

Asset Management Plan

Township of Hilliard

2023

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This Asset Management Program was prepared by:



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Key Statistics

Replacement cost of
asset portfolio

\$9.5 million

Replacement cost of
infrastructure per
household

\$102,064 (2021)

Percentage of assets in fair
or better condition

95%

Percentage of assets with
assessed condition data

65%

Annual capital
infrastructure deficit

\$217,000

Recommended
timeframe for
eliminating annual
infrastructure deficit

20 Years

Target reinvestment
rate

2.3%

Actual reinvestment
rate

0%

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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/proposed 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

 Bridges & Culverts	 Facilities
 Vehicles	 Machinery & Equipment
 Land Improvements	

With the development of this AMP the Township has achieved compliance with O. Reg. 588/17 to the extent of the requirements that must be completed by July 1, 2025.

Findings

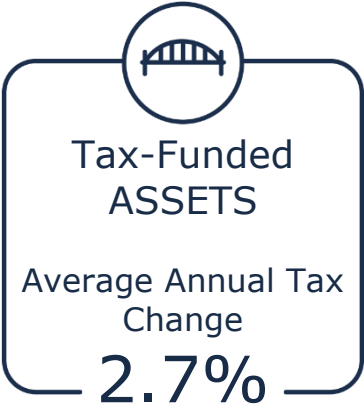
The overall replacement cost of the asset categories included in this AMP totals \$9.5 million. 95% of all assets analysed in this AMP are in fair or better condition and assessed condition data was available for 65% of assets. For the remaining 35% of assets, assessed condition data was unavailable, 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 and replacement only strategies to determine the lowest cost option to maintain the current/proposed levels 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 \$217 thousand. Based on a historical analysis of sustainable capital funding sources, the Township is not committing designated funding towards capital projects or reserves per year. As a result, there is currently an annual funding gap of \$217 thousand.

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.

Recommendations

A financial strategy was developed to address the annual capital funding gap. The following graphics shows annual tax change required to eliminate the Township’s infrastructure deficit based on a 20-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

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
- 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 Hilliard Community Profile

Census Characteristic	Hilliard	Ontario
Population 2021	215	14,223,942
Population Change 2016-2021	3.9	5.8
Total Private Dwellings	93	5,929,250
Population Density	2.4/km ²	15.9/km ²
Land Area	91.27 km ²	892,411.76 km ²

The Township of Hilliard is a single tier municipality in the Timiskaming District located within Northeastern Ontario. The Township lies to the north of Lake Timiskaming and is situated right on the border with Quebec.

The Township was settled in the late 1800s and was named after Daniel Hilliard, a political figure who was a member of the Legislative Assembly of Ontario from 1886 to 1888. The Township is comprised of smaller communities such as Couttsville and Whitewood Grove. The majority of the residents are fluent in English.

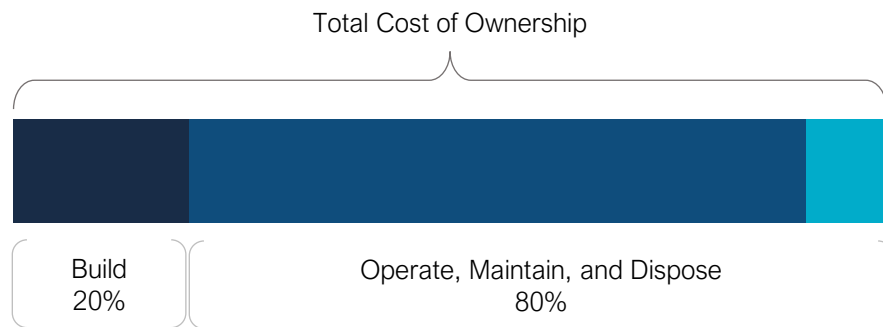
Hilliard is described as a small township located in a rural area and one of the primary industries in the region is agriculture. The Township is surrounded by green forests and hills, which allow various activities such as crop cultivation and livestock farming.

The region experiences demand due to the agricultural prospects within the community, as well as its appeal to tourism. The Township offers a wide range of services such as hiking, camping, and fishing. Within the Township, both community residents and visitors can experience a variety of amenities such as The Hilliard Municipal Park and The Hilliard Marsh Research and Education Centre. These attractions captivate nature enthusiasts with their distinctive landscapes and diverse wildlife, offering engaging educational programs and opportunities to actively contribute to the vital wetland ecosystem research and conservation endeavors benefiting the community.

1.2 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.

1.2.1 Asset Management Policy

An asset management policy represents a statement of the principles guiding the Township'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.

1.2.2 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 Township plans to achieve asset management objectives through planned activities and decision-making criteria.

1.2.3 Asset Management Plan

The asset management plan (AMP) presents the outcomes of the Township'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 Township to re-evaluate the state of infrastructure and identify how the organization's asset management and financial strategies are progressing.

1.3 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.

1.3.1 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.

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

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.

1.3.2 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.

1.3.3 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 and 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 Township's asset management strategies on the physical condition of assets or the quality/capacity of the services they provide.

For core asset categories (roads, bridges and culverts, 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 both the current and proposed level of service, provided to the community, 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.

As per O. Reg. 588/17, the Township's proposed levels of service must:

- i. Explain why the proposed levels of service are appropriate:
 - a. Discuss associated risks
 - b. How they differ from current levels of service
 - c. Whether proposed levels of service are achievable
 - d. Discuss the Township's ability to afford the proposed level of service
- ii. Have a proposed performance metric
- iii. Have a lifecycle management and financial strategy
- iv. Discuss how assumptions regarding future changes in population and economic activity, informed the preparation of the lifecycle management and financial strategy

1.4 Climate Change

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

The report revealed that between 1948 and 2016, the average temperature increase across Canada was 1.7°C; moreover, during this time period, Northern Canada experienced a 2.3°C increase. The temperature increase in Canada has doubled that of the global average. If emissions are not significantly reduced, the temperature could increase by 6.3°C in Canada by the year 2100 compared to 2005 levels. Observed precipitation changes in Canada include an increase of approximately 20% between 1948 and 2012. By the late 21st century, the projected increase could reach an additional 24%. During the summer months, some regions in Southern Canada are expected to experience periods of drought at a higher rate. Extreme weather events and climate conditions are more common across Canada. Recorded events include droughts, flooding, cold extremes, warm extremes, wildfires, and record minimum arctic sea ice extent.

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

1.4.1 Hilliard Climate Profile

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

Higher Average Annual Temperature:

1. Between the years 1971 and 2000 the annual average temperature was 2.7 °C

2. Under a high emissions scenario, the annual average temperatures are projected to increase by 2.7 °C by the year 2050 and over 6.9 °C by the end of the century.

Increase in Total Annual Precipitation:

1. Under a high emissions scenario, Hilliard is projected to experience an 14% increase in precipitation by the year 2050 and a 20% increase by the end of the century.

Increase in Frequency of Extreme Weather Events:

1. It is expected that the frequency and severity of extreme weather events will change.
2. In some areas, extreme weather events will occur with greater frequency and severity than others especially those impacted by Great Lake winds.

1.4.2 Integration Climate change and Asset Management

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

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

1.5 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) and Asset Management Policy Update

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 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 strategies

1.5.1 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, 2025. Next to each requirement a page or section reference is included in addition to any necessary commentary.

Requirement	O. Reg. Section	AMP Section Reference	Status
Summary of assets in each category	S.5(2), 3(i)	4	Complete
Replacement cost of assets in each category	S.5(2), 3(ii)	4	Complete
Average age of assets in each category	S.5(2), 3(iii)	4	Complete
Condition of core assets in each category	S.5(2), 3(iv)	4	Complete
Description of municipality's approach to assessing the condition of assets in each category	S.5(2), 3(v)	4	Complete
Current levels of service in each category	S.5(2), 1(i-ii)	4	Complete
Current performance measures in each category	S.5(2), 2	4	Complete
Proposed levels of service in each category	S.6	4 Appendix C	Complete
Lifecycle activities needed to maintain current levels of service for 10 years	S.5(2), 4	4	Complete
Costs of providing lifecycle activities for 10 years	S.5(2), 4	Appendix A	Complete
Growth assumptions	S.5(2), 5(i-ii) S.5(2), 6(i-vi)	5	Complete

2. Scope and Methodology

Key Insights

- This asset management plan includes 5 asset 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 Hilliard is produced in compliance with Ontario Regulation 588/17. The July 2025 iteration of the Asset Management Plan requires analysis of both core and non-core assets.

The AMP summarizes the state of the infrastructure for the Township’s asset portfolio, establishes current levels of service, proposed 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
Bridges & Culverts	Tax Levy
Facilities	
Vehicles	
Machinery & Equipment	
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 D includes additional information on the role of asset condition data and provides basic guidelines for the development of a condition assessment program.

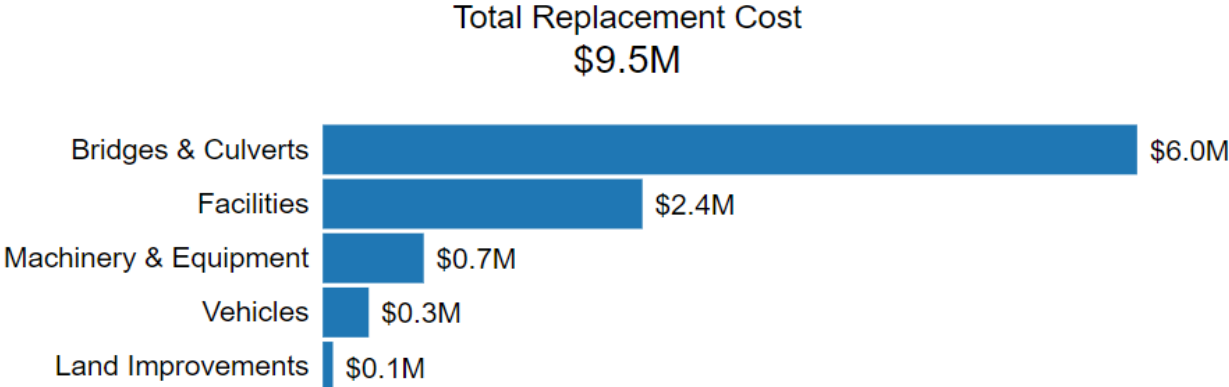
3. Portfolio Overview

Key Insights

- The total replacement cost of the Township's asset portfolio is \$9.5 million
- The Township's target re-investment rate is 2.3%, and the actual re-investment rate is 0%, contributing to an expanding infrastructure deficit
- 95% of all assets are in fair or better condition
- Average annual capital requirements total \$217 thousand per year across all assets

3.1 Total Replacement Cost of Asset Portfolio

The asset categories analyzed in this AMP have a total replacement cost of \$9.5 million based on inventory data from 2022. 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.



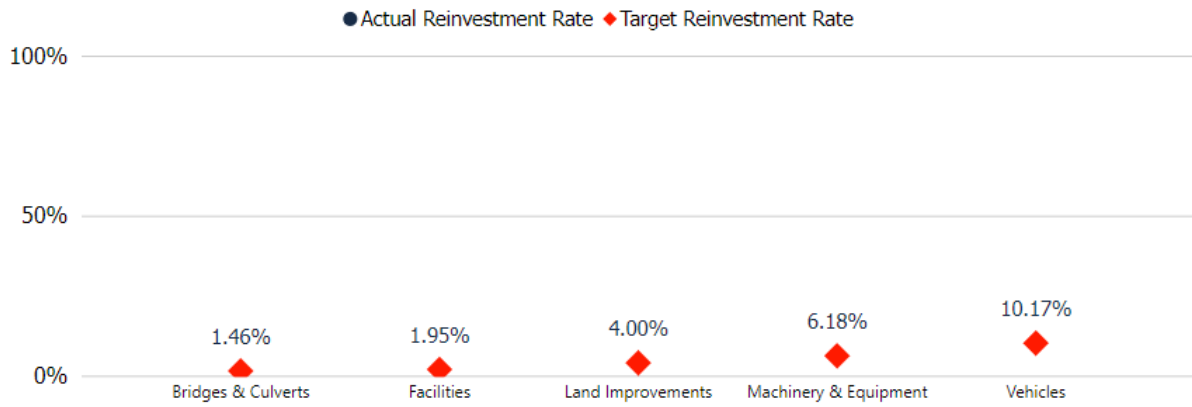
The following table identifies the methods employed to determine replacement costs across each asset category:

Asset Category	Replacement Cost Method	
	User-Defined	Notes
Bridges & Culverts	100%	2021 OSIM Report
Facilities	100%	Insurance Appraisal
Machinery & Equipment	100%	Internal Staff
Vehicles	100%	Internal Staff
Land Improvements	100%	2022 Construction Cost
Overall	100%	

3.2 Target vs. Actual Reinvestment Rate

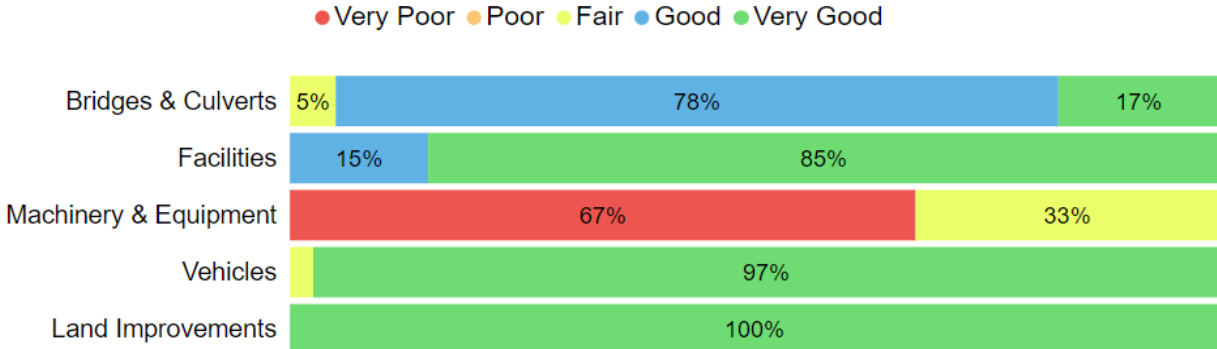
The graph below depicts funding gaps or surpluses by comparing target vs actual reinvestment rate. To meet the long-term replacement needs, the Township should

be allocating approximately \$217 thousand annually, for a target reinvestment rate of 2.3%. There is no capital expenditure on the Township's infrastructure needs.



3.3 Condition of Asset Portfolio

The current condition of the assets is central to all asset management planning. Collectively, 95% of assets in Hilliard are in fair or better condition. This estimate relies on both age-based and field condition data.

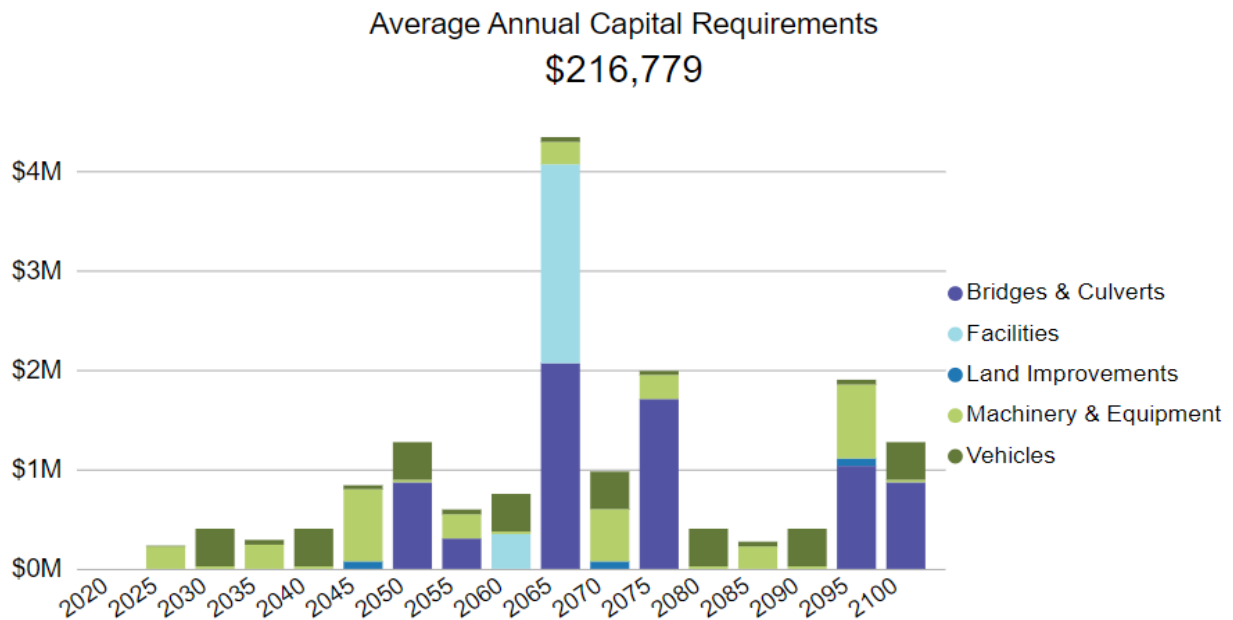


This AMP relies on assessed condition data for 65% of assets; for the remaining portfolio, age is used as an approximation of condition. Assessed condition data is invaluable in asset management planning as it reflects the true condition of the asset and its ability to perform its functions. The table below identifies the source of condition data used throughout this AMP.

Asset Category	Asset Segment	% of Assets with Assessed Condition	Source of Condition Data
Bridges & Culverts	Bridges	100%	2021 OSIM Report
	Structural Culverts	100%	2021 OSIM Report
Facilities	All	0%	Age-Based
Machinery & Equipment	All	33%	Staff Assessments
Vehicles	All	2%	Staff Assessments
Land Improvements	All	0%	Staff Assessments

3.4 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 75-80 years. This projection is used as it ensures that every asset has gone through one full iteration of replacement. The forecasted requirements are aggregated into 5-year bins and the trend line represents the average 5-year capital requirements.



4. Analysis of Tax-funded Assets

Key Insights

- Assets are valued at \$9.5 million
- 95% of assets are in fair or better condition
- The average annual capital requirement to sustain the current level of service for tax-funded assets is approximately \$217 thousand
- Critical assets should be evaluated to determine appropriate risk mitigation activities and treatment options

4.1 Bridges & Culverts

Bridges and culverts represent a critical portion of the transportation services provided to the community and represents the highest value asset category in the Township's asset portfolio.

4.1.1 Asset Inventory & Costs

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

Asset Segment	Quantity	Replacement Cost	Annual Capital Requirement
Bridges	3	\$4,809,813	\$64,131
Culverts	3	\$1,176,165	\$23,523
Total		\$5,985,978	\$87,654

Total Replacement Cost
\$6.0M



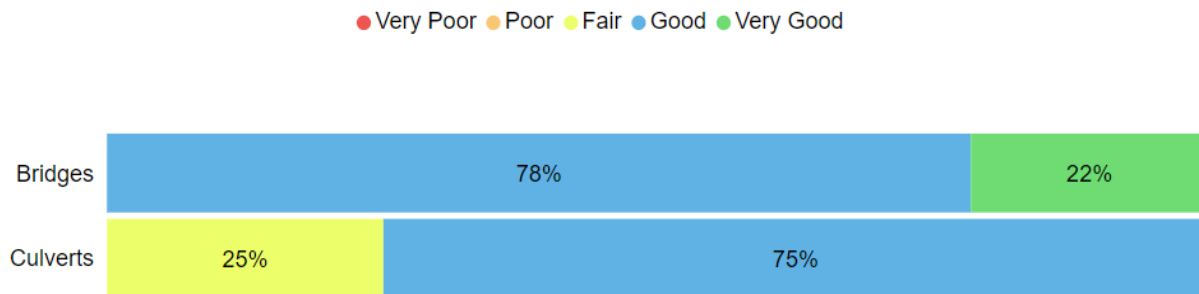
Each asset's replacement cost should be reviewed periodically to determine whether adjustments are needed to represent realistic capital requirements more accurately.

4.1.2 Asset Condition & Age

The table below identifies the current average condition, the average age, and the estimated useful life for each asset segment. The average condition (%) is a weighted value based on replacement cost, utilizing the bridge condition index (BCI) scores from the 2021 OSIM report.

Asset Segment	Estimated Useful Life (Years)	Average Age (Years)	Average Condition
Bridges	75	50 Years 4 Months	74% (Good)
Culverts	50	73 Years	66% (Good)
Average		61 Years 8 Months	73% (Good)

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



To ensure that the Township’s Bridges & Culverts continue to provide an acceptable level of service, Hilliard 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 and culverts.

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

Current Approach to Condition Assessment

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

- 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)

In this AMP, the following rating criteria is used to determine the current condition of assets and forecast future capital requirements:

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

4.1.3 Lifecycle Management Strategy

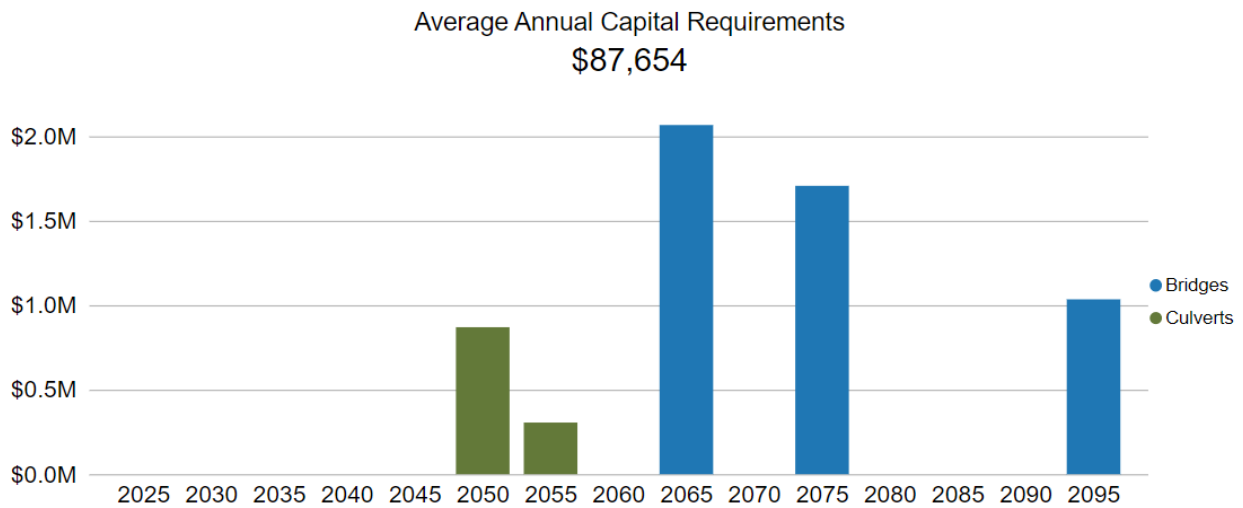
The condition or performance of most assets will deteriorate over time. To ensure that municipal assets are performing as expected and meeting the needs of customers, it is important to establish a lifecycle management strategy to proactively manage asset deterioration.

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

Activity Type	Description of Current Strategy
Maintenance, Rehabilitation and Replacement	All lifecycle activities are driven by the results of mandated structural inspections completed according to the Ontario Structure Inspection Manual (OSIM)
Inspection	The most recent inspection report was completed in 2021 by ART Engineering Inc.

Forecasted Capital Requirements

The following graph forecasts long-term capital requirements. The annual capital requirement represents the average amount per year that the Township should allocate towards funding rehabilitation and replacement needs. The following graph identifies capital requirements over the next 70-75 years. This projection is used as it ensures that every asset has gone through one full iteration of replacement. The forecasted requirements are aggregated into 5-year bins and the trend line represents the average 5-year capital requirements.



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 A.

4.1.4 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

Staff identified the lack of capital funding as the single biggest risk to the management of the Township’s bridges and structural culverts. Limited funding due to a Township’s small taxpayer base, makes it difficult for proactive asset management.

Major capital rehabilitation projects for bridges and culverts are 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.

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

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

4.1.5 Current Levels of Service

The following tables identify the Township’s current level of service for bridges and culverts. These metrics include the community and technical level of service metrics that are required as part of O. Reg. 588/17.

Community Levels of Service

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

Service Attribute	Qualitative Description	Current LOS (2022)
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. None of the Township's structures have loading or dimensional restrictions meaning that most types of vehicles, including heavy transport, motor vehicles, emergency vehicles and cyclists can cross them without restriction.
Quality	Description or images of the condition of bridges and culverts and how this would affect use of the bridges and culverts	See Appendix B

Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS (2022)
Scope	% of bridges in the Township with loading or dimensional restrictions	0%
Quality	Average bridge condition index value for bridges in the Township	74
	Average bridge condition index value for structural culverts in the Township	66

4.1.6 Proposed Levels of Service

As per O. Reg. 588/17, Hilliard is mandated to document its proposed levels of service for bridges and culverts. Refer to appendix C for the Township's proposed level of service for bridges and culverts, for the following 10 years.

4.1.7 Recommendations

Data Review/Validation

- 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

- 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.

Lifecycle Management Strategies

- This AMP only includes capital costs associated with the reconstruction of bridges and culverts. The Township should work towards identifying projected capital rehabilitation and renewal costs for bridges and culverts and integrating these costs into long-term planning.

Levels of Service

- Measure 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.
- Ensure that proposed levels of service metrics are reported on an annual basis.

4.2 Facilities

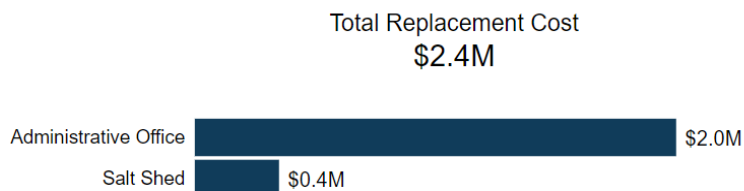
The Township of Hilliard owns and maintains two facilities, which include:

- administrative office
- salt shed

4.2.1 Asset Inventory & Costs

The table below includes the quantity, total replacement cost and annual capital requirements of each asset segment in the Township’s buildings and facilities inventory.

Asset Segment	Quantity	Replacement Cost	Annual Capital Requirement
Administrative Office	1	\$2,000,000	\$40,000
Salt Shed	1	\$350,000	\$5,833
Total		\$2,350,000	\$45,833



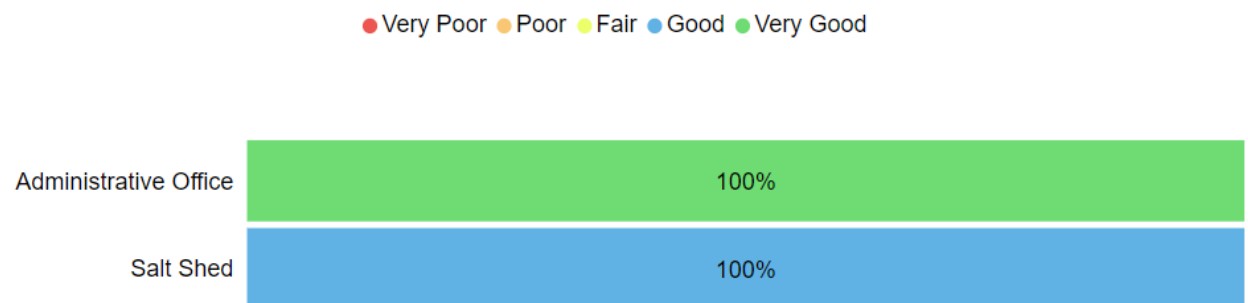
Each asset’s replacement cost should be reviewed periodically to determine whether adjustments are needed to more accurately represent realistic capital requirements.

4.2.2 Asset Condition & Age

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

Asset Segment	Estimated Useful Life (Years)	Average Age (Years)	Average Condition
Administrative Office	50	5 Years	90% (Very Good)
Salt Shed	60	23 Years	62% (Good)
Average		14 Years	86% (Very Good)

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



To ensure that the Township’s facilities continue to provide an acceptable level of service, it 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 and facilities.

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

Current Approach to Condition Assessment

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

- Visual inspections are completed by internal staff, on an ad hoc basis
- There are currently no formalized condition assessment programs in place at the Township

In this AMP the following rating criteria is used to determine the current condition of assets and forecast future capital requirements:

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

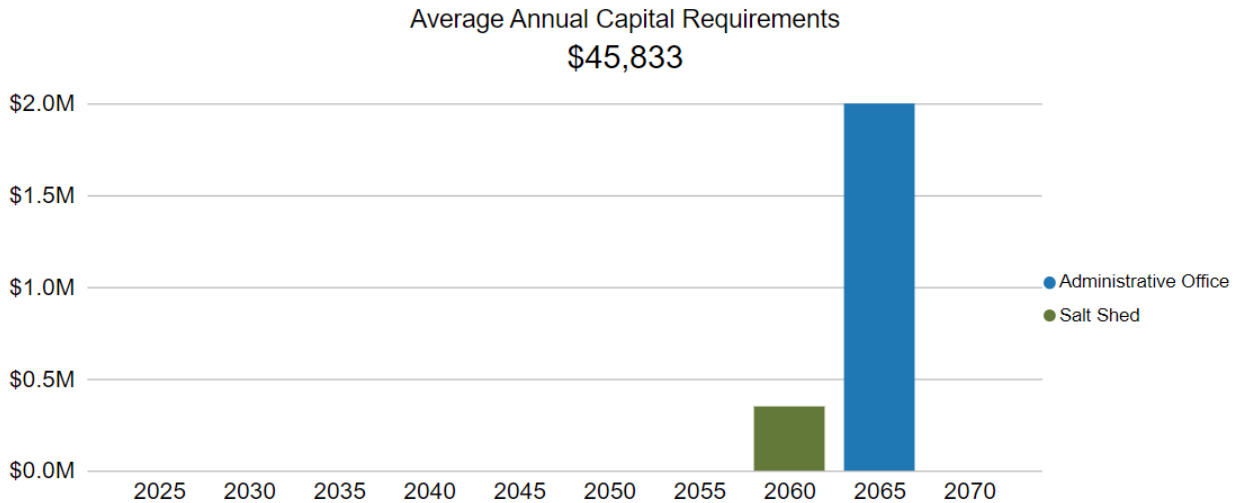
4.2.3 Lifecycle Management Strategy

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	Minor maintenance activities of facilities are completed by internal staff, as needed
	A formalized assessment program does not currently exist In the absence of external reports, the Township relies on staff expertise to drive discussion, regarding the replacement of facilities
Replacement	The Township’s replacement strategy is reactive. Due to a lack of funding, Hilliard cannot conduct a building condition assessment (BCA). As facilities continue to age and where funding becomes available, the Township may decide to utilize an external engineering firm to conduct a BCA

Forecasted Capital Requirements

The following graph forecasts long-term capital requirements. The annual capital requirement represents the average amount per year that the Township should allocate towards funding rehabilitation and replacement needs. The following graph identifies capital requirements over the next 45-50 years. This projection is used as it ensures that every asset has gone through one full iteration of replacement. The forecasted requirements are aggregated into 5-year bins and the trend line represents the average 5-year capital requirements.



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 A.

4.2.4 Risks to Current Asset Management Strategies

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

Asset Data/Capital Funding



While Hilliard’s facilities are currently in a state of ‘good’ condition, the rating is solely using an age-based approach. Neither the administrative office nor salt shed has been assessed.

Building condition assessments (BCA) are valuable as facilities are assessed on a component basis (i.e., UNIFORMAT II). By having a componentized breakdown of each facility, it would allow the Township to more accurately project expected capital expenditure (ex. Upgrade to heating, replacement of windows, etc.).

While there are no immediate capital projections for either facility, the Township is not well equipped currently if there were to be a major unplanned rehabilitation event. To mitigate any unplanned capital expenses, and for better asset management, the Township should consider conducting a BCA in the near future.

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

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

4.2.5 Current Levels of Service

The following tables identify the Township’s current level of service for facilities. These metrics include the community and technical level of service metrics that are required as part of O. Reg. 588/17.

Community Levels of Service

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

Service Attribute	Qualitative Description	Current LOS (2022)
Scope	Description of the facilities owned and managed by the Township along with the overall condition	The township owns and manages two facilities (administrative office and salt shed) Using an age-based approach, Hilliard’s facilities are in very good condition.

Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS (2022)
Quality	% of assets that are in good or very good condition	100
	% of assets that are in fair condition	0
	% of assets that are in poor or very poor condition	0

4.2.6 Proposed Levels of Service

As per O. Reg. 588/17, Hilliard is mandated to document its proposed levels of service for facilities. Refer to appendix C for the Township's proposed level of service for facilities, for the following 10 years.

4.2.7 Recommendations

Asset Inventory

- The Township's asset inventory contains a single record for all facilities. Facilities consist of several separate capital components that have unique estimated useful lives and require asset-specific lifecycle strategies. Staff should work towards a component-based inventory of all facilities to allow for component-based lifecycle planning.
- A building condition assessment (BCA) in the coming years, will help the Township better manage and plan for capital expenditure (i.e., rehabilitation events).

Condition Assessment Strategies

- The Township should implement regular condition assessments for all facilities to better inform short- and long-term capital requirements.

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.

Levels of Service

- Measure 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.
- Ensure that proposed levels of service metrics are reported on an annual basis.

4.3 Vehicles

Vehicles allow staff to efficiently deliver municipal services and personnel. Hilliard own and manage two public works vehicles, including:

- Freightliner
- Trailer

4.3.1 Asset Inventory & Costs

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	Annual Capital Requirement
Public Works	2	\$338,500	\$34,417
		\$338,500	\$34,417

Total Replacement Cost
\$338.5K

Public Works  \$0.3M

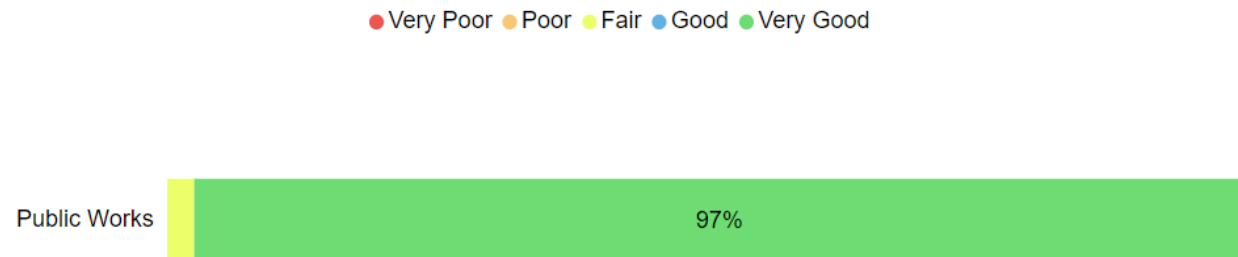
Each asset's replacement cost should be reviewed periodically to determine whether adjustments are needed to more accurately represent realistic capital requirements.

4.3.2 Asset Condition & Age

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	Estimated Useful Life (Years)	Average Age (Years)	Average Condition
Public Works	5-10	8 Years 5 Months	98% (Very Good)
		8 Years 5 Months	98% (Very Good)

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



To ensure that the Township’s vehicles continue to provide an acceptable level of service, it 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.

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

Current Approach to Condition Assessment

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

- As per MTO guidelines, staff completes regular visual inspections of vehicles to ensure they are in state of adequate repair prior to operation

- Mileage, in conjunction with monitoring maintenance costs, are used as proxies to determine remaining useful life and relative vehicle condition

In this AMP the following rating criteria is used to determine the current condition of assets and forecast future capital requirements:

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

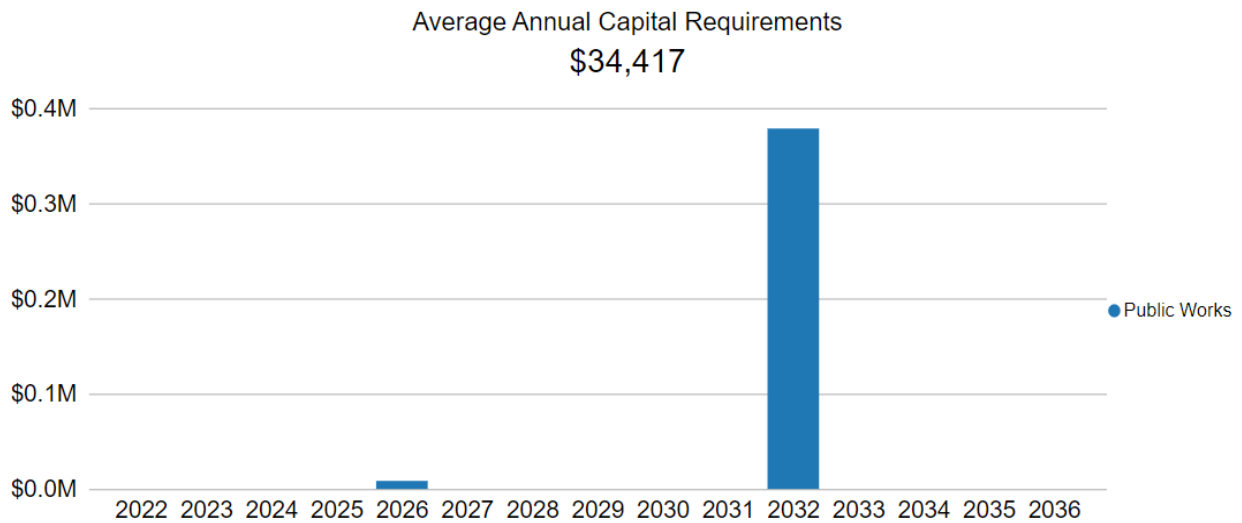
4.3.3 Lifecycle Management Strategy

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	Regular, daily inspections are conducted internally prior to vehicle usage. As per MTO guidelines, an interior, in-cab, and exterior inspection is conducted
	Minor repairs are completed internally. The Township utilizes external mechanics for major rehabilitation needs
Replacement	Historically, vehicles have lasted well beyond estimated useful lives. Coupled with funding limitations, the Township's replacement strategy can be defined as reactive

Forecasted Capital Requirements

The following graph forecasts long-term capital requirements. The annual capital requirement represents the average amount per year that the Township should allocate towards funding rehabilitation and replacement needs. The following graph identifies capital requirements over the next 10-15. This projection is used as it ensures that every asset has gone through one full iteration of replacement. The forecasted requirements are aggregated into 5-year bins and the trend line represents the average 5-year capital requirements.



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 A.

4.3.4 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



While there are no immediate planned capital requirements projected for the Township, it is worth noting that the vehicles are approaching their estimated useful life (EUL). As vehicles age, their respective operations & maintenance (O&M) costs increase. O&M costs will continue to increase to ensure compliance with MTO standards.

Furthermore, as vehicles age, the likelihood of asset failure, increases. The Township should consider a risk mitigation strategy in the event of unforeseen asset failure. Such a strategy will help decrease the negative impact (financial, health & safety, etc.) to the Township.

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

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

4.3.5 Current Levels of Service

The following tables identify the Township’s current level of service for vehicles. These metrics include the community and technical level of service metrics that are required as part of O. Reg. 588/17.

Community Levels of Service

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

Service Attribute	Qualitative Description	Current LOS (2022)
Scope	Description of types of vehicles owned and managed by the Township along with the overall condition	The Township owns two public works vehicle assets (a frieghtliner, along with a trailer) Hilliard’s vehicles are in good/very good condition

Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS (2022)
Quality	% of vehicles that are in good or very good condition	97
	% of vehicles that are in fair condition	3
	% of vehicles that are in poor or very poor condition	0

4.3.6 Proposed Levels of Service

As per O. Reg. 588/17, Hilliard is mandated to document its proposed levels of service for vehicles. Refer to appendix C for the Township's proposed level of service for vehicles, for the following 10 years.

4.3.7 Recommendations

Replacement Costs

- Gather accurate replacement costs and update on a regular basis to ensure the accuracy of capital projections.

Condition Assessment Strategies

- Identify condition assessment strategies for high value and high-risk assets.
- 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.

Levels of Service

- Measure 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.
- Ensure that proposed levels of service metrics are reported on an annual basis.

4.4 Machinery & Equipment

To maintain the high quality of public infrastructure and support the delivery of core services, Township staff own and employ machinery and equipment, including:

- Tractor
- Steamer
- Grader
- Brush Hog

4.4.1 Asset Inventory & Costs

The table below includes the quantity, total replacement cost and annual capital requirements of each asset segment in the Township’s machinery and equipment inventory.

Asset Segment	Quantity	Replacement Cost	Annual Capital Requirement
Public Works	4	\$742,500	\$45,875
Total		\$742,500	\$45,875

Total Replacement Cost
\$742.5K

Public Works  \$0.7M

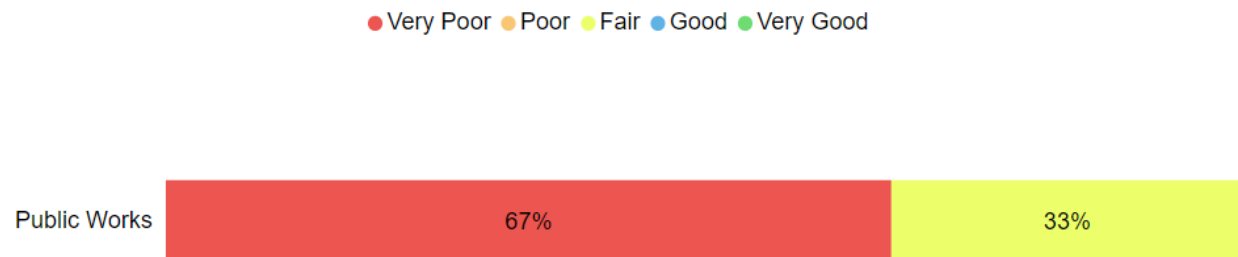
Each asset’s replacement cost should be reviewed periodically to determine whether adjustments are needed to more accurately represent realistic capital requirements.

4.4.2 Asset Condition & Age

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	Estimated Useful Life (Years)	Average Age (Years)	Average Condition
Public Works	5-25	25 Years 6 Months	16% (Very Poor)
Average		25 Years 6 Months	16% (Very Poor)

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



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

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

Current Approach to Condition Assessment

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

- Staff completes regular visual inspections of vehicles to ensure they are in state of adequate repair prior to operation
- Usage, in conjunction with monitoring maintenance costs, are used as proxies to determine remaining useful life and relative vehicle condition

In this AMP the following rating criteria is used to determine the current condition of assets and forecast future capital requirements:

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

4.4.3 Lifecycle Management Strategy

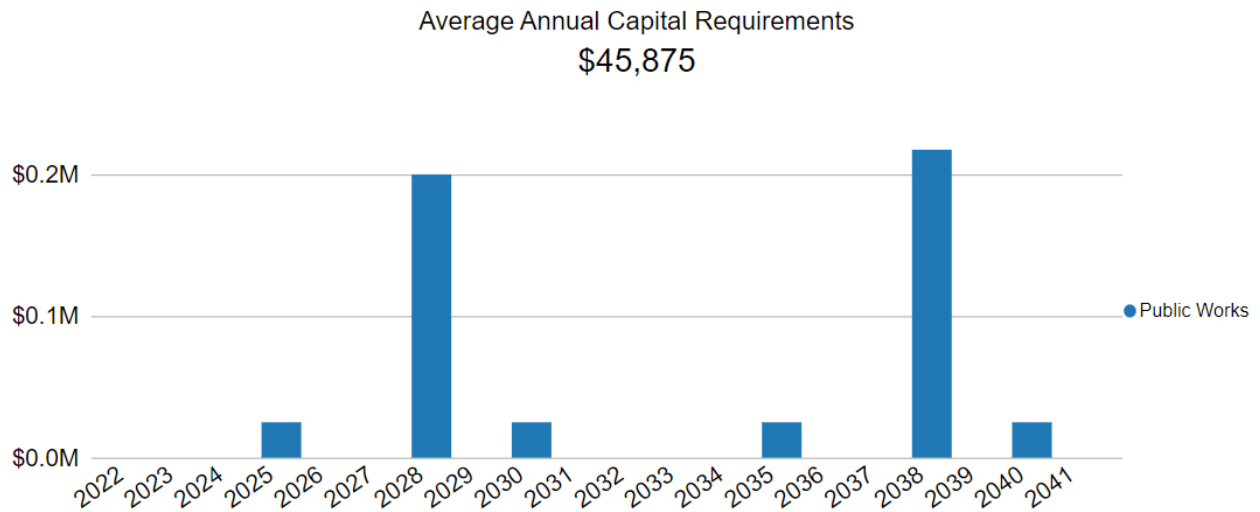
The condition or performance of most assets will deteriorate over time. To ensure that municipal assets are performing as expected and meeting the needs of customers, it is important to establish a lifecycle management strategy to proactively manage asset deterioration.

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

Activity Type	Description of Current Strategy
Maintenance/ Rehabilitation	Minor repairs are completed internally. The Township utilizes external mechanics for major rehabilitation needs Machinery and equipment is maintained according to manufacturer recommended actions and supplemented by the expertise of municipal staff
Replacement	Historically, vehicles have lasted well beyond estimated useful lives. Coupled with funding limitations, the Township’s replacement strategy can be defined as reactive

Forecasted Capital Requirements

The following graph forecasts long-term capital requirements. The annual capital requirement represents the average amount per year that the Township should allocate towards funding rehabilitation and replacement needs. The following graph identifies capital requirements over the next 15-20 years. This projection is used as it ensures that every asset has gone through one full iteration of replacement. The forecasted requirements are aggregated into 5-year bins and the trend line represents the average 5-year capital requirements.



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 A.

4.4.4 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



The Township has numerous immediate & short-term forecasted capital requirement projections. Hilliard’s machinery & equipment assets has extended beyond their projected estimated useful life (EUL).

Staff indicated that the grader (\$500,000) has reached its useful life and needs to be replaced as soon as possible. Staff also indicated that both the brush hog and tractor will need replacement, in 2025 and 2028, respectively.

As it stands, the Township’s capital budget is not sufficient. Hilliard should begin the process of creating a funding strategy to ensure that the Township has the means to obtain the required machinery & equipment assets in the coming years.

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

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

4.4.5 Current Levels of Service

The following tables identify the Township’s current level of service for machinery & equipment. These metrics include the community and technical level of service metrics that are required as part of O. Reg. 588/17.

Community Levels of Service

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

Service Attribute	Qualitative Description	Current LOS (2022)
Scope	Description of the various machinery & equipment assets owned and operated by the Township along with the overall condition	Hilliard owns and manages various equipment such as: tractor, steamer, grader, and brush hog. These assets help provide essential services to the community The Township’s machinery & equipment are in very poor condition

Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS (2022)
Quality	% of assets that are in good or very good condition	0
	% of assets that are in fair condition	33
	% of assets that are in poor or very poor condition	67

4.4.6 Proposed Levels of Service

As per O. Reg. 588/17, Hilliard is mandated to document its proposed levels of service for machinery & equipment. Refer to appendix C for the Township's proposed level of service for machinery & equipment, for the following 10 years.

4.4.7 Recommendations

Replacement Costs

- Gather accurate replacement costs and update on a regular basis to ensure the accuracy of capital projections.

Condition Assessment Strategies

- Identify condition assessment strategies for high value and high-risk assets.
- 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.

Levels of Service

- Measure 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.
- Ensure that proposed levels of service metrics are reported on an annual basis.

4.5 Land Improvements

Hilliard owns and manages one skating pad land improvement asset.

4.5.1 Asset Inventory & Costs

The table below includes the quantity, total replacement cost and annual capital requirements for the Township’s land improvement inventory.

Asset Segment	Quantity	Replacement Cost	Annual Capital Requirement
Skating Rink	1	\$75,000	\$3,000
Total		\$75,000	\$3,000

Replacement cost should be reviewed periodically to determine whether adjustments are needed to represent realistic capital requirements more accurately.

Total Replacement Cost
\$75.0K

Skating Rink  \$75.0K

4.5.2 Asset Condition & Age

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

Asset Segment	Estimated Useful Life (Years)	Average Age (Years)	Average Condition
Skating Rink	25	1	96% (Very Good)
Average		1	96% (Very Good)

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

● Very Poor ● Poor ● Fair ● Good ● Very Good



To ensure that the Township’s land improvement asset continues to provide an acceptable level of service, it 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.

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

Current Approach to Condition Assessment

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

- Hilliard has assigned a staff member to complete an inspection, on an ad hoc basis
- With the skating pad being a new asset, there is currently not a need for a formal condition assessment program

In this AMP the following rating criteria is used to determine the current condition of assets and forecast future capital requirements:

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

4.5.3 Lifecycle Management Strategy

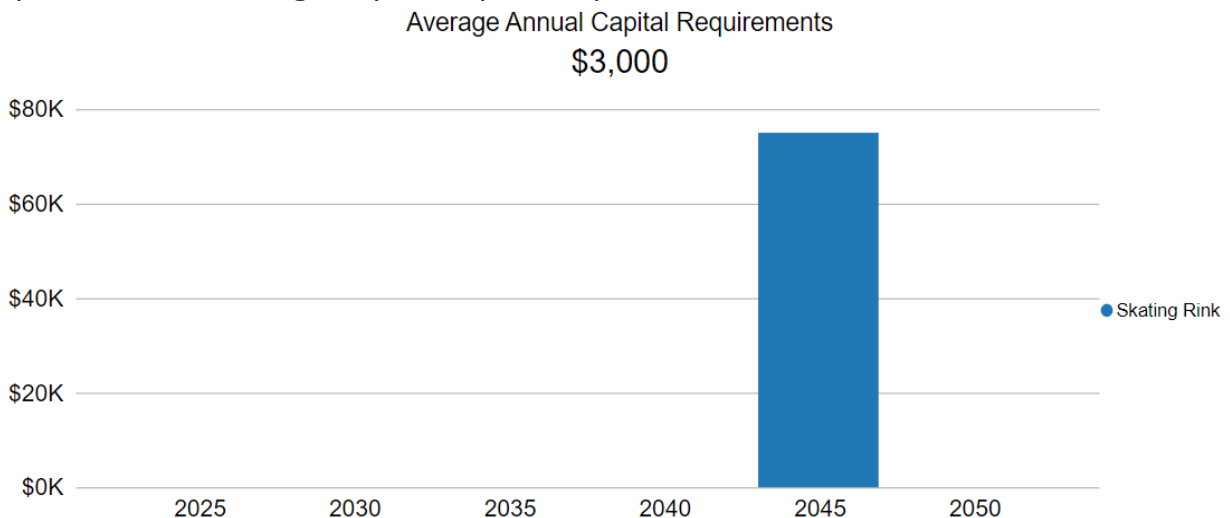
The condition or performance of most assets will deteriorate over time. To ensure that municipal assets are performing as expected and meeting the needs of customers, it is important to establish a lifecycle management strategy to proactively manage asset deterioration.

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

Activity Type	Description of Current Strategy
Maintenance, Rehabilitation & Replacement	<p data-bbox="448 600 1224 632">Internal staff conduct inspections on an ad hoc basis</p> <p data-bbox="448 642 1417 831">With the skating rink being new and in excellent condition, a formal condition assessment program has not been implemented. As the asset ages, the Township may choose to implement a program to ensure that the skating pad remains in acceptable condition</p>

Forecasted Capital Requirements

The following graph forecasts long-term capital requirements. The annual capital requirement represents the average amount per year that the Township should allocate towards funding rehabilitation and replacement needs. The following graph identifies capital requirements over the next 25-30 years. This projection is used as it ensures that every asset has gone through one full iteration of replacement. The forecasted requirements are aggregated into 5-year bins and the trend line represents the average 5-year capital requirements.



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 A.

4.5.4 Risks to Current Asset Management Strategies



Lifecycle Management Strategy & Staffing Capacity

A formalized condition assessment program has not been established by Hilliard. With the skating pad being only a year old, there is not an immediate need to implement a program. However, the Township should look to develop an internal program to ensure best asset management practices.

Staff indicated that visual inspection of the skating pad is completed internally, only when time permits, suggesting that there may be capacity issues. As the asset ages, O&M costs will be expected to increase, taking away from the Township's resources (i.e. internal staff time).

4.5.5 Current Levels of Service

The following tables identify the Township’s current level of service for land improvements. These metrics include the community and technical level of service metrics that are required as part of O. Reg. 588/17.

Community Levels of Service

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

Service Attribute	Qualitative Description	Current LOS (2022)
Quality	Description of the types of assets owned and managed by the Township along with the overall condition	The Township currently owns and manages one land improvement asset (skating pad)
		The Township’s skating pad is in very good condition

Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS (2022)
Quality	% of assets in good or very good condition	100
	% of assets in fair condition	0
	% of assets in poor or very poor condition	0

4.5.6 Proposed Levels of Service

As per O. Reg. 588/17, Hilliard is mandated to document its proposed levels of service for land improvements. Refer to appendix C for the Township's proposed level of service for land improvements, for the following 10 years:

4.5.7 Recommendations

Condition Assessment Strategies

- Formalize an appropriate condition assessment program for the Township's skating pad.

Risk Management Strategies

- Implement risk-based decision-making as part of asset management planning and budgeting processes.

Levels of Service

- Measure 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.
- Ensure that proposed levels of service metrics are reported on an annual basis.

5. 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 fluctuation in population and employment growth is expected
- The costs of growth should be considered in long-term funding strategies that are designed to maintain both the current and proposed levels of service

5.1 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 plan for new infrastructure more effectively, and the upgrade or disposal of existing infrastructure. Increases or decreases in demand can affect what assets are needed and what level of service meets the needs of the community.

5.1.1 Hilliard Official Plan (November 2009)

The Township of Hilliard adopted their Official Plan which bases its projections on the Growth Plan for Northern Ontario and reflects the goals of the Planning Act. The Official Plan was approved at County Council as of November 25, 2009.

The Township of Hilliard has land reserves dedicated for immediate residential development, with a focus on new lot creation and rural area redevelopment. The Official Plan's objective is to establish an attractive community that fosters resident well-being, while supporting a thriving agricultural industry. The plan focuses on conserving prime agricultural land, promoting employment growth through diverse means, and ensuring well-managed expansion through new housing and commercial opportunities. The plan also designates space for parks, playgrounds, and other public service facilities.

The Township will be receiving assistance from the Northern Ontario Resource Development Support (NORDS) program to help build infrastructure and promote economic development. The Township will also be receiving municipal infrastructure support through the Ontario Community Infrastructure Fund, which provides funding for communities to renew and rehabilitate critical infrastructure.

The Township intends to take measures to protect prime agricultural land, ensure source water protection, and enhance drainage flows. The preservation of natural heritage features, safeguarding against natural hazards, and the potential for alternative energy sources like wind turbines underline the Township's growth strategies. These factors will contribute to enhance the Township's infrastructure stability and facilitate overall community enhancement.

The following table outlines the population and employment forecasts allocated to Hilliard.

Historical Figures	1996	2001	2006	2011	2016	2021
Population	253	241	222	204	207	215
Population Change	N/A	-4.7%	-7.9%	-8.1%	1.5%	3.9%
Private Dwellings	N/A	94	101	92	95	93

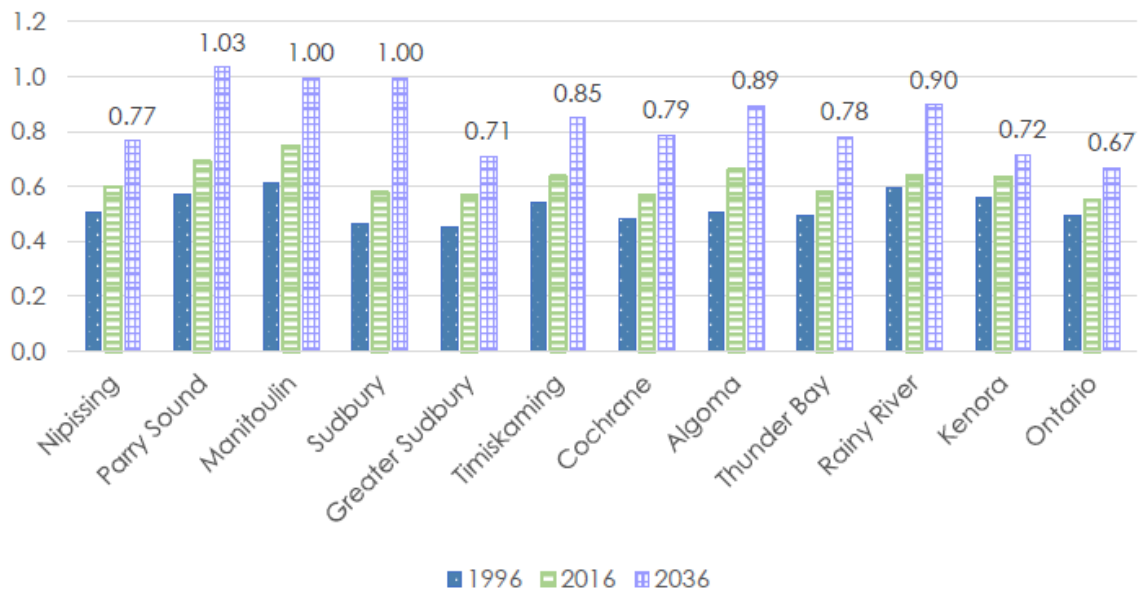
The population of Hilliard ranges from 253 in 1996 to 215 in 2021. Between the years of 1996 and 2011 there were significant drops in population. Since 2016, there has been a slight increase of population until 2021. The Official Plan has set a population goal of 200-250 by 2029, and recent census data indicates that this target can be achieved.

5.1.2 Regional Growth

In 2021 the Come North Conference Report was produced by FedNor and Government of Canada. The document describes short, medium, and long-term objectives for all communities in Northern Ontario as it relates to population growth.

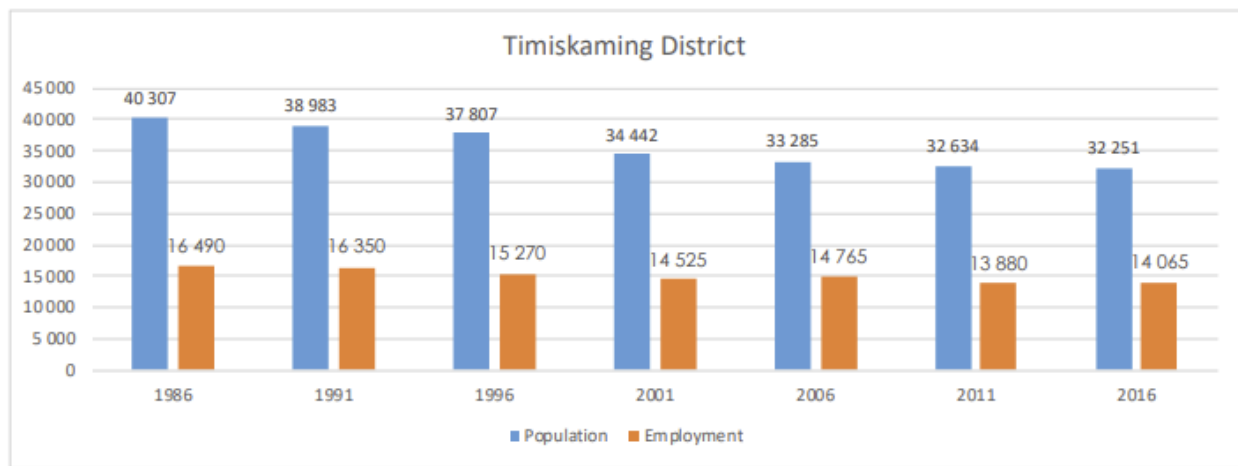
According to the report all 11 Census Districts in Northern Ontario (Nipissing, Parry Sound, Manitoulin, Sudbury, Greater Sudbury, Timiskaming, Cochrane, Algoma, Thunder Bay, Rainy River, Kenora) are currently experiencing the following trends: population decline, population aging, or labour shortages. The report highlights a risk of these communities becoming economically unsustainable unless population retention and attraction numbers improve. The risk is the result of the dependency ratio increasing. The dependency ratio is the ratio of people unable to support themselves without assistance; people between the ages of 0 and 14 and 64 and older.

The goal is to achieve a dependency ratio of 0.5. In 1996, every Census District was at or near the goal but by 2016, none were below and more than half had a ratio in excess of 0.6. The following graph displays the dependency ratio for each Census District in 1996 and 2016 along with a projected ratio for the year 2036.



The Township of Hilliard is found in the Timiskaming district, which is expected to reach a dependency ratio of 0.85.

The population trends overall in the Northeastern Ontario are in decline. The following graph from the 2019 Timiskaming district report by the Northern Policy Institute, displays the population trends from 1986 to 2016.



The following table, found in the same report, shows population projections in the Northeastern Ontario for the years 2021 to 2041.

Year	Ages 0-19	Ages 20-64	Ages 65+	Total
2021	6,347	17,362	8,029	31,738
2026	6,293	15,709	8,900	30,902
2031	6,092	14,628	9,436	30,156
2036	5,887	14,180	9,412	29,479
2041	5,751	14,014	9,137	28,902

The most recent census data from 2021, shows a slight decrease in the population, reaching a total of 31,424. According to census data, a significant portion of population decrease is within the 15-to-64-year age group, while there is an increase in population for the age of 65 years and over; thus, further increasing the dependency ratio.

6. Financial Strategy

Key Insights

- The Township is not allocating funding towards capital projects, on an annual basis
- An annual capital requirement and funding gap of \$217,000 exists
- For tax-funded assets, we recommend increasing tax revenues by 2.7% each year for the next 20 years to achieve a sustainable level of funding

6.1 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 Township of Hilliard 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:

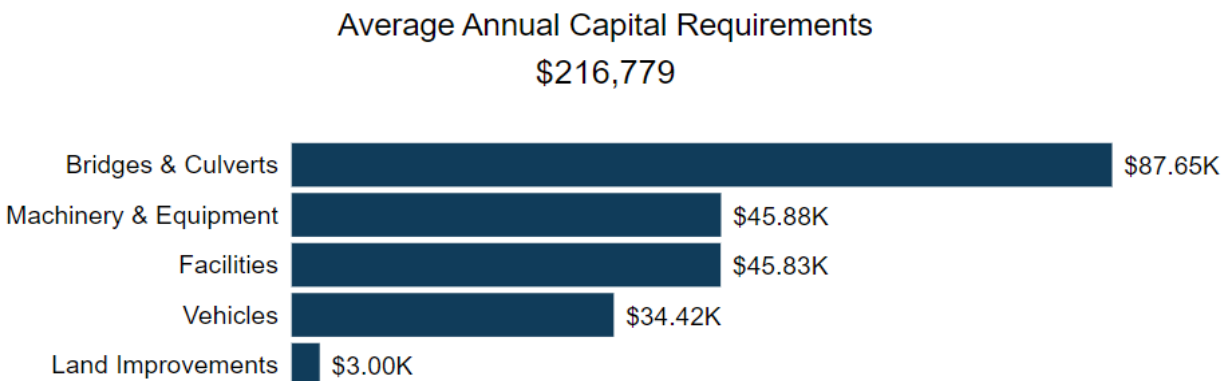
1. To reduce financial requirements, consideration has been given to revising service levels downward.

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.

6.1.1 Annual Requirements & Capital Funding

Annual Requirements

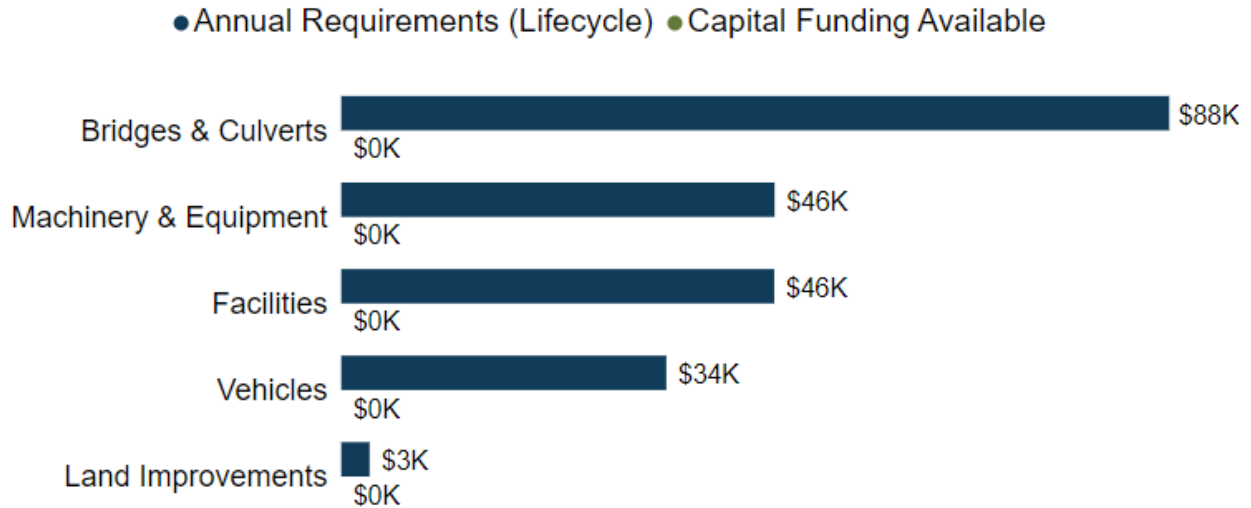
The annual requirements represent the amount the Township should allocate annually to each asset category to meet replacement needs as they arise, prevent infrastructure backlogs, and achieve long-term sustainability. In total, the Township must allocate approximately \$217 thousand annually to address capital requirements for the assets included in this AMP.



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

Annual Funding Available

Based on a historical analysis of sustainable capital funding sources, the Township is not committing dedicated funding towards capital projects. Given the annual capital requirement of \$217,000, consequently, a funding gap of the same value, exists.



6.2 Funding Objective

We have developed a scenario that would enable Hilliard to achieve full funding within 1 to 20 years for the following assets:

1. **Tax Funded Assets:** Bridges & Culverts, Facilities, Land Improvements, Machinery & Equipment, and Vehicles

Note: For the purposes of this AMP, we have excluded the road network (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.

6.3 Financial Profile: Tax Funded Assets

6.3.1 Current Funding Position

The following tables show, by asset category, Hilliard’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				Annual Deficit
		Taxes	Gas Tax	OCIF	Total Available	
Bridges & Culverts	88,000	0	0	0	0	88,000
Facilities	46,000	0	0	0	0	46,000
Land Improvements	3,000	0	0	0	0	3,000
Machinery & Equipment	46,000	0	0	0	0	46,000
Vehicles	34,000	0	0	0	0	34,000
	217,000	0	0	0	0	217,000

The average annual investment requirement for the above categories is \$217,000. The Township has not historically allocated any annual revenue to these assets for capital purposes which leaves an annual deficit of \$217,000. Put differently, these infrastructure categories are currently funded at 0% of their long-term requirements.

6.3.2 Full Funding Requirements

In 2022, Township of Hilliard has annual tax revenues of \$315,000. 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:

Asset Category	Tax Change Required for Full Funding
Bridges & Culverts	27.9%
Facilities	14.6%
Land Improvements	1.0%
Machinery & Equipment	14.6%
Vehicles	10.8%
	68.9%

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

- a) Hilliard’s debt payments for these asset categories will increase in 2023 by \$36,000 which further extends the funding gap. However, the debt payment will decrease by \$3,000 at year 10 and by \$36,000 at year 15. This will result in a decrease in the funding gap during the period of 15 – 20 years.

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:

	Without Capturing Changes				With Capturing Changes			
	5 Years	10 Years	15 Years	20 Years	5 Years	10 Years	15 Years	20 Years
Infrastructure Deficit	217,000	217,000	217,000	217,000	217,000	217,000	217,000	217,000
Change in Debt Costs	N/A	N/A	N/A	N/A	36,000	33,000	-3,000	-3,000
Resulting Infrastructure Deficit:	217,000	217,000	217,000	217,000	253,000	250,000	214,000	214,000
Tax Increase Required	68.8%	68.8%	68.8%	68.8%	80.2%	79.3%	67.9%	67.9%
Annually:	11.1%	5.4%	3.6%	2.7%	12.6%	6.1%	3.6%	2.7%

6.3.3 Financial Strategy Recommendations

Considering all the above information, we recommend the 20-year option. This involves full funding being achieved over 20 years by:

- a) When realized, reallocating the debt cost reductions of \$39,000 to the infrastructure deficit as outlined above.
- b) Increasing tax revenues by 2.7% each year for the next 20 years solely for the purpose of phasing in full funding to the asset categories covered in this section of the AMP.
- c) Allocating any gas tax or OCIF funding that is remaining after road maintenance to the asset categories outlined above.
- d) 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 commitment¹.
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.

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.

¹ The Township 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.

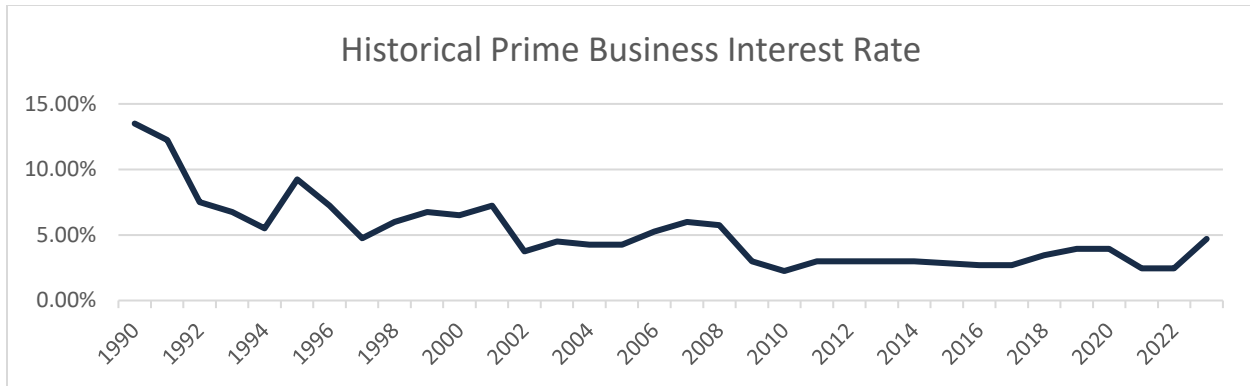
6.4 Use of Debt

For reference purposes, the following table outlines the premium paid on a project if financed by debt. For example, a \$1M project financed at 4.5%² over 15 years would result in a 40% premium or \$400,000 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
7.0%	22%	42%	65%	89%	115%	142%
6.5%	20%	39%	60%	82%	105%	130%
6.0%	19%	36%	54%	74%	96%	118%
5.5%	17%	33%	49%	67%	86%	106%
5.0%	15%	30%	45%	60%	77%	95%
4.5%	14%	26%	40%	54%	69%	84%
4.0%	12%	23%	35%	47%	60%	73%
3.5%	11%	20%	30%	41%	52%	63%
3.0%	9%	17%	26%	34%	44%	53%
2.5%	8%	14%	21%	28%	36%	43%
2.0%	6%	11%	17%	22%	28%	34%
1.5%	5%	8%	12%	16%	21%	25%
1.0%	3%	6%	8%	11%	14%	16%
0.5%	2%	3%	4%	5%	7%	8%
0.0%	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:

² As of February 2023 the municipal Infrastructure Ontario rates for 15-year money is 4.3%.



A change in 15-year rates from 4.5% to 6% would change the premium from 40% to 54%. Such a change would have a significant impact on a financial plan.

The following tables outline how Hilliard has historically used debt for investing in the asset categories as listed. There is currently \$291,000 of debt outstanding for the assets covered by this AMP with corresponding principal and interest payments of \$39,000, well within its provincially prescribed maximum of \$90,605.

Asset Category	Current Debt Outstanding	Use of Debt in the Last Five Years				
		2018	2019	2020	2021	2022
Bridges & Culverts	0	0	0	0	0	0
Facilities	0	0	0	0	0	0
Land Improvements	0	0	0	0	0	0
Machinery & Equipment	291,000	0	0	0	0	293,000
Vehicles	0	0	0	0	0	0
Total Tax Funded:	291,000	0	0	0	0	293,000

Asset Category	Principal & Interest Payments in the Next Ten Years						
	2022	2023	2024	2025	2026	2027	2032
Bridges & Culverts	0	0	0	0	0	0	0
Facilities	0	0	0	0	0	0	0
Land Improvements	0	0	0	0	0	0	0
Machinery & Equipment	3,000	39,000	39,000	39,000	39,000	39,000	36,000
Vehicles	0	0	0	0	0	0	0
Total Tax Funded:	3,000	39,000	39,000	39,000	39,000	39,000	36,000

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

6.5 Use of Reserves

6.5.1 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 Hilliard.

Asset Category	Balance at December 31, 2022
Bridges & Culverts	0
Facilities	0
Land Improvements	0
Machinery & Equipment	22,000
Vehicles	0
Total Tax Funded:	22,000

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 consider 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 Hilliard’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.

7. Appendices

Key Insights

- Appendix A identifies projected 10-year capital requirements for each asset category
- Appendix B includes several maps that have been used to visualize the current level of service
- Appendix C includes the Township's proposed LOS metrics for the following ten (10) year period
- Appendix D provides additional guidance on the development of a condition assessment program

Appendix A: 10-Year Capital Requirements

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

Bridges & Culverts											
Segment	Backlog	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Bridges	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Culverts	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total:	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Facilities											
Segment	Backlog	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Administrative Office	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Salt Shed	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total:	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Vehicles											
Segment	Backlog	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Public Works	\$0	\$0	\$0	\$0	\$0	\$8,500	\$0	\$0	\$0	\$0	\$0
Total:	\$0	\$0	\$0	\$0	\$0	\$8,500	\$0	\$0	\$0	\$0	\$0

Machinery & Equipment

Segment	Backlog	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Public Works	\$500,000	\$0	\$0	\$0	\$25,000	\$0	\$0	\$200,000	\$0	\$25,000	\$0
Total:	\$500,000	\$0	\$0	\$0	\$25,000	\$0	\$0	\$200,000	\$0	\$25,000	\$0

Land Improvements

Segment	Backlog	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Skating Rink	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Appendix B: Level of Service Maps

Images of Bridge in Good Condition

Swamp Hallow Bridge

Inspected: November 17th, 2021



Image 1 - North Approach (Looking North)



Image 2 - South Approach (Looking South)



Image 3 - East Elevation (Looking Southwest)



Image 6 - Typical deck grating (looking south)

Images of Culvert in Fair Condition
Coutville Road Culvert
Inspected: June 27th, 2019



Image 1 – South approach (looking south)



Image 4 – East elevation (looking west)



Image 6 – Horizontal shear cracks along north bolt line (looking north)



Image 7 – Culvert barrel (looking west)

Appendix C: Proposed Levels of Service Metrics

Asset Category	Service Attribute	LOS Metric	Current LOS	Target LOS	Trend	Background	Achievability	Affordability	Growth	Risks
Bridges & Culverts	Quality	BCI (Bridges)	74	50-70	↓	Hilliard's bridges and culverts are in good (BCI > 60) condition.	Bridges & culverts have long (75/50 years) EULs. With the asset class deteriorating at an acceptable rate, Hilliard should achieve its target LOS.	There are no planned capital requirements in the next 10 years. The Township will continue to follow its current lifecycle management/financial strategy to achieve its target LOS.	Refer to section 5 of this AMP.	Increase to O&M costs Increased likelihood of unforeseen closure Public liability Detour (impact to critical services)
		BCI (Culverts)	66	40-59						
	Scope	% of bridges with loading or dimensional restrictions	0	0	↔	Rehabilitation/replacement events for bridge & culverts are expensive; the Township's target LOS reflects the facts that Hilliard has a small taxpayer base, along with the necessary reliance on grants to conduct major rehabilitation events.		Operating efficiency is expected to decrease as the assets age, and O&M associated costs increase. For more information, refer to the financial strategy portion of this AMP (Section 6)		
Facilities	Quality	Average Weighted Condition	86%	60%-79%	↓	The Township's administrative office and salt shed are in very good/good condition. The Township's target LOS reflects the facts that Hilliard has a small taxpayer base, along with the necessary reliance on grants.	Given that facilities have long (50+ years) EULs, the Township's strategy is to provide an acceptable level of service, which is defined by facilities remaining in good condition for the next 10 years.	There are no planned capital requirements in the next 10 years. Coupled with the fact that the Township's facilities are in adequate condition, it will continue to follow its current lifecycle management/financial strategy to achieve its target LOS. Operating efficiency is expected to decrease as the assets age, and O&M associated costs increase. For more information, refer to the financial strategy portion of this AMP (Section 6)	Refer to section 5 of this AMP.	Increase to O&M costs Increased likelihood of unforeseen facility closure
Vehicles	Quality	Average Weighted Condition	98%	40%-59%	↓	Hilliard's vehicles are in very good condition. There is 1 capital event scheduled for the next 10 years (2026; replacement of trailer).	While vehicles deteriorate at a faster rate compared to other asset classes (10 years), historically, vehicles within the Township are used well beyond their intended EUL. The Township's target LOS is achievable if it continues its current lifecycle management strategies.	There is one planned capital requirements in the next 10 years. The Township will continue to follow its current lifecycle management/financial strategy in order to achieve its target LOS. Operating efficiency is expected to decrease as the assets age, and O&M associated costs increase. For more information, refer to the financial strategy portion of this AMP (Section 6).	Refer to section 5 of this AMP.	Increase to O&M costs The freightliner provides critical services for the Township. Failure of the asset, as it approaches its EUL, would have numerous negative impacts on the community (safety, financial, etc.) Failure of Township's

										freightliner would impact its ability to meet MMS
Machinery & Equipment	Quality	Average Weighted Condition	16%	0%-20%	↔	Hilliard's machinery & equipment assets are in very poor condition. Staff have indicated that numerous assets have been in operation beyond their respective EULs. As a result, a backlog of \$500,000 exists.	While staff have indicated that there is an immediate need to replace certain assets, the Township is cognizant of the fact that funding is limited. As a result, asset replacement can only occur when funding becomes available (ex., grant).	With numerous capital requirements in the next 10 years, the Township can achieve the target LOS by following its current lifecycle management/financial strategy. Operating efficiency is expected to remain relatively the same for the next 10 years. While not ideal regarding asset management practices, Hilliard cannot realistically ensure its machinery & equipment assets will be in 'fair' to 'good' working condition.	Refer to section 5 of this AMP.	Increase to O&M costs. Higher likelihood of catastrophic asset failure Negative impact on community (financial, safety, etc.)
Land Improvements	Quality	Average Weighted Condition	96%	40%-60%	↓	The Township's skating pad asset is in very good condition. The new (2022) asset requires very little O&M costs; furthermore, no capital requirements (upgrade or replacement) are projected in the next 10 years.	The township will allow the asset to deteriorate over time. It is expected to remain in acceptable condition (fair-good), due to the nature of the asset.	There are no planned capital requirements in the next 10 years. The Township will continue to follow its current lifecycle management/financial strategy to achieve its target LOS. Operating efficiency is expected to decrease as the assets age, and O&M associated costs increase. For more information, refer to the financial strategy portion of this AMP (Section 6).	Refer to section 5 of this AMP.	Increase to O&M costs Deteriorating features

Appendix D: 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

Appendix E: Review of Existing Asset Management Plan

AMP Table of Contents: High Level Review and Suggestions

The below is a high-level review of the Municipality's current Asset Management Plan (AMP), with some suggestions for improvements.

Section	Title / details	Notes	Action
1	Exec Summary	Report of AMP development	Use this as a section for high-level insights, inc. most recent priorities and risks (rather than share how the AMP was developed)
2	SOTI Report	Historical Overview	Consider elimination / placement in appendix
	Data gathering PSAB	Consider elimination / placement in appendix Consider elimination / placement in appendix (with data gathering)	
	SOTI for linear assets, inc. condition and replacement costs	Consider improving by connecting it to other chapters by asset rather than separate chapters for functional requirements (include Asset Info, LOS, Performance, in one place)	
3	Capital Plan	Background & Overview	Consider reducing detail / only related directly to municipality.
	Methodology	Consider reducing detail / place details related directly to municipality in appendix.	
	Details	Update. Consider combining with 2, for each asset class.	
4	LOS	How to do LOS (operating details in Appendix D)	Consider combining with 2, as above. Consider reducing LOS to what is required only
5	Financial Projections	Methodology, Funding Requirements, Funding Strategies	Consider combining with 2, as above. Consider improving and making more realistic (Apply for more grants)
6	Recommendations	For each section above	Consider combining with 2, with highlights in Exec Summary.
7	Conclusion	Context and conclusion	Retain, consider making briefer.
A	Detailed List of Capital Projects	Not available (link does not work)	Update

B	Asset Useful Life	Statement of assumptions re useful life	Update
C	Capital Plan Prioritization Matrix	Weighting of what is important	Update / remove.
D	LOS / KPIs	Examples	Update / put in correct main section
e	Municipal Cost Index	Usage of escalation / inflation factor specific to municipalities	Update
F	Road Management Strategy	How to maintain roads	Eliminate (put somewhere else)

AMP Requirements: High Level Comparison

The table below is a high-level comparison of the Municipality’s current Asset Management Plan (AMP) with the dated requirements under Ontario’s Asset Management Regulation: O.Reg. 588/17. For this purpose, the requirements have been tabulated and simplified. For specific guidance, please consult the legislation or professional legal advice.

Date required	Requirement	Status
July 1, 2021		AMP for Core Assets (water, wastewater, stormwater, roads, bridges & culverts)
	<ul style="list-style-type: none"> • Current LOS (qualitative and technical) using data from last 2 years or less 	Missing, example provided
	<ul style="list-style-type: none"> • Current performance using data from last 2 years or less 	Missing, example provided
	<ul style="list-style-type: none"> • Asset info: summary, replacement cost, average age, condition, approach to condition assessment 	Provided in 2016, must be updated
	<ul style="list-style-type: none"> • Lifecycle activities to maintain current LOS for 10 years, using full lifecycle info, options for lifecycle activities, risks, and lowest cost activities to maintain current LOS 	Missing
		Missing (Easy)

- Description of assumptions re future changes in population or economic activity and how they may impact lifecycle activities above

July 1, 2023

AMP for non-core assets

- Current LOS (qualitative and technical) using data from last 2 years or less

Missing, example provided

- Current performance using data from last 2 years or less

Missing, example provided

- Asset info: summary, replacement cost, average age, condition, approach to condition assessment

Provided in 2016

- Lifecycle activities to maintain current LOS for 10 years, using full lifecycle info, options for lifecycle activities, risks, and lowest cost activities to maintain current LOS

Missing

- Description of assumptions re future changes in population or economic activity and how they may impact lifecycle activities above

Missing (Easy)

July 1, 2024

Add-ons

- LOS – proposed (qualitative and technical)

Missing

required

Requirement

Status

- Commentary re LOS (options, differences between current vs proposed, achievability, affordability)

Missing

- Proposed performance for each asset category

Missing

- Lifecycle mgmt. and financial strategy covering: LC activities needed for proposed LOS, full LC of assets, options to achieve, risks, identification of lowest cost options; estimate of LC activities cost for 10 years; funding available for LC;

Missing

shortfall identification and mgmt.

Missing

- Discussion of changes to reflect how assumptions re future changes in population and economic activity informed preparation of LC mgmt. and Financial Strategy

Undated

Additional requirements

- Update every 5 years
- Endorsed by executive lead of municipality and approved by Council resolution
- Annual review including implementation progress, identification of impeding factors, and a strategy to address impeding factors
- Make SAMP and AMP available publicly online