EXECUTIVE SUMMARY

Scope

In response to the Ministry of Infrastructure's release of a ten–year infrastructure plan, "Building Together", which focuses on building a more standardized and consistent approach to municipal asset management planning, the Township of Bonfield ("Bonfield" or the "Township") has taken a pro-active approach in preparing a detailed Asset Management Plan ("AMP") as an ongoing and long term process that allows the Township to strategically manage lifecycle costs, reducing costs and increasing sustainability. These informed decisions ensure efficient operations.

As the Township's municipal assets continue to age, it becomes increasingly important to go through a formal process determining how a group of assets is to be managed over a period of time to help ensure safety standards, regulations, and expected levels of service continue to be met given the Township's financing capabilities.

The Township's AMP is a strategic document stating the characteristics and condition of infrastructure assets, levels of service expected from them, planned actions to ensure the assets are providing the expected level of service and financing strategies to implement the planned actions. The overall intent of the AMP is to help the Township ensure investments are made at the right time, future repair and rehabilitation costs are minimized, and municipal assets are being appropriately maintained.

This AMP includes the following asset categories:

- Land and Land Improvements
- Buildings and Building improvements
- Machinery and Equipment
- Vehicles
- Linear Assets (Roads and Bridges)

Findings

The overall replacement cost of the asset categories included in this AMP totals $23.5 million. Condition data was available for 95% of assets, which proved that nearly 56% of the assets are at the end of their useful life. For the remaining assets, assessed condition data was unavailable, and asset age was used to approximate condition – a data gap that persists in most municipalities. Generally, age misstates the true condition of assets, making assessments essential to accurate asset management planning, and a recurring recommendation in this AMP.

The development of a long-term sustainable financial plan requires an analysis of whole lifecycle costs. This AMP uses a combination of proactive lifecycle strategies (paved roads and

bridges & culverts) and replacement-only strategies (all other assets) to determine the lowest cost option to maintain the current level of service.

To meet capital replacement and rehabilitation needs for existing infrastructure the Township's average annual capital requirement totals $1.35 million, or $13.5M over the next 10 years. Based on a historical analysis of sustainable capital funding sources, the Township is committing approximately $0.5 million towards capital projects or reserves per year. As a result, there is currently an annual funding deficit of $825,444 translating to 20% tax increase or $724.00 per household (2021 Census). A balanced approach utilizing reserves, debt financing, tax levy adjustments, and senior levels of government funding will be required to address this gap and bring assets back to an acceptable standard.

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.

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

- Develop a data governance framework, complete with a condition assessment strategy
- Regularly review and update data to maintain a complete and accurate inventory
- Incorporate lifecycle strategies, where possible, for more proactive capital planning
- Track current levels of service and identify sustainable proposed levels of service

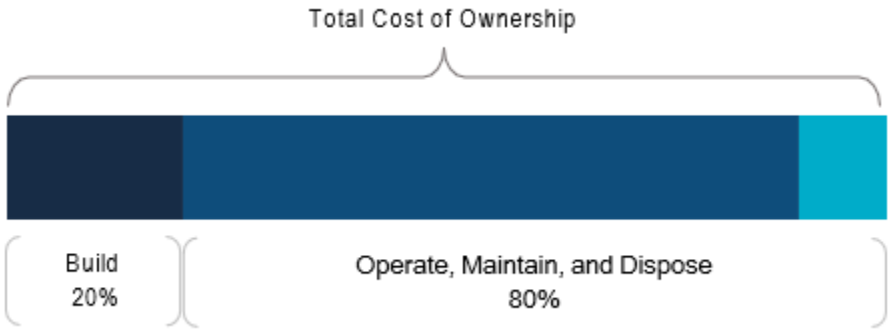
INTRODUCTION

The Province of Ontario's Ministry of Infrastructure emphasizes that a municipality's infrastructure investment is vital to building a strong economy and community. Public infrastructure including roads, water and sewer systems, bridges, and buildings are central to a town's prosperity and quality of life. Without these core assets, the viability of a municipality, from an economic, health, and environmental perspective, would be in jeopardy.

Asset Management is the process of determining how to best build, operate, maintain, renew, replace, and dispose of infrastructure assets. An Asset Management Plan ("AMP" or the "Plan") is developed for the management of one or more infrastructure assets within the municipality that combines multi-disciplinary management practices, including both technical and financial practices, over the lifecycle of the asset(s) to a specified level of service in the most cost-effective manner.

The intent of an AMP is to maximize benefits and reduce risks, while providing a satisfactory level of service to the community in a sustainable manner.

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 the broader asset management program. The industry-standard approach and sequence to developing a practical asset management program begin 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.

An AMP also incorporates the existing preventative maintenance and risk management programs to preclude risk of failure. The preventative maintenance component ensures that the day-to-day wear and tear on the asset is dealt with to ensure that the asset can reach its expected lifecycle and the risk management component ensures that risk is managed through due diligence.

In general, the Asset Management process defines:

- What we own – Inventory
- What our inventory is worth – Valuation
- Where our inventory is located – Geographical Information System
- How we operate – Service Level
- The condition of our inventory – Risk / Consequence of Failure
- What we need to do – Construct, Maintain or Replace
- How much will it cost and how will it be funded – Financial Plan

AMPs enhance both the budgeting and planning processes by modeling future capital costs for the upcoming ten years. This will aid the Township in understanding future budget pressures and assist in providing options on closing any infrastructure gaps.

As well, a fully implemented plan will provide real life Township specific data on maintenance and operations costs allowing staff to generate tools to develop lifecycle costing and long-term performance measures. The plan will also give direction on proactive preventative maintenance and rehabilitation which will ultimately lower overall costs.

KEY BENEFITS OF AN ASSET MANAGEMENT PLAN

Specific benefits associated with an AMP include:

- Better decision making regarding resource allocation;
- More effective communications with ratepayers, elected officials, financial rating organizations and regulatory agencies;
- More consistent levels of service to the public;
- Better risk management practices to the municipality;
- More effective financial planning;
- Reduced lifecycle costs;
- More efficient data management;
- Facilitates the establishment and subsequent implementation of policy objectives and the related measurement of performance;
- Avoids potential problems and crises; and
- Results in positive institutional change.

ESSENTIAL COMPONENTS OF AN ASSET MANAGEMENT PLAN

In order for an AMP to fulfill the principles of asset management, the following essential components must be contained in the overall plan:

I. ASSET VALUE:
All municipal infrastructure assets have a monetary value which has been determined by actual capital value or best estimate. This was completed through the implementation of the Public Sector Accounting Board ("PSAB") 3150 - Tangible Capital Asset.

II. LIFECYCLE MANAGEMENT:
All assets have a limited life expectancy and to some degree the rate of deterioration can be estimated. A decision made at any point in time in the lifecycle of an asset has an effect on the remaining life and may have operational implications and related costs.

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

III. SUSTAINABILITY:
In terms of asset management, sustainable development has been defined as "meeting the needs of the present generation without compromising the ability of the future generations to meet their own needs". This definition has been extracted from the "National Guide to Sustainable Municipal Infrastructure". The AMP needs to identify a financial plan over the long term to ensure that sufficient funds are available. These funds provide the resources required to operate, rehabilitate, dispose and ultimately replace the asset at the optimal time with the intention of achieving the lowest lifecycle cost.

IV. INTEGRATION OF TECHNICAL AND FINANCIAL PLANS:
The technical plan must minimize lifecycle costs for the infrastructure while maintaining an adequate level of service at the lowest possible level of risk. The financial plan must identify the financial investment required per year for each asset over the long term, including any larger than normal expenditures to meet the requirements of the technical plan. Ideally, the two plans should be integrated so the relationship between the level of service and the cost can be quantified. The Asset Management Strategies included within this Plan integrate the financial

investment level required to the level of service. The technical and financial relationship may change from time to time depending on the outcome of asset condition assessments.

V. RISK ASSESSMENT:

Risk should be managed in any decision making process. The owner of the assets should analyze and document acceptable risk tolerance. In the Township's case, the probability of failure is taken into account while the condition of the asset is being analyzed. The condition survey leads to determining the rate of failure and the consequences of such failure. Risk factors can include financial, environmental, regulatory, legal, and public health and safety.

VI. PERFORMANCE MEASUREMENT:

To optimize an AMP, performance of the assets and rehabilitation strategies should be monitored regularly and adjustments should be made at the appropriate stage in the asset lifecycle to achieve an acceptable balance between cost and the performance (level of service). Bonfield can take advantage of tools provided by various organizations including Ontario Good Roads Association ("OGRA"), Ontario Water Works Association ("OWWA"), and Ontario Recreation Facilities Association ("ORFA"), and will be able to utilize performance measurements established as part of the Municipal Benchmarking Network Canada ("MBNCanada").

VII. 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 the core asset categories in this AMP, technical metrics and qualitative descriptions that measure both technical and community levels of service have been established and measured as data is available.

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

- **Community Levels of Service**
  Community levels of service are a simple, plain language description or measure of the service that the community receives. For core asset categories (Roads, Bridges & Culverts) the Province, through O. Reg. 588/17, has provided qualitative descriptions that are required to be included in this AMP.

- **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.

Current and Proposed Levels of Service
This AMP focuses on measuring the current level of service provided to the community and has created this Plan with these levels to maintain the current lifecycle management and financial strategy. Once current levels of service have been measured, the Township plans to establish proposed levels of service over a 10-year period, in accordance with O. Reg. 588/17. Proposed levels of service should be realistic and achievable within the timeframe outlined by the Township. They should also be determined with consideration of a variety of community expectations, fiscal capacity, regulatory requirements, corporate goals, and long-term sustainability.

ASSET MANAGEMENT POLICY

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

In accordance with Ontario Regulation 588/17 the Township's Strategic Asset Management Policy (BY-LAW 2019-06) was approved and effective in late March 2019. The policy identifies key principles to be followed when making asset management decisions, these include:

- Evidence based priorities & planning
- Financially sustainable planning & investment
- Adaptation of innovative infrastructure technology, services & practices
- Reliable planning & investment
- Environmentally conscious decisions

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

TOWNSHIP OF BONFIELD'S STRATEGIC PLAN

The Township of Bonfield adopted a Strategic Plan in March of 2025 and is committed to ensuring that it will be used to guide their actions and decisions. The Strategic Plan was developed to help the Township chart a future course of action to ensure the municipality's effectiveness in the long-run, provide a decision-making framework, and facilitate prioritizing limited resources and capital expenditures in an environment of competing interests.

The Strategic Plan outlines where efforts should be focused and indicates what needs to be done in order to start moving in the direction of the preferred future. The Strategic Plan identifies four strategic objectives that reflect the community's priorities:

1. **Responsible government**

A responsible government builds and maintains trust and increases community pride. It engages and encourages participation with residents on projects and initiatives. It promotes healthy and active living, and equal opportunity amongst all residents. It also produces robust policies and procedures in accordance with prescribed legislation. Working in collaboration and partnership, the Township will create modern, accessible, and inclusive spaces for all, while demonstrating openness, transparency, and our capability to address strategic challenges.

2. **Economic & Social Development**

Economic and social development includes working with residents, agencies, and neighbouring communities to address important issues and opportunities. The Township will implement the strategic direction of Council, ensuring municipal infrastructure is maintained, while carrying out regular inspections to manage the lifespan of assets over time. We will advance opportunities to increase productivity and accelerate the delivery of new and innovative housing solutions that meet the needs of Bonfield's residents. Together, we will build a solid foundation for future economic growth and social development, while avoiding undue hardship to taxpayers through smart investment decisions.

3. **Fiscal Prudence**

Fiscal prudence requires spending decisions to be informed by asset management priorities and best practices, alongside defined policies, roles, and responsibilities. The Township will implement modern and simplified administrative processes and explore other opportunities to increase efficiencies that reduce total costs across the township's operations. Through long term planning for service delivery, we will demonstrate and deliver departmental efficiencies through budgeting.

4. **Environment Stewardship**

Environmental sustainability will guide the township of Bonfield as it makes the transition to a more green, resilient, and prosperous community. We will apply mitigation and adaptation-led solutions which reduce the communities' footprint and prepares it for a less predictable climate. Through current and future planning documents, we will adopt stringent and realistic targets, and work with partners to advance stewardship which fosters enhanced sustainability and environmental stewardship.

The outlined corresponding goals are heavily dependent on the Township's infrastructure. The Township's infrastructure assets support the economic activity of the community and improve the quality of life of its residents. These assets are vital to the prosperity and sustainability of Bonfield and to achieving our strategic objectives.

Without appropriate and adequate infrastructure, Bonfield would not be able to attract the businesses, tourists, and residents that will support a thriving community. Attraction of business, tourism, and residential development is essential to the sustainability of a community.

Scope and Methodology

Included Asset Categories

This asset management plan for Bonfield Township is produced in compliance with Ontario Regulation 588/17. The AMP summarizes the state of the infrastructure for the Township's asset portfolio, establishes current levels of service and the associated technical and customer-oriented key performance metrics, outlines lifecycle strategies for optimal asset management and performance, and provides financial strategies to reach sustainability for the asset categories listed below.

- Land and Land Improvements
- Buildings
- Machinery and Equipment
- Vehicles
- Linear Assets (Roads and Bridges)

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 the following two costing methods:

- **User defined cost and cost/unit method:** costs are provided by municipal staff which could include average costs from recent contracts; data from engineering reports and assessments; and 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.

Estimated Useful Life

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.

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 follow

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, for most assets, 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, the service life remaining is used to approximate asset condition. The following table details standard condition ratings used in this AMP:

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	deterioration, some elements exhibit significant deficiencies	40 - 60
Poor	Increasing potential of affecting service	Approaching the end of service life, condition below standard, a large portion of the 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

PORTFOLIO OVERVIEW

Total Replacement Cost of Asset Portfolio

The asset categories analyzed in this AMP have a total replacement cost of $23.5 million based 2023 year-end data. This data is currently housed in an asset management database called Citywide. This total was determined based on a combination of user-defined costs and inflation of historical cost. This estimate reflects the replacement of historical assets with similar, not necessarily identical, assets available for procurement today.

Replacement Cost Method Asset Category	User-Defined	Historical Inflation	Notes
Road Network	100%	0%	Unit costs based on 2023 Road Needs Study and latest tender prices for all Road assets
Bridges & Culverts	100%	0%	Unit costs based on 2021 bridge inspections and latest tender prices
Buildings	49%	51%	User-Defined Costs provided by Building Condition Inspections
Vehicles	90%	10%	Unit Cost based on departmental staff estimates
Machinery & Equipment	0%	100%	Inflation of historical costs/recent tender prices
Land Improvements	6%	94%	Inflation of historical costs
Overall	**91%**	**9%**	

Average Annual Capital Requirements

Annual capital requirements represent the amount the Township should allocate annually to each asset category to meet rehabilitation and/or replacement needs as they arise, prevent infrastructure backlogs, and achieve long-term sustainability. This figure does not factor in costs associated with operations and maintenance. For most asset categories the annual requirement has been calculated based on a “replacement only scenario”, in which capital expenditures are only incurred at the construction and replacement of each asset. However, for paved roads, lifecycle management strategies have been developed, based on staff expertise and road needs study recommendations, to identify capital costs that are realized through strategic rehabilitation and renewal of the Township’s roads. The annual requirements, however, do not incorporate the backlog costs of assets that have reached the end of their useful life prior to the 2023 reporting year.

Condition of Asset Portfolio

The current condition of the assets is central to all asset management planning. Collectively, 84% of assets in Bonfield are in fair or better condition. This estimate relies on both age- based and assessed condition data. Condition of each asset is weighted by replacement cost.

Asset Category	Asset Segment	% of Assets with Assessed Condition	Source of Condition Data
Road Network	Paved & Unpaved Roads	100%	2023 Roads Needs Study
	Other	20%	Public Works Staff Assessments
Bridges & Culverts	All	100%	2022 Bridge and Culvert Study
Buildings	All	100%	2017 Building Condition Assessments
Machinery & Equipment	All	0%	Age-Based
Vehicles	All	96%	Age-Based and Staff Assessment
Land Improvement	All	9%	Staff Assessments

ANALYSIS OF ASSETS

Asset Inventory – Costs and Conditions

The table below is the annual capital requirements of each asset segment in the Township's inventory.

Land and Land Improvements	Total Replaceme
Buildings	$ 427,854
Machinery and Equipment	$ 6,485,847
Vehicles	$ 395,045
Roads Treated	**$ 4,654,492**
Gravel	$ 5,593,348
Bridges and Culverts	$ 2,309,317
	$ 3,647,000
Required	$ 23,512,903

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

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

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

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

Lifecycle Management Strategies

The Township's roads are maintained by the Public Works department, which is also responsible for winter snow clearing, ice control, and snow removal operations. Every five years a Road Needs Study is completed for all road segments.

The Public Works department is also responsible for the maintenance of all bridges and structural culverts located across municipal roads with the goal of keeping structures in an

adequate state of repair and minimizing service disruptions. Condition assessments of all bridges and structural culverts are completed every 2-4 years in accordance with the Ontario Structure Inspection Manuals (OSIMs). Staff visually inspect bridges and culverts on a regular basis, between OSIM inspections, to ensure that the assets are structurally and functionally adequate. These inspections are followed by annual bridge cleaning and erosion clean outs.

Municipal buildings and facilities are subject to regular inspections to identify health and safety requirements as well as structural deficiencies that require additional attention. Critical facilities have a detailed maintenance and rehabilitation schedule, while the maintenance of other facilities is dealt with on a case-by-case basis. Staff conduct assessments strategically as facilities approach their end-of-life to determine whether replacement or rehabilitation is appropriate.

Staff complete regular visual inspections of machinery and equipment assets to ensure they are in adequate state of reapir. Staff also conduct formal inspections of outdoor play space, fixed play streuctrue and surfacing in acordance with CAN/CSA-Z614 and regquired as per O. Reg 137/15.

Maintenance activies for machinery and equimet assets vary by departmet but are generally based onmanufactureer's rcommnedationa dn supplemented by the expertise of staff.
The replacement of machiner and equipment assets depends on deficiencies identified by operators that may impact tehir ability to complete required tasks.

Fire and emergency vehicles have formal condition assessments conducted in accordance with regulations including National Fire Protection Association codes and standards. Staff complete regular visual inspection and annual preventive maintenance activities. Mileage is used as proxy to determine remaining useful life and relative vehicle condition, that along with vehicle age and usage dictate the prioritization of asset replacement.

Public Works vehicles have formal condition assessments conducted in accordance with Ministry of Transportation Standards and codes. Staff complete regular visual inspection and annual preventive maintenance activities. Mileage is used as proxy to determine remaining useful life and relative vehicle condition, that along with vehicle age and usage dictate the prioritization of asset replacement.

Lifecycle Models

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.

Paved Roads		
Event Name	**Event Class**	**Event Trigger**
Resurfacing	Rehabilitation	65% Condition
Major Rehabilitation	Rehabilitation	50%-65% Condition
Full Reconstruction	Replacement	0%-50% Condition

Lifecycle Activity	Description	Cost	Typical Associated Risks
Preventative Maintenance/ Maintenance	Activities that prevent defects or deteriorations from occurring	$	• Balancing limited resources between planned maintenance and reactive, emergency repairs and interventions; • Diminishing returns associated with excessive maintenance activities, despite added costs; • Intervention selected may not be optimal and may not extend the useful life as expected, leading to lower payoff and potential premature asset failure;
Rehabilitation/ Renewal	Activities that rectify defects or deficiencies that are already present and may be affecting asset performance	$$	• Useful life may not be extended as expected; • May be costlier in the long run when assessed against full reconstruction or replacement; • Loss or disruption of service, particularly for underground assets;
Replacement/ Reconstruction	Asset end-of-life activities that often involve the complete replacement of assets	$$$	• Incorrect or unsafe disposal of existing asset; • Costs associated with asset retirement obligations; • Substantial exposure to high inflation and cost overruns; • Replacements may not meet capacity needs for a larger population; • Loss or disruption of service, particularly for underground assets;

Lifecycle Strategies

The following tables outlines the Township's current lifecycle management strategies

Activity Type	Description of Current Strategy
Maintenance	Annual winter control activities to meet Minimum Maintenance Standards including road and sidewalk plowing, snow removal and sanding.
	Activities such as deep patching, shallow patching and crack sealing are done on an as-needed basis depending on the performance and condition of the road segments and in accordance with MMS guidelines.
	Gravel roads require ongoing maintenance activities including • Dust Control Application (annually) • Grading (annually) • Re-gravelling (as needed)
Rehabilitation	Road rehabilitation activities such as resurfacing, or Mill & Paves are triggered by the pavement condition index and pavement network value as outlined in the Township's RNS (Road Needs Study). These activities are refined annually.
	Some Gravel roads are determined to be viable options for upgrade to Chip Seal based on economic, social, and environmental factors.
Replacement	Full road reconstruction is coordinated effectively with other Right-of-Way assets.
Maintenance, Rehabilitation & Replacement	All lifecycle activities are driven by the results of mandated structural inspections competed according to the Ontario Structure Inspection Manual (OSIM).
Maintenance, Rehabilitation & Replacement	Staff perform visual inspections regularly Internal annual bridge cleaning and erosion clean-outs are performed

Levels of Service

The following core values and level of service statements are a key driving force behind the Township's asset management planning.

Service Attribute	Level of Service Statement
Accessible & Reliable	The road network is reliable and provides reasonable access to properties throughout the municipality
Sustainable	There are long-term plans in place for the renewal and replacement of the road network

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

Community Levels of Service

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

Service Attribute	**Qualitative Description**	**Current LOS (2021)**
Scope	Description, which may include maps, of the roads network in the Township and its level of connectivity	See Appendix B
Quality	Description or images that illustrate the different levels of road class pavement condition	Every road section receives a Pavement Condition Index (PCI) rating (0-100). The rating incorporates pavement roughness measurements and surface distress (type, quantity, severity). Ratings are categorized into 4 general qualitative descriptors as detailed below. Very Good- 75 PCI and greater; Over 20 years of useful life remaining Good- 61 PCI and greater; 15-20 years remaining Fair- 51 PCI and greater; 10-15 years remaining Poor -0-50 PCI; Less than 10 years remaining

Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS (2023)
Accessibility & Reliability	Lane-km of hot mix roads (MMS class 4) (km/km^2)	6.5 km
	Lane-km of surface treated roads (MMS class 4) (km/km^2)	171.6
	Lane-km of gravel roads (MMS classes 5 and 6)	76.4
Sustainable	Average pavement condition index for paved roads in the Township	67 (Good)
	Average pavement condition index for Treated roads in the Township	65 (Good)
	Average surface condition for unpaved roads in the Township	62 (Fair)

Condition Status by MMS

MMS	Excellent	Good	Fair	Poor
4	5.7	18.5	17.4	2.1
5	2.2	17.7	44.0	10.7

Service Attribute	Level of Service Statement
Accessible & Reliable	Bridges and culverts provide reliable access to the road network for vehicles and/or pedestrians
Sustainable	There are long-term plans in place for the renewal and replacement of all bridges and culverts

Community Levels of Service

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

Service Attribute	Qualitative Description	Current LOS (2021)
Accessible & Reliable	Description of the traffic that is supported by municipal bridges (e.g. heavy transport vehicles, motor vehicles, emergency vehicles, pedestrians, cyclists)	Most of the Township's structures do not have loading or dimensional restrictions meaning that most traffic, including heavy transport, motor vehicles, emergency vehicles and cyclists can be supported.
Sustainable	Description or images of the condition of bridges and how this would affect use of the bridges	**Good (70-100):** considered to be in good-excellent condition, and repair work is not required in the short-term. **Fair (60-70):** considered to be in good-fair condition. Repair work is ideally scheduled to be completed within the next 5 years. **Poor (< 60):** considered poor with lower numbers representing structures nearing the end of their service life. The repair of these structures is best scheduled within a year.

Technical Levels of Service

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

For the Township's inventory (10 structures total), the current summary of BCI ranges is presented as follows (individual structure BCI values are presented in the tables in *Appendix A*):

BCI Range	*Number of Structures in Range*	*Percent of Structures in Range*
70-100	2 (bridges) / 3 (culverts) / 5 total	31.2
60-70	1 (bridges) / 3 (culverts) / 4 total	25.0
Less than 60	3 (bridges) / 4 (culverts) / 7 total	43.8

Service Attribute	Technical Metric	Current LOS (2021)
Accessible & Reliable	% of bridges in the Township with loading or dimensional restrictions	0%
Sustainable	Average bridge condition index value for bridges in the Township	61 (Fair)
	Average bridge condition index value for structural culverts in the Township	55.4 (Poor)

A full Level of Service is provided in Appendix C

Service Attribute	Qualitative Description	Current Level of Service (2021)
Accessible and Reliable	List of facilities that meet accessibility standards and any work that has been undertaken to achieve alignment	Municipal Office and Community Centre meet accessibility standards. Work was undertaken in 2017. The Nairn Fire Hall is currently under renovations to meet accessibility standards.
Safe and Regulatory	Description of monthly and annual facilities inspection process	All facilities are inspected on a weekly basis to ensure a safe and reliable experience for users.
Affordable	Description of the lifecycle activities (maintenance, rehabilitation and replacement) performed on municipal facilities	The Township strives to perform maintenance to maintain the current good/fair levels of service and to provide users with a safe environment.
Sustainable	Description of the current condition of municipal facilities and the plans that are in place to maintain or improve the provided level of service	The Township does not currently have data available to determine this qualitative metric. Staff are working to gather this metric for the next iteration of the AMP that is required in 2025.

Recommendations

Data Review/Validation

- Ensure updated information is consistently entered into the AMP datasets to enable the most accurate planning and analysis

Condition Assessment Strategies

- Both lifecycle strategies and risk analysis are informed, at least in part, by assessed condition. Information collected through Road Needs Studies and/or staff assessments should be regularly updated so that decisions are based on the most recent and accurate information.
- 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.

Replacement Costs

- Ensure that all assets have up-to-date replacement costs that have been evaluated for their accuracy and reliability. Accurate replacement costs are foundational to deriving the most value from asset management practices.

Lifecycle Management Strategies

- Implement the identified lifecycle management strategies for paved roads to realize potential cost avoidance and maintain a high quality of road pavement condition.

- Evaluate the efficacy of the Township's lifecycle management strategies at regular intervals to determine the impact on cost, condition, and risk.

Risk Management Strategies

- Implement risk-based decision-making as part of asset management planning and budgeting processes. This should include the regular review of high-risk assets to determine appropriate risk mitigation strategies.
- Review risk models on a regular basis and adjust according to an evolving understanding of the probability and consequences of asset failure. As feasible, collect and update attribute information identified as valuable to the risk models (i.e., daily traffic counts, road maintenance class, drainage adequacy, etc.).

Levels of Service

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

Impacts of Growth

Description of Growth Assumptions

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

Bonfield Township: Strategic Plan

The Township of Bonfield's Official Plan was last adopted in 2013. The Plan is currently under review with the Ministry of Municipal Affairs and Housing and with provide general guidance for growth and development until 2051.

As illustrated in the figure below, Bonfield's population is projected to modestly grow from 2006 to 2031. Total households and employment indicators are projected to grow at a similar rate. Households have generally grown faster than population suggesting decreasing household size or new dwelling formation.

It is noteworthy that while there will has been slow and modest growth across the mentioned indicators, the Township's rate of growth between 2026 and 2031 is projected to decrease from previous years. This is evidenced in the table below:

Years	% Change in Population	% Change in Households	% Change in Employment
2006–2011	–1.4%	+3.3%	≈+0.0%*
2011–2016	–0.3%	+3.1%	–8.9%*
2016–2021	+8.6%	+8.5%	+11.5%
2021–2026	≈–0.4%	≈+2.8%	≈+4.0%*
2026–2031	≈+0.1%	≈+3.0%	≈+3.0%*

Impact of Growth on Lifecycle Activities

Future versions of the Township's asset management plan must include assumptions regarding projected changes in population and economic activity informing the preparation of lifecycle management and financial strategies.

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

The Township has developed and adopted numerous documents and policies to guide population and economic growth. This includes the Bonfield Official Plan (currently under review), the Community Strategic Plan (2025), and the Economic Development Plan (2026).

These future studies and reports are expected to assist the Township as they begin to gather data to support future O. Reg. requirements including developing proposed levels of service and identifying risks associated with their asset management program.

FINANCIAL STRATEGY

Financial Strategy Overview

For an asset management plan to be effective and meaningful, it must be integrated with a long-term financial plan (LTFP). The development of a comprehensive financial plan will allow the Bonfield Township 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:
   - Existing assets
   - Existing service levels
   - Requirements of contemplated changes in service levels (none identified for this plan)
   - Requirements of anticipated growth (none identified for this plan)

2. Use of traditional sources of municipal funds:
   - Tax levies
   - User fees
   - Reserves
   - Debt

3. Use of non-traditional sources of municipal funds:
   - Reallocated budgets
   - Partnerships
   - Procurement methods

4. Use of Senior Government Funds:
   - Gas tax
   - Annual grants
   - One-time grant programs

Annual Requirements & Capital Funding

Financial Profile

Current Funding Position

The following tables show, by asset category, Bonfield Township 's average annual capital expenditure requirements, current funding positions, and funding increases required to achieve full funding on tax-funded assets.

Asset Category	Avg. Annual Requirement	Annual Funding Available				Annual Deficit
		To Capital Reserves	Gas Tax	OCIF	Total Available	
Road Network	731,103	132,250	140,564		272,814	458,289
Bridges & Culverts	359,400	132,250		125,000	257,250	102,150
Buildings	12,400	0			0	12,400
Machinery & Equipment	34,005	0			0	34,005
Land Improvements	0				0	0
Fleet	218,600	0			0	218,600
Total	**1,355,508**	**264,500**	**140,564**	**125,000**	**530,064**	**825,444**

Full Funding Requirements

In 2023, Bonfield had annual tax revenues of $3.5 million for operating. 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 10 Year Funding
Road Network	183%
Storm Network	2%
Bridges & Culverts	90%
Buildings	3%
Machinery & Equipment	9%
Land Improvements	3%
Rolling Stock	55%
Total	558% or 55%/year

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

- Bonfield's formula based OCIF grant is scheduled to remain at $125,000
- Bonfield's CCFB is expected to remain at $140,564.
- Bonfield's debt payments for these asset categories will be decreasing by $105,000 over the next 5 years and by $236,000 over the next 10 years. Although not shown in the table, debt payment decreases will be $335,000 and $433,000 over the next 15 and 20 years respectively.

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:

Financial Strategy Recommendations

Considering all the above information, we recommend the 20-year option. This involves full capital expenditures funding being possible over 20 years with a combination of:

- when realized, reallocating the debt cost reductions to the infrastructure deficit as outlined above.
- increasing tax revenue by 5.0% 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.
- adjusting tax revenue increases in future year(s) when allocations to CapEx exceed or fail to meet budgeted amounts.
- allocating the current gas tax and OCIF revenue as outlined previously.
- Lobbying for significant one-time senior level government funding programs

- reallocating appropriate revenue from categories in a surplus position to those in a deficit position.
- increasing existing and future infrastructure budgets by the applicable inflation index on an annual basis in addition to the deficit phase-in.

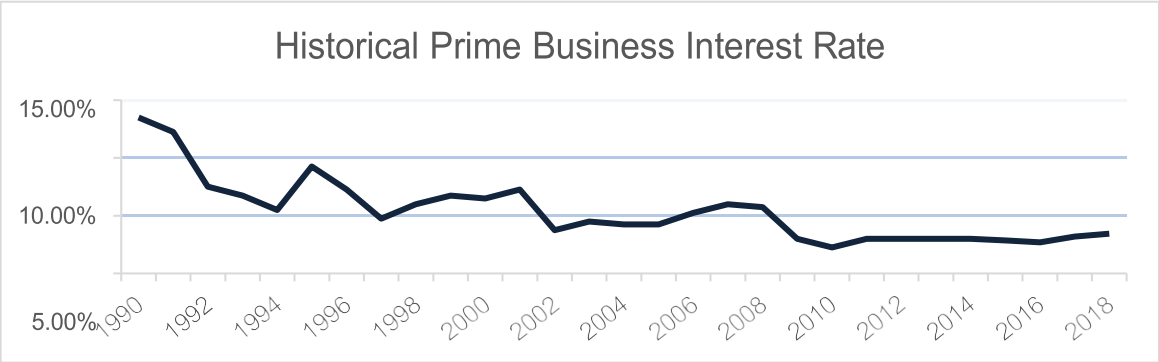
1. We realize that raising tax revenues by the amounts recommended above for infrastructure purposes will be very difficult to do. However, considering a longer phase- in window may have even greater consequences in terms of infrastructure failure.

Use of Debt

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

Interest Rate	Number of Years Financed					
	5	10	15	20	25	30
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 some current loans have interest rates at 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:



9 Current municipal Infrastructure Ontario rates for 15-year money is 3.2%.

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

The following tables outline how Bonfield has historically used debt for investing in the asset categories as listed. There is currently $2,931,495 of debt outstanding for the assets covered by this AMP, with annual repayment amounts equaling $248,435 well within its provincially prescribed maximum of $1,000,000 annually.

Asset Category	Current Debt Outstanding	Use of Debt in the Recent Years					
		2011	2016	2017	2019	2023	2025
Road Network	1,532,419*			760,595*			
Bridges & Culverts	571,688			499,887*	315,632		158,000
Buildings	141,568	284,800		196,353*			
Machinery & Equipment	685,820		264,947		230,277	475605	
Land Improvements							
Rolling Stock							
Total Tax Funded:	2,931,495	284,800	264,947	1,456,835	545,909	475,605	158,000

The revenue options outlined in this plan will require Bonfield to fund a portion of its long-term infrastructure requirements with future use of debt.

Use of Reserves

Available Reserves

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

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

By asset category, the table below outlines the details of the reserves currently available to Bonfield.

Asset Category	Balance at December 31, 2024
AMP Road /Bridges Network	468,037
Parks	28,071
Tax Stabilization	48,743
Operation Modernization	232,499
Emergencies Fund	369,653
Fire	27,706
Total Tax Funded:	$1,174,709

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:

- breadth of services provided
- age and condition of infrastructure
- use and level of debt
- economic conditions and outlook
- 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 Bonfield'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.

OTHER

- Appendix A identifies projected 10-year capital requirements for each asset category
- Appendix B includes several maps and images that have been used to visualize the current level of service

Roads and Bridges – Detailed Asset Management Update

This section integrates findings from the Township of Bonfield Roads Needs Study and the 2024 Bridge Management Study. The intent is to align condition-based needs with lifecycle management strategies and a ten-year capital implementation plan.

Road Network Condition Summary

The Roads Needs Study classifies the Township road network into Good, Fair, and Poor condition categories based on surface condition, structure, and ride quality. Assets in Poor condition require near-term rehabilitation or reconstruction, Fair condition roads are prioritized for preventative treatments, and Good condition roads are maintained through routine maintenance to preserve service life.

Bridge Inventory and Condition Summary

The 2024 Bridge Management Study assessed bridges using Ontario Structure Inspection Manual (OSIM) ratings. Structures with condition ratings below 60 are identified as priority candidates for rehabilitation within the next 5 years, while bridges rated between 60 and 70 require preventative maintenance.

Lifecycle and Risk-Based Prioritization

Roads and bridges are prioritized using a risk-based approach that considers condition, traffic volumes, connectivity, safety, and consequences of failure. This approach supports proactive investment and minimizes long-term lifecycle costs.

10-Year Capital Planning Approach

A ten-year capital plan has been developed to sequence required works based on condition rating and risk. The plan emphasizes early intervention for Fair assets and targeted reconstruction of Poor assets while sustaining Good assets through maintenance.