
Zorra Maintenance Facility

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1.0 Executive Summary

1.1 Background

The Township of Zorra is a rural municipality within the County of Oxford. The Township is comprised of several rural clusters and two serviced villages. We strive to make Zorra better by doing our part. In Zorra, we take great pride in maintaining our exceptional rural lifestyle, made possible by our highly engaged community and government. Our location allows residents and businesses to enjoy a small village atmosphere with abundant green space, easy and fast access to big city amenities and large consumer markets. Zorra is progressive, environmentally conscious, economically strong and prosperous. Our highly productive rural land provides a solid foundation for successful and varied agriculture and food production.

This Asset Management Plan (AMP) supports the Township's 2023-2026 Strategic Plan of thriving today and tomorrow. This plan builds on prior AMPs and sets out a strategic framework that will guide future investments that support economic growth and respond to changing needs in a fiscally responsible manner. The Township's asset management program forms a strong foundation for sound asset management principles well into the future. This AMP covers all Township owned assets including natural assets.

The development of a long-term, sustainable plan requires an analysis of lifecycle costs using a combination of proactive lifecycle strategies and replacement only strategies. Through these lifecycle strategies, the Township is able to determine an average annual investment requirement, which forms the basis for annual contributions into capital reserves. This helps smooth the impact on property taxes, helping with predictability and sustainability. Each AMP appendix will identify if the current annual contribution is in-line with the required investment based on the proposed level of service, in turn allowing for a long-term financial plan to be developed for managing and reducing any identified gaps.

In addition to meeting the provincially mandated AMP requirements, this AMP establishes a strategic framework for managing these assets, aligning assets with service objectives, documenting core practices and procedures, and guiding the action and investment needed to meet key business goals. To be eligible for certain capital grants, municipalities must have an AMP and demonstrate the need of a project to the social, economic or environmental priorities of the community.

This AMP is based on current information available with a goal to identify plans to address gaps in data and procedures. Improvement opportunities will be listed within each appendix. The AMP is designed to be a living document that will be reviewed annually and revised in response to changing environmental, social and economic needs within our community. The annual update process will ensure that staff are working through each budget cycle with up-to-date information on our assets.

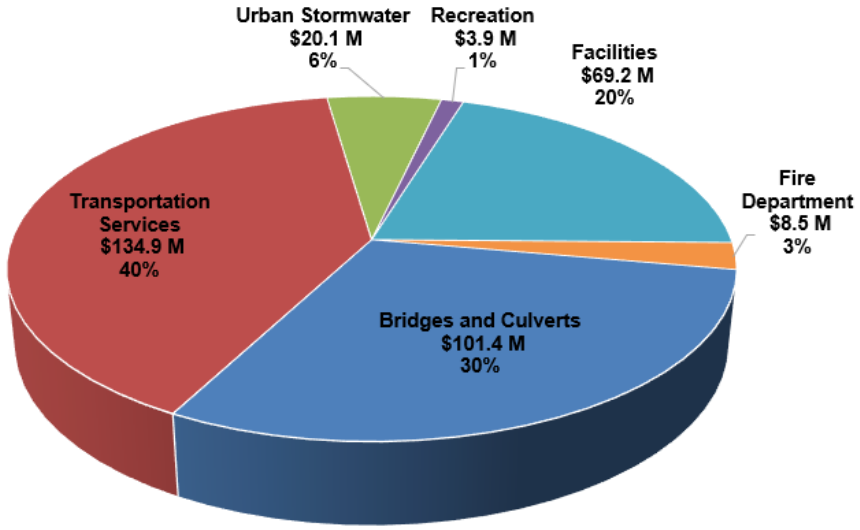
Table 1.1.1 reflects a summary of the replacement value of the Township's assets identified throughout the 2025 Asset Management Plan appendices. The overall replacement cost is approximately $338.0 million.

Table 1.1.1 Asset Investment Summary (millions)

Asset Appendix	Replacement Value	Required Annual Investment (100% Funded)	Annual Investment Target	2025 Budget Investment	Annual Investment Surplus/(Deficit)
Bridges and Structural Culverts	$101.4	$1.51	$1.21	$0.71	($0.50)
Transportation Services	134.9	2.76	2.34	1.63	(0.71)
Urban Stormwater	20.1	0.21	0.12	0.11	(0.01)
Recreation Services	3.9	0.23	0.21	0.21	0.00
Facilities	69.2	1.33	0.67	0.33	(0.34)
Fire Department	8.5	0.69	0.45	0.46	0.01
Total	**$338.0**	**$6.73**	**$5.00**	**$3.45**	**($1.55)**

PROPOSED INVESTMENT DEFICIT

$1.55 MILLION



2.0 Introduction

2.1 Importance of Asset Management

Asset Management strives to continually improve the long-term management of assets. The following is a list of goals that asset management programs and processes aim to achieve:

- Reduced lifecycle cost (i.e. total operating, maintenance and capital resources) of providing services to residents.
- Reduced risk exposure by ensuring that assets are managed in a manner that matches the risk that their failure represents to the delivery of services.
- An informed and transparent decision-making process that provides Council with the knowledge that they need to make decisions regarding capital expenditures, operating costs and revenue requirements (i.e. tax levels).
- A mechanism to ensure that the services that are delivered, through the use of assets, can be provided at a sustainable level that is affordable to residents.

2.2 Alignment to Strategic Plan

The initiatives contained within this AMP support the values and strategic directions as set out in the 2023-2026 Strategic Plan.

- A sustainable community The asset management planning process helps ensure we grow in a sustainable manner, with each AMP appendix indicating how climate change and environmental sustainability are incorporated into asset management practices.
- A livable, healthy community Processes ensure assets are maintained in a manner that provides the required level of service to enhance the quality of life for all our citizens.
- A fiscally sustainable community This plan sets out a strategic framework that will guide future investments that support economic growth and respond to changing needs in a fiscally responsible manner.
- Governance and corporate excellence Through asset management engagement activities we will gather valuable feedback from residents to make informed decisions on our long-term asset needs.

2.3 Alignment to Other Plans and Policies

The comprehensive asset management approach reviews plans and initiatives in place throughout the Township to ensure that asset management activities align with these plans and initiatives.

- Official Plan The County of Oxford's Official Plan helps guide municipal decisions with respect to infrastructure, public services and other investments.
- Capital Plan The capital plan consists of a capital budget over a 10-year horizon, built in alignment with asset lifecycle needs and identifies financing sources.

- By-Laws, Policies and Procedures The AMP incorporates requirements from various asset related by-laws, policies and procedures, including the Development Charges Background Study.
- Regulations The AMP aligns with government regulations.

2.4 Purpose and Development Methodology

The purpose of this AMP is to set out how the Township's assets will be managed in accordance with the Strategic Plan; various plans and policies; and legislation, to ensure that the Township is capable of providing sustainable levels of service.

The output from the AMP serves as a framework for the long-term capital plan, including reconstruction and rehabilitation strategies, maintenance, repair activities, ongoing operations, and financial planning.

The asset management planning process begins with the Strategic Plan, aligned with the public's expectations and government regulations. The process evaluates the state of our assets, which is determined by current conditions and performance assessment for each asset component. This assists in forecasting a sustainable funding level and identifies if a funding surplus or deficit exists. Performance measures are established and tracked to provide an understanding of the current levels of service. This framework guides the development of proposed levels of service and indicates performance measures used to evaluate progress in achieving the proposed levels of service.

The asset management strategy component of the planning process provides a detailed analysis within each appendix. This analysis is based on best practices and industry standards employed to manage assets. This component includes a comprehensive review based on clearly identified rehabilitation strategies that trigger specific lifecycle events. The ideal lifecycle strategy takes into consideration return on investment, risk assessment and prioritization of projects. The next step in the planning cycle is developing the financial strategy. This is an integral component of the capital plan. All possible revenue sources are considered for asset lifecycle needs, such as, grants (including the Ontario Community Infrastructure Fund and Canada Community Building Fund), reserves, development charges, debt, user fees, and tax levy. This stage of the process is reviewed and developed concurrently with the operating and capital budget process to ensure the plan is sustainable, both technically and financially.

2.5 Plan Content

This AMP complies with the requirements of O.Reg. 588/17 and the provincial government directives and is structured to provide consistency and ease of understanding for readers. For each appendix, the following sections are included:

- State of Assets
- Levels of Service
- Asset Management Strategy

- Financial Strategy

2.6 Resources

At the organizational level, the asset management program involves collaboration among various divisions and programs – transportation, facilities, parks, fire, finance, and more.

The Township utilizes software applications for long-term financial planning and analysis. The systems include:

- Comprehensive asset inventory including condition ratings, replacement costs, anticipated useful lives, and lifecycle activities; and
- Asset accounting for Public Sector Accounting Board (PSAB) purposes in accordance with PSAB 3150.

2.7 Plan Scope

The AMP utilizes a long-term strategic planning window of 100-years. Having a long-term strategic planning window allows the plan to model the exceptionally long service lives of some assets (i.e. underground stormwater assets, road bases, etc.). Although the accuracy of a long-term planning window is highly subject to assumptions and estimates, it allows decision makers to better assess the funding requirements, and sustainably fund asset lifecycle needs.

2.8 Planning Framework

The Township will align asset management planning with the Province of Ontario's land-use planning framework, including any relevant policy statement issued under section 3(1) of the Planning Act and any Provincial Plans that are in effect, as well as with the County of Oxford's Official Plan. The objective being to ensure that assets and public service facilities are provided in a coordinated, efficient and cost-effective manner and that planning for assets and public service facilities is coordinated and integrated with land use planning so that they are financially viable over their lifecycle and available to meet current and projected needs.

The Oxford County Official Plan is the policy document that establishes the overall land use strategy for the Township. The policies and land use schedules contained in the Official Plan establish locational and development review requirements for various land uses (residential, commercial, industrial, institutional, parks, etc.), set out how agricultural land and other natural features and cultural heritage resources are to be protected and provide direction on how environmental constraints are to be addressed. The Official Plan also helps to guide municipal decisions with respect to asset management, public services and other investments. The Official Plan anticipates that growth to both population and employment will continue to be experienced during the planning period.

In order to ensure an up-to-date basis for designating sufficient lands for settlement and employment purposes, for establishing capital improvement programs for municipal assets and for planning for public services, the County reviews and updates population, household and

employment forecasts for the County and Area Municipalities (including the Township) for the planning period set out in the Provincial Planning Statement (i.e. up to 30 years) on a regular basis (e.g. every 5 years). The last formal growth forecast updates were approved by Council in 2020. However, the County is currently in the process of updating these forecasts based on the most recent Ministry of Finance forecasts. The initial draft growth forecast updates from that project (set out in Table 2.8.1 below) indicate that the Township is generally expected to experience higher growth than was identified for the same periods in the previous 2020 forecasts. Similarly, the 2024 Development Charges Background Study completed an analysis of shorter-term growth projections based on updated information, that resulted in projections to 2034 that substantially exceed the figures identified in the 2020 forecasts.

As such, staff will continue to monitor growth to ensure that capital projects designed to service growth are timed appropriately, including finalizing the current growth forecast updates later in 2025, to ensure they reflect current growth drivers and trends, as well as recently updated Provincial policy direction (i.e. Increased planning horizon and use of Ministry of Finance forecasts as the base).

Table 2.8.1 Township of Zorra Growth Projections

	2026	2031	2036	2041	2046
Population	10,300	11,300	12,100	13,000	13,700
Households	3,605	3,985	4,305	4,650	4,960
Employment	3,105	3,355	3,565	3,735	3,905

2.9 Commitment to Engagement

The Strategic Plan commits to being accountable to the public through an open and responsive government. We will provide information and seek input on asset management planning through:

- Opportunities for residents and other stakeholders to provide input across a range of channels (e.g., online, in person, written submissions);
- Coordinated planning between interrelated assets by pursuing collaborative approaches with Oxford County and neighbouring municipalities, and other asset owning agencies wherever viable and beneficial; and
- Our partnerships and relationships with external parties are important to maintaining service delivery. We rely on partnerships to aid in the delivery of services and improvements to our assets. We highly value our partnerships and recognize the benefits of working with them to secure safe and effective delivery, incorporate leading practices and techniques, and achieve efficiencies in delivery.

This document is made publicly available on the Township's website as required by O. Reg. 588/17. The Township will also respond to and facilitate information requests for any background information and reports used in the creation of this plan.

2.10 Improvement Plan

Improved asset management planning is vital to the long-term sustainability of assets. The Township is committed to monitoring the industry and implementing best practices as they evolve and updating asset management data on a continuous basis as new information is received (i.e. the Bridge Needs Study is completed every two years providing updated conditions). This continuous improvement process helps ensure that the right capital projects are targeted with each budget cycle. Throughout each appendix, areas of improvement are identified.

3.0 State of Assets

3.1 Data Confidence

The quality and completeness of asset data is critical to effective Asset Management, accurate financial forecasts, and informed decision-making. For this reason, it is important to know what the reliability of the information is for the Levels of Service, Asset Management Strategy (lifecycle activities and risk) and Financial Strategy. Table 3.1.1 provides a description for the data confidence grades used to classify the reliability of the asset data within each asset appendix.

Table 3.1.1: Data Confidence Grading Scale

Confidence Grades	Description
A - Highly reliable	Data is based on sound records, procedures, investigations, and analysis, documented appropriately and agreed as the best method of assessment. Dataset is complete and estimated to be accurate ± 2%
B – Reliable	Data is based on sound records, procedures, investigations, and analysis, documented appropriately but has minor shortcomings, for example some of the data is old, some documentation is missing and/or reliance is placed on unconfirmed reports or some extrapolation. Dataset is complete and estimated to be accurate ± 10%
C – Uncertain	Data is based on sound records, procedures, investigations, and analysis which is incomplete or unsupported, or extrapolated from a limited sample for which grade A or B data are available. Dataset is substantially complete but up to 50% is extrapolated data and accuracy is estimated ± 25%
D - Very Uncertain	Data is based on unconfirmed verbal reports and/or cursory inspections and analysis. Dataset may not be fully complete, and most data is estimated or extrapolated. Accuracy ± 40%
E – Unknown	None or very little data held

3.2 Inventory

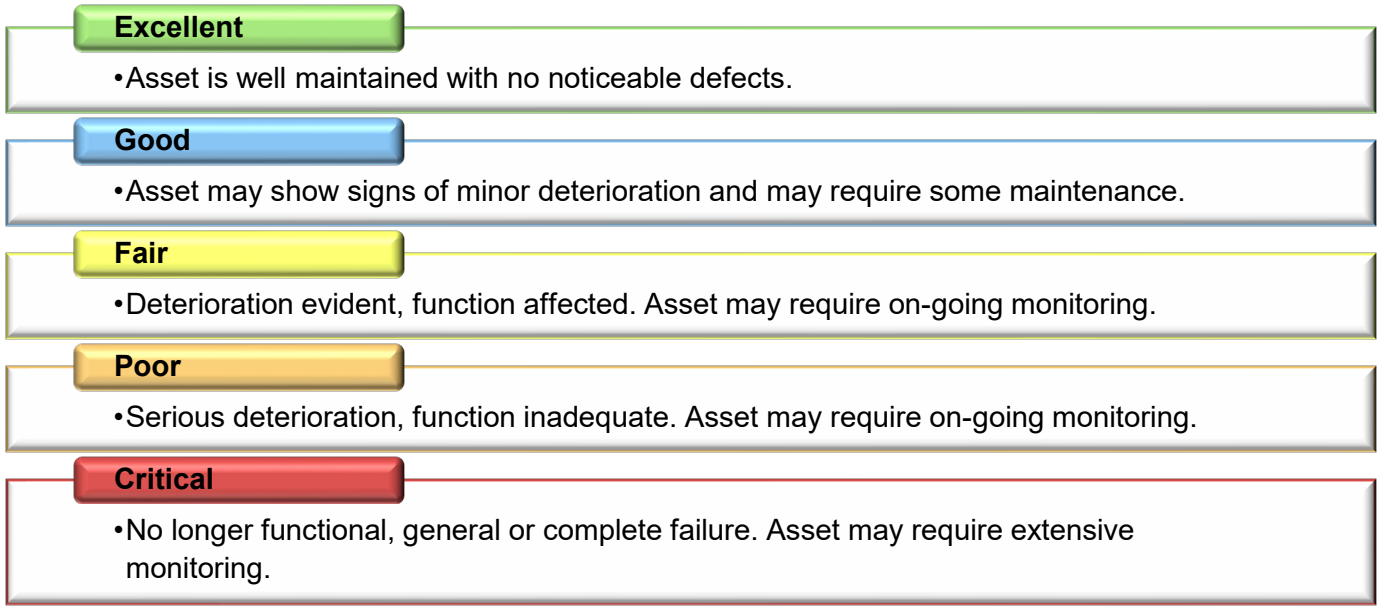
Assets are identified within each appendix by component and quantity. Included, where available, is a comparison of inventory levels to the previous AMP and explanations of significant changes. The current inventory and replacement cost figures capture inventory within newly constructed subdivisions which the Township is aware of and anticipates assuming ownership of. The Township generally assumes ownership of these assets approximately two years after full operation. Growth related asset needs identified in the Development Charges Background Study and the Capital plan are not included in current inventory and replacement costs, however they are included for the purposes of determining lifecycle needs and the annual requirement. It is important to include both the unassumed and growth assets to ensure that lifecycle activities are planned and funded accordingly.

3.3 Valuation

Replacement cost valuation is forward-looking and accounts for changes in technology, engineering standards, climate change and other factors. Replacement costs may be based on current tender prices (adjusted where Township staff feel cost increases are due to temporary economic situations), provided as part of condition assessments or other studies, or based on the Consumer Price Index. Tariffs may have significant impacts on replacement costs of the Township's assets, including the cost to complete lifecycle activities. The exact impact is unknown and difficult to predict; therefore the costs presented throughout this plan are not reflective of potential tariff impacts.

3.4 Condition Assessment Approach

There are numerous investigative techniques to determine and track the physical condition of an asset portfolio. The techniques used are often asset specific and tied to the nature of service or degradation level of the asset and can be grouped into categories. The specific approach used for each service area is identified in the related appendix. For assets, without a standardized approach to condition assessment scoring, information from visual inspections, failure records and other maintenance related observations are used in establishing the condition of the asset. Given the complexities and accessibility of some assets, not all assets allow for a visual or performance-based condition assessment. In these cases, a theoretical age-based condition rating is used.



As the physical condition assessments are completed at a point in time, the asset management system will project the condition to the end of a specified year based on the lifecycle curves defined in the individual profiles. This allows for a more accurate reflection of the current condition. Projected conditions presented in this report are based on December 31, 2024.

3.5 Useful Life

Asset anticipated useful lives, based on a run to failure strategy, are identified within each appendix. Assets may undergo a continual process of repair, rehabilitation, and refurbishment to maintain their intended purpose while extending their overall life.

It should be noted that anticipated useful lives, based purely on age, can provide a misleading view on the asset replacement requirements. In many cases assets that are properly constructed and maintained may outlive their anticipated useful life and continue providing service. In other cases, due to poor workmanship and lack of proactive maintenance, assets may fail before they fulfill their anticipated useful life.

4.0 Levels of Service

4.1 Levels of Service Context

Levels of Service (LOS) measure what the Township is providing to the community and the nature and quality of that service. The LOS framework was developed to align with international best practices including the International Infrastructure Management Manual (IPWEA, 2015). The framework includes the mandatory measures to meet the requirements of Ontario Regulation (O.Reg.) 588/17 by including both community and technical levels of service. In addition to the mandatory measures, additional measures have been identified as worth measuring and evaluating.

This framework helps establish a relationship between the current LOS being provided by the Township's assets, and the associated operating and capital expenditures required to achieve the proposed LOS. The framework puts into perspective the definition and measurement of service performance in alignment with the Township's mission and vision.

Community or Customer levels of service are statements that describe quantifiable metrics of the service delivery outcomes from the perspective of the customer, expressed in plain language. Technical levels of service metrics are quantifiable metrics applied against assets that are subject-matter specific inputs or outputs supported by the day-to-day activities of staff.

Identifying levels of service (LOS) ensures that asset management decisions are:

- Based on impact to customers, the community and the environment;
- Focused to deliver the required level of service;
- Aligned with the strategic goals of the Township; and
- Considered and optimally balanced with risk and financial cost.

It is important to define and quantify the levels of service within each service area as key indicators of asset needs and the basis for investment decisions. Service levels communicate to Council and the residents the state and trend of the Township's assets. Funding scenarios can be created based on different service levels, which allows Council to set priorities on the proposed service level for each service area.

Levels of service take into consideration:

- Legislative and regulatory requirements: These requirements prevent levels of service from declining below a certain standard. (i.e. Minimum Maintenance Standards for municipal highways, building codes and the Accessibility for Ontarians with Disabilities Act)
- Corporate goals and objectives: These goals and objectives define the Township's priorities, and guide future spending.
- Customer needs: The expectations of the general public have a direct impact on the level of service demanded from our assets.
- Industry standards and best management practices

4.2 External Trends and Issues

There are always external factors that are beyond the control of the Township that can influence the level of service achieved from our assets. Performing an analysis of these factors will ensure that the performance targets are well-aligned with the environment which the Township operates in.

The following are known external trends/issues impacting levels of service:

- Aging assets: older assets may burden the Township and may require a higher funding investment to maintain safety and reliability.
- Enhanced environmental stewardship: an increased demand of environmentally responsible alternatives (i.e. battery electric vehicles); the Township's requirement to look at environmental sustainability with each asset lifecycle need could increase timelines and costs.
- Inflation index for construction projects: inflation rates that increase at a rate greater than expected could result in a shortage of funding to complete asset lifecycle needs.
- Environmental factors and Climate change: unusual weather events can significantly impact the condition of assets, changing the timeframes for required lifecycle activities.
- Changes in senior level government funding: changes in funding levels or priorities will require us to take another look at our ability to fund our asset management needs.
- Uncertainty of growth forecasts: may result in increased deterioration, the need for additional assets and upgrades to service growth quicker than expected.
- Active transportation: increases in the use of alternative transportation results in increased pressure to maintain a safe and reliable transportation network.
- Changing demographics: may result in requests for new services or enhanced accessibility.
- Changes in building or accessibility standards: may result in increased costs during project completion to ensure new standards are adhered to.

5.0 Asset Management Strategy

5.1 Procurement Methods

The Township's Purchasing Policy sets out guidelines for the Township and staff to ensure that all purchases of materials, supplies and services is at the lowest possible cost while obtaining the level of quality and service that is required by the Township.

The key objectives of the purchasing policy are to:

- ensure that all purchases of materials, supplies and services provide the lowest costs consistent with the required quality and service; and
- promote and maintain the integrity of the purchasing process and protect Council, vendors and staff involved in the process by providing clear direction and accountabilities.

Procurements may include joint contracts with internal divisions and external municipalities/agencies through capital planning or development-related asset planning. To ensure the most efficient allocation of resources and funds, the Township will consider bundling projects when issuing tenders, to realize cost-benefits and economies of scale.

5.2 Risks Associated with the Strategy

Risk management frameworks are developed to assist with the prioritization of investments within the capital planning period. The risk management framework was developed so that it could be integrated with lifecycle management and levels of service strategies to support the development of the Asset Management Plan. This is achieved by identifying the key components of risk as well as the impacts the specific asset will have on the overall delivery of services in the event of failure or disruption. The preferred approach is to implement a triple bottom line analysis approach to evaluate:

- Social impacts of asset failure, including impacts to customers, businesses and the Township's reputation;
- Environmental impacts of asset failure; and
- Economic impacts of failure including the cost of remediation.

In the context of asset management, risk is the multiple of the consequence of an asset failing and the probability that the event will occur. Probability of failure (POF) is a representation of the probability or likelihood that a failure event for an asset will occur. The POF is tied to asset condition and is based on condition data and deterioration modelling. The probability of failure will increase throughout the asset's lifecycle as it degrades. Consequence of failure is based on weighted parameters specific to each asset component based on their financial, social, and environmental impact, and provides an understanding of asset criticality and the impact of asset failure. These parameters include aspects such

as replacement cost and distance to environmentally sensitive areas. The asset management software includes risk information in each of the asset profiles.

Lifecycle strategy risks:

- Insufficient funding and/or staff to complete activities
- Construction risks including scope creep
- Escalating or unanticipated costs
- Unanticipated deterioration
- Delays in receiving required materials / components

5.3 Lifecycle Analysis

The lifecycle management strategy is the set of planned actions that should enable assets to provide users with the proposed level of service in a sustainable way, while achieving acceptable levels of risk and the lowest lifecycle costs required to provide that level of service. Lifecycle considerations for assets include industry benchmarking, consultant recommendations, available budget and other inputs, to determine the right activity for an asset at a specific point in time. The goal of this assessment is to capture the deterioration model for each asset component. Understanding the optimal budget at which lifecycle activities sustain the proposed LOS at the lowest lifecycle cost is one of the main objectives of the lifecycle planning component of the AMP. The lifecycle activities impacting condition and useful life are contained within profiles in the asset management system.

Lifecycle considerations for assets include analysis of the timing to carry out key asset management activities including inspection, maintenance, repair, and replacement. For some assets, replacement needs are based on a run to failure strategy, as this is the most economical.

The lifecycle activity types that are considered for managing assets include:

- Non-Infrastructure Solutions Actions or policies that can lower costs or extend useful lives.
- Maintenance Including regularly scheduled inspection and maintenance, or more significant maintenance associated with unexpected events. These activities do not improve the overall condition of the asset, nor increase its useful life.
- Rehabilitation / Renewal Significant treatments designed to extend the useful life of the asset.
- Replacement Occurs at the end of the useful life and/or when rehabilitation is no longer an option.
- Disposal Activities associated with disposing of an asset once it has reached the end of its useful life or is otherwise no longer needed to provide services.
- Growth / Service Improvement Planned activities required to expand municipal services to accommodate the demands of growth or increase the level of service being provided.

5.4 Climate Change

Impacts of climate change are being experienced around the world and are expected to be a significant and unavoidable financial burden on municipalities. Municipalities must include a commitment in their asset management planning to address the vulnerabilities of climate change with respect to operations, levels of service and lifecycle management. Two of the largest threats to southwestern Ontario are extreme heat and extreme precipitation, both of which are already being experienced and will continue to increase in severity. Consideration must be given to anticipated costs, mitigation and adaptation approaches and disaster planning. Natural assets enhance climate resiliency (flood protection/erosion control), purify the air, support biodiversity, improve water quality, and contribute to overall environmental health and sustainability.

Climate Risks

- Potential increased service disruptions with more frequent and severe weather events.
- Potential increased maintenance and replacement costs due to damage and impact of severe weather.

Climate Adaptation Measures

- Consider climate change impacts when designing, constructing and maintaining assets, while considering affordability and co-benefits.
- Consider technology and best practices to minimize service disruption and increase resiliency.
- Consider altering inspection and renewal to support resiliency.
- Consider regulation changes and best practices in the industry.

Climate Mitigation Opportunities

- Invest in assets that will provide environmental benefits and reduce wear and tear on existing assets.
- Invest and retrofit assets and services to support renewable energy and net-zero initiatives.
- Invest in technology to increase the efficiency of assets.

'Investing in proactive adaptation is smart economic policy that pays substantial dividends.'

- Canadian Climate Institute

6.0 Financial Strategy

6.1 Proposed Levels of Service Review

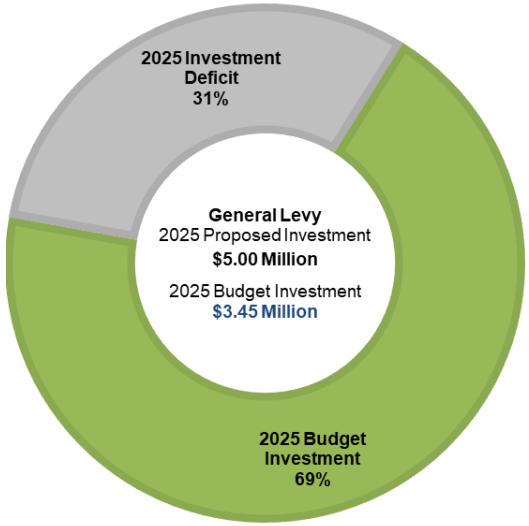
Staff reviewed multiple level of service scenarios for each portfolio centered around budget, condition or useful life depending on the asset, using a decision support module within asset management software. The analysis and outputs are subject to the existing capabilities of the system, with staff in regular communication with the software provider for future system enhancements. Each scenario is reviewed over a 100-year period to identify the proposed long-term sustainable level of service, while continuing to balance risk to the service provided.

Based on the recommended scenarios, the proposed investment represents the amount of capital funding required to renew and maintain existing assets so services can continue to be delivered at the desired level. Utilizing an average annual figure for the investment, over a charge based on actual expenditures, helps smooth the impact on residents, helping with predictability and sustainability.

Table 6.1.1 below reflects the proposed investment based on 2025 owned assets, whereas the recommendations within each service area are based on the analysis over the entire scenario period, and include anticipated asset needs to service growth. The analysis is completed on an annual basis prior to each budget cycle to ensure recommendations are based on current information. Significant investment increases are required for services funded by the general levy to ensure that lifecycle needs are completed in a sustainable manner, at an acceptable risk level.

Table 6.1.1 Investment Summary (millions)

Asset Appendix	2025 Proposed Investment	2025 Budget Investment	2025 Investment Surplus/(Deficit)
Bridges and Structural Culverts	$1.21	$0.71	-$0.50
Transportation Services	2.34	1.63	-$0.71
Urban Stormwater	0.12	0.11	-$0.01
Recreation Services	0.21	0.21	$0.00
Facilities	0.67	0.33	-$0.34
Fire Department	0.45	0.46	$0.01
Total	**$5.00**	**$3.45**	**-$1.55**



6.2 Funding Gap Analysis

A financial plan is a critical component of the AMP and brings the AMP into action. A sound financial plan demonstrates that the Township has integrated the AMP into financial planning and budgets, and that it has utilized all available funding tools.

In addition to targeting and prioritizing the investment needed to maintain existing assets, there are also planning processes in place to determine the additional assets and expansion of existing assets (e.g. the widening of structures) needed to meet growing demands through population increases or demand for new services (e.g. active transportation). The projects targeted to meet growth are funded primarily through Development Charges (DC) – the mechanism that enables recovery of growth-related capital expenditures from new development.

Where possible, lifecycle activities are planned in collaboration with activities across service areas to minimize disruption and to achieve cost efficiencies. The availability of funding by other municipalities for shared assets will also have an impact on the timing of lifecycle projects. In the event of constraints, either financial or resource related, the Township will prioritize projects based on risk and impact to an assets useful life and serviceability based on timing of recommended lifecycle strategies. This may result in assets of a higher condition being prioritized over assets in a lower condition to achieve the best value from dollars invested.

Based on the lifecycle strategies identified to maintain service levels, financial estimates over the next 100-years are determined in current dollars. These estimates assume that all work is able to be completed, as indicated, and do not consider future changes due to environmental factors, new maintenance techniques, and unidentified growth.

The average annual investment requirement represents the amount of capital funding required to renew and maintain the existing assets on an annual basis so services can continue to be delivered. The Township utilizes this information to determine the required annual contribution to capital reserves. Utilizing the average annual figure for the required contribution, over a charge based on actual required expenditures, helps smooth the impact on residents, helping with predictability and sustainability.

Prioritizing the focus on the use of funds from capital reserves on existing asset lifecycle needs, helps ensure that the Township can maintain existing assets in a state of good repair and continue to deliver on the levels of service that residents depend on. Use of these reserves to expand the Township's asset base, or on non-asset related activities, adds risk to the Township's ability to maintain assets in a state of good repair, which in turn could lead to a reduced level of service being provided.

The Township will integrate findings from the AMP in the creation of the capital and operating budgets, and its long-term financial plan. Sound financial analysis will be encompassed in asset management planning for the AMP to be a sought-after guide to employees for long-term

planning. The 10-year capital plan may not reflect all lifecycle needs identified by the asset management system due to internal resource limitations, limitations on external subject matter availability, and financial limitations.

The AMP will be referenced in preparation of the capital plan to assist with:

- Identifying all potential revenues, costs, and project timing (including operating, maintenance, replacement and decommissioning) associated with asset lifecycle decisions;
- Evaluating each significant new (growth related) asset, including considering the impact on future operation costs;
- Utilizing risk to prioritize projects where constraints exist; and
- Incorporating new revenue tools and alternative funding strategies where possible.

Each appendix will identify a proposed approach to funding changes to achieve the proposed levels of service, recognizing that the recommended approach may differ based on current funding levels and the level of the gap to achieve the proposed service level. The approach does not include the potential for a contribution from an operating surplus. Within this section of each AMP the required investment level includes an inflationary estimate of 6.3% for 2026 based on the Q4 2024 non-residential building construction price index for the London area as the most recently available inflation figure at the time of completing this AMP, and then 2.5% for each subsequent year. The proposed investment level may be increased by the same inflationary figure depending on the funding strategy with the 2026 Budget request incorporating the Q2 2025 inflation figures. The approach will be subjet to review and approval through each Budget process and may include strategies such as:

a. use of available reserve balances;
b. use of debt;
c. increase in levy contributions; and
d. increase or introduce user fees.

Table 6.3.1 below summarizes the proposed investment changes identified throughout each service area AMP. The capital contribution figure noted includes the anticipated contribution increases resulting from growth. The percentage of levy increase presented for the levy is based on the 2025 approved budget.

Table 6.3.1 General Levy Investment Summary (millions)

	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Required Investment	$5.00	$5.12	$5.25	$5.39	$5.52	$5.66	$5.80	$5.94	$6.10	$6.27	$6.52
Capital Contribution	3.44	3.44	3.69	3.96	4.24	4.52	4.81	5.06	5.32	5.63	5.99
Inflation	-	0.05	0.08	0.09	0.10	0.10	0.11	0.12	0.12	0.13	0.14

	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Proposed Investment Change	-	0.19	0.19	0.19	0.19	0.19	0.15	0.15	0.15	0.15	0.15
Unfunded Requirement	1.55	1.43	1.29	1.16	1.00	0.85	0.74	0.62	0.51	0.37	0.24
% Levy Increase	-	2.0%	2.2%	2.2%	2.3%	2.4%	2.1%	2.1%	2.2%	2.3%	2.3%

Drawing reserve balances to zero would likely result in increased capital reserve contribution requirements in the subsequent 10-year period in order to fund the anticipated asset lifecycle needs. Reserves are also utilized to fund emergency or unplanned expenses. A minimal or fully committed reserve balance would limit the ability to fund these types of expenses. Consideration needs to be given to a minimum balance the Township should maintain based on these risks.

When evaluating asset funding requirements and shortfalls, it is important to consider intergenerational equity which refers to the fairness between generations. From an asset perspective this speaks to who should pay for assets that have long-term benefits. For assets such as fleet and equipment with short lives, 10 years or less, the current generation receives the full benefit of the asset and should be responsible for the asset's financing. For assets with longer lives, such as stormwater assets with a 90-year life, multiple generations will receive the benefit and establishing fairness for the asset financing is more difficult.

Table of Contents

1.0 Introduction

The Township maintains a diverse transportation network to provide safe and effective means to keep our community moving and connected. Roads located within Zorra Township are under the care of either the Township or the County of Oxford. The Township is responsible for the construction and maintenance of all the transportation network assets under their jurisdiction. This includes bridges and structural culverts which help provide continuous efficient movement of traffic.

Bridges and structural culverts are categorized into three components, as a result of differing life spans and maintenance strategies. They are bridges, structural culverts with a span of 3 meters or greater (culverts with spans less than 3 meters are included in the Transportation AMP as part of the stormwater network), and guide rails related to the structure approaches that protect road users from underlying and/or roadside hazards.

Assets face increased challenges as a result of aging infrastructure, climate change and increasing demand due to growth. Our investment in these assets must therefore be balanced to optimize investment for renewal with the growing needs of our community.

The quality and completeness of the data used in this plan is highly reliable as indicated in Table 1.0.1, which largely stems from completion of the bi-annual Bridge Needs Study. Additional enhancements to the attributes used for assessing risk are required, along with other improvement areas as indicated in Table 1.0.2.

Table 1.0.1 – Data Confidence

		Risk	AM Data Analysis			
Asset Component	**Inventory Completeness**	**Attribute Data**	**Service Life**	**Age**	**Condition**	**Replacement Cost**
Bridges	A	B	A	A	A	B
Guide Rails	A	B	B	B	B	B
Structural Culverts	A	B	A	A	A	B

Table 1.0.2 – Status of improvement opportunities

Improvement Opportunity	Year Identified	Status	Notes
Update attributes to further enhance the risk profile in the Township's asset management software.	2024	Not Started	Competing higher impact priorities have prevented this from being undertaken. Improvement to be pursued in conjunction with Township staff.
Continue to improve data confidence.	2024	In Progress	Added guide rail inventory into the 2025 AMP. Will continue to refine inventory and attributes annually through staff inspections and the Bridge Needs Study.
Incorporate climate change resiliency as part of capital replacement/renewal projects in accordance with applicable emerging guidelines and design standards.	2024	Ongoing	Included as part of tenders for upsizing; to be included in OSIM reports going forward if possible
Document lifecycle history on asset components within the asset management systems.	2024	Ongoing	Historical rehabs have been added to the asset management software where possible. More historical information will improve data confidence.
Review replacement cost estimates as part of the 2025 Bridge Needs Study.	2025	New	Discuss methodology and high tender costs related to bridge and structural culvert rehabilitation and replacements with 2025 Bridge Needs Study vendor.

2.0 State of Assets

2.1 Inventory

Table 2.1.1 displays Zorra's current inventory and the associated replacement costs, average age and anticipated useful life for each component.

Due to the varying structure types and material, the replacement costs are not easily defined as a value per square meter of bridge/culvert deck area. Replacement costs were provided within the 2023 Bridge Needs Study. Replacement costs identified reflect only the Township's portion of shared boundary road structures which were not adjusted for in the 2024 AMP. Replacement costs from the 2023 Bridge Needs Study have been increased to incorporate engineering, geotechnical and contingency costs.

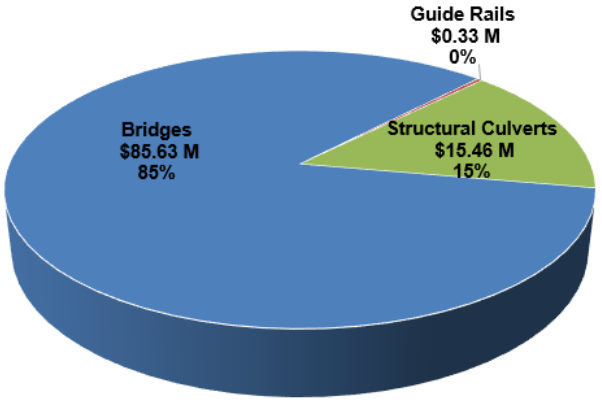


Table 2.1.1 - Inventory

Asset Component	Unit	Previous AMP Inventory	Current Inventory	Replacement Cost	Average Age (years)	Anticipated Useful Life (years)
Bridges	each	37	37	$85,634,308	56	50
Guide Rails	length (m)	N/A	1205	325,350	10	30
Structural Culverts	each	26	26	15,462,566	56	50-65
Total Replacement Cost				**$101,422,224**		

2.2 Condition Assessment Approach

The assessment approach for the assets in this portfolio utilizes a combination of physical assessments, asset attributes, such as material, as well as established anticipated useful lives.

A Bridge Needs Study is required to be carried out every two years to comply with the Public Transportation and Highway Improvement Act and Ontario Regulation 104/97, amended to Ontario Regulation 160/02. Structure inspections are to be performed under the direction of a professional engineer. The study evaluates the structural and serviceability of individual elements and recommends required improvements. The Ministry of Transportation (MTO) has developed an Ontario Structure Inspection Manual (OSIM), which is used to complete the inspections. The OSIM has specified condition states for each material type and where required, for specialized elements. Once inspections have been completed, the Bridge Condition Index (BCI) for each structure is determined based on the MTO methodology. The BCI determined helps to schedule maintenance and rehabilitation work and is not a direct indication of the safety of the bridge. In general, for a bridge with a BCI value:

- Greater than 70 - Repair work is not usually required within the next five years.
- Between 60 and 70 - Repair work is usually recommended within the next five years.
- Less than 60 - Repair work is usually recommended within the next year.

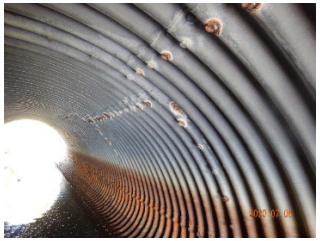
Other factors are also considered in the prioritization of our structure rehabilitation recommendations including:

- State of deterioration and estimated length of prolonged useful life are considered against asset management needs through a cost/benefit analysis.
- Impacts of rehabilitation methods on users based on the length of detour or alternate access.

During OSIM inspections, the condition and effectiveness of roadside safety measures on the approaches to the structures is reviewed. Where no roadside safety systems are present, recommendations are made to identify whether consideration should be given to installing roadside safety systems, (i.e., guide rail and end treatments).

Table 2.2.1 illustrates how the BCI score ratings align with the Township’s standard condition scale.

Table 2.2.1 - BCI Score Ratings[1]

Asset Component	Excellent BCI Score of 90-100	Good BCI Score of 70-89	Fair BCI Score of 50-69	Poor BCI Score of 40-49	Critical BCI Score of 0-39
Bridges	 Non-Township owned structure			 Non-Township owned structure	 Non-Township owned structure
Structural Culverts	 Non-Township owned structure			 Non-Township owned structure	 Non-Township owned structure

[1] Unless otherwise noted, all images are of Township assets, and are general representations of the condition at the time the photo was taken. Assets may have undergone lifecycle strategies since the date of the image impacting its condition.

2.3 Current Condition

The condition profile is shown in table 2.3.1. The quantity in each condition is based on replacement costs. Continued completion of lifecycle strategies identified through the Bridge Needs Study will help to maintain the overall condition rating of structures.

The MTO has established a goal of maintaining 85% of their structures in good condition, with a BCI greater than 70. Of the Township's 63 structures, 43 (68%) have a projected BCI at 70 or greater as of December 31, 2024. It should be noted that it is not sustainable or practical for the Township to maintain structures to the level of the MTO or the County, as the Townships structures are located on lower class roads, seeing less traffic and therefore do not carry the same level of criticality as County or MTO structures.

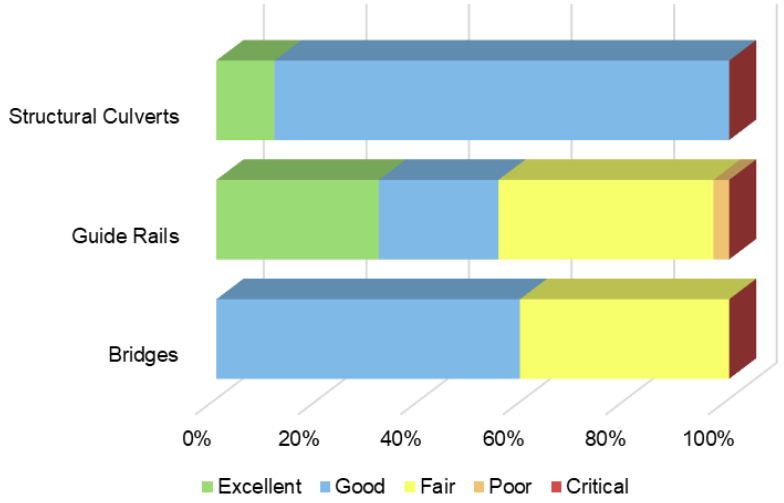


Table 2.3.1 – Condition Profile

Asset Component	Excellent	Good	Fair	Poor	Critical	Average Condition Rating	2024 Avg Condition Rating	Trend
Bridges	0%	59%	41%	0%	0%	Good	Good	➔
Guide Rails	32%	23%	42%	3%	0%	Fair	N/A	
Structural Culverts	11%	89%	0%	0%	0%	Good	Good	➔
Overall Total	**2%**	**63%**	**35%**	**0%**	**0%**			

3.0 Levels of Service

It is intended that all bridges and structural culverts will be maintained, rehabilitated, and replaced to perform the same function and handle the same traffic volumes and loads as they are currently designed to do. While the Township can control development within its boundaries, activities occurring in surrounding areas can impact use of the Township's structures and thus the level of service achieved. To ensure levels of service are maintained, staff monitor these impacts and plan for changes to ongoing practices and budget requirements.

Corporate Objective

- The objective of the transportation division, which includes the maintenance of the Township's bridges and structural culverts, is to ensure people and goods are able to move safely and efficiently throughout the Township. The transportation network includes boundary roads with neighbouring municipalities in which the Township and the neighbouring municipality share in the maintenance activity costs. Service agreements are in place to ensure that service levels are maintained.

Legislative Requirements

- In addition to Ontario Regulation 104/97, as amended, specifying the requirements for biennial inspections, Ontario Regulation 239/02 specifies the maintenance standards for bridge decks. The maintenance requirement is based on the highway classification associated with the bridge or structural culvert.

Customer Levels of Service

- The Township's bridges and structural culverts are used by all types of vehicles on the road, including heavy transport vehicles, motor vehicles, farm equipment, horse and buggy, emergency vehicles, pedestrians, and cyclists.
- Bridge assets that are not maintained in a state of good repair could result in bridge weight restrictions, which significantly impact goods movements.
- Structural culverts, which are typically used for water conveyance, that are not maintained in a state of good repair, could negatively impact drainage of adjacent lands by reducing flood resilience and increasing flooding susceptibility that results in property damage, crop failure, and damage to the road asset. Culvert failure can compromise the structural integrity of the road and become a significant risk to public safety and negatively impact other essential services (emergency services) that rely on the road network.

Tables 3.0.1 and 3.0.2 includes metrics the Township has defined as required under the Infrastructure for Jobs and Prosperity Act, 2015 - O.Reg. 588/17. Included in Table 3.0.2, as required under the regulation, is the estimated performance for each metric over the upcoming 10-year period, based on the recommended financial strategy. A consistent annual target is not established for this portfolio as staff anticipate and plan for changes based on asset lifecycle strategies and ages.

Table 3.1.1 - Performance Measures

Key Service Attribute	Performance Measure	2022	2023	2024
Safety	% of bridges in the municipality with loading or dimensional restrictions.	0%	0%	0%
Quality	For bridges in the municipality, the average bridge condition index value	71.49	72.58	70.49
	For structural culverts in the municipality, the average bridge condition index value	70.66	73.03	72.82
Reliability	% of structural culverts in poor or critical condition	0%	0%	0%
	% of bridges in poor or critical condition	0%	0%	0%

Table 3.1.2 - Performance Measures with Estimated Performance

2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
QUALITY											
Average condition											
72%	71%	71%	70%	70%	71%	71%	71%	70%	68%	66%	66%
RELIABILITY											
% of assets in poor or critical condition											
0%	0%	0%	0%	0%	0%	1%	6%	7%	13%	16%	27%

4.0 Asset Management Strategy

4.1 Lifecycle Activities and Planned Actions

Routine maintenance requires minimal effort to maintain the useful life of the structure, provided maintenance is completed within 1-2 years as identified in the Bridge Needs Study. Safety critical elements are identified during the inspection process if in immediate need of repair. All safety concerns are addressed in a timely manner.

The most effective improvement in a structure's useful life can be achieved by completing rehabilitations while the structure has a BCI between 50 and 69. Depending on the span size, structures may undergo one or two rehabilitations, or replacement if rehabilitation is not cost effective.

The rehabilitation and replacement activities impacting condition and useful life are contained within profiles in the Township's asset management system and align with OSIM curves from the Ministry of Transportation (MTO). Examples of lifecycle activities considered in the overall sustainable management of structures are described in table 4.1.1.

Table 4.1.1 - Lifecycle Activities

Strategy	Lifecycle Activity
Non-Infrastructure Solutions	• Climate change adaptation and mitigation planning • Bridge Needs Study (BNS) **Trigger: Ongoing**
Maintenance	• Washing and collection of debris • Minor repairs including slope erosion, potholes, cracking, damaged guide rails • Other maintenance items noted in the BNS **Trigger: Ongoing**
Rehabilitation / Renewal	• Major & minor structure rehabilitations **Trigger: BCI = 50-69**
Replacement	• Occurs at the end of the useful life and/or when rehabilitation is no longer an option • May also occur to increase service levels **Trigger: BCI < 50**
Disposal	• Activities associated with disposing of an asset once it has reached the end of its useful life **Trigger: Poor/Critical**
Expansion / Growth	• Provide additional driving lanes **Trigger: Development**

4.2 Risk Strategy

For this portfolio, the probability of failure hinges on the projected condition. The consequence of failure is based on the replacement cost of the asset. Staff are working to further enhance the risk profiles as not all attributes recommended for inclusion are currently tracked within the asset management systems.

Table 4.2.1 illustrates the risk ratings at a summary level. A significant percentage of bridges have a major risk rating due to their high replacement costs. This is not a direct indication that these structures are at a high risk of failure (refer to section 2.3 for information on the condition of the assets in this portfolio). Staff will continue to monitor high risk assets, review and/or complete physical inspections to further validate needs and plan for lifecycle strategies accordingly.

Table 4.2.1 - Risk Profile

Asset Component	Severe	Major	Moderate	Minor	Insignificant	Average Risk Rating	2024 Avg Risk Rating	Trend
Bridges	28%	71%	1%	0%	0%	Major	Major	➔
Guide Rails	0%	0%	0%	0%	100%	Insignificant	N/A	N/A
Structural Culverts	0%	37%	44%	15%	4%	Moderate	Moderate	➔

4.3 Climate Change

As part of the asset management planning process, the Township will consider the risks and vulnerabilities of capital assets to climate change and the resulting actions that may be required. Commitment will be made to the development of tailored actions that make the best use of our resources to mitigate and adapt to climate change, in accordance with our local reduction targets, financial capacity and stakeholder support. Bridges and structural culverts are directly exposed to the events and impacts of climate change. Weather events, such as substantial amounts of rainfall can rapidly impact the function and condition of structures.

Climate Risks

- Potential increased maintenance and replacement costs as durability and anticipated life decrease with more severe weather events and freeze and thaw cycles.
- Potential increased service disruption with more frequent and severe weather events.
- Potential increased damage as more frequent severe weather events increase stormwater flows through infrastructure.
- Thermal expansion of bridges due to an increase in variability of summer and winter temperature can cause detours and traffic disruptions.

Climate Adaptation Measures

- Incorporate technology and best practices in the design, construction and maintenance of structures to minimize service disruption and increase resiliency.
- Commitment to the utilization of tools, guidelines, and standards as published by Provincial, Federal and/or other regulatory agencies, and included as design criterion for renewal/replacement projects, while considering affordability and co-benefits.
- Structures that span over bodies of water need to be inspected and renewed as necessary to avoid impeding flow, which could lead to upstream flooding, damage and shortened asset life.

Climate Mitigation Opportunities

- Explore further opportunities for greenhouse gas reductions and improving energy performance.
- Assess embodied carbon of materials used in projects and explore opportunities to use materials and construction methods with lower embodied carbon.

5.0 Financial Strategy

5.1 Proposed Levels of Service Review

Staff reviewed multiple scenarios over a 100-year period to ensure assets with long useful lives were incorporated in the analysis. Scenarios B, C and D were initially run using unlimited resources to achieve lifecycle needs. Staff then took the average investment requirement to create a subsequent scenario utilizing the investment as the restriction. The result is a realistic expectation of what can be achieved on an annual basis in maintaining the long-term system needs. The current reserve balance, including the Canada Community Building Fund, is factored into each scenario as available funding to complete existing asset lifecycle needs. The recommended scenario is then used to inform the development of the overarching financial strategy.

Scenario A

This scenario is based on the 2025 budgeted contribution to the Bridges reserve of approximately $710,000, representing approximately 47% funded based on lifecycle needs. The funding level results in an overall average condition of poor, the highest number of assets in poor or critical condition and significant lifecycle needs would be deferred increasing the risk of failure. Staff do not feel this level of funding results in a sustainable service over the long-term.

Scenario B

Staff initially ran this scenario assuming unlimited resources to achieve the lifecycle needs of all assets in this portfolio. This generated an average annual requirement of approximately $1,513,000, which staff used to re-run the analysis. The result is a realistic expectation of what can be achieved on an annual basis in maintaining the long-term lifecycle needs. This is considered the fully funded scenario, resulting in the lowest risk, and lowest achievable percentage of assets in poor or critical condition over the 100-year scenario period.

Scenario C

This scenario is based on maintaining a 65 Bridge Condition Index Value (BCI) which is considered Fair. This scenario results in a reduced risk and improved percentage of assets in poor or critical condition than Scenario A.

Scenario D

This scenario is based on maintaining a 70 Bridge Condition Index Value (BCI) which is considered Good, which is in-line with the current average BCI of the Township’s structures. This scenario results in decreased risk and percentage of assets in poor or critical condition when compared to Scenarios A and C.

Based on the analysis, staff are recommending Scenario C, the proposed level of service is maintained at an average BCI of 65, which results in an annual investment level of approximately $1.2 million. This recommendation is in line with the 2025 Budget Survey responses where 80% of respondents indicated that the service level related to roads and bridges should be maintained or increase. As projects will be prioritized based on risk, staff anticipate this proposed service level and funding approach will reduce the risk of structures posing a health and safety risk and limited connectivity to the community.

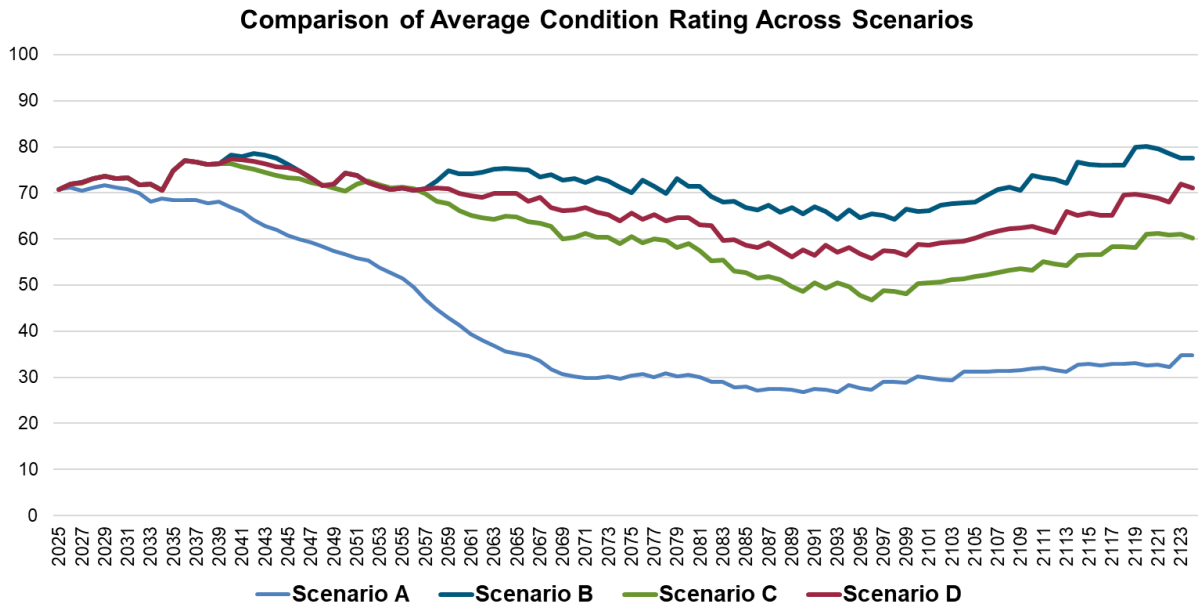


Table 5.1.1 – Scenario Summary

	Annual Investment	Average Condition	Average Risk	% of assets in poor or critical condition
Scenario A	$710,000	Poor	Severe	50%
Scenario B	1,513,000	Good	Major	16%
Scenario C	**1,205,000**	**Fair**	**Major**	**28%**
Scenario D	1,358,000	Fair	Major	22%

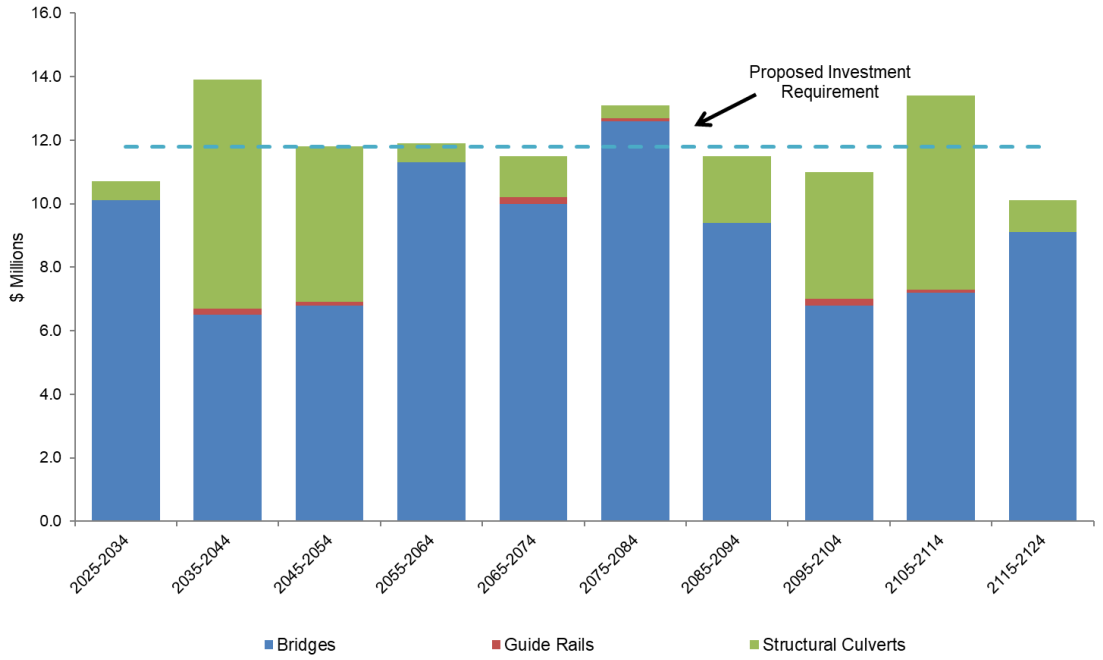
PROPOSED SERVICE LEVEL DEFICIT $0.50 MILLION

5.2 Lifecycle Requirements

Based on the lifecycle strategies identified to maintain current levels of service, the cost estimates to support the lifecycle needs over the next 100-years are determined in current dollars and summarized in Table 5.2.1.

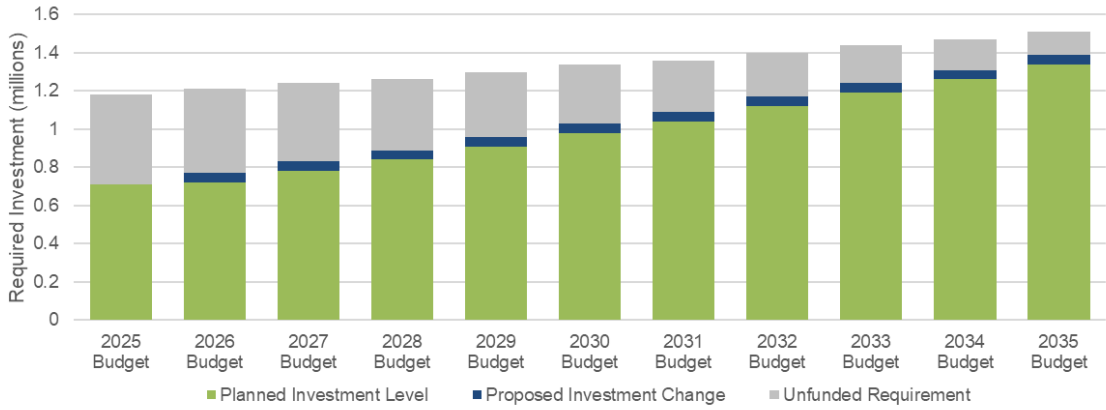
Table 5.2.1 - Lifecycle Requirements (millions)

Asset Component	2025-2034	2035-2044	2045-2054	2055-2064	2065-2074	2075-2084	2085-2094	2095-2104	2105-2114	2115-2124
Bridges	$10.1	$6.5	$6.8	$11.3	$10.0	$12.6	$9.4	$6.8	$7.2	$9.1
Guide Rails	-	0.2	0.1	-	0.2	0.1	-	0.2	0.1	-
Structural Culverts	0.6	7.2	4.9	0.6	1.3	0.4	2.1	4.0	6.1	1.0
Totals	**$10.7**	**$13.9**	**$11.8**	**$11.9**	**$11.5**	**$13.1**	**$11.5**	**$11.0**	**$13.4**	**$10.1**



5.3 Funding Gap Analysis

This portfolio is funded by an annual contribution to the Bridges reserve and the use of Canada Community Building Fund (CCBF).



Planned Investment Level

An estimated inflationary rate is used in Table 5.4.1 below in both the required investment and planned investment figures.

Proposed Investment Change

A reallocation of the current Infrastructure Capital Levy Reserve of $254,000 will occur from 2026-2031. In addition to the planned investment level changes, an increase in the contribution to the Bridges reserve of approximately $49,500 annually is proposed over the 10-year period which amounts to a 0.4% annual increase on the 2025 tax levy. Staff will continue to monitor actual rates of inflation to determine if changes to the level of service or funding strategy should be considered in response to changing economic conditions.

Table 5.3.1 – Comparing the required investment to the proposed investment (millions)

	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Required Investment	$1.21	$1.24	$1.27	$1.30	$1.33	$1.36	$1.40	$1.43	$1.47	$1.50	$1.54
Planned Investment Level	0.71	0.72	0.78	0.84	0.91	0.98	1.04	1.12	1.19	1.26	1.34
Proposed Investment Change	-	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Unfunded Requirement	0.50	0.47	0.44	0.40	0.37	0.34	0.30	0.27	0.23	0.19	0.16

Based on the funding strategy proposed, the lifecycle needs to be reviewed in preparation of the long-term capital plan for the 2026 Business Plan and Budget process are as follows:

Table 5.3.2 - Lifecycle Requirements (millions)

Asset Component	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Bridges	$1.16	$0.39	$0.83	$0.86	$0.74	$0.95	$0.36	$-	$-	$0.71
Guide Rails	-	-	-	-	-	-	-	-	-	0.01
Structural Culverts	-	0.28	-	-	-	-	-	-	0.35	-
Totals	**$1.16**	**$0.67**	**$0.83**	**$0.86**	**$0.74**	**$0.95**	**$0.36**	**-**	**$0.35**	**$0.72**

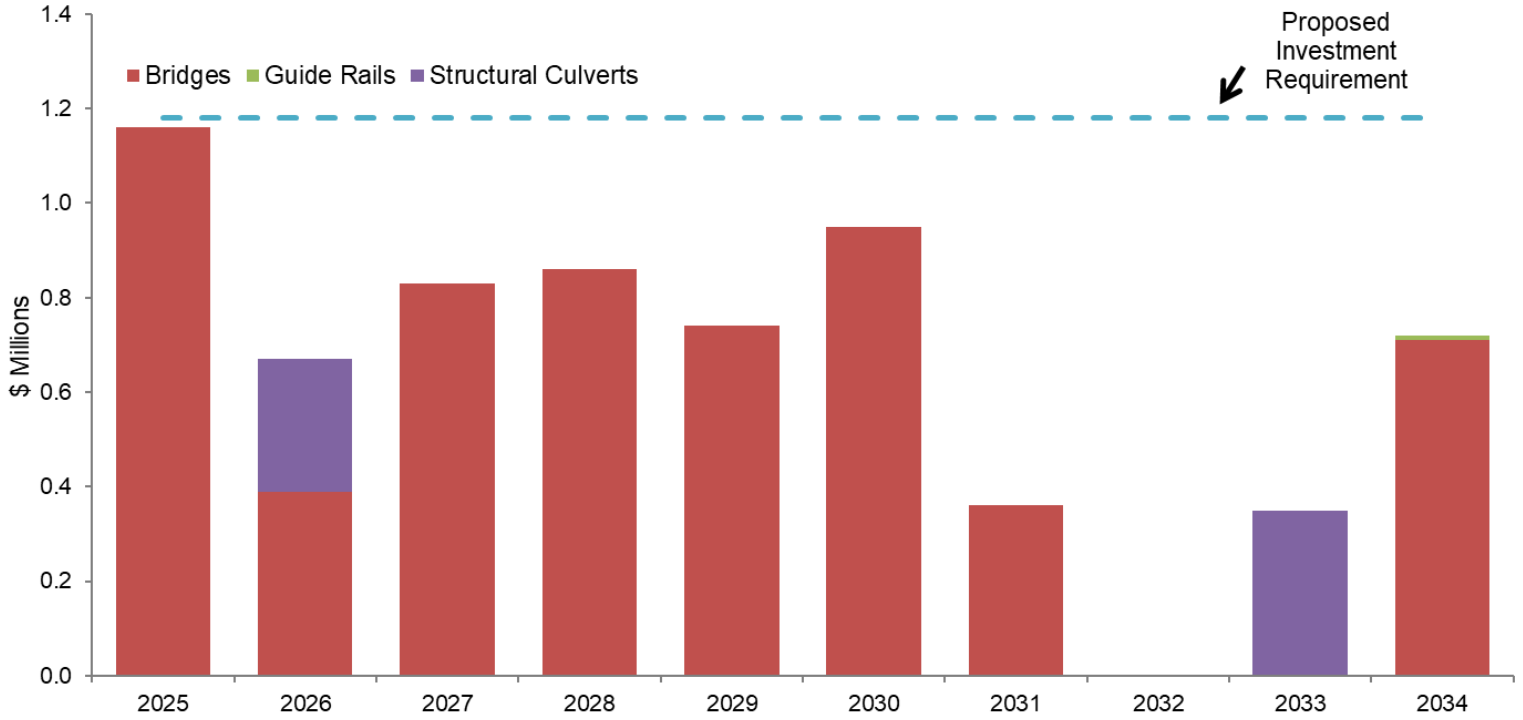


Table of Contents

1.0 Introduction

Zorra township maintains a diverse transportation network to provide safe and effective means to keep our communities moving and connected. Roads located within the township are under the care of either Zorra Township or the County of Oxford with the township responsible for the construction and maintenance of all roads under their jurisdiction. The township has shared ownership of boundary roads with the neighbouring municipality, with financial information throughout relating to only the townships share. Transportation services also maintains a diverse stormwater network comprised of natural and built environments. Due to the interconnected nature of stormwater assets throughout Zorra, analysis on stormwater flows is completed holistically. Rural stormwater infrastructure is captured in this appendix, and urban stormwater infrastructure is captured in Appendix C.

Transportation services assets are categorized into various components, each tailored to different life spans and maintenance strategies; collector roads, local roads, street lights, sidewalks, parking lots, fleet and equipment, culverts with spans less than 3 meters, catchbasins, catchbasin leads, and storm mains.

Like many of our assets, our transportation services assets are facing increased challenges as a result of aging assets, climate fluctuations, increased replacement costs, and increasing demand due to growth in our communities. Our investment in these assets must therefore be balanced to optimize investment for renewal with the growing needs of our community.

The quality and completeness of the data used in this plan as indicated in Table 1.0.1, relies on inventory and assessments of equipment and various transportation assets, while road information largely comes from the Roads Needs Study and frequent inspections by Township staff. Additional enhancements to the attributes used for assessing risk are required, along with other improvement areas as indicated in Table 1.0.2.

Table 1.0.1 – Data Confidence

		Risk	AM Data Analysis			
Asset Component	**Inventory Completeness**	**Attribute Data**	**Service Life**	**Age**	**Condition**	**Replacement Cost**
Collector Road[1]	A	B	A	B	B	B
Local Road[2]	A	B	A	B	B	B
Street Lights	A	B	A	A	A	B

[1] “Collector Road” means Class 3 and Class 4 highways as determined under the Table to section 1 of Ontario Regulation 239/02
[2] “Local Road” means Class 5 and Class 6 highways as determined under the Table to section 1 of Ontario Regulation 239/02

		Risk	AM Data Analysis			
Asset Component	**Inventory Completeness**	**Attribute Data**	**Service Life**	**Age**	**Condition**	**Replacement Cost**
Sidewalks	A	B	A	A	B	B
Fleet and Equipment	A	B	A	A	B	B
Rural Culverts <3m	C	B	B	C	B	B
Rural Catchbasins	B	B	B	B	B	B
Rural Storm Main	A	B	A	A	B	B

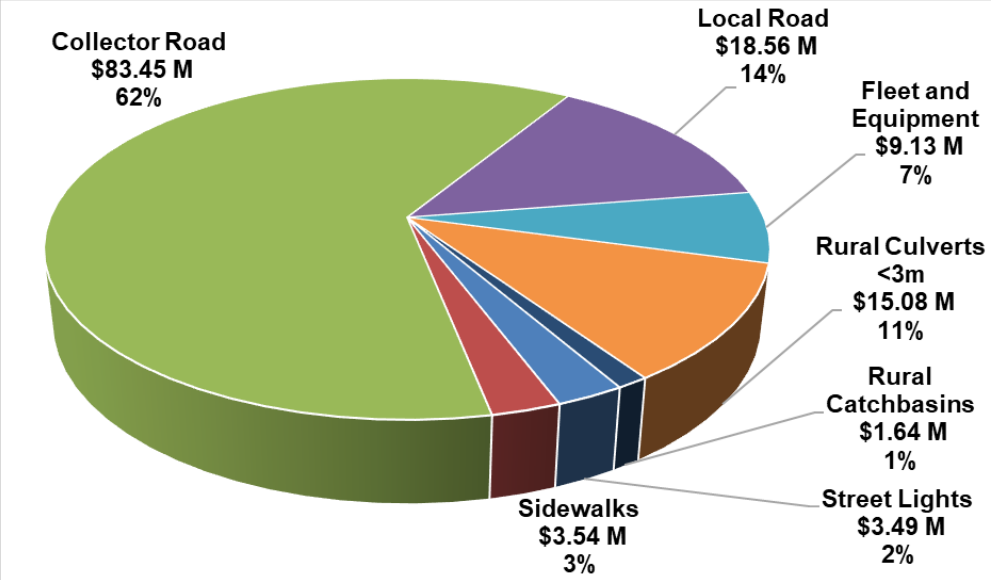
Table 1.0.2 – Status of improvement opportunities

Improvement Opportunity	Year Identified	Status	Notes
Update attributes to further enhance the risk profile in the Township's asset management software.	2024	Not Started	Competing higher impact priorities have prevented this from being undertaken. Improvement to be pursued in conjunction with Township staff.
Establish a procedure for integrating consultant and staff asset inspections into the condition rating process	2024	In Progress	Working to incorporate road inspection notes made in work order software in asset conditions.
Document lifecycle history on asset components within the asset management systems.	2024	Ongoing	Preliminary work completed on asset components (rural culverts) with more to be done across the portfolio.
Continue to improve data confidence	2024	In Progress	Have made improvements to rural culverts with more required. More improvements required for stormwater assets and street lights.
Establish a culvert inspection program.	2025	New	Establish a process to ensure the condition and approximate age of rural culverts are captured within the asset management software.
Refine road asset end of life lifecycle strategies.	2025	New	During the development of scenarios for this AMP, it was determined that not all rural roads require a complete replacement at end of life. A 50-year life was utilized instead of 100 years as staff investigate which roads will require full replacement and develop an appropriate strategy for those that do not.
Establish strategy for gravel road conversions	2025	New	Gravel road conversions to be part of next roads needs study.

2.0 State of Assets

2.1 Inventory

Table 2.1.1 displays Zorra's current inventory and the associated replacement costs, average age and anticipated useful life for each component. The lengths identified for collector and local roads reflect only the Township's share of boundary roads.



Staff members are actively addressing data gaps, by using road reconstruction dates as a proxy for estimating the age of the stormwater assets associated with each road section, where in-service dates are unavailable.

Of the collector and local roads listed in Table 2.1.1, approximately 672 lane-km are gravel roads. The replacement cost for gravel roads represents either the cost related to a complete reconstruction of the gravel road or the costs for conversion to a surface treated road, if recommended in the last Roads Needs Study. Gravel roads require replacement on an infrequent basis, and replacement is generally completed to improve service levels or resulting from structural deficiencies. The acquisition year on a number of gravel roads is based on a date of 1900 which increases the overall average age. Additional local roads were added through subdivision assumptions in 2024.

The replacement cost valuation of stormwater components relies on current tender prices, where available. These replacement values assume that work is completed concurrently with other lifecycle projects, such as road rehabilitation and the replacement of linear water and wastewater assets owned by Oxford County. Rural stormwater is shown in this appendix leading to reduced inventory in Table 2.1.1 due to urban stormwater being omitted from that table and placed in Appendix C.

Table 2.1.1 - Inventory

Asset Component	Unit	Previous AMP Inventory	Current Inventory	Replacement Cost	Average Age (years)	Anticipated Useful Life (years)
Collector Road	lane-km	840.67	841.0	$83,448,308	76	25
Local Road	lane-km	89.78	93.4	18,553,600	27	25
Street Lights	each	674	674	3,494,690	11	20
Sidewalks	square meter	36,378	37,255	3,539,252	14	30
Fleet and Equipment	total	N/A	32	9,127,245	7	5-20
Rural Culverts <3m	length (m)	19,184	18,630	15,078,073	47	50-80
Rural Catchbasins	each	912	360	1,636,000	50	90
Total Replacement Cost				**$134,877,168**		

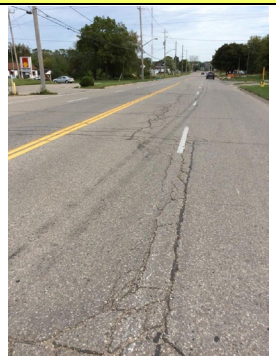
2.2 Condition Assessment Approach

The assessment approach for assets in this portfolio utilizes a combination of physical assessments, asset attributes, such as material, as well as established anticipated useful lives. Given the complexities and accessibility of some assets, not all assets allow for a visual or performance-based condition assessment. For assets which have not been visually inspected an age-based condition rating is being used based on anticipated useful lives.

The state of the collector and local road assets is determined based on the Pavement Condition Index (PCI), through a Road Needs Study completed every five years, with the next study due in 2026. The PCI is calculated from the Ride Comfort Rating (RCR) and the Distress Manifestation Index (DMI). The Ministry of Transportation developed a formula to determine the cumulative impacts of the various surface distresses, to determine the DMI for each road section. The higher the calculated DMI the better overall condition of the road surface.

The PCI tells us what the current condition of the road segment is and can help determine the rate of deterioration of that segment by comparing PCI values over time. It helps to identify immediate maintenance and rehabilitation requirements, as well as provide a base for establishing a long-term maintenance strategy. Table 2.2.1 illustrates how the PCI values align with the Township's standard condition scale.

Table 2.2.1 - PCI Score Ratings[3]

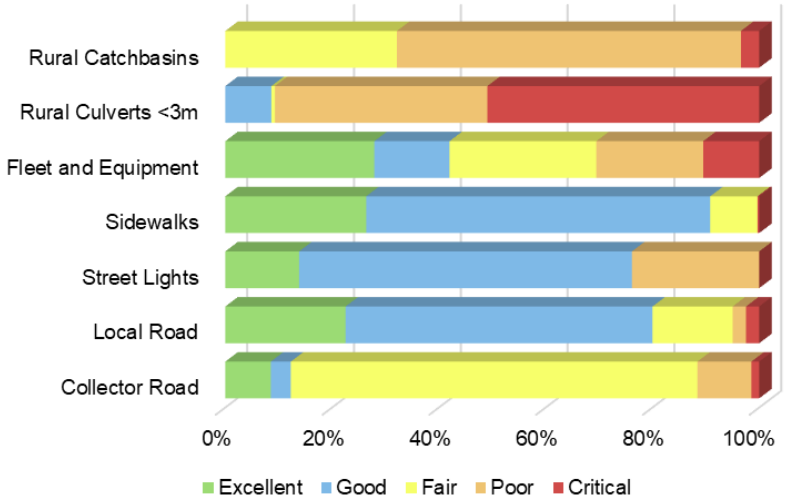
Asset Component	Excellent PCI Score of 85-100	Good PCI Score of 70-84	Fair PCI Score of 55-70	Poor PCI Score of 40-55	Critical PCI Score of 0-39
Collector and Local roads					

2.3 Current Condition

The condition profile is shown in table 2.3.1. The indicator measure in each condition is based on percentage of replacement costs as opposed to the number of assets.

Continued completion of lifecycle strategies identified through the Road Needs Study will help maintain the overall condition rating of the roads.

It should be noted that it is not sustainable or practical for the Township to maintain roadway assets to a level similar to the County, as the Townships roadways are considered lower class roads, seeing less traffic and therefore do not carry the same level of criticality as County or MTO roads.



[3] All assets are non-township assets and are general representations of the condition at the time the photo was taken. Assets may have undergone lifecycle strategies since the date of the image impacting its condition.

Gravel roads are generally maintained at a fair condition, and the last physical condition assessment completed on these segments was in 2019. The upcoming Roads Needs Study will inform updated condition ratings reflective of the segments physical condition.

Visual inspections were last completed on culverts with a span of less than 3m in 2008. A procedure will be developed to integrate staff physical inspections into updated condition ratings on a regular basis.

Table 2.3.1 – Condition Profile

Asset Component	Excellent	Good	Fair	Poor	Critical	Average Condition Rating	2024 Avg Condition Rating	Trend
Collector Road	9%	4%	76%	10%	1%	Poor	Poor	→
Local Road	23%	57%	15%	3%	2%	Good	Good	→
Street Lights	14%	62%	0%	24%	0%	Good	Good	→
Sidewalks	26%	65%	9%	0%	0%	Good	Good	→
Fleet and Equipment	28%	14%	28%	20%	10%	Fair	Fair	→
Rural Culverts <3m	0%	9%	1%	40%	50%	Poor	Poor	→
Rural Catchbasins	0%	0%	32%	65%	3%	Poor	Good	↓
Overall Total	**11%**	**15%**	**52%**	**14%**	**8%**			

3.0 Levels of Service

Corporate Objective

The objective of transportation services, which includes the collection of rural stormwater, is to ensure people and goods can move safely and efficiently throughout the Township, and to efficiently provide reliable stormwater services to protect the community from flooding. The inventory includes a number of assets located on boundary roads with neighbouring municipalities in which the Township and the neighbouring municipality share in the lifecycle costs. Service agreements are in place to ensure that service levels are maintained.

Legislative Requirements

Ontario Regulation 239/02[4] specifies the Maintenance Standards for Municipal Highways. It covers such items as, but not limited to, patrolling frequency, snow accumulation, potholes, and regulatory/warning signs and traffic signals. The level of service provided by the Township for winter maintenance meets the level required by Ontario Regulation 239/02.

Ontario does not currently have a regulation specifically for stormwater management. Under the Ontario Water Resources Act (OWRA) Section 53, stormwater infrastructure requires an Environmental Compliance Approval (ECA), formerly a Certificate of Approval (C of A), for its establishment, alteration, extension, and replacement. Operations, maintenance and reporting requirements are typically identified in ECA condition(s) if applicable.

Customer Levels of Service

The following statements form our qualitative descriptions of the customer level metrics required under O.Reg. 588/17.

- *The transportation network provides a safe and efficient multi-modal transportation system, which moves people and goods into and through the township while meeting the present and future needs of township residents and businesses.*
- *The stormwater network works to mitigate the risk of flooding throughout the township, in combination with Oxford County systems.*
- *A two-part analysis has been undertaken to determine properties resilient to the 100-year storm. Properties that have structures that lie within 1.5m of the 100-year floodline are considered not resilient. Outside of the 100-year flood line, overland flow routes were determined, ultimately directing runoff from the 100-year event to a downstream receiver. Where there are instances of sags in the road profile, all properties which front the road within the sag limits are considered as non-resilient. Also, properties which have an entrance leading to a structure at a lower elevation than the road grade is considered as non-resilient.*

[4] https://www.ontario.ca/laws/regulation/020239

As a further illustrative example of our community levels of service, maps are included as figure 3.1.2 showing the connectivity of our road network and figure 3.1.3 showing the resiliency to a 100-year storm.

Tables 3.0.1 and 3.0.2 includes metrics the Township has defined as required under the Infrastructure for Jobs and Prosperity Act, 2015 - O.Reg. 588/17. Included in Table 3.0.2, as required under the regulation, is the estimated performance for each metric over the upcoming 10-year period, based on the recommended financial strategy. A consistent annual target is not established as staff anticipate and plan for changes based on asset lifecycle strategies and ages.

Table 3.0.1 - Performance Measures

Key Service Attribute	Performance Measure	2022	2023	2024
Safety	# of lane-kilometers of collector roads as a proportion of square kilometers of land area of the municipality	840.7 lane-km to 532 km^2 of land area	840.7 lane-km to 532 km^2 of land area	841.0 lane-km to 532 km^2 of land area
	# of lane-kilometers of local roads as a proportion of square kilometers of land area of the municipality	89.8 lane-km to 532 km^2 of land area	89.8 lane-km to 532 km^2 of land area	93.5 lane-km to 532 km^2 of land area
	% of properties in municipality resilient to a 100-year storm	N/A	97.8%	98.0%
Quality	% of collector roads with surfaces in fair or better condition	37%	34%	21%
	% of local roads with surfaces in fair or better condition	90%	86%	78%
	Average Pavement Condition Index (for paved collector roads)	80.1	70.5	65.6
	Average Pavement Condition Index (for paved local roads)	85.0	79.1	80.3
	Average Surface Condition (for unpaved collector roads)	58.8	51.4	44.9
	Average Surface Condition (for unpaved local roads)	57.7	53.2	53.9

Key Service Attribute	Performance Measure	2022	2023	2024
Reliability	% of roads/paved surface area in poor or critical condition	53%	57%	62%
	% of other Transportation Assets in poor or critical condition	24%	20%	23%
	% of stormwater culverts in poor or critical condition	71%	95%	90%

Table 3.0.2 - Performance Measures with Estimated Performance

2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Roads – Hard Top											
QUALITY											
Average condition											
71%	67%	71%	70%	70%	70%	69%	69%	68%	69%	68%	69%
RELIABILITY											
% of assets in poor or critical condition											
14%	21%	23%	25%	20%	19%	17%	15%	19%	18%	16%	15%
Transportation - Other											
QUALITY											
Average condition											
64%	62%	60%	58%	57%	55%	54%	53%	52%	51%	51%	51%
RELIABILITY											
% of assets in poor or critical condition											
14%	24%	25%	26%	25%	27%	26%	22%	26%	29%	28%	31%

Figure 3.1.2 Road Network Connectivity

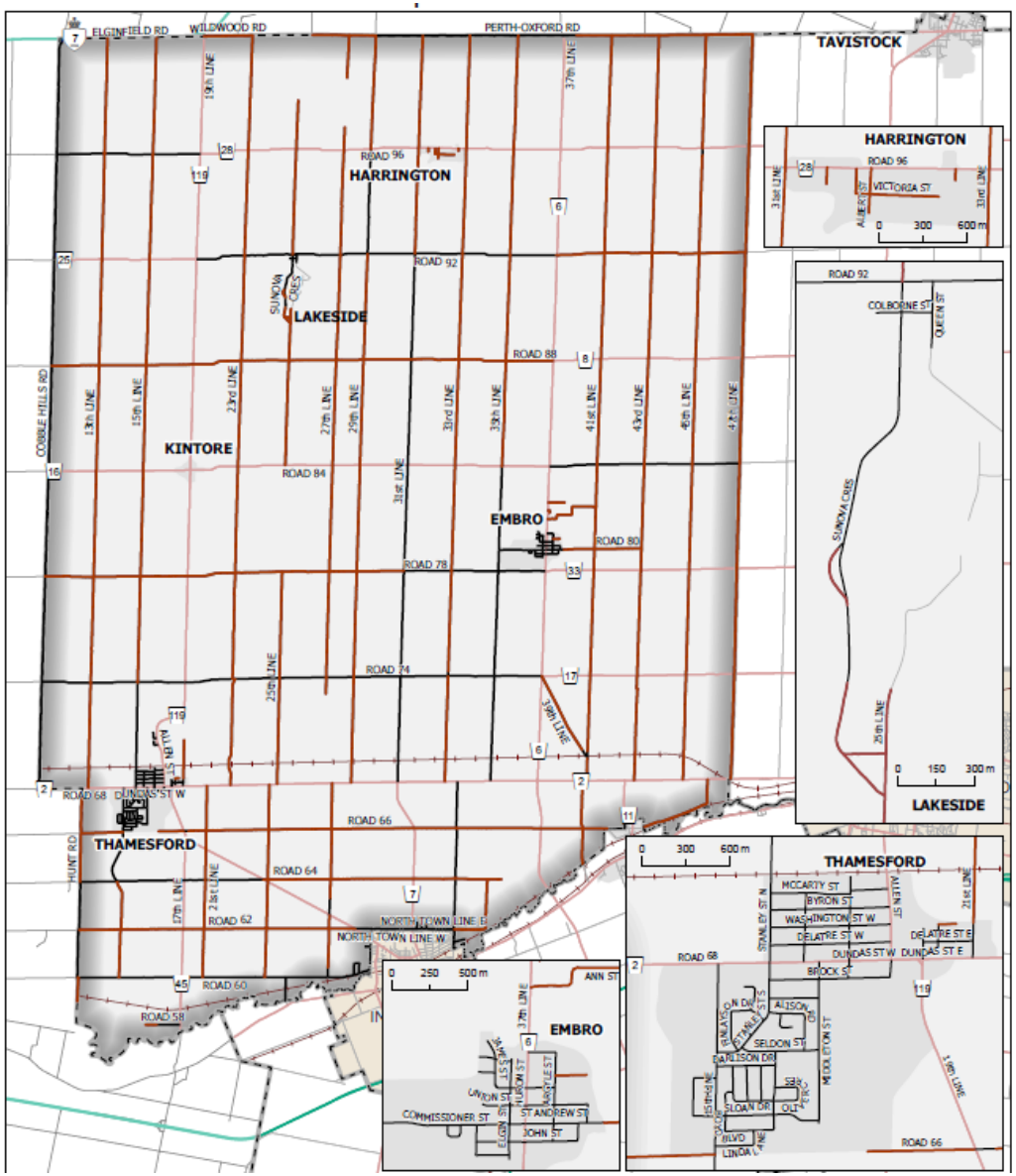
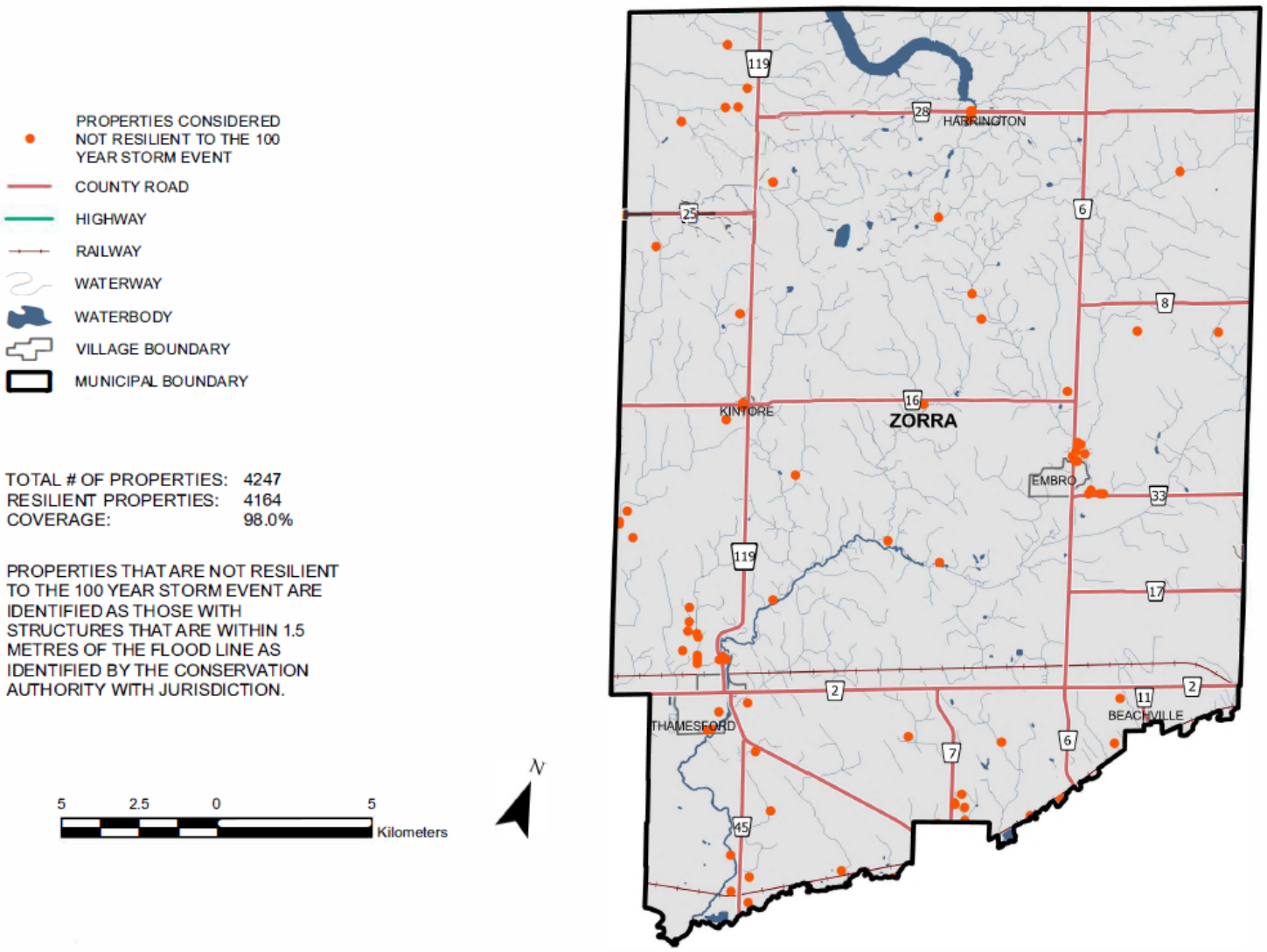


Figure 3.1.3 100-Year Storm Resiliency



4.0 Asset Management Strategy

4.1 Lifecycle Activities and Planned Actions

The Township has developed various maintenance strategies depending on the asset component and type of surface. These strategies align with the Road Needs Study.

Routine maintenance requires minimal effort to maintain the useful life of our road network. Safety critical elements are identified during the inspection process to determine if any assets are in need of immediate repair. All safety concerns are addressed in alignment with minimum maintenance standard requirements.

The most effective improvement in a road's useful life can be achieved by completing rehabilitations while the roadway has a PCI between 45 and 65. Although PCI is a measure of the overall condition of the roadway surface, other factors are considered when prioritizing maintenance.

Stormwater collection assets undergo regular maintenance and inspection. Replacement needs are based on a run to failure strategy, which is typically the most economical. Township staff will continue to monitor industry trends and best practices, evaluating any lifecycle activities to determine the value in implementing them.

Weather factors and actual traffic flow will also influence the actual life achieved. Processes are seamlessly integrated with the renewal requirements of other assets, including drinking water and wastewater systems. By taking this comprehensive approach, we ensure that our renewal projects in these service areas are executed with optimal timing, maximizing value while minimizing disruption to our communities.

Examples of lifecycle activities considered in the overall sustainable management of this portfolio are described in table 4.1.1.

Table 4.1.1 - Lifecycle Activities

Strategy	Lifecycle Activity
Non-Infrastructure Solutions	• Climate change planning • Roads needs study • CCTV Inspections **Trigger: Ongoing**
Maintenance	• Pothole repairs • Catchbasin cleaning **Trigger: Ongoing**
Rehabilitation / Renewal	• Partial depth asphalt removal / repaving **Trigger: PCI between 45 and 65, Fair/Poor**
Replacement	• Occurs at the end of the useful life and/or when rehabilitation is no longer an option • May also occur to increase service levels **Trigger: PCI < 50, Poor/Critical**
Disposal	• Activities associated with disposing of an asset once it has reached the end of its useful life **Trigger: Poor/Critical**
Expansion / Growth	• New roads as part of subdivision development **Trigger: Development/Storm Resiliency**

4.2 Risk Strategy

For this portfolio the probability of failure is based on the projected condition. The consequence of failure for roads contains economic consequences (weighted at 60% of the overall consequence scoring) and social consequences (weighted at 40% of the overall consequence scoring). For the remaining assets, the consequence of failure is currently based only on the replacement cost of the asset. Staff are working to further enhance the risk profiles as not all attributes recommended for inclusion are currently tracked within the asset management systems.

Table 4.2.1 illustrates the risk ratings at a summary level. Most assets within this portfolio have minor or insignificant consequences in the event of a failure; assets may be replaced within a short timeframe at a low cost and may be able to be completed utilizing internal staff. Staff will continue to monitor high risk assets, review and/or complete physical inspections to further validate needs and plan for lifecycle strategies accordingly.

Table 4.2.1 - Risk Profile

Asset Component	Severe	Major	Moderate	Minor	Insignificant	Average Risk Rating	2024 Avg Risk Rating	Trend
Collector Road	1%	12%	5%	4%	78%	Insignificant	Minor	↓
Local Road	0%	6%	8%	34%	52%	Insignificant	Insignificant	→
Street Lights	0%	40%	20%	0%	40%	Moderate	Minor	↑
Sidewalks	0%	0%	0%	16%	84%	Insignificant	Insignificant	→
Fleet and Equipment	17%	25%	10%	8%	40%	Moderate	Minor	↑
Culverts <3m	7%	9%	8%	35%	41%	Minor	Minor	→
Catchbasins	0%	0%	0%	3%	97%	Insignificant	Insignificant	→

4.3 Climate Change

As part of the asset management planning process, the township will consider the risks and vulnerabilities of capital assets to climate change and the resulting actions that may be required. Commitment will be made to the development of tailored actions that make the best use of our resources to mitigate and adapt to climate change (including sizing stormwater infrastructure to ensure resilience to future storms), in accordance with our local reduction targets, financial capacity and stakeholder support. Transportation assets are directly exposed to the events and impacts of climate change. The Winter Control section of Roads Maintenance Standards is dedicated to maintaining roads during winter events from minor snowfalls to ice storms. The Township manages a fleet of specialized vehicles and equipment to provide winter control services. Other weather events, such as substantial amounts of rainfall, can rapidly impact the function and condition of a roadway.

Climate Risks

- Potential increased maintenance and replacement costs as durability and anticipated life decrease with more severe weather events.
- Potential service disruption and increased damage due to more frequent and severe weather events.

Climate Adaptation Measures

- Commitment to the utilization of tools, guidelines, and standards as published by Provincial, Federal and/or other regulatory agencies, and included as design criterion for renewal/replacement projects, while considering affordability and co-benefits.
- Incorporate technology and best practices in the design, construction and maintenance of roadways to minimize service disruption and increase resiliency.

Climate Mitigation Opportunities

- Explore further opportunities for greenhouse gas reductions and improving energy performance.
- Assess embodied carbon of materials used in projects and explore opportunities to use materials and construction methods with lower embodied carbon.

5.0 Financial Strategy

The proposed levels of service analysis were conducted in two stages: the first focused on the roadway assets, and the second covered all other transportation assets. This approach allowed for an analysis of the roadway assets based on the Pavement Condition Index (PCI). The recommendations from both reviews are then used to inform the development of the overarching financial strategy. The 2025 budgeted contribution to reserves and reserve balances were split between the two reviews based on the needs of the fully funded scenarios. The financial strategy and scenarios exclude rural storm and gravel roads. Gravel roads maintenance and a significant portion of the rural storm infrastructure is currently funded form the operating budget.

5.1 Proposed Levels of Service Review (Roads)

Staff reviewed multiple scenarios over a 50-year period as many rural road replacements are forecasted in the 50 to 100 year range and the Township is still investigating the needs and costs of complete rural road replacements, which would include all granulars.

Scenarios B, C and D were initially run using unlimited resources to achieve lifecycle needs. Staff then took the average investment requirement to create a subsequent scenario utilizing the investment as the restriction. The result is a realistic expectation of what can be achieved on an annual basis in maintaining the long-term system needs.

Scenario A

This scenario is based on the 2025 budgeted contribution to the Roads reserve of approximately $1,066,000 representing approximately 60% funded based on lifecycle needs. This includes the Township's anticipated annual Ontario Community Infrastructure Fund (OCIF) grant. The funding level results in an overall average condition of fair, the highest number of assets in poor or critical condition and significant lifecycle needs would be deferred increasing the risk of failure. Staff do not feel this level of funding results in a sustainable service over the long-term.

Scenario B

This scenario is considered the fully funded scenario and results in maintaining a 73 Pavement Condition Index value (PCI) which is considered good condition. This scenario results in the lowest risk, and lowest achievable percentage of assets in poor or critical condition over the 50-year scenario period.

Scenario C

This scenario is based on maintaining a 65 PCI which is considered fair condition. This scenario results in a slightly improved risk and a lower percentage of assets in poor or critical condition than Scenario A.

Scenario D

This scenario is based on maintaining a 70 PCI which is considered good condition. This scenario results in improved risk and a decreased percentage of assets in poor or critical condition than Scenario A.

Based on the analysis, staff are recommending Scenario D. The proposed level of service is maintained at an average PCI of 70, which results in an annual investment level of approximately $1.51 million. This recommendation is in line with the 2025 Budget Survey responses where 80% of respondents indicated that the service levels related to Township roads should be maintained or enhanced.

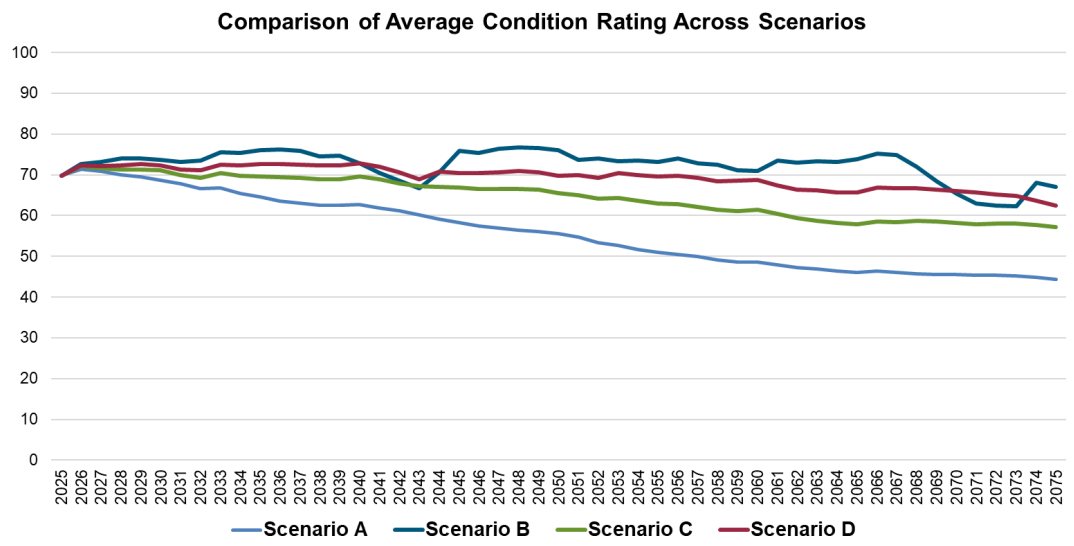


Table 5.1.1 – Scenario Summary

	Annual Investment	Average Condition	Average Risk	% of assets in poor or critical condition
Scenario A	$1,066,000	Fair	Moderate	38%
Scenario B	1,786,000	Good	Minor	15%
Scenario C	1,391,000	Fair	Moderate	26%
Scenario D	**1,567,000**	**Good**	**Minor**	**19%**

PROPOSED SERVICE LEVEL DEFICIT $0.5 MILLION

5.2 Proposed Levels of Service Review (Transportation Other)

Staff reviewed multiple scenarios over a 100-year period as described below. The assets reviewed include all fleet and equipment, as well as sidewalks and street lights. The current reserve balance is factored into each scenario as available funding to complete existing asset lifecycle needs.

Scenario A

This scenario is based on the 2025 budgeted contribution to the Roads Vehicle and Equipment reserve of approximately $566,000 representing approximately 60% funded based on lifecycle needs. The funding level results in an overall average condition of poor, the highest number of assets in poor or critical condition and significant lifecycle needs would be deferred increasing the risk of failure. Staff do not feel this level of funding results in a sustainable service over the long-term.

Scenario B

This is considered the fully funded scenario, resulting in an overall average condition of fair, the lowest risk, and lowest achievable percentage of assets in poor or critical condition over the 100-year scenario period.

Scenario C

Under this scenario staff looked at targeting an annual contribution to the reserve of 70% of the fully funded scenario or approximately $679,000 annually over the 100-year period. The increased funding would still result in an average condition of the portfolio of fair. Deferral of lifecycle needs would still be required under this scenario.

Scenario D

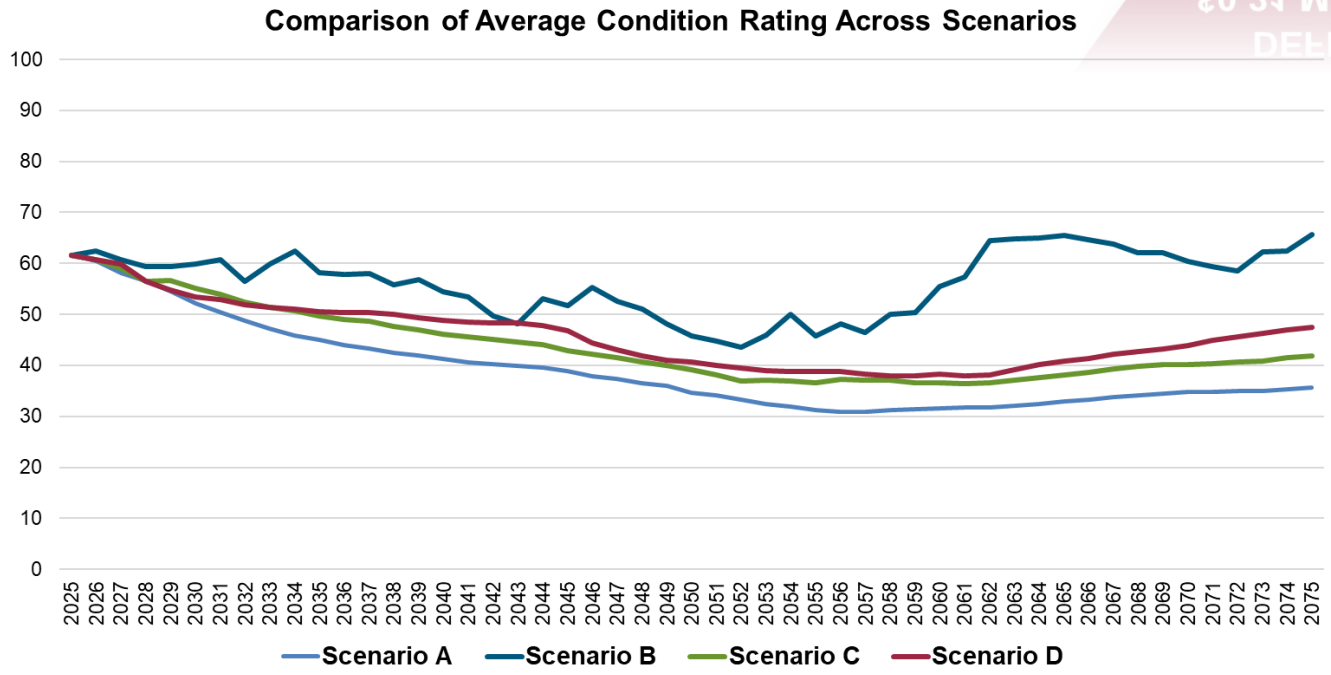
Under this scenario staff looked at targeting an annual contribution to the reserve of 80% of the fully funded scenario or approximately $776,000 annually over the 100-year period. The increased funding would result in the overall average condition of the portfolio to be fair, reducing the risk level from the current budget. Deferral of some lifecycle needs may still be required under this scenario.

Based on the analysis, staff are recommending Scenario D, the proposed level of service target is 80% funded. Staff review replacement costs for each budget for all assets under this portfolio. This approach should result in fewer significant replacement cost increases with a reduced need for significant increases over the annual investment requirement. Through the budget survey, residents provide input on forward facing services. Fleet and equipment are crucial to the efficient delivery of forward-facing services.

Table 5.2.1 – Scenario Summary

	Annual Investment	Average Condition	Average Risk	% of assets in poor or critical condition
Scenario A	$566,000	Poor	Moderate	53%
Scenario B	967,000	Fair	Minor	30%
Scenario C	677,000	Fair	Moderate	48%
Scenario D	**774,000**	**Fair**	**Minor**	**42%**

PROPOSED SERVICE LEVEL DEFICIT $0.21 MILLION

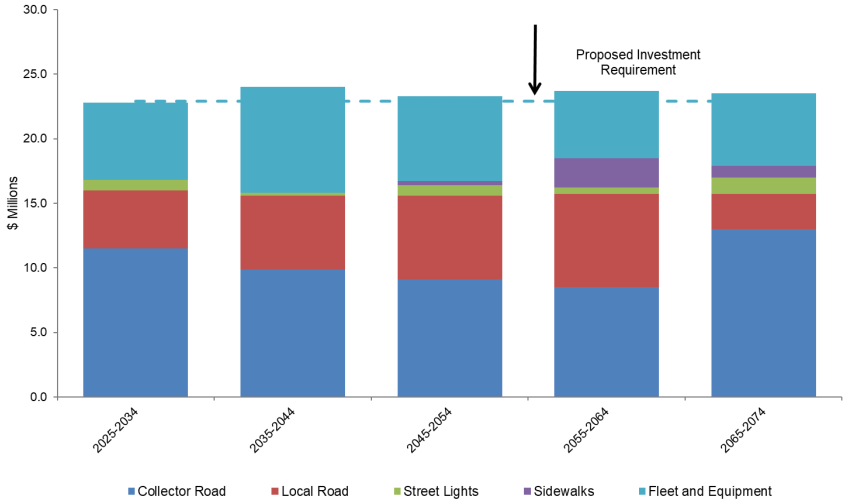


5.3 Lifecycle Requirements

Based on the proposed level of service, the cost estimates to support the lifecycle needs over the next 50 years are determined in current dollars as summarized in Table 5.3.1.

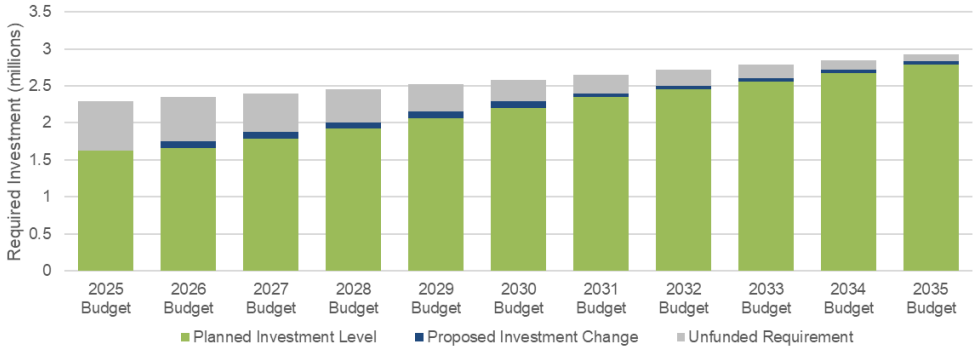
Table 5.3.1 - Lifecycle Requirements (millions)

Asset Component	2025-2034	2035-2044	2045-2054	2055-2064	2065-2074
Collector Road	$11.5	$9.9	$9.1	$8.5	$13.0
Local Road	4.5	5.7	6.5	7.2	2.7
Street Lights	0.8	0.2	0.8	0.5	1.3
Sidewalks	0	0	0.3	2.3	0.9
Fleet and Equipment	6.0	8.2	6.6	5.2	5.6
Totals	**$22.8**	**$24.0**	**$23.3**	**$23.7**	**$23.5**



5.4 Funding Gap Analysis

This portfolio is funded by an annual contribution to the Roads and Roads Vehicle and Equipment reserves and the use of Ontario Community Infrastructure Funding (OCIF).



Planned Investment Level

An estimated inflationary rate is used in Table 5.4.1 below in both the required investment and planned investment figures.

Proposed Investment Change

A reallocation of the current Infrastructure Capital Levy Reserve of $538,000 will occur from 2026-2031. Additional increases of $41,600 for Transportation Other assets are being proposed between 2026-2030, while increases of $50,100 for Roads assets are being proposed until 2034. In total, these increases will account for 0.7% on the 2025 levy until 2030, and 0.41% increase from 2031-2034. Staff will continue to monitor actual rates of inflation to determine if changes to the level of service or funding strategy should be considered in response to changing economic conditions.

Table 5.4.1 – Comparing the required investment to the proposed investment (millions)

	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Required Investment	$2.29	$2.35	$2.40	$2.46	$2.53	$2.59	$2.65	$2.72	$2.79	$2.86
Planned Investment Level	1.63	1.66	1.79	1.92	2.06	2.20	2.35	2.45	2.56	2.67
Proposed Investment Change	-	0.09	0.09	0.09	0.09	0.09	0.05	0.05	0.05	0.05
Unfunded Requirement	0.66	0.60	0.52	0.45	0.37	0.29	0.25	0.22	0.18	0.13

Based on the funding strategy proposed, the lifecycle needs to be reviewed in preparation of the long term capital plan for the 2026 Business Plan and Budget process are as follows:

Table 5.4.2 - Lifecycle Requirements (millions)

Asset Component	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Collector Road	$1.05	$1.07	$1.07	$1.20	$1.30	$0.84	$0.41	$1.21	$1.03	$1.00
Local Road	0.06	0.10	0.15	0.07	0.02	0.53	1.01	0.26	0.49	0.57
Street Lights	-	-	-	-	-	-	-	0.16	0.67	-
Sidewalks	0.01	-	-	-	-	-	-	-	-	-
Fleet and Equipment	0.58	0.51	0.68	0.60	0.74	0.77	0.75	0.62	0.05	0.74
Totals	**$1.70**	**$1.68**	**$1.90**	**$1.87**	**$2.06**	**$2.14**	**$2.17**	**$2.25**	**$2.24**	**$2.31**

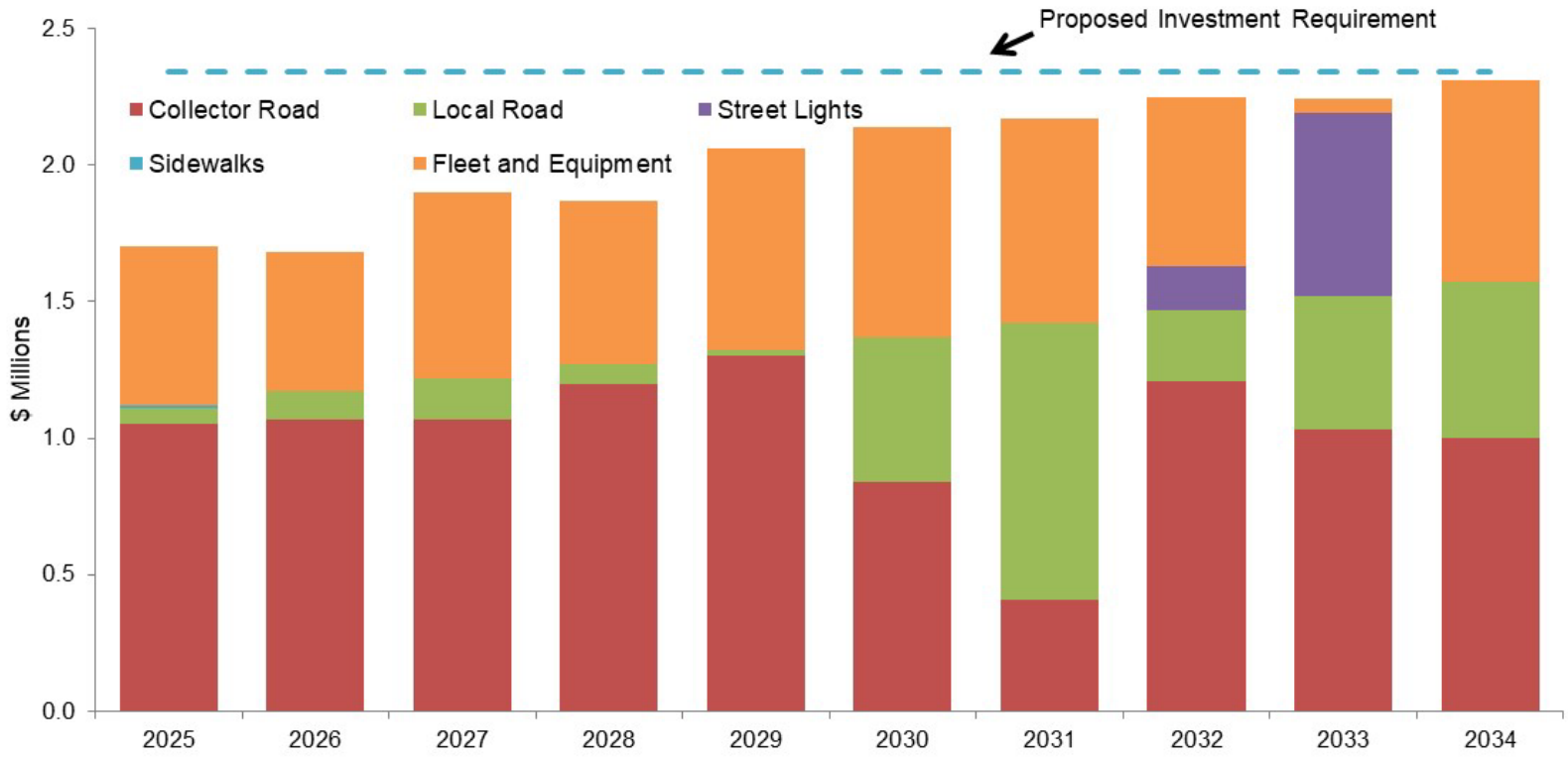


Table of Contents

1.0 Introduction

Zorra township maintains an urban[1] stormwater system in the villages of Embro and Thamesford. This stormwater infrastructure is funded through an urban stormwater levy and was therefore separated to be its own appendix for this AMP. This diverse stormwater network is comprised of natural and built environments. Due to the interconnected nature of stormwater assets throughout Oxford County, analysis on stormwater flows is completed holistically and was included as part of Appendix B. Rural stormwater assets are included in Appendix B and are mostly funded through the operating budget.

Urban stormwater assets are categorized into various components, each tailored to different life spans and maintenance strategies; culverts with spans less than 3 meters, catchbasins, catchbasin leads, and storm mains.

Like many of our assets, our stormwater assets are facing increased challenges as a result of climate fluctuations, increased replacement costs, and increasing demand due to growth in our communities. Our investment in these assets must therefore be balanced to optimize investment for renewal with the growing needs of our community.

The quality and completeness of the data used in this plan as indicated in Table 1.0.1, relies on inventory and assessments of urban stormwater infrastructure by Public Works staff, along with final subdivision plans provided by developers. Additional enhancements to the attributes used for assessing risk are required, along with other improvement areas as indicated in Table 1.0.2.

Table 1.0.1 – Data Confidence

		Risk	AM Data Analysis			
Asset Component	**Inventory Completeness**	**Attribute Data**	**Service Life**	**Age**	**Condition**	**Replacement Cost**
Culverts <3m	C	B	B	C	B	B
Catchbasins	B	B	B	B	B	B
Catchbasin Lead	B	B	B	A	B	B
Storm Main	A	B	B	A	B	B
Storm Management Facilities	A	B	B	B	B	B

[1] The villages of Embro and Thamesford are not considered urban as part of the County of Oxford's Official Plan

Table 1.0.2 – Status of improvement opportunities

Improvement Opportunity	Year Identified	Status	Notes
Update attributes to further enhance the risk profile in the Township's asset management software.	2025	New	Improvement to be pursued in conjunction with Township staff.
Establish a procedure for integrating consultant and staff asset inspections into the condition rating process.	2025	New	Develop an inventory and condition process for urban and rural storm infrastructure.
Establish a culvert inspection program.	2025	New	Establish a process to ensure the condition and approximate age of rural culverts are captured within the asset management software.
Investigate establishing an interest bearing reserve for storm infrastructure.	2025	New	This will be a consideration of the update to the reserve policy going to Council in 2025.

2.0 State of Assets

2.1 Inventory

Table 2.1.1 displays Zorra's current inventory and the associated replacement costs, average age and anticipated useful life for each component.

The replacement cost valuation of stormwater components relies on current tender prices, where available. These replacement values assume that work is completed concurrently with other lifecycle projects, such as road rehabilitation and the replacement of linear water and wastewater assets owned by Oxford County.

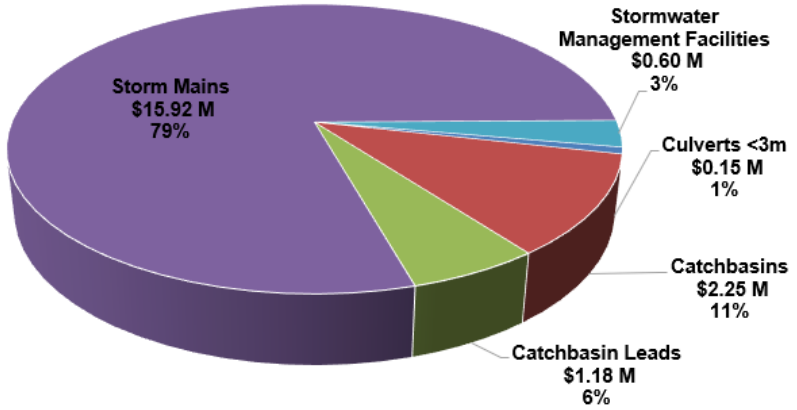


Table 2.1.1 - Inventory

Asset Component	Unit	Current Inventory	Replacement Cost	Average Age (years)	Anticipated Useful Life (years)
Culverts <3m	length (m)	363	$150,361	39	50-80
Catchbasins	each	559	2,250,000	15	90
Catchbasin Leads	length (m)	2,439	1,182,867	15	90
Storm Mains	length (m)	18,901	15,924,175	14	90
Stormwater Management Facilities	square meter	41,575	600,000	9	90
Total Replacement Cost			**$20,107,403**		

2.2 Condition Assessment Approach

The assessment approach for the assets in this portfolio utilizes a combination of physical assessments, asset attributes, such as material, as well as established anticipated useful lives. Given the complexities and accessibility of some assets, not all assets allow for a visual or performance-based condition assessment. For assets which have not been visually inspected an age-based condition rating is being used based on anticipated useful lives.

The Pipeline Assessment Certificate Program (PACP) is the North American Standard for pipeline defect identification and assessment[2]. Closed-circuit television (CCTV) is the principal method of inspecting drains and sewers. In this process, a small robotic crawler vehicle with the CCTV camera attached is lowered into the pipe to complete the inspections. A structural rating, on a scale of 0-5, is assigned using sewer condition assessment standards, with 0 representing an asset with minimal structural deficiencies and 5 representing assets on the verge of failure. Table 2.2.1 illustrates how the PACP score ratings align with the standard condition scale.

The township has conducted CCTV inspections of its storm mains when assets were being replaced in the mid to late 2000s. Future CCTV work would be done on an as-needed bases, primarily when considering reconstruction projects. Due to a lack of sewer ratings, the age and material of the assets are used to assign conditions to our stormwater network assets.

Table 2.2.1 – PACP Score Ratings[3]

Asset Component	**Excellent** PACP Score of 0 or 1	**Good** PACP Score of 2	**Fair** PACP Score of 3	**Poor** PACP Score of 4	**Critical** PACP Score of 5
Storm Main					

[2] https://www.nassco.org/content/pipeline-assessment-pacp
[3] All images are of non-township owned assets and are general representations of the condition at the time the photo was taken.

2.3 Current Condition

The indicator measure in each condition is based on percentage of replacement costs as opposed to the number of assets.

Visual inspections were last completed on culverts with a span of less than 3m in 2008. A procedure will be developed to integrate staff physical inspections into the condition rating to provide updated condition ratings on a regular basis.

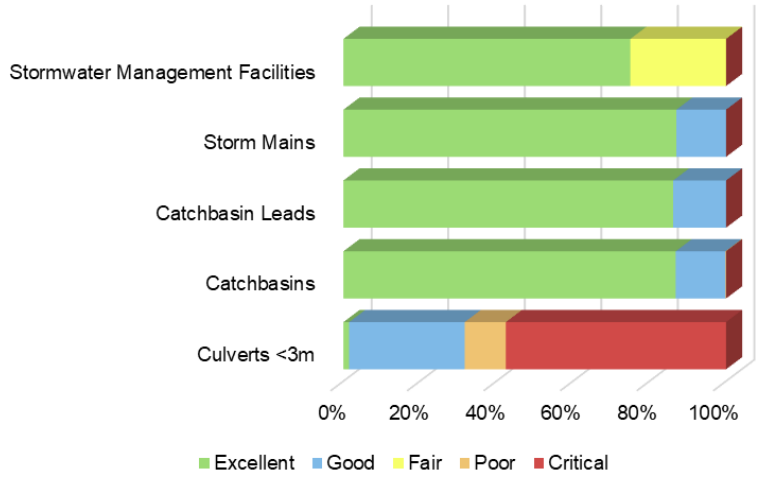


Table 2.3.1 – Condition Profile

Asset Component	Excellent	Good	Fair	Poor	Critical	Average Condition Rating	2024 Avg Condition Rating	Trend
Culverts <3m	1%	30%	0%	11%	58%	Critical	Poor	↓
Catchbasins	87%	13%	0%	0%	0%	Excellent	Excellent	→
Catchbasin Leads	86%	14%	0%	0%	0%	Excellent	Excellent	→
Storm Mains	87%	13%	0%	0%	0%	Excellent	Excellent	→
Stormwater Management Facilities	75%	0%	25%	0%	0%	Excellent	Excellent	→
Overall Total	**86%**	**13%**	**1%**	**0%**	**0%**			

3.0 Levels of Service

Corporate Objective

The objective of transportation services, which includes the collection of stormwater, is to ensure people and goods can move safely and efficiently throughout the Township, and to efficiently provide reliable stormwater services to protect the community from flooding. The inventory includes a number of assets located on boundary roads with neighbouring municipalities in which the Township and the neighbouring municipality share in the lifecycle costs. Service agreements are in place to ensure that service levels are maintained.

Legislative Requirements

Ontario does not currently have a regulation specifically for stormwater management. Under the Ontario Water Resources Act (OWRA) Section 53, stormwater infrastructure requires an Environmental Compliance Approval (ECA), formerly a Certificate of Approval (C of A), for its establishment, alteration, extension, and replacement. Operations, maintenance and reporting requirements are typically identified in ECA condition(s) if applicable.

Customer Levels of Service

The following statements form our qualitative descriptions of the customer level metrics required under O.Reg. 588/17.

- *The stormwater network works to mitigate the risk of flooding throughout the township, in combination with Oxford County systems.*
- *Stormwater infrastructure, which is resilient to the 5-year storm, will be considered as any township stormwater main which has been designed to convey/treat/detain runoff from storm events up to the 5-year event.*

Tables 3.0.1 and 3.0.2 includes metrics the county has defined as required under the Infrastructure for Jobs and Prosperity Act, 2015 - O.Reg. 588/17. Included in Table 3.0.2, as required under the regulation, is the estimated performance for each metric over the upcoming 10-year period, based on the recommended financial strategy. A consistent annual target is not established for this portfolio as staff anticipate and plan for changes based on asset lifecycle strategies and ages.

Table 3.0.1 - Performance Measures

Key Service Attribute	Performance Measure	2022	2023	2024
Safety	% of the municipal stormwater management system resilient to a 5-year storm	-	95.8%	95.8%
Reliability	% of storm mains in poor or critical condition	0%	0%	0%
	% of stormwater culverts in poor or critical condition	81%	92%	68%

Table 3.0.2 - Performance Measures with Estimated Performance

2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
QUALITY											
Average condition											
85%	84%	83%	82%	81%	79%	78%	77%	76%	75%	74%	73%
RELIABILITY											
% of assets in poor or critical condition											
0%	0%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%

4.0 Asset Management Strategy

4.1 Lifecycle Activities and Planned Actions

The Township has developed various maintenance strategies depending on the asset component and type of surface.

Routine maintenance requires minimal effort to maintain the useful life of our stormwater infrastructure. Stormwater collection assets undergo regular maintenance and inspection. In analysing capital works projects, decisions regarding the replacement or relining of stormwater pipes are carefully considered.

Weather factors and actual traffic flow will also influence the actual life achieved. Processes are seamlessly integrated with the renewal requirements of other assets, including roads, drinking water and wastewater systems. By taking this comprehensive approach, we ensure that our renewal projects in these service areas are executed with optimal timing, maximizing value while minimizing disruption to our communities.

Examples of lifecycle activities considered in the overall sustainable management of this portfolio are described in table 4.1.1.

Table 4.1.1 - Lifecycle Activities

Strategy	Lifecycle Activity
Non-Infrastructure Solutions	• Climate change planning • CCTV Inspections **Trigger: Ongoing**
Maintenance	• Catchbasin cleaning **Trigger: Ongoing**
Rehabilitation / Renewal	• Storm main lining **Trigger: Fair/Poor**
Replacement	• Occurs at the end of the useful life • May also occur to increase service levels **Trigger: Poor/Critical**
Disposal	• Activities associated with disposing of an asset once it has reached the end of its useful life **Trigger: Poor/Critical**
Expansion / Growth	• New storm sewers as part of subdivision development • Storm main upsizing to accommodate increased storm resiliency **Trigger: Development/Storm Resiliency**

4.2 Risk Strategy

For this portfolio the probability of failure is based on the projected condition. The consequence of failure is currently based on the replacement cost of the asset. Staff are working to further enhance the risk profiles as not all attributes recommended for inclusion are currently tracked within the asset management systems.

Table 4.2.1 illustrates the risk ratings at a summary level. Staff will continue to monitor high risk assets, review and/or complete physical inspections to further validate needs and plan for lifecycle strategies accordingly.

Table 4.2.1 - Risk Profile

Asset Component	Severe	Major	Moderate	Minor	Insignificant	Average Risk Rating	2024 Avg Risk Rating	Trend
Culverts <3m	0%	0%	0%	59%	41%	Minor	Minor	➔
Catchbasins	0%	0%	0%	0%	100%	Insignificant	Insignificant	➔
Catchbasin Lead	0%	0%	0%	0%	100%	Insignificant	Insignificant	➔
Storm Main	0%	0%	0%	0%	100%	Insignificant	Insignificant	➔
Storm Management Facilities	0%	0%	0%	25%	75%	Insignificant	Insignificant	➔

4.3 Climate Change

As part of the asset management planning process, the township will consider the risks and vulnerabilities of capital assets to climate change and the resulting actions that may be required. Commitment will be made to the development of tailored actions that make the best use of our resources to mitigate and adapt to climate change (including sizing stormwater infrastructure to ensure resilience to future storms), in accordance with our local reduction targets, financial capacity and stakeholder support. Stormwater assets are directly impacted by climate change, such as flooding due to significant rainfall. The repair, renewal and replacement of stormwater assets consider the following climate risks, adaptation, and mitigation opportunities.

Climate Risks

- Potential increased infrastructure and property damage and risk to public safety as more frequent and severe weather events increase risk in flood susceptible areas.
- Increased occurences of flooding events and potential for adverse environmental impacts to natural water courses/water bodies (erosion, sediment loading, destruction of habitat).

Climate Adaptation Measures

- Designing and implementing measures to minimize future storm impacts with green infrastructure and low impact development facilities that reduce and treat stormwater.
- Increasing the capacity of the minor drainage system in areas that experience flooding problems and bottlenecks in trunk systems by up-sizing the storm sewers
- Consider implementation of end of pipe facilities to reduce adverse environmental impact to natural water courses.

Climate Mitigation Opportunities

- Explore further opportunities for greenhouse gas reductions and improving energy performance.

5.0 Financial Strategy

5.1 Proposed Levels of Service Review

Staff reviewed multiple scenarios over a 100-year period to ensure assets with long useful lives were incorporated in the analysis. The current reserve balance is factored into each scenario as available funding to complete existing asset lifecycle needs. The recommended scenario is used to inform the development of the overarching financial strategy.

It is important to note that under each scenario replacements are generally not needed until 2092 when the vast majority of infrastructure will need to be replaced over a ten year period. Under all scenarios, except for Scenario B, these replacements are deferred beyond their estimated end of life.

Scenario A

This scenario is based on the 2025 budgeted contribution to the Urban Storm Management reserve of approximately $109,000 representing approximately 51% funded based on lifecycle needs. The funding level results in an overall average condition of fair, the highest number of assets in poor or critical condition and significant lifecycle needs would be deferred increasing the risk of failure.

Scenario B

Staff initially ran this scenario assuming unlimited resources to achieve the lifecycle needs of all assets in this portfolio. This generated an average annual requirement of approximately $207,000, which staff used to re-run the analysis. The result is a realistic expectation of what can be achieved on an annual basis in maintaining the long-term lifecycle needs. This is considered the fully funded scenario, resulting in the lowest risk, and lowest achievable percentage of assets in poor or critical condition over the 100-year scenario period.

Scenario C

Under this scenario staff looked at targeting an annual contribution to the reserve of 60% of the fully funded scenario or approximately $123,000 annually over the 100-year period. The increased funding would still result in an average condition of the portfolio of fair. Deferral of lifecycle needs would still be required under this scenario.

Scenario D

Under this scenario staff looked at targeting an annual contribution to the reserve of 70% of the fully funded scenario or approximately $144,000 annually over the 100-year period. This funding level results in an average condition of fair. Deferral of some lifecycle needs would still be required under this scenario.

Based on the analysis, staff are recommending Scenario C, the proposed level of service target is to achieve 60% funding for this portfolio which results in an annual investment level of approximately $123,000. This recommendation is in line with the 2025 Budget Survey responses where 80% of respondents indicated that the service levels related to Township roads should be maintained or enhanced.

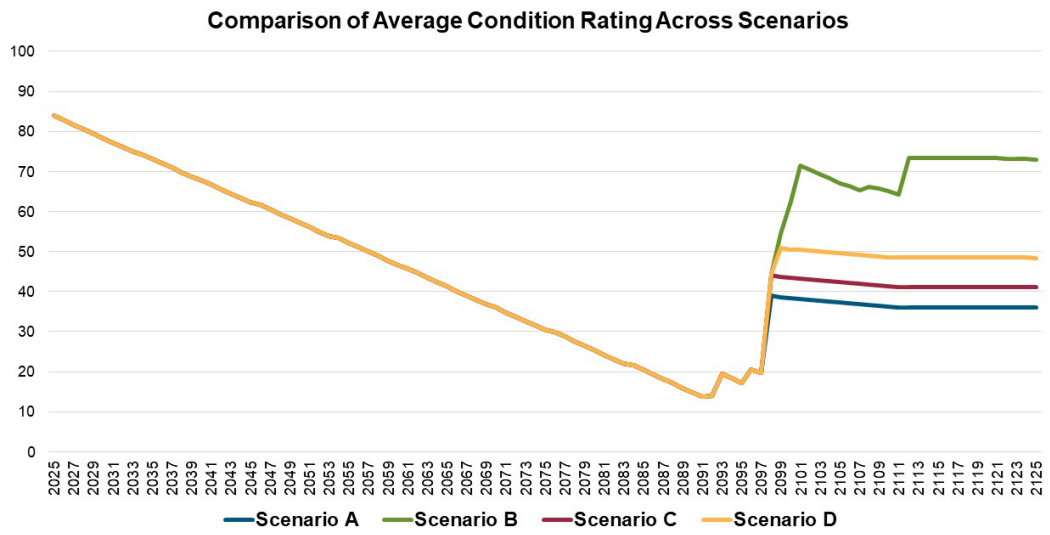


Table 5.1.1 – Scenario Summary

	Annual Investment	Average Condition	Average Risk	% of assets in poor or critical condition
Scenario A	$109,000	Fair	Insignificant	46%
Scenario B	207,000	Fair	Insignificant	36%
Scenario C	**123,000**	**Fair**	**Insignificant**	**45%**
Scenario D	144,000	Fair	Insignificant	42%

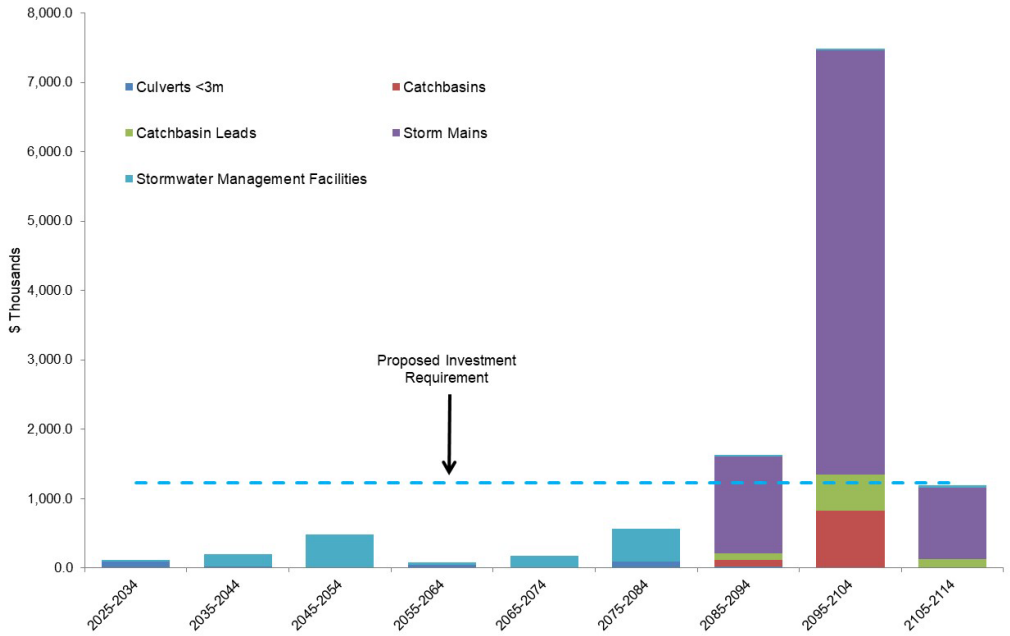
PROPOSED SERVICE LEVEL DEFICIT $0.01 MILLION

5.2 Lifecycle Requirements

Based on the lifecycle strategies identified to achieve proposed levels of service, the financial estimates over the next 100-years are determined in current dollars and summarized in Table 5.2.1.

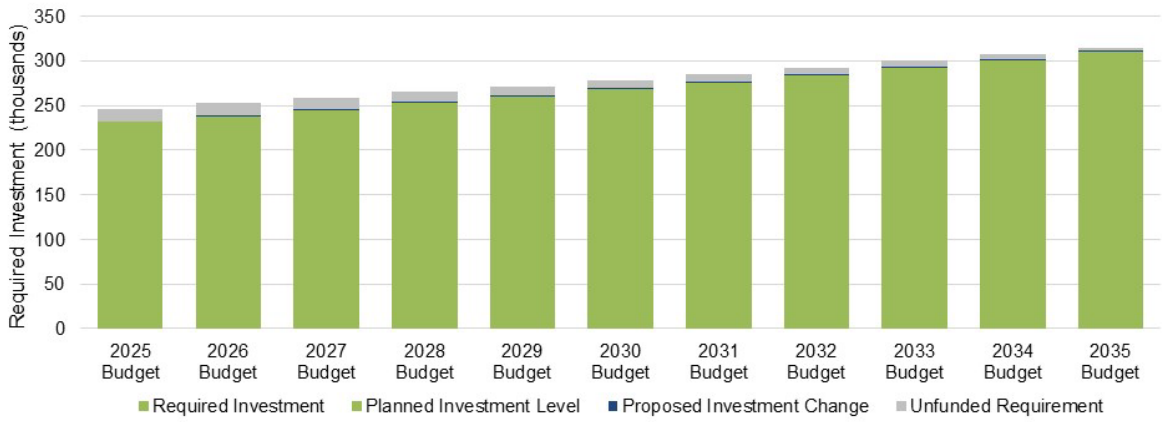
Table 5.2.1 - Lifecycle Requirements (thousands)

Asset Component	2025-2034	2035-2044	2045-2054	2055-2064	2065-2074	2075-2084	2085-2094	2095-2104	2105-2114	2115-2124
Culverts <3m	$88.8	$16.2	$-	$45.4	$-	$88.8	$16.2	$-	$-	$22.0
Catchbasins	-	-	4.0	-	-	-	104.0	824.0	7.5	7.5
Catchbasin Leads	-	-	-	-	-	-	88.2	517.7	121.6	106.5
Storm Mains	-	-	-	-	-	-	1,393.7	6,119.1	1,030.8	1,024.0
Stormwater Management Facilities	30.0	180.0	480.0	30.0	180.0	480.0	30.0	22.5	30.0	22.5
Totals	**$118.8**	**$196.2**	**$484.0**	**$75.4**	**$180.0**	**$568.8**	**$1,632.1**	**$7,483.3**	**$1,189.9**	**$1,182.5**



5.3 Funding Gap Analysis

The lifecycle needs for this portfolio are currently funded by an annual contribution to the Urban Storm Management reserve.



Planned Investment Level

An estimated inflationary rate is used in Table 5.3.1 below in both the required investment and planned investment figures.

Proposed Investment Change

In addition to the planned investment level changes, an increase in the contribution to the Urban Storm Management reserve of approximately $1,400 annually is proposed over the 10-year period which amounts to a 1.2% annual increase (before CPI) on the Stormwater fee. Staff will continue to monitor actual rates of inflation to determine if changes to the level of service or funding strategy should be considered in response to changing economic conditions. Staff would recommend the proactive approach of putting away funds for these replacements in an interest bearing reserve if possible.

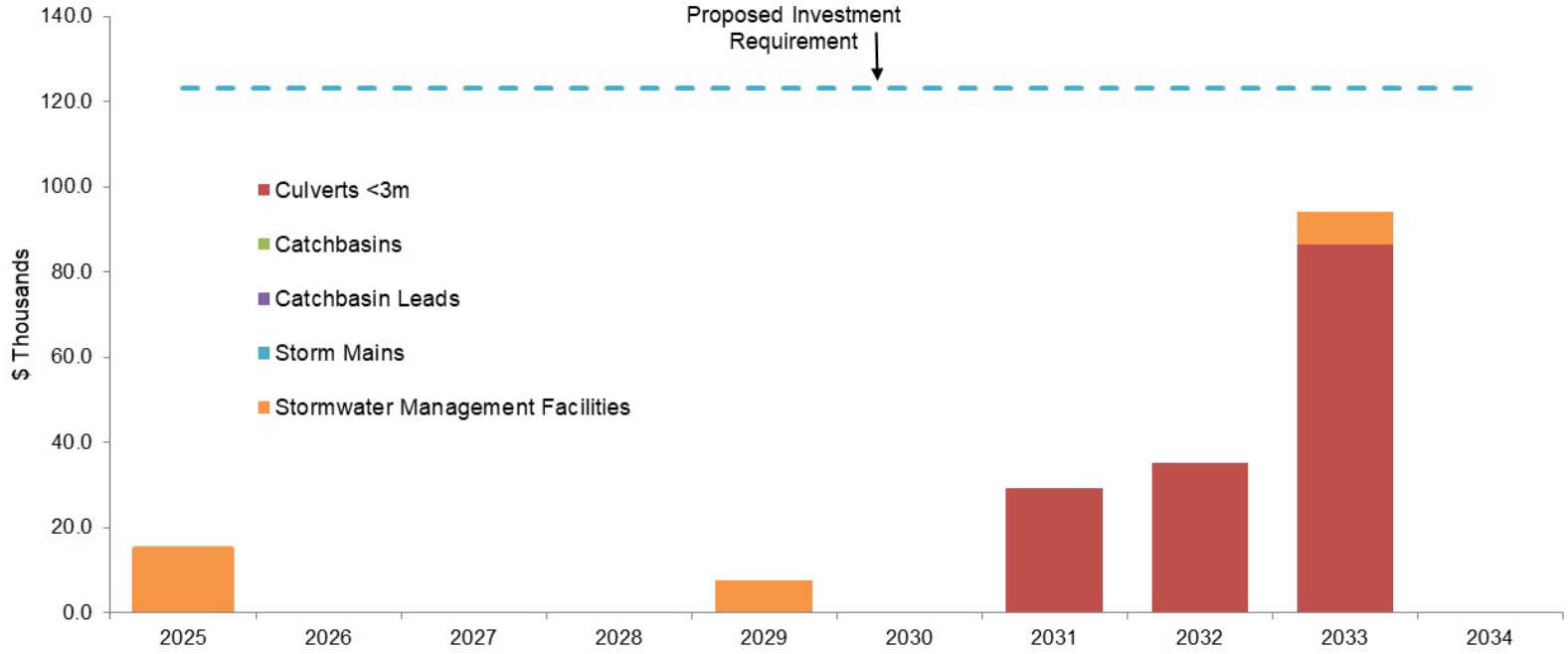
Table 5.3.1 – Comparing the required investment to the proposed investment (thousands)

	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Required Investment	$123.0	$126.1	$129.2	$132.5	$135.8	$139.2	$142.6	$146.2	$149.9	$153.6	$157.5
Planned Investment Level	109.0	111.0	115.4	119.8	124.2	128.6	133.0	137.4	141.8	147.2	152.6
Proposed Investment Change	-	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
Unfunded Requirement	14.0	13.7	12.4	11.3	10.2	9.2	8.2	7.4	6.7	5.0	3.5

Based on the funding strategy proposed, the lifecycle needs to be reviewed in preparation of the long-term capital plan for the 2026 Business Plan and Budget process are as follows:

Table 5.3.2 - Lifecycle Requirements (thousands)

Asset Component	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Culverts <3m	$-	$-	$-	$-	$-	$-	$29.2	$35.2	$86.5	$-
Catchbasins	-	-	-	-	-	-	-	-	-	-
Catchbasin Leads	-	-	-	-	-	-	-	-	-	-
Storm Mains	-	-	-	-	-	-	-	-	-	-
Stormwater Management Facilities	15.0	-	-	-	7.5	-	-	-	7.5	-
Totals	**$15.0**	**$-**	**$-**	**$-**	**$7.5**	**$-**	**$29.2**	**$35.2**	**$94.0**	**-**




EMBRO-WEST-ZORRA
COMMUNITY CENTRE

Table of Contents

1.0 Introduction

The Recreation Department is responsible for the operation and maintenance of 2 arenas, 70 acres of parkland including sports fields and intrapark trails), an outdoor pool, 3 splash pads, 3 pavilions, a skate park, a disc golf course and playground equipment. The township aims to provide affordable, accessible, high quality recreation opportunities and facilities that promote a safe, healthy, and fun lifestyle.

The Recreation, Arts & Culture Master Plan was completed in 2018, identifying needs and priorities for the township and its community stakeholders towards 2028. Five strategic directions were developed to serve as the framework for advancing parks, recreation, arts, and culture in the Township of Zorra.

Assets are categorized into various components, as a result of differing life spans and maintenance strategies. They are arena equipment, pool equipment, park infrastructure, and playgrounds. The building structures utilized to provide parks and recreation services are located within the Facilities appendix.

Like many of our assets, our parks and recreation assets are facing increased challenges as a result of aging assets, increased costs, meeting accessibility requirements and increasing demand due to growth in our communities. Our investment in these assets must therefore be balanced to optimize investment for renewal with the growing needs of our community.

The quality and completeness of the data used in this plan as indicated in Table 1.0.1, relies on inventory and assessments of equipment by facilities and recreation staff, along with equipment review by consultants. Additional enhancements to the attributes used for assessing risk are required, along with other improvement areas as indicated in Table 1.0.2.

Table 1.0.1 – Data Confidence

		Risk	AM Data Analysis			
Asset Component	**Inventory Completeness**	**Attribute Data**	**Service Life**	**Age**	**Condition**	**Replacement Cost**
Arena Equipment	B	B	B	A	B	B
Pool Equipment	B	B	B	A	B	B
Park Infrastructure	B	B	B	A	B	B
Playgrounds	A	B	A	A	B	B

Table 1.0.2 – Status of improvement opportunities

Improvement Opportunity	Year Identified	Status	Notes
Update attributes to further enhance the risk profile in the Township's asset management software.	2024	Not Started	Competing priorities have prevented this from being undertaken. Improvement to be pursued in conjunction with Recreation staff.
Establish a procedure for integrating consultant and staff asset inspections into the condition rating process.	2024	In Progress	Working to incorporate staff monthly and annual inspections into asset condition rating.
Document lifecycle history on asset components within the asset management systems.	2024	Ongoing	Work with staff on a breakdown of arena equipment to make sure lifecycle history has been fully documented.
Identify rehab procedures and costs for the skate park.	2025	New	Work with staff to identify skate park long term costs beyond current estimates.
Conduct a Recreation master plan.	2025	New	Completion of Recreation master plan including facility review.
Investigate funding sources for Recreation replacements.	2025	New	Look into developing policy on alternative funding sources including community fundraising and grants for Recreation assets.

2.0 State of Assets

2.1 Inventory

Table 2.1.1 displays the current inventory and the associated replacement costs, average age and anticipated useful life for each component.

The replacement costs were estimated based on staff reviews, historical costs, and inflation rates.

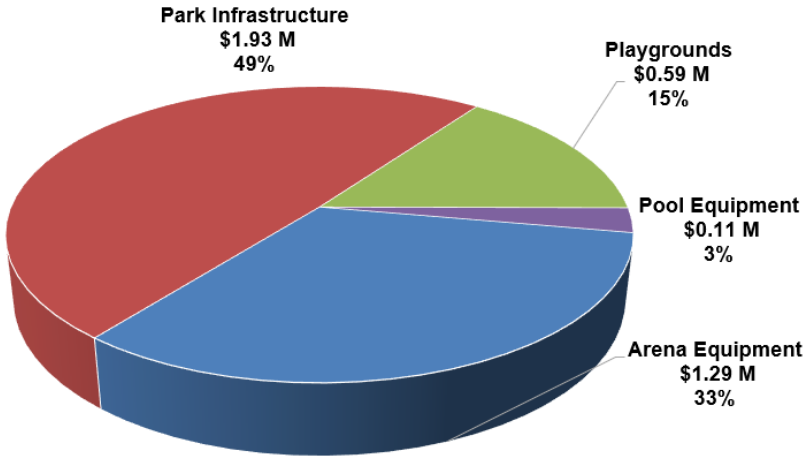


Table 2.1.1 - Inventory

Asset Component	Unit	Previous AMP Inventory	Current Inventory	Replacement Cost	Average Age (years)	Anticipated Useful Life (years)
Arena Equipment	total	37	30	$1,287,000	12	7-35
Park Infrastructure	total	28	28	1,926,000	21	15-25
Playgrounds	total	6	6	590,000	14	15-35
Pool Equipment	each	6	6	105,000	14	15
Total Replacement Cost				**$3,908,000**		

2.2 Condition Assessment Approach

The assessment approach utilizes a combination of physical assessments, asset attributes, as well as established anticipated useful lives.

2.3 Current Condition

The condition profile is shown in table 2.3.1, based on the projected condition. The indicator measure in each condition is based on percentage of replacement costs as opposed to the number of assets.

There are 3 older playground structures with an age-based critical rating, and are slated to be replaced in 2025 and 2027.

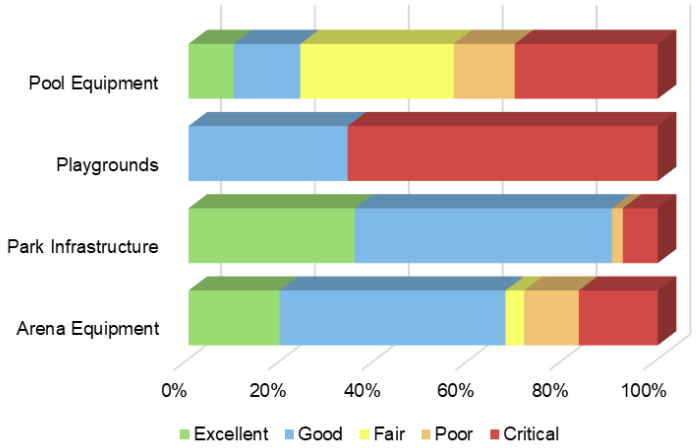


Table 2.3.1 – Condition Profile

Asset Component	Excellent	Good	Fair	Poor	Critical	Average Condition Rating	2024 Avg Condition Rating	Trend
Arena Equipment	19%	48%	4%	12%	17%	Fair	Fair	→
Park Infrastructure	35%	55%	0%	2%	7%	Good	Fair	↑
Playgrounds	0%	34%	0%	0%	66%	Poor	Good	↓
Pool Equipment	10%	14%	33%	13%	30%	Poor	Poor	→
Overall Total	**24%**	**49%**	**2%**	**5%**	**20%**			

3.0 Levels of Service

Corporate Objective

The objective of parks and recreation services is to offer a diverse range of services, programs, activities and facilities for residents to live and play in Zorra.

Legislative Requirements

The Accessibility for Ontarians with Disabilities Act, 2005[1] was developed with the purpose of ensuring that accessibility for Ontarians with disabilities is achieved on or before January 1, 2025. The Township ensures that each new build / renovation complies with the standards developed under this Act.

Customer Levels of Service

The following statements form our qualitative descriptions of the customer level metrics required under O.Reg. 588/17.

- *The Township's park and recreation services provides different avenues for individuals to improve or enjoy their quality of life.*

Tables 3.0.1 and 3.0.2 includes metrics the county has defined as required under the Infrastructure for Jobs and Prosperity Act, 2015 - O.Reg. 588/17. Included in Table 3.0.2, as required under the regulation, is the estimated performance for each metric over the upcoming 10-year period, based on the recommended financial strategy. A consistent annual target is not established for this portfolio as staff anticipate and plan for changes based on asset lifecycle strategies and ages.

[1] https://www.ontario.ca/laws/statute/05a11

Table 3.0.1 - Performance Measures

Key Service Attribute	Performance Measure	2022	2023	2024
Safety	Number of unplanned closures	-	0	0
Reliability	% of assets in poor or critical condition	20%	22%	25%

Table 3.0.2 - Performance Measures with Estimated Performance

2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
QUALITY											
Average condition											
61%	58%	61%	62%	63%	63%	58%	54%	52%	56%	51%	49%
RELIABILITY											
% of assets in poor or critical condition											
22%	25%	20%	15%	10%	8%	16%	28%	28%	33%	39%	42%

4.0 Asset Management Strategy

4.1 Lifecycle Activities and Planned Actions

To cost effectively maintain assets at the established service levels, the right maintenance or rehabilitation activity needs to be completed at the ideal time throughout the asset's lifecycle. The use of the service also plays a role in when maintenance is completed. Staff will also complete similar lifecycle activities across sites in this portfolio to maximize economies of scale and achieve the best benefit to the Township.

The Township employs a variety of lifecycle activities to maintain levels of service while striving to optimize costs based on defined risk. This includes activities for maintenance, rehabilitation, replacement, and disposal, while continuing to prepare for growth and introduce service improvements.

For many assets in this portfolio, replacement needs typically follow a "run to failure" strategy as long as the assets remain safe for users. This is usually the most cost-effective approach and follows provincial and federal standards. Staff will constantly monitor industry trends and best practices, assessing lifecycle activities to ascertain if implementing them would add value.

Examples of lifecycle activities considered in the overall sustainable management of this portfolio are described in table 4.1.1.

Table 4.1.1 - Lifecycle Activities

Strategy	Lifecycle Activity
Non-Infrastructure Solutions	• Master Plan • Climate change adaptation **Trigger: Ongoing**
Maintenance	• Routine and preventative maintenance programs, including grass cutting • Equipment cleaning **Trigger: Ongoing**
Rehabilitation / Renewal	• Major & minor rehabilitations, based on asset component where cost effective **Trigger: Fair/Poor**
Replacement	• Occurs at the end of the useful life and/or when unexpected events occur • May also occur to increase service levels **Trigger: Poor/Critical**
Disposal	• Activities associated with disposing of an asset once it has reached the end of its useful life **Trigger: Poor/Critical**
Expansion / Growth	• New facilities to support growth • Changes to accessibility requirements **Trigger: Development**

4.2 Risk Strategy

For this portfolio, the probability of failure is based on the projected condition and the consequence of failure is based on the replacement cost of the asset. Staff are working to further enhance the risk profiles as not all attributes recommended for inclusion (including social and environmental metrics) are currently tracked within the asset management systems.

Table 4.2.1 provides an overview of the risk ratings. Most assets in this portfolio pose minor consequences in the event of a failure. Staff will continue to monitor the higher-risk assets, conducting physical inspections to validate needs and plan lifecycle strategies accordingly.

Table 4.2.1 - Risk Profile

Asset Component	Severe	Major	Moderate	Minor	Insignificant	Average Risk Rating	2024 Avg Risk Rating	Trend
Arena Equipment	0%	0%	0%	17%	83%	Insignificant	Insignificant	→
Park Infrastructure	0%	7%	0%	34%	59%	Insignificant	Insignificant	→
Playgrounds	0%	18%	0%	48%	34%	Minor	Insignificant	↑
Pool Equipment	0%	0%	0%	30%	70%	Insignificant	Insignificant	→

4.3 Climate Change

As part of the asset management planning process, the Township will consider the risks and vulnerabilities of capital assets to climate change and the resulting actions that may be required. Commitment will be made to the development of tailored actions that make the best use of our resources to mitigate and adapt to climate change, in accordance with our local reduction targets, financial capacity and stakeholder support.

Climate Risks

- Potential facility infrastructure damage and increased maintenance and replacement costs as more frequent and severe weather events occur.
- Potential service disruption and facility closures due to more frequent and severe weather events.

Climate Adaptation Measures

- Identify facilities and equipment that may be impacted by extreme weather events, and increase the frequency of inspections and maintenance.
- Design and implement measures to minimize climate change impacts such as changes to building envelope materials, building specifications, site considerations, new technology, and other protection methods for both new construction and retrofitting existing facilities to minimize service disruption and increase resiliency.
- Standardize low-intensity design stormwater management practices on new and existing recreation sites.

Climate Mitigation Opportunities

- Explore further opportunities for greenhouse gas reductions and improving energy performance.
- Investigate areas of priority to incorporate best practices, low carbon materials, and green infrastructure into recreation planning and design.

5.0 Financial Strategy

5.1 Proposed Level of Service review

Staff reviewed multiple scenarios over a 100-year period to ensure assets with long useful lives were incorporated in the analysis. The current reserve balance is factored into each scenario as available funding to complete existing asset lifecycle needs. The recommended scenario is used to inform the development of the overarching financial strategy.

Scenario A

This scenario is based on the 2025 budgeted contribution to the Recreation reserve of approximately $206,000, representing approximately 89% funded based on lifecycle needs. The funding level results in an overall average condition of fair, the highest number of assets in poor or critical condition and some lifecycle needs would be deferred increasing the risk of failure.

Scenario B

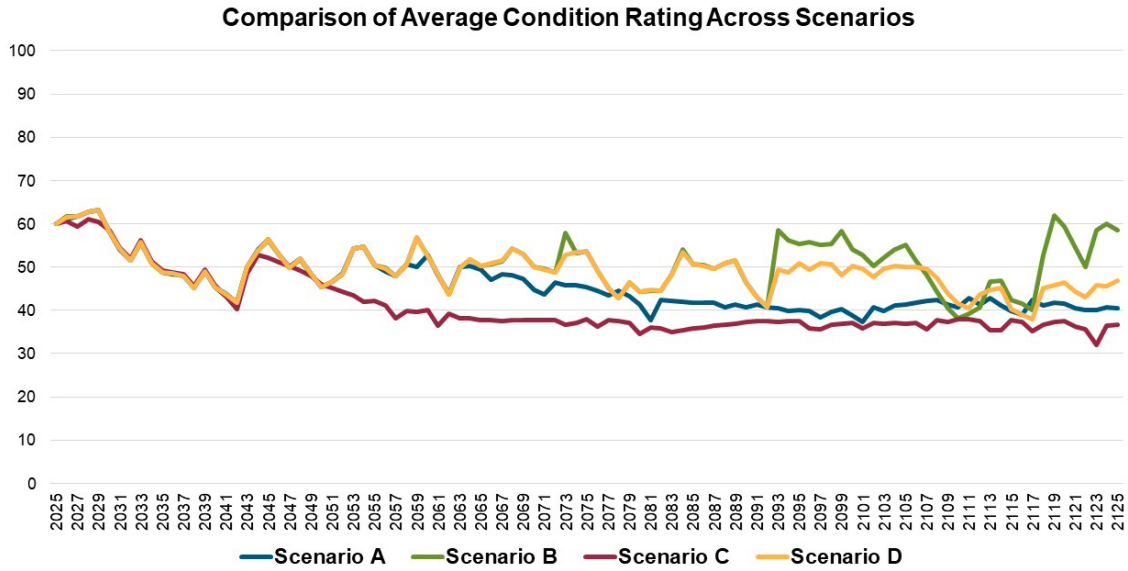
Staff initially ran this scenario assuming unlimited resources to achieve the lifecycle needs of all assets in this portfolio. This generated an average annual requirement of approximately $234,000, which staff used to re-run the analysis. The result is a realistic expectation of what can be achieved on an annual basis in maintaining the long-term lifecycle needs. This is considered the fully funded scenario, resulting in the lowest risk, and lowest achievable percentage of assets in poor or critical condition over the 100-year scenario period.

Scenario C

Under this scenario staff looked at decreasing the annual contribution to the reserve of 80% of the fully funded scenario or approximately $187,000 annually over the 100-year period. The overall average condition of the portfolio under this scenario is fair and results in increased risk and deferral as scenario A.

Scenario D

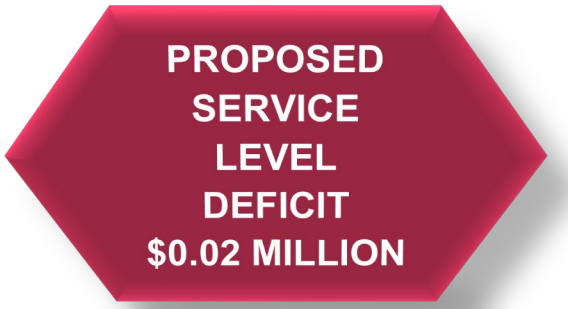
Under this scenario staff looked at targeting an annual contribution to the reserve of 95% of the fully funded scenario or approximately $222,000 annually over the 100-year period. This funding level results in an average condition of fair, and a reduced overall risk level of moderate. Deferral of some lifecycle needs would still be required under this scenario.



Based on the analysis, staff are recommending **Scenario D**, the proposed level of service target is to achieve 95% funding for this portfolio which results in an annual investment level of approximately $222,000. While some lifecycle needs would still require deferral under this scenario, a small increase to the annual investment will result in fewer deferrals, reducing risk of failure and service disruptions. This recommendation is in line with the 2025 Budget Survey responses where 82% of respondents indicated that the service levels related to parks and recreation should be maintained or enhanced.

Table 5.1.1 – Scenario Summary

	Annual Investment	Average Condition	Average Risk	% of assets in poor or critical condition
Scenario A	$206,000	Fair	Minor	44%
Scenario B	234,000	Fair	Minor	39%
Scenario C	187,000	Fair	Minor	49%
Scenario D	**222,000**	**Fair**	**Minor**	**41%**

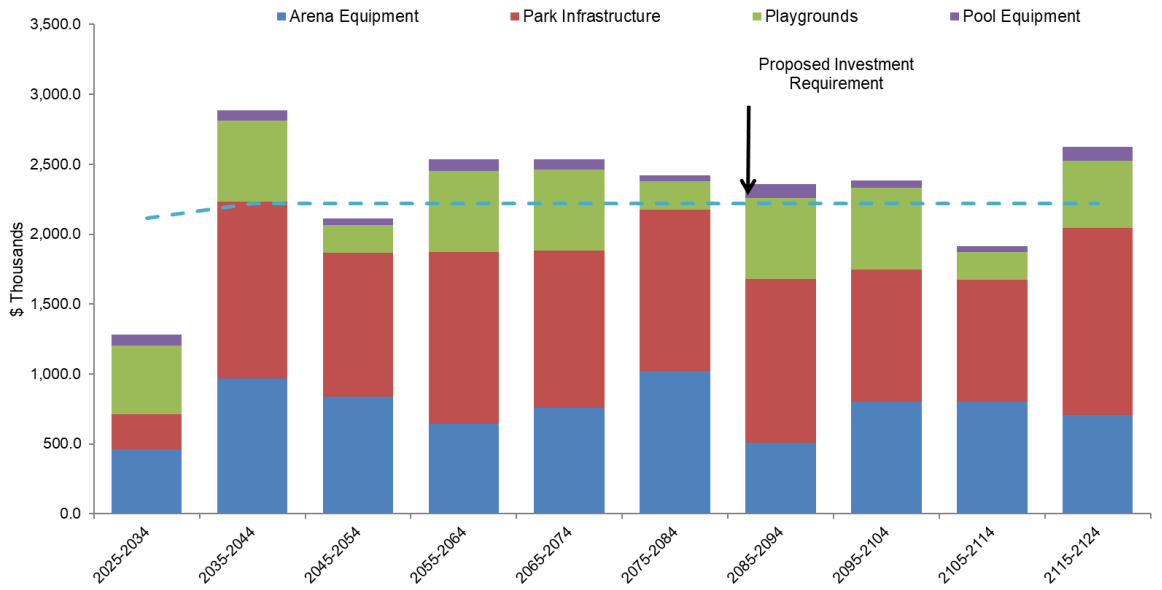


5.2 Lifecycle Requirements

Based on the lifecycle strategies identified to achieve proposed levels of service, the cost estimates to support the lifecycle needs over the next 100-years are determined in current dollars and summarized in Table 5.2.1.

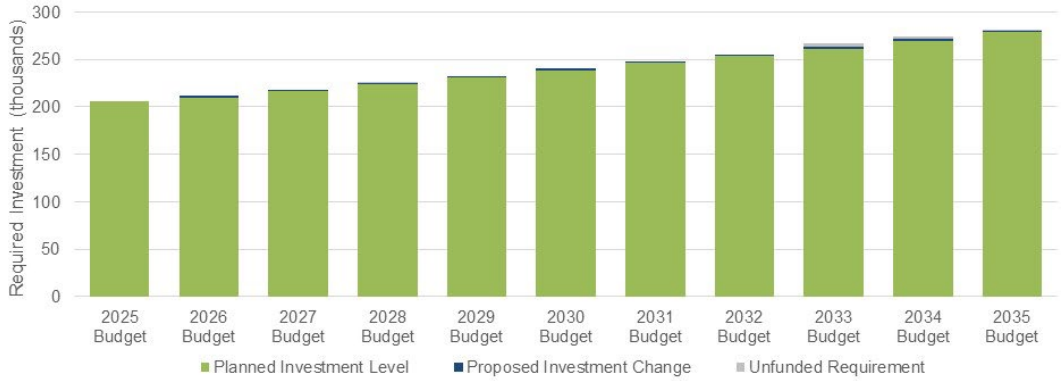
Table 5.2.1 - Lifecycle Requirements (thousands)

Asset Component	2025-2034	2035-2044	2045-2054	2055-2064	2065-2074	2075-2084	2085-2094	2095-2104	2105-2114	2115-2124
Arena Equipment	$463.7	$966.4	$837.3	$643.5	$758.4	$1,019.4	$508.3	$803.1	$799.4	$707.8
Park Infrastructure	247.2	1,265.5	1,029.2	1,227.5	1,121.5	1,158.1	1,168.9	943.9	871.7	1,336.2
Playgrounds	490.0	583.2	200.0	583.2	583.2	200.0	583.2	583.2	200.0	483.2
Pool Equipment	80.3	71.0	44.6	80.3	71.0	44.6	95.3	56.0	44.6	95.3
Totals	**$1,281.2**	**$2,886.1**	**$2,111.1**	**$2,534.5**	**$2,534.1**	**$2,422.1**	**$2,355.7**	**$2,386.2**	**$1,915.7**	**$2,622.5**



5.3 Funding Gap Analysis

The lifecycle needs for this portfolio are currently funded by an annual contribution to the Recreation reserve.



Planned Investment Level

An estimated inflationary rate is used in Table 5.3.1 below in both the required investment and planned investment figures.

Proposed Investment Change

A reallocation of the current Infrastructure Capital Levy Reserve of $134,000 will occur from 2026-2031. In addition to the planned investment level changes, an increase in the contribution to the Recreation reserve of approximately $1,600 annually is proposed over the 10-year period, accounting for 0.01% on the 2025 levy. The proposed increase recognizes the requirement to plan for the lifecycle needs of growth infrastructure in a way that is predictable for residents.

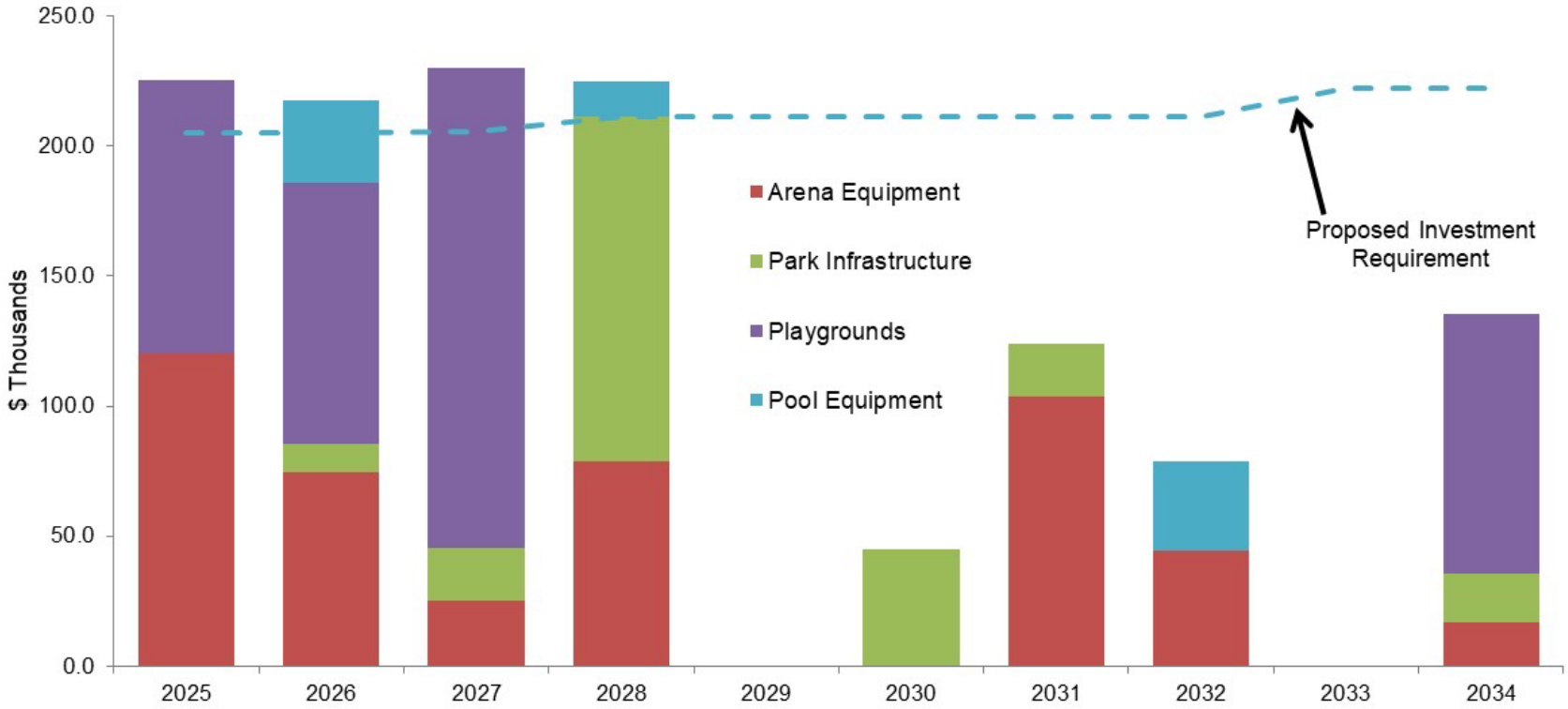
Table 5.3.1 – Comparing the required investment to the proposed investment (thousands)

	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Required Investment	$205.0	$210.1	$215.6	$226.8	$232.4	$238.3	$244.3	$250.4	$267.4	$274.1	$280.9
Planned Investment Level	206.1	210.1	216.7	223.3	230.9	238.5	246.1	253.7	261.3	269.9	278.5
Proposed Investment Change	-	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
Unfunded Requirement	-	-	-	1.8	-	-	-	-	4.5	2.5	0.8

Based on the funding strategy proposed, the lifecycle needs to be reviewed in preparation of the long term capital plan for the 2026 Budget process are as follows:

Table 5.3.2 - Lifecycle Requirements (thousands)

Asset Component	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Arena Equipment	$120.5	$74.6	$25.2	$78.8	$-	$-	$103.7	$44.2	$-	$16.7
Park Infrastructure	-	11.0	20.0	132.5	-	45.0	20.0	-	-	18.7
Playgrounds	105.0	100.0	185.0	-	-	-	-	-	-	100.0
Pool Equipment	-	32.2	-	13.7	-	-	-	34.5	-	-
Totals	**$225.5**	**$217.7**	**$230.2**	**$224.9**	**$-**	**$45.0**	**$123.7**	**$78.7**	**$-**	**$135.5**




EMBRO

Table of Contents

1.0 Introduction

Facilities provide safe and efficient work, meeting and recreation places for staff, Council, other organizations, and members of the public. Staff maintain these facilities assets, allowing them to meet functional requirements along with building and safety codes, all while operating in a safe and efficient manner. Facilities provide space for staff workstations, equipment, and material; provide modern and effective meeting places; and support the Township in delivering front-line and administrative services. Facilities are grouped based on the service area supported. Also included in this portfolio are furnishings and computer equipment.

The 2024 Development Charge Background Study includes a contribution for a school gymnasium to increase the size of the built facility to service growth needs for Zorra Township. As 95% of the project was to be paid by Development Charges, the remaining 5% cost estimate was deducted from the Facilities reserve before completing the financial scenarios in section 5.0.

The quality and completeness of the data used in this plan as indicated in Table 1.0.1, relies on inventory and assessments by staff, along with Building Condition Assessments (BCAs). Additional enhancements to the attributes used for assessing risk are required, along with other improvement areas as indicated in Table 1.0.2.

Table 1.0.1 – Data Confidence

		Risk	AM Data Analysis			
Asset Component	**Inventory Completeness**	**Attribute Data**	**Service Life**	**Age**	**Condition**	**Replacement Cost**
Community Hall	A	B	B	A	B	B
Computer Equipment	A	B	B	B	B	B
Fire Department	A	B	B	A	B	B
Library[1]	A	B	B	A	B	B
Other Facilities[2]	B	B	B	A	B	B
Parking Lots	B	B	A	A	B	B
Recreation	A	C	B	A	B	B
Transportation	A	B	A	A	B	B

[1] The Thamesford Library is co-owned with the County of Oxford. Replacement cost and needs illustrated throughout represent the Township's portion only.
[2] Other facilities includes the Zorra Municipal and Child Care Centre, and buildings at the owned cemeteries

Table 1.0.2 – Status of improvement opportunities

Improvement Opportunity	Year Identified	Status	Notes
Update attributes to further enhance the risk profile in the Township's asset management software.	2024	Not Started	Competing priorities have prevented this from being undertaken.
Establish a procedure for integrating consultant and staff asset inspections into the condition rating process	2024	In Progress	Working to incorporate BCA ratings and notes made in work order software in asset conditions.
Refine asset components and lifecycle strategies for facilities, and document lifecycle history.	2024	Ongoing	Preliminary work completed on asset components (parking lots) with more to be done across the portfolio.
Validate the condition, lifecycle and costs of furniture and equipment.	2025	New	Work with staff on a component-by-component assessment of equipment and furniture.
Conduct a Recreation master plan.	2025	New	Completion of Recreation master plan including facility review.
Conduct a Fire Services master plan.	2025	New	Completion of Fire Services master plan including facility review.

2.0 State of Assets

2.1 Inventory

Table 2.1.1 displays the current inventory and the associated replacement costs, average age and anticipated useful life for each component.

Replacement costs for facilities were determined by Building Condition Assessments (BCA) completed by Facility Risk Solutions in 2023 and inflated to 2024 costs. For other assets in this portfolio, the replacement costs were estimated based on staff reviews, historical construction costs and inflation rates.

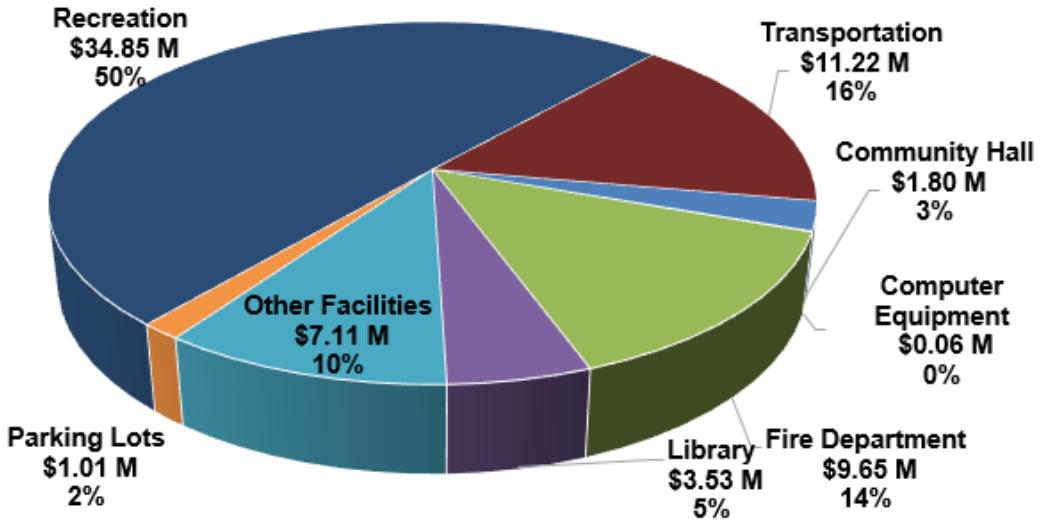


Table 2.1.1 - Inventory

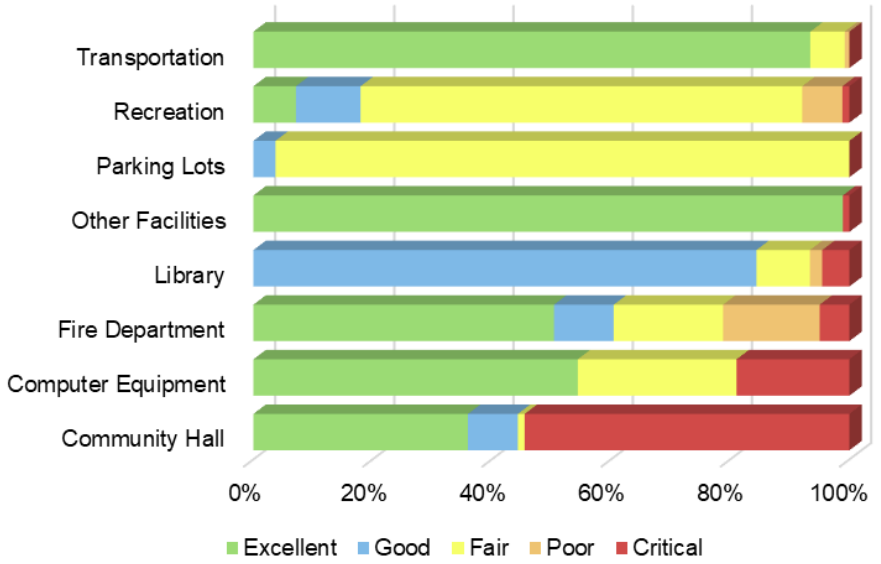
Asset Component	Unit	Previous AMP Inventory	Current Inventory	Replacement Cost	Average Age (years)	Anticipated Useful Life (years)
Community Hall	bldg	2	2	$1,799,321	55	10-100
Computer Equipment	each	N/A	5	62,635	3	5-10
Fire Department	bldg	3	3	9,649,434	21	10-100
Library[3]	bldg	1	1	3,534,000	17	10-100
Other Facilities	bldg	2	2	7,113,353	1	10-100
Parking Lots	each	5	5	1,010,360	0	20-40
Recreation	bldg	6	6	34,845,758	36	10-100
Transportation	bldg	3	3	11,222,830	3	10-100
Total Replacement Cost				**$69,237,691**		

[3] The Thamesford Library is co-owned with the County of Oxford, while the Embro and Harrington libraries are part of the Community Hall components. Replacement cost and needs illustrated throughout represent the Township's portion only

2.2 Condition Assessment Approach

The assessment approach utilizes a combination of physical assessments, asset attributes, as well as established anticipated useful lives.

The Township completed building condition assessments (BCA) on its facilities in 2023. The BCAs assess and document the current condition of facilities to identify capital repairs and replacements which may affect the continued operation of the property over the next ten (10) years, and to provide an assessment as to the level of accessibility for each property. Replacement costs are also requested as a part of this process.



2.3 Current Condition

The indicator measure in each condition is based on percentage of replacement costs as opposed to the number of assets.

Table 2.3.1 - Condition

Asset Component	Excellent	Good	Fair	Poor	Critical	Average Condition Rating	2024 Avg Condition Rating	Trend
Community Hall	36%	8%	1%	0%	55%	Poor	Fair	↓
Computer Equipment	54%	0%	27%	0%	19%	Fair	Fair	→
Fire Department	51%	10%	18%	16%	5%	Fair	Good	↓
Library	0%	84%	9%	2%	5%	Good	Good	→
Other Facilities	99%	0%	0%	0%	1%	Excellent	Excellent	→
Parking Lots	0%	4%	96%	0%	0%	Fair	Fair	→
Recreation	7%	11%	74%	7%	1%	Fair	Fair	→
Transportation	93%	0%	6%	1%	0%	Excellent	Excellent	→
Overall Total	**37%**	**11%**	**43%**	**6%**	**3%**			

3.0 Levels of Service

Corporate Objective

The objective of the facilities service is to provide well maintained buildings, and properties appropriate to the services being delivered.

Legislative Requirements

The Township is required to maintain minimum standards based on governing directives. These include, but are not limited to, Technical Standards and Safety Authority (TSSA), Electrical Safety Authority (ESA), National Plumbing Code of Canada (NPC), Fire Code, Ontario Building Code, Designated Substance List (DSL) and additional Ministry of Labour (MOL) requirements.

The Accessibility for Ontarians with Disabilities Act, 2005[4] was developed with the purpose of ensuring that accessibility for Ontarians with disabilities is achieved on or before January 1, 2025. The Township ensures that each new build / renovation complies with the standards developed under this Act.

Customer Levels of Service

The following statements form our qualitative descriptions of the customer level metrics required under O.Reg. 588/17.

- *The Township's facilities are used by staff, Council, other organizations, and members of the public, with the Township committed to providing safe, and accessible spaces.*

Tables 3.0.1 and 3.0.2 includes metrics the county has defined as required under the Infrastructure for Jobs and Prosperity Act, 2015 - O.Reg. 588/17. Included in Table 3.0.2, as required under the regulation, is the estimated performance for each metric over the upcoming 10-year period, based on the recommended financial strategy. The new Zorra Municipal and Child Care Centre that went into service in June of 2024 leads to a significant decrease in the weighted percentage of assets in poor or critical condition starting in 2025. A consistent annual target is not established as staff anticipate and plan for changes based on asset lifecycle strategies and ages.

[4] https://www.ontario.ca/laws/statute/05a11

Table 3.0.1 - Performance Measures

Key Service Attribute	Performance Measure	2022	2023	2024
Quality	% of assets in good or better condition	43%	60%	48%
Reliability	% of assets in poor or critical condition	9%	12%	9%

Table 3.0.2 - Performance Measures with Estimated Performance

2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
QUALITY											
Average condition											
54%	56%	30%	30%	29%	28%	28%	27%	27%	26%	25%	25%
RELIABILITY											
% of assets in poor or critical condition											
12%	9%	11%	11%	11%	13%	13%	12%	12%	13%	13%	14%

4.0 Asset Management Strategy

4.1 Lifecycle Activities and Planned Actions

To cost effectively maintain facilities at the established service levels, the right maintenance or rehabilitation activity needs to be completed at the ideal time throughout the asset's lifecycle. The use of the facility also plays a role in when maintenance is completed. Staff complete similar lifecycle activities across where possible to maximize economies of scale and achieve the best benefit to the Township.

To minimize disruption where possible, maintenance is planned during periods a facility is vacant. Where this is not possible staff will attempt to work with tenants to minimize disruption or conduct work outside of the building's regular operating hours.

Examples of lifecycle activities considered in the overall sustainable management of this portfolio are described in table 4.1.1.

Table 4.1.1 - Lifecycle Activities

Strategy	Lifecycle Activity
Non-Infrastructure Solutions	• Building Condition Assessments (BCA) • Structural condition assessments **Trigger: Ongoing**
Maintenance	• Routine and preventative maintenance programs • Snow removal and landscaping at facilities **Trigger: Ongoing**
Rehabilitation / Renewal	• Major & minor rehabilitations **Trigger: Fair**
Replacement	• Occurs at the end of the useful life and/or when rehabilitation is no longer an option • May also occur to increase service levels **Trigger: Poor/Critical**
Disposal	• Activities associated with disposing of an asset once it has reached the end of its useful life **Trigger: Poor/Critical**
Expansion / Growth	• Implementation of a new service • Changes to accessibility requirements **Trigger: Development**

4.2 Risk Strategy

For this portfolio, the probability of failure is based on the projected condition and the consequence of failure is based on the replacement cost of the asset. Staff are working to further enhance the risk profiles as not all attributes recommended for inclusion (including social and environmental metrics) are currently tracked within the asset management systems.

Table 4.2.1 illustrates the risk ratings at a summary level. In addition to the BCA process, staff complete regular inspections. Areas of concern are addressed through demand maintenance or included in the subsequent budget cycle as appropriate. The inspection and review process helps mitigate the likelihood of any unanticipated asset failures. Staff will continue to monitor the higher risk assets, review and/or complete physical inspections to further validate needs and plan for lifecycle strategies accordingly.

Table 4.2.1 - Risk Profile

Asset Component	Severe	Major	Moderate	Minor	Insignificant	Average Risk Rating	2024 Avg Risk Rating	Trend
Community Hall	40%	13%	0%	1%	46%	Moderate	Major	↓
Computer Equipment	0%	0%	0%	19%	81%	Insignificant	N/A	N/A
Fire Department	25%	0%	1%	44%	30%	Minor	Minor	→
Library	0%	76%	0%	8%	16%	Major	Moderate	↑
Other Facilities	0%	0%	0%	12%	88%	Insignificant	Insignificant	→
Parking Lots	0%	57%	37%	0%	6%	Major	Major	→
Recreation	66%	5%	6%	7%	16%	Major	Major	→
Transportation	0%	6%	0%	66%	28%	Minor	Major	↓

4.3 Climate Change

As part of the asset management planning process, the Township will consider the risks and vulnerabilities of capital assets to climate change and the resulting actions that may be required. Commitment will be made to the development of tailored actions that make the best use of our resources to mitigate and adapt to climate change, in accordance with our local reduction targets, financial capacity and stakeholder support. Climate change resiliency is included as a design criterion for facilities as part of the capital plan, as well as climate change mitigation by way of greenhouse gas emissions reductions.

Climate Risks

- Potential facility infrastructure damage and increased maintenance and replacement costs as more frequent and severe weather events occur.
- Potential service disruption and facility closures due to more frequent and severe weather events.

Climate Adaptation Measures

- Identify facilities that may be impacted by extreme weather events, and increase the frequency of inspections and maintenance.
- Design and implement measures to minimize climate change impacts such as changes to building envelope materials, building specifications, site considerations, new technology, and other protection methods for both new construction and retrofitting existing facilities to minimize service disruption and increase resiliency.
- Design and implement considerations for adapting facilities as community emergency and disaster service sites.
- Standardize low-intensity design stormwater management practices on new and existing facility sites.

Climate Mitigation Opportunities

- Explore further opportunities for greenhouse gas reductions and improving energy performance.
- Investigate areas of priority to incorporate best practices, low carbon materials, and green infrastructure into facility planning and design.

5.0 Financial Strategy

5.1 Proposed Level of Service Review

Staff reviewed multiple scenarios over a 100-year period to ensure assets with long useful lives were incorporated in the analysis. The current reserve balance is factored into each scenario as available funding to complete existing asset lifecycle needs. The recommended scenario is used to inform the development of the overarching financial strategy.

Under all scenarios except for fully funded, the replacement of the two arenas, among other facilities are deferred beyond their estimated end of life. Debenture funding may be utilized if the facility is at risk of not providing services and replacement is unable to be deferred until reserve balances are sufficient to fund the replacement project.

Scenario A

This scenario is based on the 2025 budgeted contribution to the Information Technology and Facilities reserves of approximately $330,000, representing approximately 25% funded based on lifecycle needs. The funding level results in an overall average condition of poor, the highest number of assets in poor or critical condition and significant lifecycle needs would be deferred increasing the risk of failure. Staff do not feel this level of funding results in a sustainable service over the long-term.

Scenario B

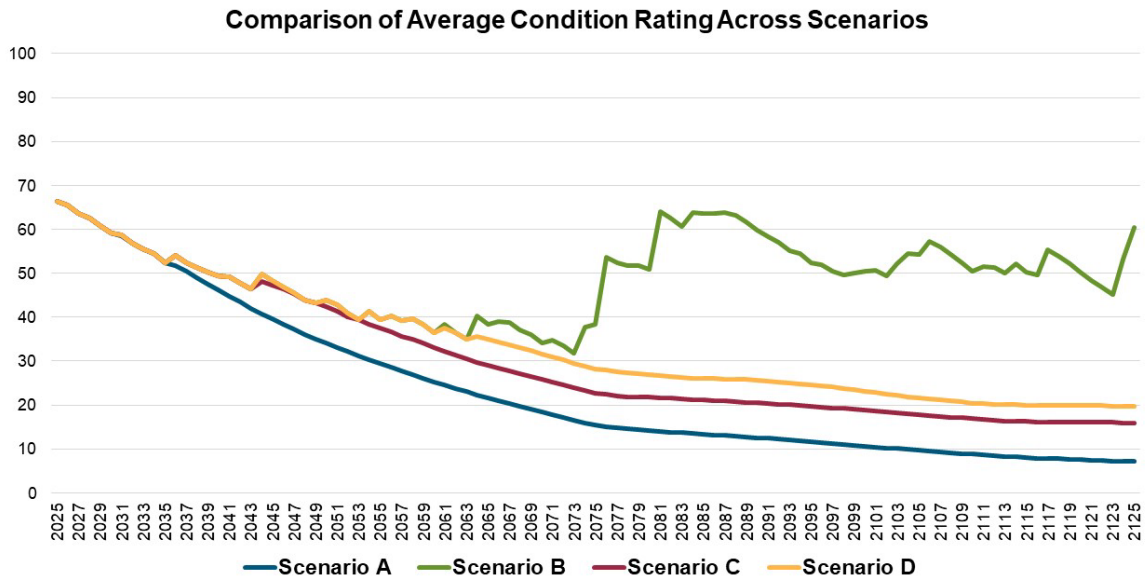
Staff initially ran this scenario assuming unlimited resources to achieve the lifecycle needs of all assets in this portfolio. This generated an average annual requirement of approximately $1,334,000, which staff used to re-run the analysis. The result is a realistic expectation of what can be achieved on an annual basis in maintaining the long-term lifecycle needs. This is considered the fully funded scenario, resulting in the lowest risk, and lowest achievable percentage of assets in poor or critical condition over the 100-year scenario period.

Scenario C

Under this scenario staff looked at targeting an annual contribution to the reserve of 50% of the fully funded scenario or approximately $667,000 annually over the 100-year period. The overall average condition of the portfolio under this scenario is poor, still resulting in a major risk level and deferral of asset lifecycle needs. The overall risk and number of assets in poor or critical condition is at a more tolerable level under this scenario. Asset deferrals are not anticipated for 20 to 30 years.

Scenario D

Under this scenario staff looked at targeting an annual contribution to the reserve of 60% of the fully funded scenario or approximately $800,000 annually over the 100-year period. This funding level results in an average condition of poor, and a reduced overall risk level. Deferral of some lifecycle needs would still be required under this scenario in the next 30 to 40 years.



Based on the analysis, staff are recommending Scenario C, the proposed level of service target is to achieve 50% funding for this portfolio. This scenario will include looking for debenture and grant options for replacing the two arenas. While the facilities included in this appendix are across a variety of survey results, the responses through the 2025 budget survey was strong support for maintaining or enhancing recreation, transportation and fire department assets.

Table 5.1.1 – Scenario Summary

	Annual Investment	Average Condition	Average Risk	% of assets in poor or critical condition
Scenario A	$329,000	Poor	Severe	74%
Scenario B	1,334,000	Fair	Major	40%
Scenario C	**667,000**	**Poor**	**Severe**	**67%**
Scenario D	800,000	Poor	Major	63%

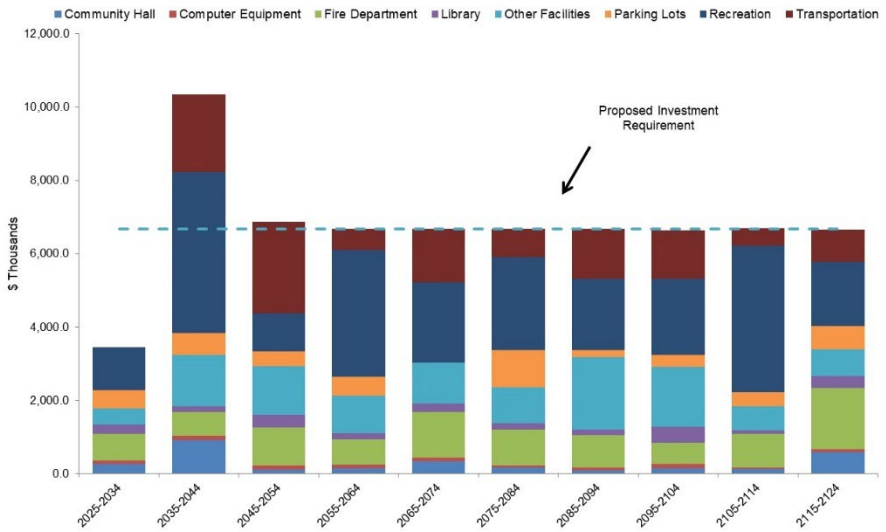
PROPOSED SERVICE LEVEL DEFICIT $0.34 MILLION

5.2 Lifecycle Requirements

Based on the lifecycle strategies identified to achieve proposed levels of service, the cost estimates to support the lifecycle needs over the next 100-years are determined in current dollars and summarized in Table 5.2.1. Both arenas are not able to funded through this scenario and are not included in the table.

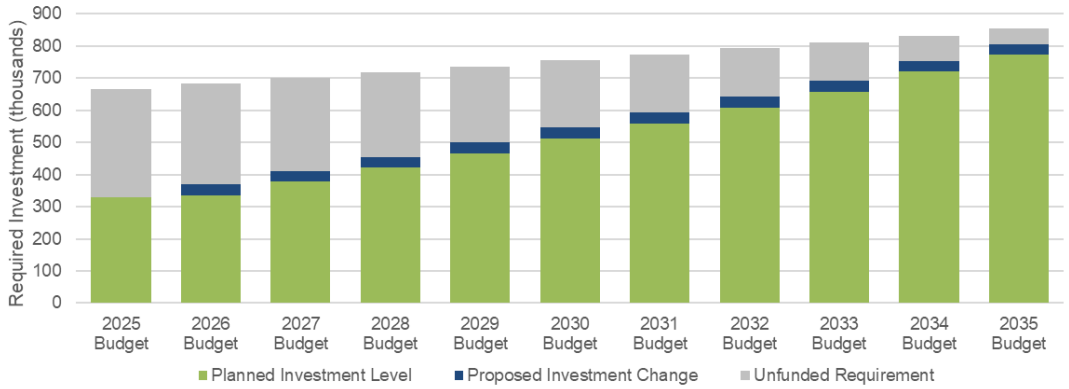
Table 5.2.1 - Lifecycle Requirements (thousands)

Asset Component	2025-2034	2035-2044	2045-2054	2055-2064	2065-2074	2075-2084	2085-2094	2095-2104	2105-2114	2115-2124
Community Hall	$254	$903	$108	$143	$329	$160	$78	$149	$129	$577
Computer Equipment	105	115	105	91	94	55	82	115	33	79
Fire Department	734	668	1,049	693	1,256	976	892	579	915	1,676
Library	234	143	337	173	236	185	157	437	112	326
Other Facilities	447	1,404	1,330	1,028	1,109	982	1,969	1,640	655	732
Parking Lots	506	598	413	506	-	1,010	192	314	375	635
Recreation	1,175	4,398	1,035	3,462	2,194	2,535	1,948	2,071	3,997	1,756
Transportation	-	2,117	2,485	573	1,456	763	1,353	1,336	487	884
Totals	**$3,455**	**$10,345**	**$6,862**	**$6,669**	**$6,673**	**$6,667**	**$6,671**	**$6,640**	**$6,702**	**$6,666**



5.3 Funding Gap Analysis

The lifecycle needs for this portfolio are currently funded by an annual contribution to the Information Technology and Facilities reserves.



Planned Investment Level

An estimated inflationary rate is used in Table 5.3.1 below in both the required investment and planned investment figures.

Proposed Investment Change

A reallocation of the current Infrastructure Capital Levy Reserve of $183,000 is proposed to occur from 2026-2031. Additional increases of $33,800 for Facilities are being proposed between 2026-2034. In total, these increases will account for 0.3% on the 2025 levy until 2034. Staff will continue to monitor actual rates of inflation to determine if changes to the level of service or funding strategy should be considered in response to changing economic conditions.

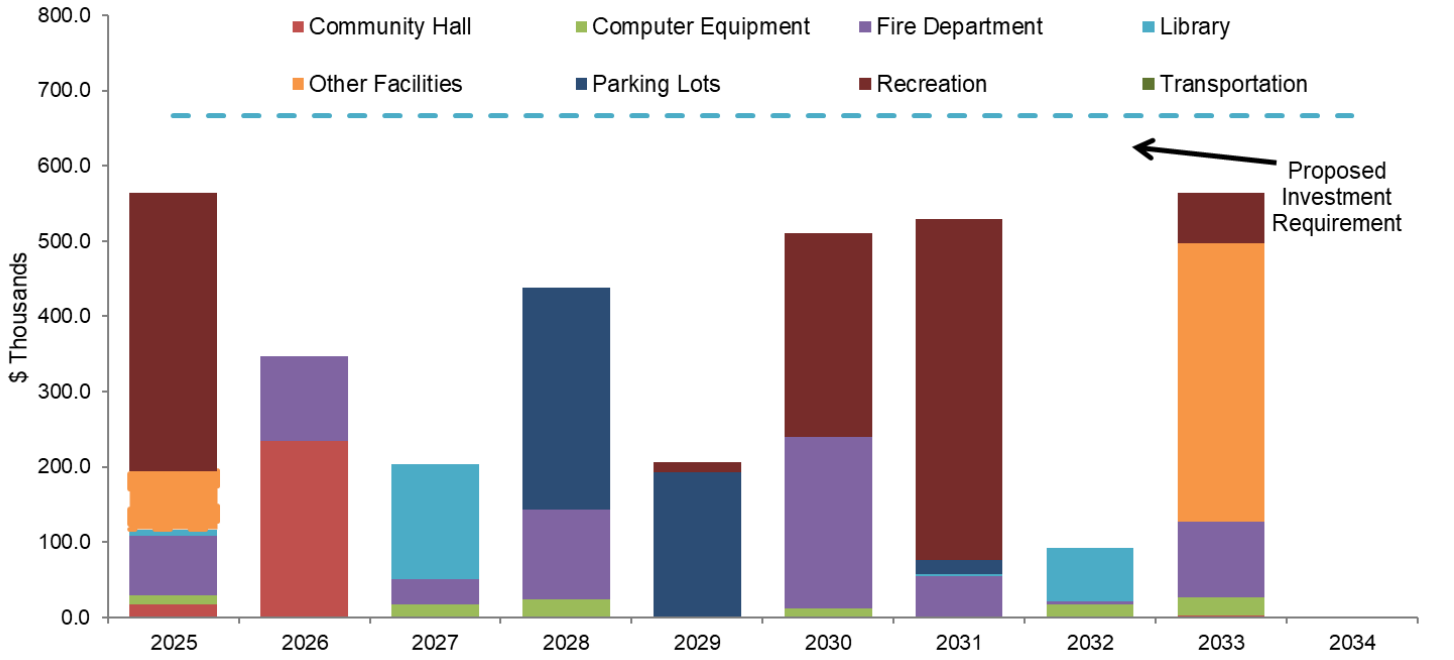
Table 5.3.1 – Comparing the required investment to the proposed investment (thousands)

	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Required Investment	$667.0	$683.6	$700.8	$718.3	$736.2	$754.7	$773.5	$792.9	$812.7	$833.0	$853.8
Planned Investment Level	328.8	334.8	377.6	421.4	466.2	512.0	559.8	608.6	658.4	720.2	773.0
Proposed Investment Change	-	33.8	33.8	33.8	33.8	33.8	33.8	33.8	33.8	33.8	33.8
Unfunded Requirement	338.2	315.1	289.4	263.1	236.3	208.9	180.0	150.5	120.5	79.0	47.1

Based on the funding strategy proposed, the lifecycle needs to be reviewed in preparation of the long term capital plan for the 2026 Budget process are as follows:

Table 5.3.2 - Lifecycle Requirements (thousands)

Asset Component	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Community Hall	$17.0	$235.0	$-	$-	$-	$-	$-	$-	$2.4	$-
Computer Equipment	11.9	-	16.7	24.1	-	11.9	-	16.7	24.1	-
Fire Department	79.5	112.0	33.9	119.8	-	227.6	55.5	4.5	101.2	-
Library	8.4	-	152.7	-	-	-	1.5	71.3	-	-
Other Facilities	78.0	-	-	-	-	-	-	-	368.8	-
Parking Lots	-	-	-	294.4	192.3	-	19.2	-	-	-
Recreation	369.7	-	-	-	14.1	271.5	452.7	-	67.1	-
Transportation	-	-	-	-	-	-	-	-	-	-
Totals	**$564.3**	**$347.0**	**$203.2**	**$438.3**	**$206.4**	**$510.9**	**$528.9**	**$92.5**	**$563.6**	**$-**




ZORRA FIRE & EMERGENCY SERVICES

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1.0 Introduction

Zorra Township's Fire Department has a holistic approach to ensure the safety of its firefighters and the Zorra community it serves. The department focuses on training its workforce to top standards, educating the broader community on fire prevention, working with Building Services to ensure Fire Safety Standards are being enforced, and responding to emergencies as required. The Fire Department is rooted in Zorra's Strategic Plan by ensuring that Zorra Township is a livable, healthy community. The Fire Department and its team of volunteer firefighters, shared administrative staff with other Zorra programs, and a full-time Fire Chief are dedicated to ensuring the accountability, professionalism and philanthropy that connect the department to the community are strong to achieve trust in the department's ability to respond to emergencies.

The department received 254 emergency response calls in 2024 and has agreements with neighbouring municipalities and Oxford County Paramedics to respond to various medical and motor vehicle emergencies to provide support.

This portfolio is categorized into two components due to differing life spans and maintenance strategies. They are fleet, and equipment. Equipment includes bunker gear, extrication tools, hoses, SCBA systems, thermal imaging cameras, communication tools and other general fire equipment. Fleet includes tankers, pumpers, a rescue truck, a trailer, and a pickup truck. The fire stations are located within the Facilities appendix to align with how their lifecycle needs are funded.

Like many of our assets, our Fire Department faces escalating challenges due to aging infrastructure, climate fluctuations and rising demand spurred by community growth. Consequently, we must carefully balance our investment in these assets to prioritize both infrastructure renewal and the overall welfare of our community.

The quality and completeness of the data used in this plan as indicated in Table 1.0.1, relies on inventory and assessments of staff along with feedback and reporting from consultants. Additional enhancements to the attributes used for assessing risk are required, along with other improvement areas as indicated in Table 1.0.2.

Table 1.0.1 – Data Confidence

		Risk	AM Data Analysis			
Asset Component	**Inventory Completeness**	**Attribute Data**	**Service Life**	**Age**	**Condition**	**Replacement Cost**
Equipment	A	B	A	A	B	A
Fleet	A	B	A	A	A	A

Table 1.0.2 – Status of improvement opportunities

Improvement Opportunity	Year Identified	Status	Notes
Update attributes to further enhance the risk profile in the Township's asset management software.	2024	Not Started	Competing priorities have prevented this from being undertaken. Improvement to be pursued in conjunction with Fire Department staff.
Establish a procedure for integrating consultant and staff asset inspections into the condition rating process	2024	In Progress	Working to incorporate equipment inspections and notes made in Fire Pro software in asset conditions.
Refine asset components and lifecycle strategies for facilities, and document lifecycle history.	2024	Ongoing	Preliminary work completed on asset components (fleet) with more to be done across the portfolio.
Conduct a Fire Services master plan	2025	New	Completion of Fire Services master plan including facility review.

2.0 State of Assets

2.1 Inventory

Table 2.1.1 displays the current inventory and the associated replacement costs, average age and anticipated useful life for each component. The equipment inventory is managed through the Fire Pro system; therefore, we have a high level of confidence in this data. A few assets are missing in-service dates with these estimated based upon the age of similar assets.

The replacement cost are based on a combination of current tender prices, inflated historical costs, and research of market prices.

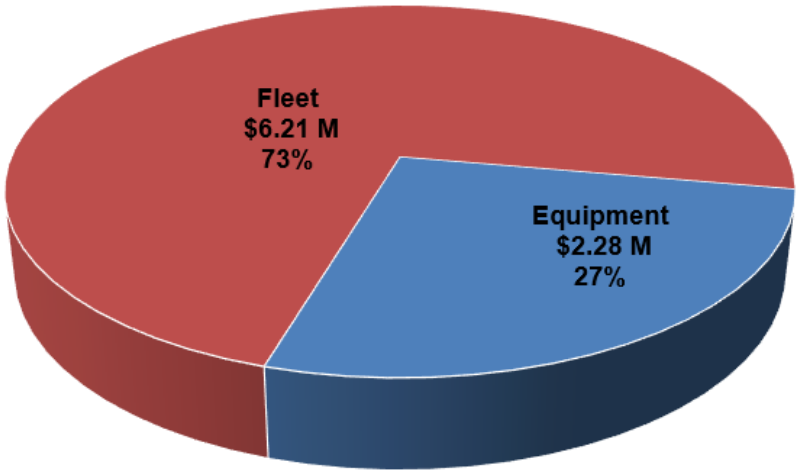


Table 2.1.1 - Inventory

Asset Component	Unit	Previous AMP Inventory	Current Inventory	Replacement Cost	Average Age (years)	Anticipated Useful Life (years)
Equipment	each	N/A	72	$2,279,573	8	5-40
Fleet	each	11	11	6,207,400	13	5-20
Total Replacement Cost				**$8,486,973**		

2.2 Condition Assessment Approach

The Township inspects all equipment on a yearly basis with increased frequency for higher risk equipment, utilizing a combination of physical assessments, asset attributes such as material and sizing, and established useful lives. The Township follows the Fire Underwriters Survey and other insurance and fire department documented best practices to determine minimum requirements. The Ontario Fire Marshals collect data on fire equipment and fleet used in fires, and equipment is automatically replaced if it fails a test.

Hoses undergo an annual pressure test and complete visual inspection, and sections of hose are disposed if they fail either test. Ladders undergo similar annual checks replaced as necessary. An annual pump test and service is done for all portable and truck pumps. Extrication tools are serviced and tested annually, and all self-contained breathing apparatus (SCBA) units are inspected annually. All personal protective equipment including all bunker gear is inspected and maintained monthly, while a 6 month in house cleaning is mandated by the department. SCBA cylinders are hydrostatically inspected every 5 years, inspected after every use, and have fresh air added every 6 months. Breathing air compressor has its air samples and the unit serviced every 6 months. The generators at the stations are load tested monthly, with some done weekly. The communications system is tested weekly including dispatch pagers.

The fleet undergoes provincially mandated pre trip and post trip inspections, as well as extra monthly checks and maintenance, and an annual commercial vehicle inspection as required by the Ministry of Transportation.

2.3 Current Condition

The indicator measure in each condition is based on percentage of replacement costs.

The critical fleet assets relate to older pumpers and tankers with a 20-year life that are used as backup assets for the Fire Department. While these assets are anticipated to be replaced over the next five years, the intent of the department is to maintain some older assets as backups for redundancy and risk management. Furthermore, fleet and equipment delivery times have significantly increased as a result of the pandemic, reducing the overall average condition rating of these assets. The longer delivery times are anticipated to continue for the next few years, after which the Township will see a more normalized replacement cycle with the average condition rating returning to pre-pandemic levels.

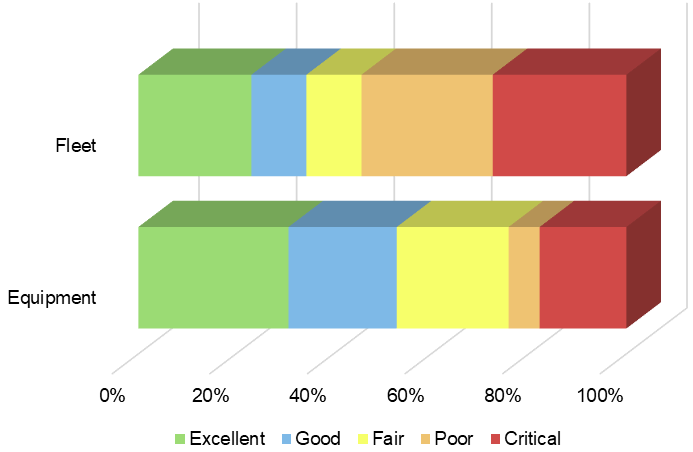


Table 2.3.1 – Condition Profile

Asset Component	Excellent	Good	Fair	Poor	Critical	Average Condition Rating	2024 Avg Condition Rating	Trend
Equipment	31%	22%	23%	6%	18%	Fair	Fair	➔
Fleet	24%	11%	11%	27%	27%	Fair	Fair	➔
Overall Total	**25%**	**14%**	**14%**	**22%**	**25%**			

3.0 Levels of Service

Corporate Objective

The corporate objective of the Zorra Fire Department is to ensure the safety of its firefighters and the community it serves.

Legislative Requirements

Ontario firefighters are governed by the Fire Protection and Prevention Act, 1997 and its associated regulations. Amongst other regulations and guidelines from other industry sources, the Fire Department is required to operate with a total of 62 volunteer firefighters spread across 3 stations and one permanent Fire Chief.

Customer Levels of Service

The following statement forms our qualitative description of the customer level metrics required under O.Reg. 588/17.

- *Zorra Fire Department provides fire protection services through a range of programs designed to protect the lives and property within the Township from adverse effects of fires, sudden medical emergencies or exposure to dangerous conditions created by man or nature.*

Tables 3.0.1 and 3.0.2 includes metrics the county has defined as required under the Infrastructure for Jobs and Prosperity Act, 2015 - O.Reg. 588/17. Included in Table 3.0.2, as required under the regulation, is the estimated performance for each metric over the upcoming 10-year period, based on the recommended financial strategy. A consistent annual target is not established as staff anticipate and plan for changes based on asset lifecycle strategies and ages.

Table 3.0.1 - Performance Measures

Key Service Attribute	Performance Measure	2022	2023	2024
Reliability	% of equipment in poor or critical condition	35%	35%	35%
	% of fleet in poor or critical condition	60%	55%	55%

Table 3.0.2 - Performance Measures with Estimated Performance

2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
QUALITY											
Average condition											
48%	49%	47%	46%	41%	36%	32%	31%	29%	29%	43%	40%
RELIABILITY											
% of assets in poor or critical condition											
35%	37%	43%	39%	41%	57%	62%	60%	59%	64%	51%	57%

4.0 Asset Management Strategy

4.1 Lifecycle Activities and Planned Actions

The fire department ensures all equipment and fleet used to prevent and reduce the impact of fires is in good shape and maintains a preventative maintenance program that meets or exceeds the requirements of the Fire Underwriters Survey and the Insurance Board of Canada; national organizations that set guidelines for firefighter's equipment, and fleet.

The Township employs a variety of lifecycle activities to maintain levels of service while striving to optimize costs based on defined risk. This includes activities for maintenance, rehabilitation, replacement, and disposal, while continuing to prepare for growth and introduce service improvements.

This strategy is not static. Lifecycle activities chosen to apply to assets are selected, reviewed, and modified based on continual industry benchmarking, staff training, professional networking, online reviews, consultant recommendations, and trial and error through scenarios and pilot programs.

For Fire Department assets, replacement needs follow a "run to failure" strategy provided assets consistently pass their annual inspections. This is generally the most cost-effective approach and follows provincial and federal standards.

Examples of lifecycle activities considered in the overall sustainable management of this portfolio are described in table 4.1.1.

Table 4.1.1 - Lifecycle Activities

Strategy	Lifecycle Activity
Non-Infrastructure Solutions	• Ongoing collaboration meetings • Annual inspections **Trigger: Ongoing**
Maintenance	• Preventative maintenance • Minor repairs **Trigger: Ongoing**
Rehabilitation / Renewal	• Equipment is generally not rehabilitated, while some minor vehicles rehabs are completed **Trigger: Fair/Poor**
Replacement	• Occurs at the end of the useful life and/or when unexpected events occur • May also occur to increase service levels **Trigger: Poor/Critical**
Disposal	• Activities associated with disposing of an asset once it has reached the end of its useful life **Trigger: Poor/Critical**
Expansion / Growth	• Fleet and equipment needs based on anticipated growth **Trigger: Development**

4.2 Risk Strategy

For this portfolio, the probability of failure is based on the projected condition and the consequence of failure is based on the replacement cost of the asset. Staff are working to further enhance the risk profiles as not all attributes recommended for inclusion (including social and environmental metrics) are currently tracked within the asset management systems.

Table 4.2.1 provides an overview of the risk ratings. Most equipment assets in this portfolio pose minor consequences in the event of a failure, as redundancies are in place, while the vehicles pose major consequences due to their value and lead time to replace. Staff will continue to monitor the higher-risk assets, conducting physical inspections to validate needs and plan lifecycle strategies accordingly.

Table 4.2.1 - Risk Profile

Asset Component	Severe	Major	Moderate	Minor	Insignificant	Average Risk Rating	2024 Avg Risk Rating	Trend
Equipment	0%	5%	17%	14%	65%	Minor	Insignificant	↑
Fleet	53%	11%	11%	0%	24%	Major	Major	→

4.3 Climate Change

As part of the asset management planning process, the Township will consider the risks and vulnerabilities of capital assets to climate change and the resulting actions that may be required. Commitment will be made to the development of tailored actions that make the best use of our resources to mitigate and adapt to climate change, in accordance with our local reduction targets, financial capacity and stakeholder support.

5.0 Financial Strategy

5.1 Proposed Levels of Service Review

Staff reviewed multiple scenarios over a 100-year period to ensure assets with long useful lives were incorporated in the analysis. The current reserve balance is factored into each scenario as available funding to complete existing asset lifecycle needs. The recommended scenario is used to inform the development of the overarching financial strategy.

Under all scenarios, except for Scenario B, the replacement of the aerial proposed in the Township's 2023 Development Charges Growth Study is deferred beyond its estimated end of life due to the high cost. Debenture funding would be utilized if the apparatus is at risk of not providing services and replacement is unable to be deferred until reserve balances are sufficient to fund the replacement.

Scenario A

This scenario is based on the 2025 budgeted contribution to the Fire Vehicle and Equipment reserves of approximately $458,000, representing approximately 67% funded based on lifecycle needs. The funding level results in an overall average condition of poor, the highest number of assets in poor or critical condition and significant lifecycle needs would be deferred increasing the risk of failure. Staff do not feel this level of funding results in a sustainable service over the long-term.

Scenario B

Staff initially ran this scenario assuming unlimited resources to achieve the lifecycle needs of all assets in this portfolio. This generated an average annual requirement of approximately $693,000, which staff used to re-run the analysis. The result is a realistic expectation of what can be achieved on an annual basis in maintaining the long-term lifecycle needs. This is considered the fully funded scenario, resulting in the lowest risk, and lowest achievable percentage of assets in poor or critical condition over the 100-year scenario period.

Scenario C

Under this scenario staff looked at targeting an annual contribution to the reserve of 75% of the fully funded scenario or approximately $520,000 annually over the 100-year period. The overall average condition of the portfolio under this scenario is poor, still resulting in a major risk level and deferral of asset lifecycle needs. The risk tolerance and number of assets in poor or critical condition is at a more tolerable level under this scenario.

Scenario D

Under this scenario staff looked at targeting an annual contribution to the reserve of 80% of the fully funded scenario or approximately $554,000 annually over the 100-year period. This funding level results in an average condition of poor but reduces the percentage of assets that are deferred and in poor condition. Deferral of some lifecycle needs would still be required under this scenario.

Based on the analysis, staff are recommending **Scenario D**, the proposed level of service target is to achieve 80% funding for this portfolio. Through the 2025 budget survey nearly 85% of respondents indicated that the service levels related to housing should be maintained or enhanced.

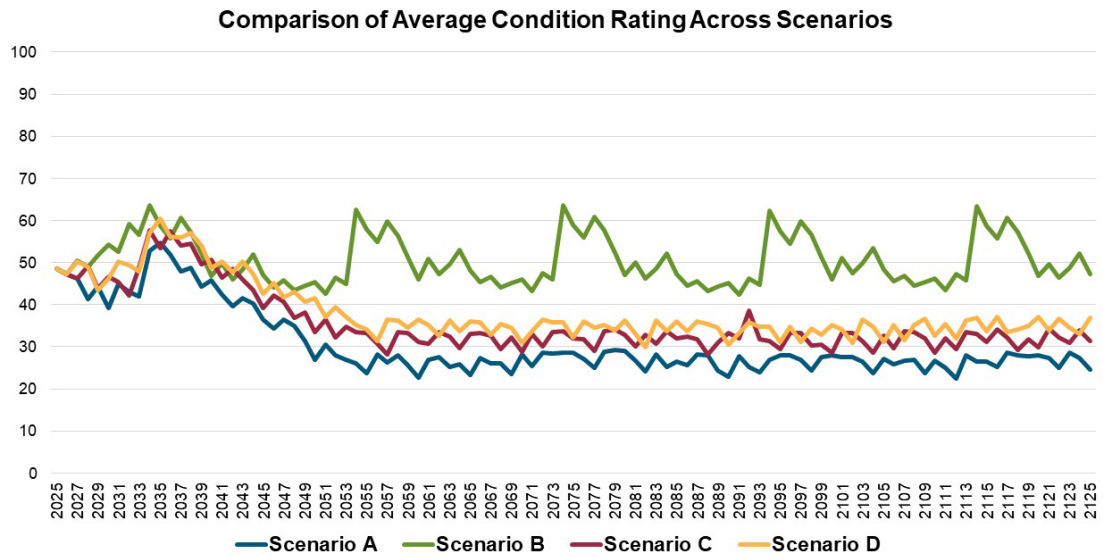


Table 5.1.1 – Scenario Summary

	Annual Investment	Average Condition	Average Risk	% of assets in poor or critical condition
Scenario A	$458,000	Poor	Major	62%
Scenario B	693,000	Fair	Major	39%
Scenario C	520,000	Poor	Major	55%
Scenario D	**554,000**	**Poor**	**Major**	**52%**

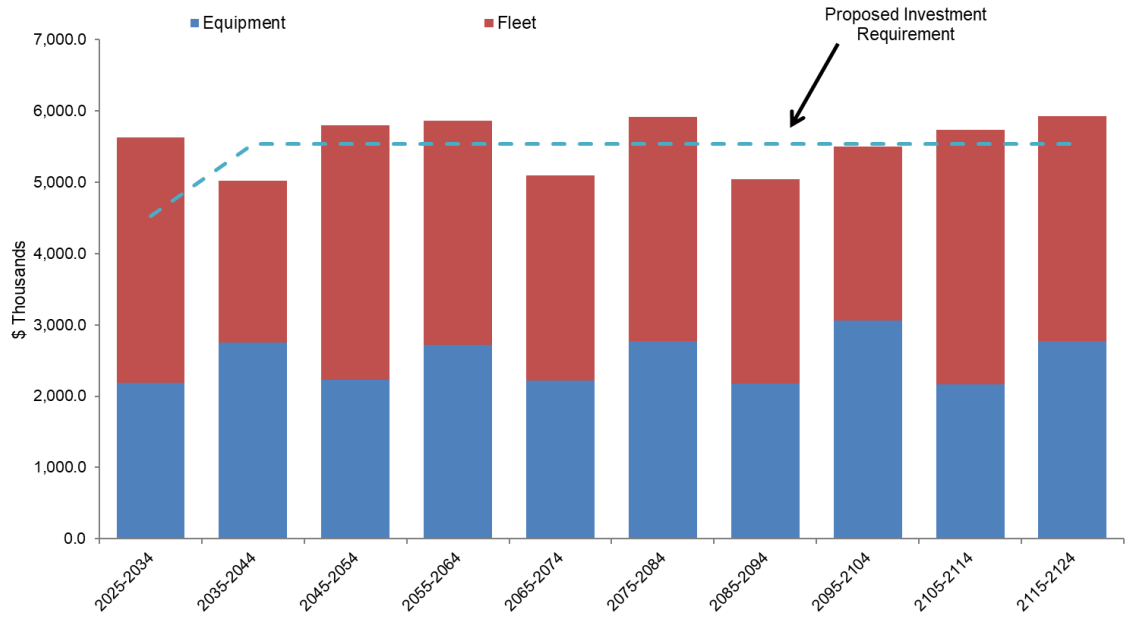
PROPOSED SERVICE LEVEL DEFICIT $0.10 MILLION

5.2 Lifecycle Requirements

Based on the lifecycle strategies identified to achieve proposed levels of service, the cost estimates over the next 100-years are determined in current dollars and summarized in Table 5.2.1.

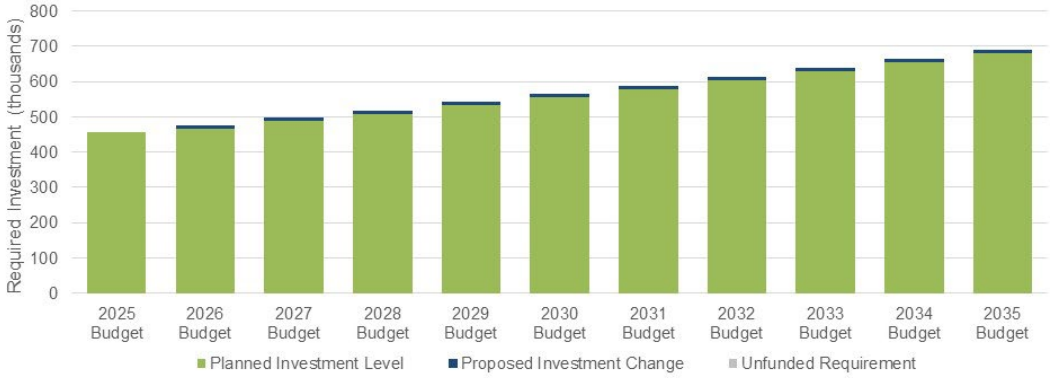
Table 5.2.1 - Lifecycle Requirements (thousands)

Asset Component	2025-2034	2035-2044	2045-2054	2055-2064	2065-2074	2075-2084	2085-2094	2095-2104	2105-2114	2115-2124
Equipment	$2,188	$2,753	$2,236	$2,725	$2,225	$2,769	$2,172	$3,063	$2,167	$2,777
Fleet	3,440	2,265	3,561	3,140	2,874	3,152	2,874	2,440	3,574	3,152
Totals	**$5,628**	**$5,018**	**$5,797**	**$5,865**	**$5,099**	**$5,921**	**$5,046**	**$5,503**	**$5,741**	**$5,929**



5.3 Funding Gap Analysis

The lifecycle needs for this portfolio are currently funded by an annual contribution to the Fire Vehicle and Equipment reserves.



Planned Investment Level

An estimated inflationary rate is used in Table 5.3.1 below in both the required investment and planned investment figures.

Proposed Investment Change

An increase of approximately $9,600 is proposed for 2026 through 2034 at which point the target investment level would be reached. The proposed increase recognizes the requirement to plan for the lifecycle needs of growth infrastructure in a way that is predictable for residents. Maintaining the reserve helps ensure a contingency is in place should unanticipated failures or events occur. Staff will continue to monitor actual rates of inflation to determine if changes to the level of service or funding strategy should be considered in response to changing economic conditions.

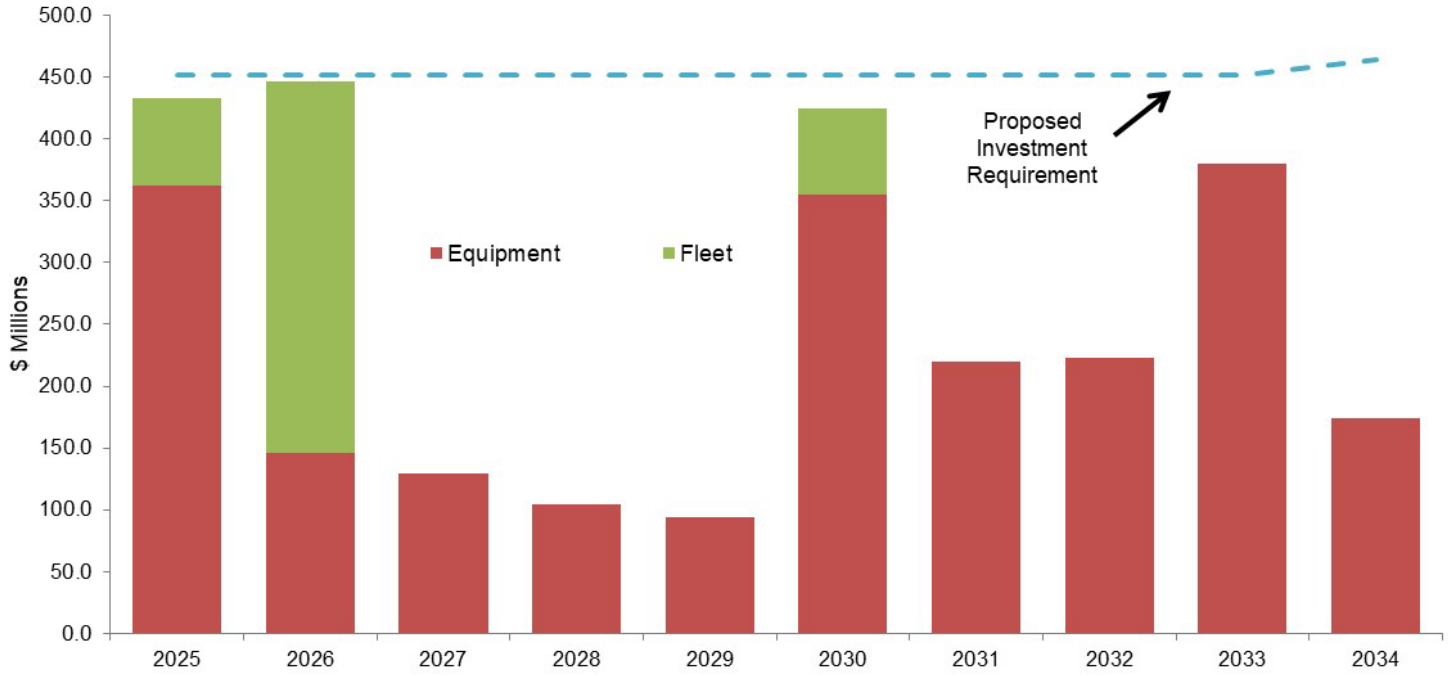
Table 5.3.1 – Comparing the required investment to the proposed investment (thousands)

	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Required Investment	$452.0	$463.3	$474.9	$486.8	$498.9	$511.4	$524.2	$537.3	$550.7	$576.5	$680.9
Planned Investment Level	458.0	466.0	487.6	509.2	531.8	555.4	579.0	603.6	628.2	653.8	680.4
Proposed Investment Change	-	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6
Unfunded Requirement	-	-	-	-	-	-	-	-	-	-	-

Based on the funding strategy proposed, the lifecycle needs to be reviewed in preparation of the long term capital plan for the 2026 Budget process are as follows:

Table 5.3.2 - Lifecycle Requirements (thousands)

Asset Component	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Equipment	$362.7	$146.1	$128.8	$104.3	$94.1	$355.0	$219.9	$223.4	$380.3	$173.6
Fleet	70.0	300.0	-	-	-	70.0	-	-	-	-
Totals	**$432.7**	**$446.1**	**$128.8**	**$104.3**	**$94.1**	**$425.0**	**$219.9**	**$223.4**	**$380.3**	**$173.6**



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1.0 Introduction

The Township of Zorra recognizes the critical role that natural assets play in providing essential services and enhancing community resilience and have begun the process of incorporating these assets into our asset management planning and financial reporting. Natural assets provide numerous societal, economic and environmental benefits for climate resilience. Traditionally, these benefits are often undervalued or go unrecognized in financial processes, leading to an increased risk of mismanagement and loss of natural infrastructure.

As natural asset management is a relatively new practice, standard terms and approaches for its integration into municipal asset management frameworks, which were originally designed exclusively for built and engineered assets, are still evolving. Overall, the intent of this AMP is to try to align natural asset planning and management with approaches and practices already in place for built and engineered assets, recognizing that natural assets have some unique attributes and functions as well as very different life cycles that do not always allow them to fit neatly into the same “boxes” as built and engineered assets. The Township is developing strategies to effectively manage and sustain our natural assets, ensuring their long-term viability and contribution to municipal service delivery. This approach supports a comprehensive, sustainable, and data-driven methodology to infrastructure investment, balancing financial stewardship with environmental and community well-being. This AMP is intended to document the available information for natural assets, including a summary of natural assets owned by the Township and provide a roadmap for how the Township will work toward fully achieving compliance with O.Reg. 588/17 for this portfolio, including the use of green infrastructure solutions.

To help understand some of the standard terms, definitions used throughout this portfolio have been provided in Table 1.0.1.

Table 1.0.1 – Definitions

Term	Definition
Aquifer	Underground shared water resources that are typically contained in sand, gravel and rock. Aquifers are replenished by rain and snow melt that seeps into the ground.
Areas of Natural and Scientific Interest (ANSI)	Represent areas of lands and waters containing important natural landscapes or features which have earth science values related to protection, appreciation, scientific study, or education. Such areas are identified and evaluated by the province and may be provincially, regionally or locally significant.
Green Infrastructure Asset	An infrastructure asset consisting of natural or human-made elements that provide ecological and hydrological functions and processes and includes natural heritage features and systems,

Term	Definition
	parklands, stormwater management systems, street trees, urban forests, natural channels and permeable surfaces.
Engineered (Green) Asset	Green infrastructure assets which have been designed to function like natural assets but are designs not found in nature (e.g., green roofs, permeable pavement, rain barrels etc.)[1]
Enhanced (Green) Asset	Green infrastructure assets which have been designed to act like natural assets (e.g., street trees, urban parks, stormwater management ponds etc.)
Natural Asset/Natural Infrastructure	Green infrastructure assets include the stock of natural resources or ecosystems that is relied upon, managed, or could be managed by a municipality, regional district, or other forms of local government for the sustainable provision of one or more municipal services.
Meadow and Thicket	Meadows and thickets are early successional communities which may turn into woodlands over time or may be maintained by natural or human disturbances like fire, flooding or mowing. Meadows are dominated by grasses and herbaceous species with tree and shrub cover of less than 25%, whereas thickets are dominated by shrubs and young or stunted trees.
Waterbodies	Non-linear, open water areas including lakes and ponds.
Watercourses	A linear, flowing and visible river, stream or creek and the surrounding floodplain areas. This includes seasonal streams that are dry during summer.
Wetlands	Wetlands are areas that are seasonally or permanently covered by shallow water, as well as lands where the water table is close to or at the surface. This allows for the formation of hydric soils and supports water-loving or water-tolerant plants to grow. The four major types of wetlands are swamps, marshes, bogs and fens.
Woodlands	Means treed areas that provide environmental and economic benefits to both the private landowner and the general public, such as erosion prevention, hydrological and nutrient cycling, provision of clean air and the long-term storage of carbon, provision of wildlife habitat, outdoor recreational opportunities, and the sustainable harvest of a wide range of woodland products. Woodlands include treed areas, woodlots or forested areas and vary in their level of significance at the local and provincial levels.

[1] https://naturalassetsinitiative.ca/wp-content/uploads/2024/11/NAI-NAM-guidance-document-v105.pdf - page 10

Figure 1.0.2 includes examples of natural, enhanced, and engineered green infrastructure assets.

Figure 1.0.2 – Green Infrastructure Assets

Natural Assets	Enhanced Assets	Engineered Assets
• Wetlands • Swamps • Forests • Meadows • Watercourses • Aquifers • Lakes and Ponds • Groundwater • Soils	• Rain gardens • Green roofs and walls • Bioswales • Street and park trees • Naturalized stormwater ponds • Manicured lawns	• Permeable pavement • Rain barrels • Cisterns • Dams • Perforated pipes • Infiltration trenches and galleries

The Township can only directly maintain and manage natural assets on lands under its ownership, or through a shared management agreement (e.g., with another public agency such as a Conservation Authority). However, it is also understood that natural assets on all lands within the municipality provide services to the broader community (e.g., such as air pollution control, cooling, water quantity and quality management, mental health benefits associated with views of green – even if one does not have access to this greenery, etc.).

Furthermore, it is not unusual for natural areas in private ownership to be transferred into public ownership as part of the municipal planning process, or through land securement initiatives with community partners, or as part of strategic initiatives to protect certain assets from risks and impacts (e.g. protection of drinking water). On this basis, this initial report focuses on those natural assets which are explicitly owned by the Township, it also identified the broader system these assets are a part of and includes actions and timing to expand the asset inventory and assessment to a community wide framework.

While the Township doesn't have direct control of their groundwater and water purification, their lands in sourcewater protection areas can impact groundwater quality and quantity and therefore are included in this analysis. Surface water quality does directly affect Township services and quality for life, and will continue to be a focus of this report and the Township's enforcement mechanisms.

The natural assets included in this plan are split into three separate but linked categories: terrestrial natural assets (e.g. woodlands, wetlands, meadows, etc.), aquatic assets (e.g. groundwater features, watercourses and waterbodies) and soil assets. Using the best available data and information, each asset area was spatially mapped over Township-owned properties to determine a listing of Township-owned natural assets. However, it should be acknowledged that many services that natural assets provide are part of a broad, interconnected system that does not cease at a property line. The end goal is to take a Township-wide approach to cataloguing natural assets and the services they provide.

There are several limitations related to defining natural asset inventory and providing maps of areas directly serviced by natural assets:

- Overlap Between Categories: While the three asset categories are largely mutually exclusive, certain categories may have functional overlap (e.g. wetlands are considered a terrestrial asset, however they may overlap with aquatic classes).
- Groundwater: Groundwater is critical to sustaining many of the wetland and watercourse features within the Township. Additionally, nearly 100% of the communities in Oxford County rely on groundwater for drinking water supply, whether through the 17 municipal drinking water systems or by private well. There are many challenges to quantifying the value that groundwater provides as a natural asset, both environmentally and socially. Defining the boundaries of groundwater can be extremely difficult requiring a detailed understanding of surface and subsurface geomorphology and hydrology. As a starting point, the best available information as it relates to Township owned properties and associated ground water studies have been captured. A more fulsome analysis on the boundaries and value of groundwater features is recognized as a gap to be filled as part of a subsequent project.
- Limitations in Ecological Data and Information: This analysis does not consider natural assets with respect to areas which may represent terrestrial linkages or corridors as these are not fully understood or mapped at a Township wide scale or property specific scale. In addition, habitat functions including the presence of unique characteristics such as areas of ground water discharge (seeps and springs), presence of species at risk or other significant species have not been assessed as part of this exercise.

Traditional built infrastructure and asset management plans have clear financial inputs and implications. Natural assets do not follow the same approach resulting in financial management practices that can be difficult to define. Table 1.0.3 documents some of the key differences between asset management practices of traditional built infrastructure and natural assets.

Table 1.0.3 – Differences between traditional built infrastructure and natural assets

Traditional Assets	Natural Assets
Specified useful life and lifecycle strategies	No useful life, maintained in perpetuity.

Traditional Assets	Natural Assets
Service capacity and replacement costs available when asset is put into service.	Capacity grows over time as does value of natural asset.
Quantifiable service(s)	Beyond specific service, numerous ecosystem benefits are difficult to quantify (i.e.. Ecosystem benefits).
Included in Tangible Capital Assets (TCA) financial reporting.	Not directly included in TCA financial reporting.
Exist within the municipal boundary with clear ownership.	May be part of a larger system with multiple jurisdictions and stewards.
Many available best practices and guides.	Few available best practices for natural asset management; development ongoing throughout Ontario.

Over time, this plan will be expanded to include all natural assets that the County and Area Municipalities rely on for environmental services, regardless of ownership, and will also attempt to quantify the broad range of ecosystem functions which provide direct and indirect ecological services from which the community benefits. Valuing the ecological services of natural assets can help inform decision-making and sustainable management, which can help ensure that the economic benefits of these assets are recognized and are appropriately protected, conserved or restored to help prevent costly mistakes and promoting long-term environmental and economic stability.

As the Township is just beginning its natural asset management journey, information is not currently available to populate all AMP sections for this portfolio. In conjunction with Oxford County, County and Township staff have discussed the County's Natural Asset Management Roadmap with the Natural Asset Initiative which was completed in the summer of 2024. This Roadmap, included as Figure 1.0.4, outlined a series of goals and competency areas to improve in order to include natural asset management in the County's financial planning framework. The implementation of the initial stages of this roadmap has already begun with the Township; the timeline for projects in 2026-2028 would be in conjunction with the County if Council pushes for these changes. The roadmap is driven by multiple gaps noted throughout and will improve the Township's usage of green infrastructure while establishing the value natural assets provide to the Township. This will require further study and dedicated resources, including external expertise to ensure the roadmap's goals are met. A catered Natural Asset Management Roadmap can also be completed with the Township as part of this process.

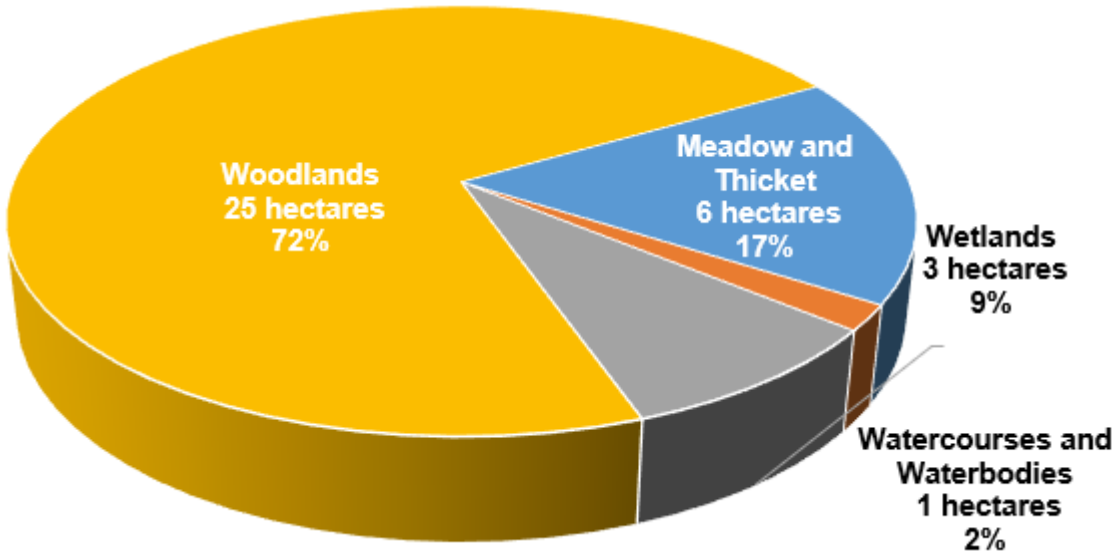
Figure 1.0.4 – Improvement Roadmap

2025	2026	2027	2028
•Initial inventory and risk identification for Township owned assets •Conduct workshop to identify high level risks and threats to natural assets •Initial replacement costs, conditions where possible •Commence project to identify/inventory Township-owned street trees	•Identify Natural Asset Management targets with Township staff and Council •Enhancements to replacement costs, conditions and other improvements noted in AMP (annual commitment) •Identify and build the natural asset inventory to a wider scale, including completion of a detailed initial assessment of conditions and risks for all assets	•Further breakdown of replacement costs/valuation of natural assets based on all usages of the asset – carbon sequestration, stormwater resiliency, etc. •Develop funding strategies for natural asset areas that currently have no or limited direct funding/management plans or strategies such as biodiversity, soil health, pollination, and wetlands •Complete a service attribution and valuation for all natural assets, including improving replacement costs and completing a valuation for ecological services	•Review Natural Asset Management for the whole community to assess for gaps, develop targets to infom management and provide recommendations to address and assess areas which may have no/limited management or funding with a focused approach to biodiversity, climate change adaptation, and natural asset management

2.0 State of Assets

2.1 Inventory

The Township owns a total of 49 distinct properties across 100 hectares used to deliver various services throughout Zorra. As a starting point for creating the inventory, all properties were separated by their ecological land classification (ELC) to assess the different natural assets on each property using existing information from the draft Oxford Natural Heritage Systems Study, 2023 (ONHSS). Based on this assessment, woodlands account for the highest number of natural assets owned by the Township followed by thickets and wetlands. About 25% of Township owned land (including the two arenas, fire halls, and parks across 25 hectares) does not have enough natural assets to meet the ELC threshold. The inventory in Table 2.1.1 below shows the Township owned natural assets along with the total natural assets based on available information. The identification of these assets will be an ongoing process that will include community engagement with local experts and community groups that will enhance the data confidence of these asset classes.



The average age and anticipated useful life of natural assets differs from traditional built infrastructure as natural assets grow their value over time and need to be maintained or protected from negative impacts of human interference in perpetuity, thereby requiring the inclusion of a variety of stakeholders in management practices.

Developing replacement costs for natural assets requires the full cost of the natural assets' ecological goods and services to be understood. This incorporates the functional impact of natural assets and their value in a holistic sense. Replacement valuation that does not replace the ecological goods and services that the asset creates is only replacing the direct asset and not the wider utility and function of the asset. Replacement costs will be developed as the Township progresses through the improvement roadmap.

Table 2.1.1 - Inventory

Asset Component	Unit	Current Inventory (Township owned)	Total Inventory (all lands within Township boundary)	Percentage Township Owned	Percentage of Township Land
Meadow and Thicket	hectares	6	1,437	0.4%	6%
Watercourses and Waterbodies	hectares	1	524	-	-
Wetlands	hectares	3	3,167	0.1%	3%
Woodlands	hectares	794	16,423	2.9%	25%

3.0 Levels of Service

Natural assets on Township properties provide a variety of services throughout the Township, with the ecological condition of the natural asset directly impacting the level of service provided.

Much of the direct work with natural assets occurs through the Township's Drainage department that directly oversees the maintenance and construction of all municipal drains. Municipal drains are drainage systems that channel water off of agricultural land or removes excess water that collects on properties. These include open ditches and closed tile systems in the ground, and interact with stormwater management ponds, culverts, bridges, streams and rivers. The Township's Drainage Superintendent works with landowners to ensure drains aren't causing downstream water quality issues and works with Bylaw, Township and County staff, and local conservation authorities to ensure the drains are not negatively impacting natural assets and water quality.

Additional work done with natural assets includes Oxford County's Woodlands Officer enforcing the County's Woodlands Conservation By-law, as well as through stewardship programs such as the Clean Water Program for Oxford County. The Woodlands Conservation by-law manages how lumber can be harvested from wooded properties within Oxford County, and there are reasonable limits put in place to limit the impact that harvesting and recreational activities have on the remaining natural assets. The Clean Water Program works with private landowners to manage and enhance natural assets on private property by helping provide funding for these projects where they meet program criteria.

Table 3.0.1 – Natural Asset Services

Service Provided	Aquifers / Sourcewater	Meadow and Thicket	Soils	Surface Water (Watercourses and Waterbodies)	Woodlands	Wetlands
Water storage of drinking water source	✓					
Water filtration through soil towards aquifer improves water quality	✓		✓		✓	✓
Carbon sequestration reduces and limits the impacts of medium to long term climate change	✓	✓	✓	✓	✓	✓
Soil quality leads to agricultural, biodiversity and water quality impacts		✓			✓	
Soil erosion reductions meant to reduce impact on buildings, roads, and other infrastructure assets		✓				
Biodiversity improvements lead to improved agricultural outcomes through pollination, improved wildlife health through protected habitats and food sources, and a wider variety of ecosystem biomass		✓	✓	✓	✓	✓
Stormwater management leads to a reduction of the impact of severe storms and floods and increases the filtering effect of water going into the watershed		✓		✓		✓
Recreational benefits lead to a human centered focus on access to natural areas for recreation and tourism		✓		✓	✓	
Tree canopy leads to local temperature, air quality improvements, wind and noise reductions combined with increased resiliency in urban and semi-urban settings					✓	✓
Water quality improvements minimizes the impacts of nitrates and other pollutants in sourcewater and surface water quality				✓		✓

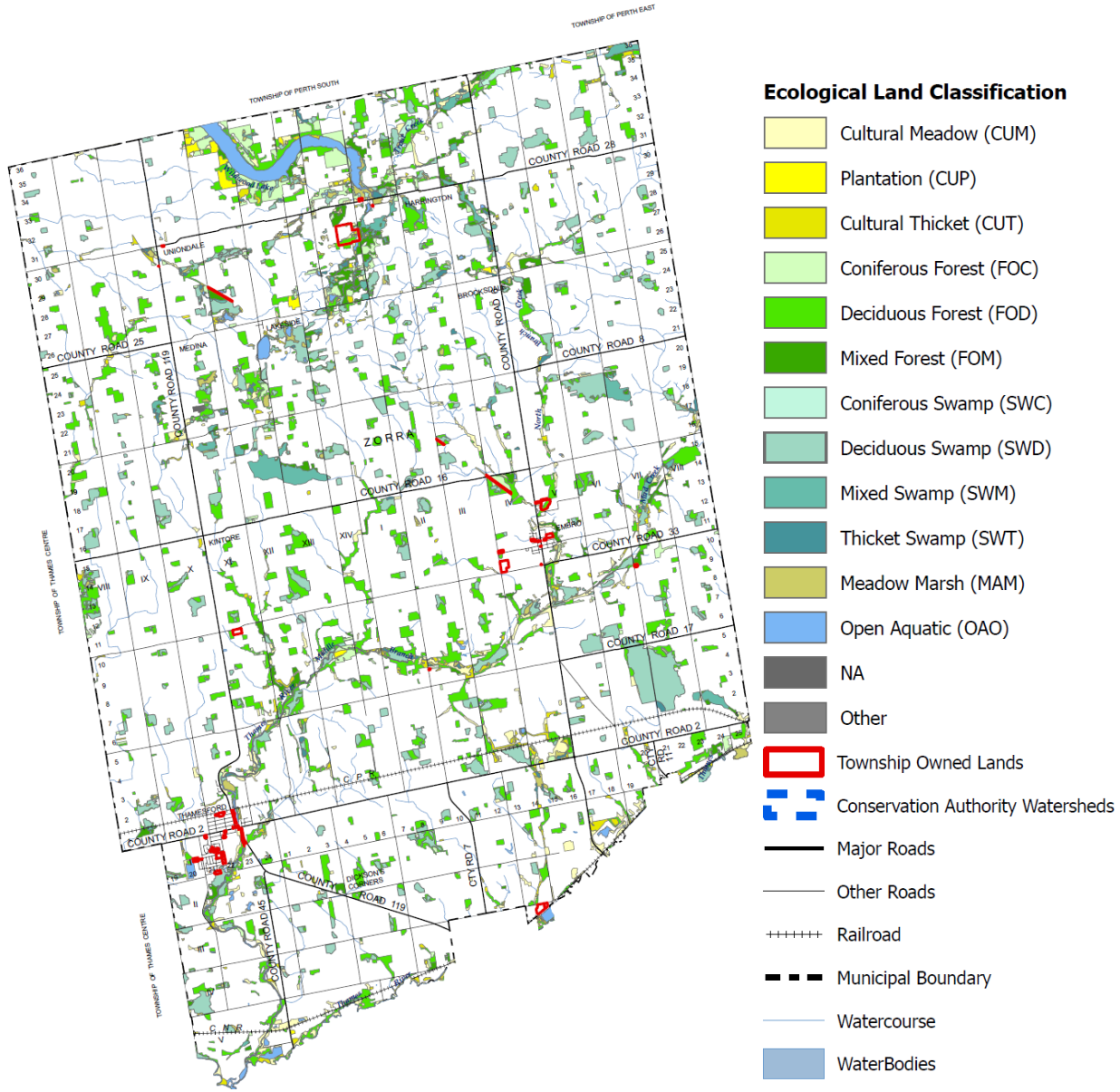
3.1 Terrestrial Assets

Terrestrial assets include woodlands, wetlands, meadows and thickets. For the terrestrial natural features asset type, the vegetation community mapping was used to establish a nested asset hierarchy aligned with those typically used in asset management. The relative level of coverage of each natural asset type across County properties was then calculated based on the synthesis of the available data.

Terrestrial features are fixed polygons delineated using the applicable standard for vegetation community classification - the Ecological Land Classification (ELC) system for southern Ontario (Lee et al., 1998). These have been delineated by land property and include data on their terrestrial, aquatic, and soil attributes, and will be expended upon in the County's geographic information system (GIS) as more information is available. The attributes currently tracked include quantity, type, location, ownership (initially only County-owned), watershed, subwatershed, soil type, and conservation authority. Figure 3.1.1 shows the ownership of ELC natural cover on County owned land.

The Township does not currently have an inventory of street trees. The benefits of these trees include improving air quality, improving water filtration, stormwater management and soil quality, reducing soil erosion, and lowering local temperature, wind and noise disruptions. Conducting a tree assessment may assist the Township in improving traffic safety, increasing environmental and ecological benefits, and leading to increased property values.

Figure 3.1.1 – Terrestrial Assets Map



3.2 Aquatic Assets

The functions of surface water and watercourses include their ability to attenuate floods, filter and improve water quality, support recreational opportunities, and assimilate wastewater discharge. Watercourses and their surrounding floodplain areas reduce the pressure of floods when they naturally include buffers on either side of the watercourse that can slow runoff and absorb excess water (similar to wetlands). This buffer before agriculture/development land reduces the impacts of floods and the increased intensity of storms being seen in the Township.

Recreational opportunities are directly affected by surface water quality within the Township. Recreational opportunities for residents including fishing and boating along with other tourism activities are directly affected by low surface water quality. Lower water quality can lead to algae blooms, loss of fish habitat and species, and other signs of negative impacts to aquatic ecosystems and biodiversity overall.

Aquatic features are subsequently split into surface features and groundwater features. Surface features include watercourses which are dynamic continually moving systems whose boundaries have been based on a center polyline feature. To represent this in the inventory, linear measurements of watercourses were taken to calculate the total amount of land interacting with this watercourse to ascertain the possible influence owned lands can have in these areas. Similarly, groundwater features are represented in relation to their function for municipal drinking water sources and the asset inventory represents these areas building from available Source Water Protection information and supporting technical data relating to the operation of the County's supply wells.

3.3 Soil Assets

Soils are a vital natural asset, forming the foundation for food production, water filtration, biodiversity, and climate regulation, and are essential for many of the ecological functions and services we depend on. Fertile soils produce the vast majority of all food, supporting crop growth and livestock grazing. It also provides the timber, pulp and paper we rely on for housing, packaging and currency, among other things. It is also responsible for storing the bulk of the carbon found in terrestrial ecosystems and supports vital waterways by preventing erosion and enhancing water quality. Zorra Township has some of the best soil in the province based on the Canada Land Inventory (CLI). These soils support the vast agricultural industry and that is why all areas outside of settlements are considered part of the Township's prime agricultural area.

The review of soil attributes revealed that areas of lesser CLI soils within the Township typically overlap with areas of woodlands and wetlands and represent areas of organic soil. While these soils are considered to be of lower quality from an arability perspective, they are functionally important for slowly breaking down plant material, filtering contaminants out of water, providing habitat for wildlife, and represent important carbon sinks. These functions are necessary to slowly release essential nutrients through the soils system and cannot be completely replicated by artificial means.