b>\$453,679</b>
Bridges & Culverts	\$69.4	Very Good	Annual Requirement:	\$802,034
			Funding Available:	\$590,000
			<b>Annual Deficit:</b>	<b>\$212,034</b>
Stormwater Network	\$5.7	Good	Annual Requirement:	\$120,272
			Funding Available:	\$65,000
			<b>Annual Deficit:</b>	<b>\$55,272</b>
Buildings & Facilities	\$19.2	Fair	Annual Requirement:	\$503,637
			Funding Available:	\$328,000
			<b>Annual Deficit:</b>	<b>\$175,637</b>
Machinery & Equipment	\$2.5	Poor	Annual Requirement:	\$201,832
			Funding Available:	\$111,000
			<b>Annual Deficit:</b>	<b>\$90,832</b>
Vehicles	\$5.9	Fair	Annual Requirement:	\$359,767
			Funding Available:	\$197,000
			<b>Annual Deficit:</b>	<b>\$162,767</b>
Land Improvements	\$2.2	Fair	Annual Requirement:	\$89,152
			Funding Available:	\$49,000
			<b>Annual Deficit:</b>	<b>\$40,152</b>
<b>Overall</b>	<b>\$139.7</b>	Fair	Annual Requirement:	\$3,589,372
			Funding Available:	\$2,399,000
			<b>Annual Deficit:</b>	<b>\$1,190,372</b>

# Appendix B: 10-Year Capital Requirements

The following tables identify the capital cost requirements for each of the next 10 years in order to meet projected capital requirements and maintain the current level of service.

<b>Road Network</b>											
Asset Segment	Backlog	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Curb and Gutter	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$20,111
Guide Rails	\$10,002	\$0	\$0	\$0	\$0	\$4,307	\$0	\$4,771	\$0	\$0	\$3,929
Road Base	\$0	\$0	\$0	\$0	\$5,190,776	\$121,197	\$150,607	\$0	\$0	\$0	\$613,237
Road Surface - HCB	\$57,981	\$0	\$0	\$0	\$173,039	\$141,586	\$42,372	\$26,212	\$91,065	\$63,627	\$148,727
Road Surface - LCB	\$12,753	\$398,886	\$490,112	\$787,230	\$2,159,615	\$335,497	\$93,401	\$943,286	\$1,818,963	\$618,551	\$1,361,231
Sidewalks	\$0	\$0	\$0	\$0	\$0	\$0	\$221,550	\$0	\$0	\$0	\$14,506
Streetlights	\$0	\$0	\$0	\$222,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<b>Total</b>	<b>\$80,736</b>	<b>\$398,886</b>	<b>\$490,112</b>	<b>\$1,009,230</b>	<b>\$7,523,430</b>	<b>\$602,587</b>	<b>\$507,930</b>	<b>\$974,268</b>	<b>\$1,910,028</b>	<b>\$682,178</b>	<b>\$2,161,740</b>

<b>Bridges &amp; Culverts</b>											
Asset Segment	Backlog	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Bridges	\$0	\$0	\$670,000	\$0	\$0	\$7,545,000	\$0	\$0	\$0	\$0	\$4,277,000
Structural Culverts	\$0	\$0		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<b>Total</b>	<b>\$0</b>	<b>\$0</b>	<b>\$670,000</b>	<b>\$0</b>	<b>\$0</b>	<b>\$7,545,000</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$4,277,000</b>



**Stormwater Network**

Asset Segment	Backlog	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Catchbasins	\$0	\$0	\$0	\$0	\$0	\$0	\$1,436,400	\$0	\$0	\$0	\$0
Drains	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Storm Ponds	\$173,303	\$0	\$39,831	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<b>Total</b>	<b>\$173,303</b>	<b>\$0</b>	<b>\$39,831</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$1,436,400</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>

### Buildings & Facilities

Asset Segment	Backlog	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Administration	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$20,443	\$0	\$0	\$0
Arena	\$0	\$0	\$41,483	\$0	\$0	\$3,077	\$262,770	\$2,520,118	\$0	\$0	\$0
Cemetery	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$13,376	\$0	\$0	\$0
Community Centre	\$0	\$0	\$0	\$0	\$10,835	\$0	\$0	\$1,721,374	\$0	\$0	\$28,636
Fire	\$24,142	\$0	\$0	\$0	\$0	\$0	\$103,937	\$0	\$0	\$10,088	\$0
Parks	\$0	\$0	\$0	\$0	\$0	\$43,536	\$117,640	\$347,821	\$0	\$0	\$0
Roads	\$286,718	\$2,631,672	\$0	\$0	\$0	\$0	\$20,625	\$0	\$40,940	\$18,261	\$51,071
<b>Total</b>	<b>\$310,860</b>	<b>\$2,631,672</b>	<b>\$41,483</b>	<b>\$0</b>	<b>\$10,835</b>	<b>\$46,613</b>	<b>\$504,972</b>	<b>\$4,623,132</b>	<b>\$40,940</b>	<b>\$28,349</b>	<b>\$79,707</b>

### Machinery & Equipment

Asset Segment	Backlog	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Administration	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Community Centre	\$0	\$0	\$0	\$0	\$0	\$101,991	\$0	\$0	\$7,204	\$52,400	\$2,010
Drains	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$19,042	\$0	\$0
Fire	\$0	\$0	\$70,000	\$74,400	\$0	\$0	\$30,767	\$16,191	\$74,400	\$0	\$0
Parks	\$0	\$0	\$0	\$31,453	\$0	\$37,035	\$0	\$0	\$0	\$0	\$31,453
Roads	\$61,922	\$0	\$629,994	\$0	\$0	\$0	\$127,347	\$155,491	\$0	\$18,267	\$702,320
<b>Total</b>	<b>\$61,922</b>	<b>\$0</b>	<b>\$699,994</b>	<b>\$105,853</b>	<b>\$0</b>	<b>\$139,026</b>	<b>\$158,114</b>	<b>\$171,682</b>	<b>\$100,646</b>	<b>\$70,667</b>	<b>\$735,783</b>

<b>Vehicles</b>											
Asset Segment	Backlog	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Administration	\$0	\$0	\$0	\$28,500	\$0	\$0	\$31,670	\$0	\$0	\$0	\$28,500
Fire	\$0	\$700,000	\$0	\$50,000	\$450,000	\$57,723	\$0	\$0	\$50,000	\$89,819	\$757,723
Road	\$270,000	\$0	\$0	\$0	\$0	\$231,604	\$0	\$337,287	\$62,255	\$256,188	\$42,353
<b>Total</b>	<b>\$270,000</b>	<b>\$700,000</b>	<b>\$0</b>	<b>\$78,500</b>	<b>\$450,000</b>	<b>\$289,327</b>	<b>\$31,670</b>	<b>\$337,287</b>	<b>\$112,255</b>	<b>\$346,007</b>	<b>\$828,576</b>

<b>Land Improvements</b>											
Asset Segment	Backlog	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Administration	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$68,334	\$0	\$0	\$0
Arena	\$0	\$0	\$0	\$0	\$0	\$103,378	\$0	\$0	\$0	\$0	\$0
Community Services	\$0	\$0	\$59,117	\$31,215	\$0	\$0	\$0	\$0	\$49,859	\$0	\$0
Drains	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Fire	\$100,304	\$0	\$0	\$0	\$23,804	\$0	\$142,267	\$0	\$0	\$0	\$0
Parks	\$0	\$4,372	\$74,631	\$0	\$0	\$0	\$0	\$0	\$4,671	\$2,105	\$0
Roads	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<b>Total</b>	<b>\$100,304</b>	<b>\$4,372</b>	<b>\$133,748</b>	<b>\$31,215</b>	<b>\$23,804</b>	<b>\$103,378</b>	<b>\$142,267</b>	<b>\$68,334</b>	<b>\$54,530</b>	<b>\$2,105</b>	<b>\$0</b>

# Appendix C: Level of Service Supporting Information

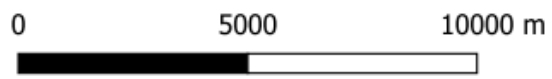
# Road Network Map



**Legend**

Road Network

- Other
- Class 3 and 4
- Class 5 and 6



## Road Class Pavement Images

Ride Comfort Rating (at posted speed)					Severity of Distress (Si)					Density of Distress (Di)										
10	9	8	7	6	5	4	3	2	1	Very Slight	Slight	Moderate	Severe	Very Severe	Few	Intermittent	Frequent	Extensive	Throughout	
Very Good		Good			Fair			Poor		Very Poor						<10	10-20	20-40	40-80	>80
Pavement				Wi	0.25	0.5	1	1.5	2	0.25	0.5	1	1.5	2						
Surface Defects	Ravelling & loss of surface aggregate			1	1.5															
	Flushing			2	0.5															
Surface Deformations	Rippling and Shoving			3	1.0															
	Wheel Track Rutting			4	3.0															
	Distortion			5	3.0															
Cracking	Longitudinal Wheel Track	Single and Multiple			6	1.0														
		Alligator			7	3.0														
	Centreline	Single and Multiple			8	0.5														
		Alligator			9	2.0														
	Pavement Edge	Single and Multiple			10	0.5														
		Alligator			11	1.5														
	Transverse	Half, full and multiple			12	1.0														
		Alligator			13	3.0														
	Longitudinal – meander or mid-lane			14	1.0															
	Potholes/Patching			15	3.0															

**Asphalt: DMI** =  $10 \times (208 - \text{summation of } W \times (D+S))/208$

**Surface Treatment: DMI** =  $10 \times (135 - \text{summation of } W \times (D+S))/135$ .

Where W = Weighting factor for distress type; D = Density Factor; S = Severity Factor.

**Asphalt: PCI** =  $13.75 + (9 \times \text{DMI}) - (7.5 \times e^{(8.5 - \text{RCR})/3.02})$

**Surface Treatment: PCI** =  $12.75 + (9 \times \text{DMI}) - (5.5 \times e^{(9.94 - \text{RCR})/3.46})$ .

Where DMI = Distress Manifestation Index, RCR = Ride Condition Rating and e = the natural exponential.

# Images of Bridge Condition

Bridge in Very Good Condition

Culvert in Good condition



**Description: Wearing Surface (looking south)**



**Description: Barrel (looking east)**



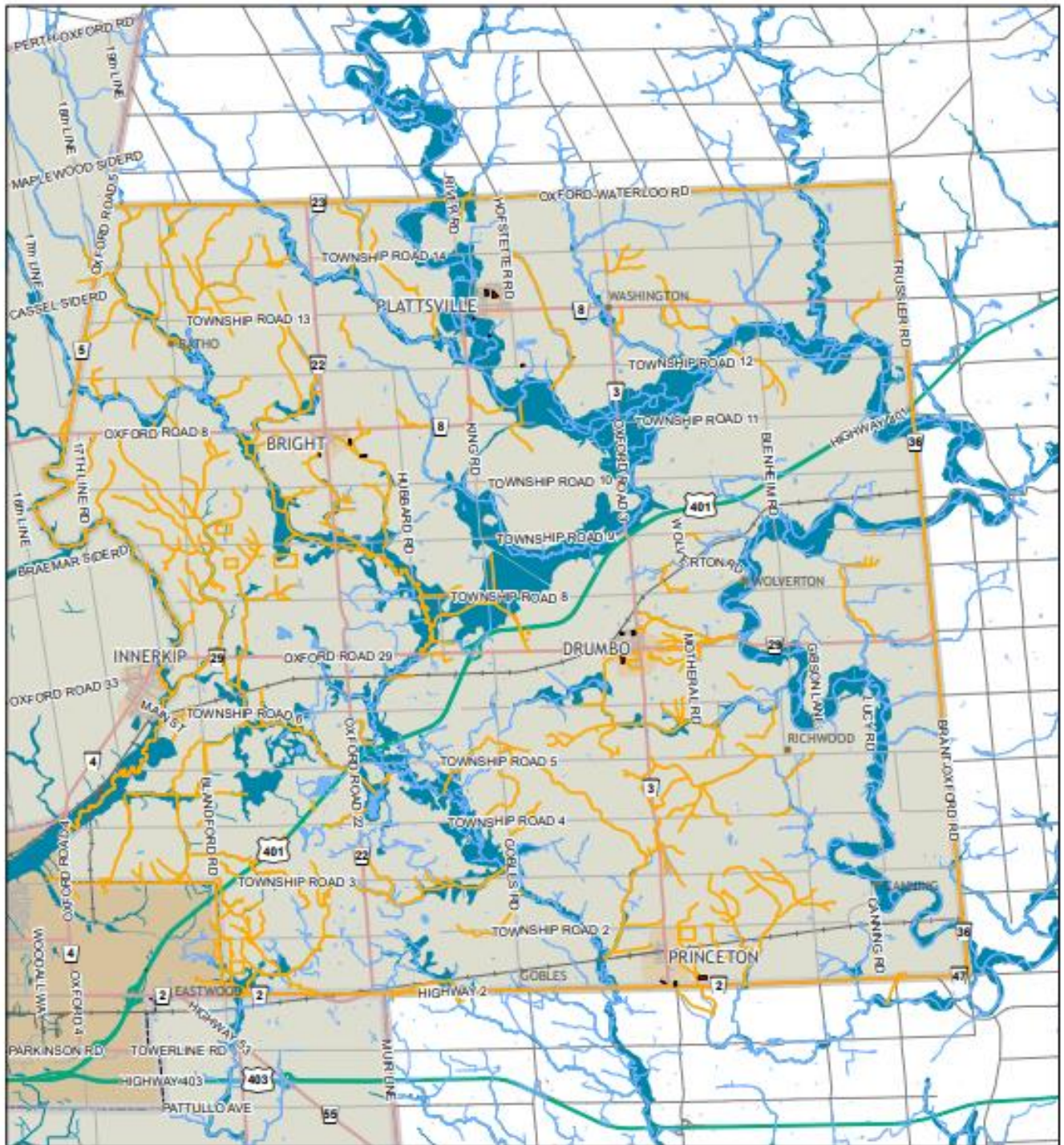
**Description: North Approach (looking south)**



**Description: East Elevation (looking west)**



## Stormwater Asset Management, Township of Blandford-Blenheim



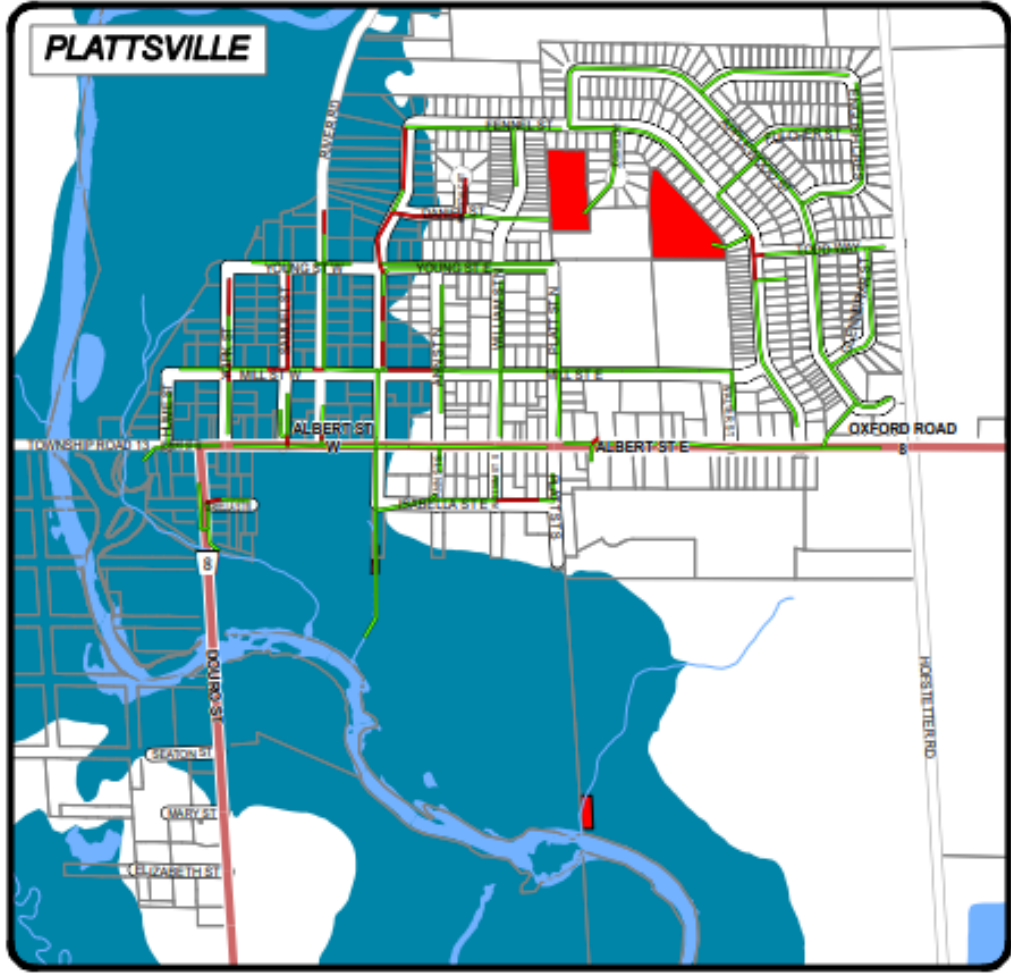
- Constructed Drains
- Storm Water Management Pond
- Regulatory Floodplain
- Watercourse
- Waterbody
- Municipal Road
- County Road
- Provincial Highway



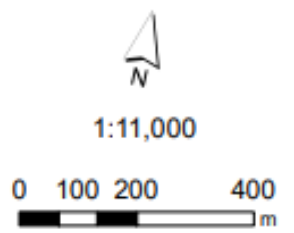
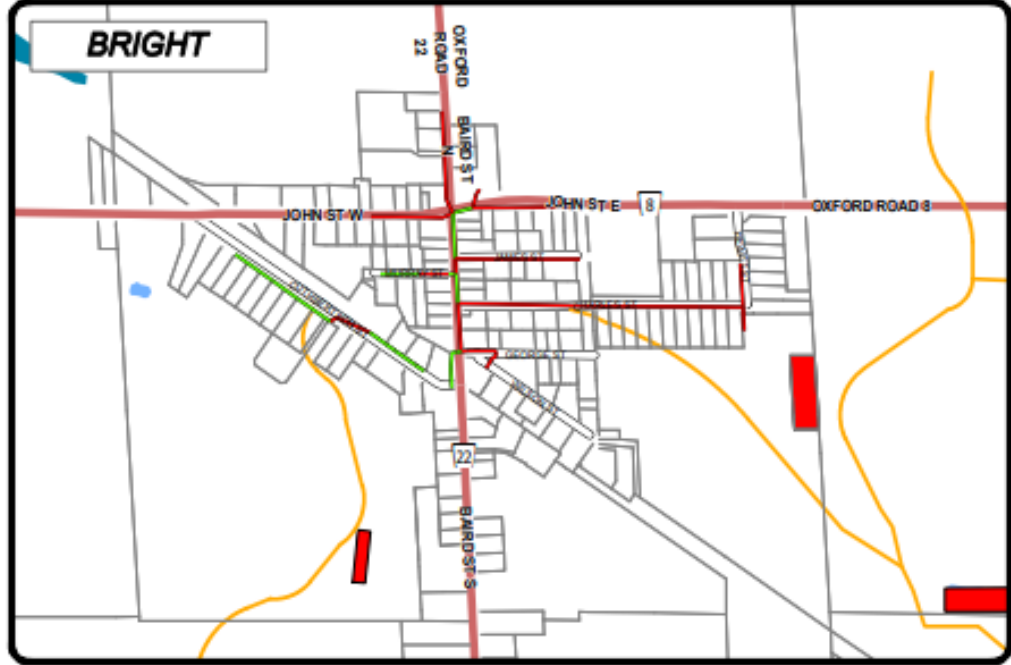
**OxfordCounty**  
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 Produced by The Department of Corporate Services  
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# Stormwater Asset Management, Blandford-Blenheim Villages

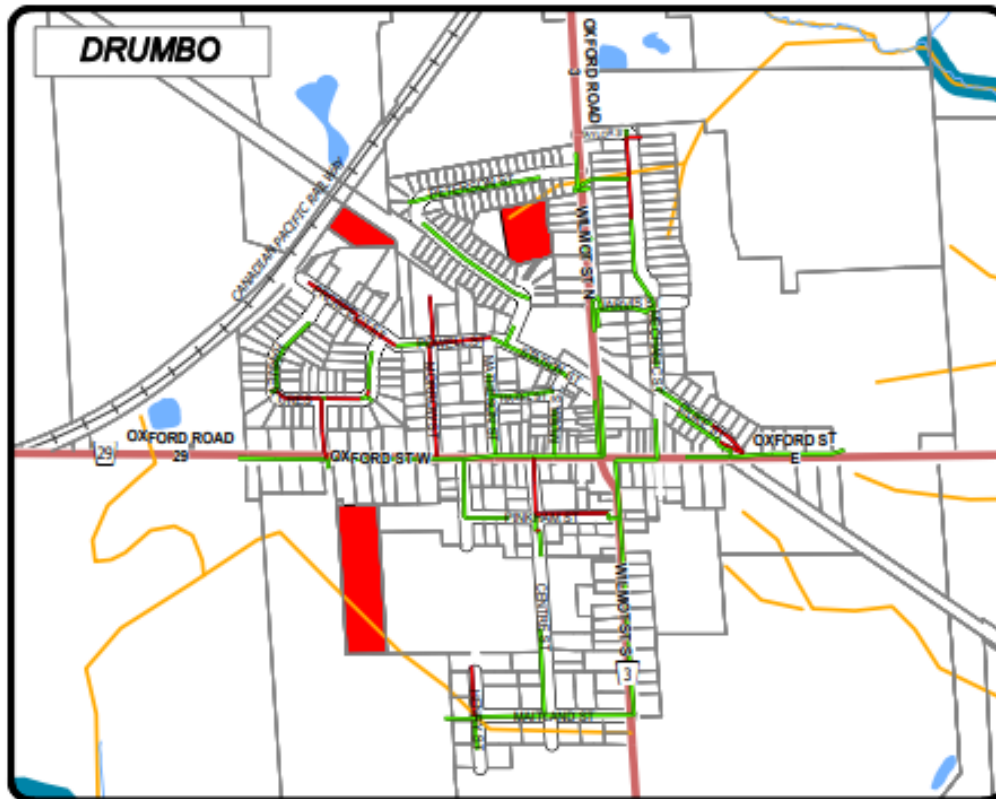


- Storm drain sized for 5 year storm
- Storm drain sized for less than 5 year storm
- Constructed Drains
- Watercourse
- Property Line
- County Road
- Provincial Highway / Freeway
- Township Road
- Village Road
- Stormwater Management Pond
- Waterbody
- Regulatory Floodplain

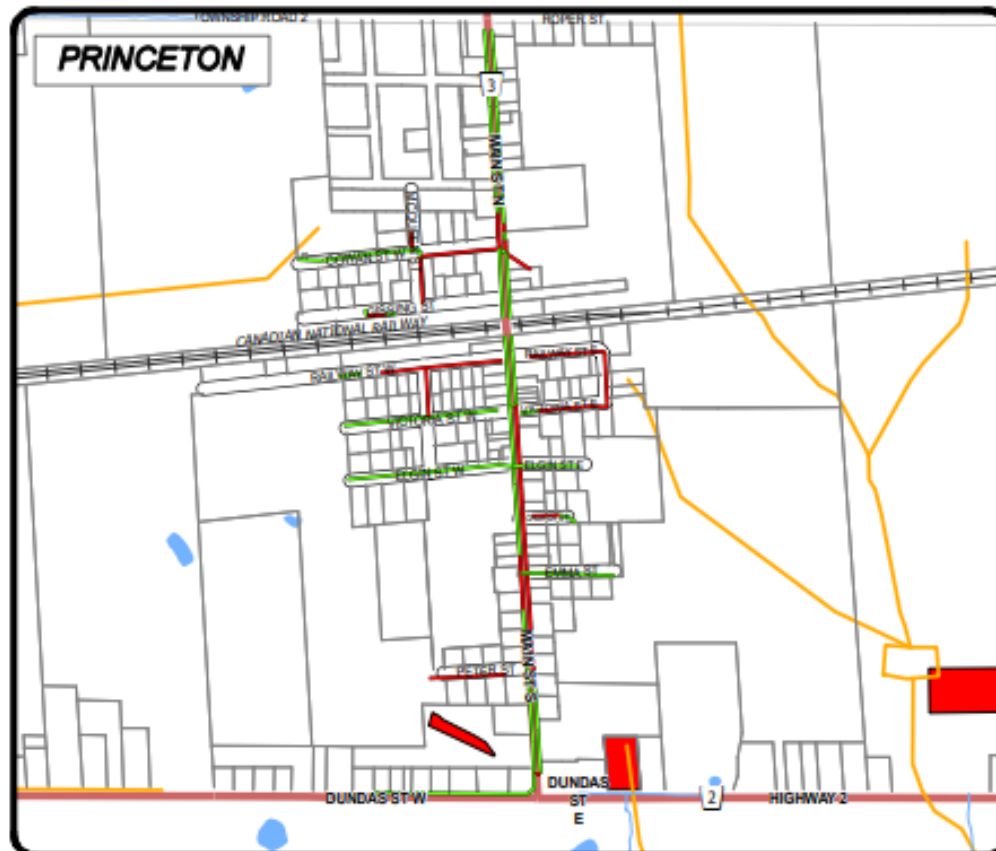



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# Stormwater Asset Management, Blandford-Blenheim Villages

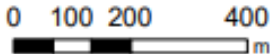


- Storm drain sized for 5 year storm
- Storm drain sized for less than 5 year storm
- Constructed Drains
- Watercourse
- Property Line
- County Road
- Provincial Highway / Freeway
- Township Road
- Village Road
- Stormwater Management Pond
- Waterbody
- Regulatory Floodplain





1:11,000



0 100 200 400 m

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 Information Services 62321

## List of Equipment with Annual Manufacturer Calibration Maintenance

- 07 CAT 140H Grader
- 11 JD 772 G Grader
- 18 CAT 140M3 AWD Grader
- 14 Case 621F articulating 4WD Loader
- 13 CAT 420F IT Loader Backhoe
- 12 T 6030 New Holland 4WD Tractor
- 14 MT-5 Trackless

## List of Fire Equipment Testing

- Pump test annual x 5 pumpers
- Ladder test every 2 years x 24 ladders
- Ranger 6x6 annual x 1 unit
- MTO inspection annual x 12 apparatus
- Fit tester annual x 1 unit shared
- SCBA Self Contained Breathing Apparatus annual x 40 + 10 old spares
- Face mask annual x 80 mask
- Cylinders every 5 years x 80 + 20 old spare
- Cascade cylinders every 5 years x 4 cylinders
- Bunker gear every 6 months x 65 pcs
- Auto X tools annual x 4 sets
- Honda Generators annual x 4 units
- Back up generators annual x 2 units
- Portable pumps annual x 10 pumps
- Fire extinguishers annual x 40 pcs
- CO2 testers in station every 6 months
- Air filling machine air sample every 6 months
- Serviced and tested annual x 1 unit

## Land Improvement Safety and Accessibility Standards

<b>Item</b>	<b>Location</b>	<b>Meets Township safety standard (weekly checks)</b>	<b>Meets accessibility standard</b>	<b>Date to meet standard</b>	<b>Plan to meet standard</b>
Playground equipment	Plattsville Park	Yes	No	N/A	At the time of replacement, new designs will be made.
Baseball Diamond	Plattsville Park	Yes	Yes	N/A	N/A
Baseball Diamond Fence	Plattsville Park	Yes	Yes	N/A	N/A
Pavilion	Plattsville Park	Yes	No	At the time of renovations	At the time of renovations
Skateboard Park	Plattsville Park	Yes	No	N/A	N/A
Skateboard Park	Bright Park	Yes	No	N/A	N/A
Baseball Diamond	Bright Park	Yes	Yes	N/A	N/A
Baseball Diamond fence	Bright Park	Yes	Yes	N/A	N/A
Playground equipment	Bright Park	Yes	No	N/A	At the time of replacement, new designs will be made.
Pavilion	Bright Park	Yes	Yes	N/A	N/A
Splash Pad	Drumbo Park	Yes	Yes	N/A	N/A
Baseball Diamond	Drumbo Park	Yes	Yes	N/A	N/A
Baseball Diamond fence	Drumbo Park	Yes	Yes	N/A	N/A
Playground Equipment	Drumbo Park	Yes	No	N/A	At the time of replacement, new designs will be made.
Pavilion	Drumbo Park	Yes	Yes	N/A	N/A

Washrooms	Drumbo Park	Yes	No	N/A	Need automatic doors. Doors are left open during the day usage to meet accessibility standard.
Outdoor sporting pad	Princeton Park	Yes	Yes	N/A	N/A
Baseball Diamond	Princeton Park	Yes	Yes	N/A	N/A
Baseball fences	Princeton Park	Yes	Yes	N/A	N/A
Pavilion	Princeton Park	Yes	Yes	N/A	N/A
Outdoor fitness equipment	Princeton Park	Yes	Yes	N/A	N/A
Walking trail	Princeton Park	Yes	Yes	N/A	N/A
Washrooms	Princeton Park	Yes	Yes	N/A	N/A
Playground Equipment	Princeton Park	Yes	No	N/A	At the time of replacement, new designs will be made.

# Appendix D: Risk Rating Criteria

## Probability of Failure

Asset Category	Risk Classification	Risk Criteria	Value/Range	Probability of Failure Score	
Road Network (Roads)	Social (15%)	AADT	0-45	1	
			45-95	2	
			95-200	3	
			200-750	4	
			750-2000	5	
	Road Base Condition (25%)		80-100	1	
			60-80	2	
			40-60	3	
			20-40	4	
			0-20	5	
	Structural (85%)	Surface Material (55%)	80-100	1	
			70-80	2	
			50-70	3	
			40-50	4	
			0-40	5	
		Ride Comfort Rating (RCR) (10%)		8-10	1
				6-8	2
				4-6	3
				2-4	4
				0-2	5
Service Life Remaining (Years) (10%)		16 Years +	1		
		12-16 Years	2		
		8-12 Years	3		
		4-8 Years	4		
		0-4 Years	5		

Asset Category	Risk Classification	Risk Criteria	Value/Range	Probability of Failure Score
Bridges & Culverts	Functional (15%)	AADT	0-45	1
			45-95	2
			95-200	3
			200-750	4
			750-2000	5
	Loading Restrictions (10%)	No	3	
		Yes	5	
	Condition (50%)	80-100	1	
		70-80	2	
		60-70	3	
		50-60	4	
		0-40	5	
	Structural (85%)	Structure Type (15%)	Steel Through Truss	1
			Concrete Rigid Frame, Three Span CPCI Girders, Steel Beams, Three Span Solid Slab, Three Span over Railway	2
			Concrete Box Culvert, Multiple Pipe Arch, Voided Concrete Slabs	3
			Twin Multiplate CSP's	4
			Circular/Spiral CSP Pipe	5
			Service Life Remaining (%) (10%)	60-100
	40-60	2		
	20-40	3		
10-20	4			
0-10	5			

Asset Category	Risk Classification	Risk Criteria	Value/Range	Probability of Failure Score
Stormwater Network, Buildings, Machinery & Equipment, Vehicles, Land Improvements	Economic	Condition	80-100	1
			60-80	2
			40-60	3
			20-40	4
			0-20	5

## Consequence of Failure

Asset Category	Risk Classification	Risk Criteria	Value/Range	Consequence of Failure Score
Road Network (Roads)	Economic (65%)	Roadside Environment (20%)	Rural	3
			Semi-Urban	4
			Urban	5
		Replacement Cost (Cost/Unit) (80%)	0-100	1
			100-150	2
	150-315		3	
	315-400		4	
	400-800		5	
	Social (20%)	Maintenance Class (50%)	6	1
			5	2
			4,3	3
			2	4
			1	5
	Health & Safety (15%)	Design Class (50%)	Local	3
			Collector	4
Arterial			5	
0-50 km			3	
Road Speed Limit 50 km +			4	



Asset Category	Risk Classification	Risk Criteria	Value/Range	Consequence of Failure Score
Bridges & Culverts	Economic (40%)	Roadside Environment (20%)	Rural	3
			Semi-Urban	4
			Urban	5
		Replacement Cost (Cost/Unit) (80%)	0-60,000	1
			60,000-250,000	2
			250,000-1,200,000	3
			1,200,000-2,390,000	4
			2,390,000-3,000,000	5
		Maintenance Class (20%)	6	1
			5	2
	4,3		3	
	2		4	
	1		5	
	Social (35%)	Design Class (20%)	Local	3
			Collector	4
			Arterial	5
		Dimensional Restrictions (20%)	No	3
			Yes	5
	Detour Distance (40%)	0-1	1	
		1-5	2	
		5-10	3	
		10-15	4	
		15-50	5	
Road Speed Limit (40%)	0-50 km	3		
	50 km +	4		
Health & Safety (25%)	Main Deficiency (60%)	Rough Riding Surface	1	
		Minor Defect	2	
		Settlement, Movement	3	
		Excessive Deformation	4	
		Carrying Capacity, Pedestrian, Vehicle Hazard	5	

Asset Category	Risk Classification	Risk Criteria	Value/Range	Probability of Failure Score
Stormwater Network, Buildings, Machinery & Equipment, Vehicles, Land Improvements	Economic	Historical Cost	Ranges	1
				2
				3
				4
				5

# Appendix E: 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 Township'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 Township'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 Township 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 Township 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 Township 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 Township 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

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