
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.

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 lifecycle funding requirements, in turn allowing for a long-term financial plan to be developed for managing and reducing any identified gaps.

This AMP covers all Township owned assets, except for natural assets as staff continue to work through identifying assets and related asset management planning practices for this area.

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 2024 Asset Management Plan appendices. The overall replacement cost is approximately $310.6 million.

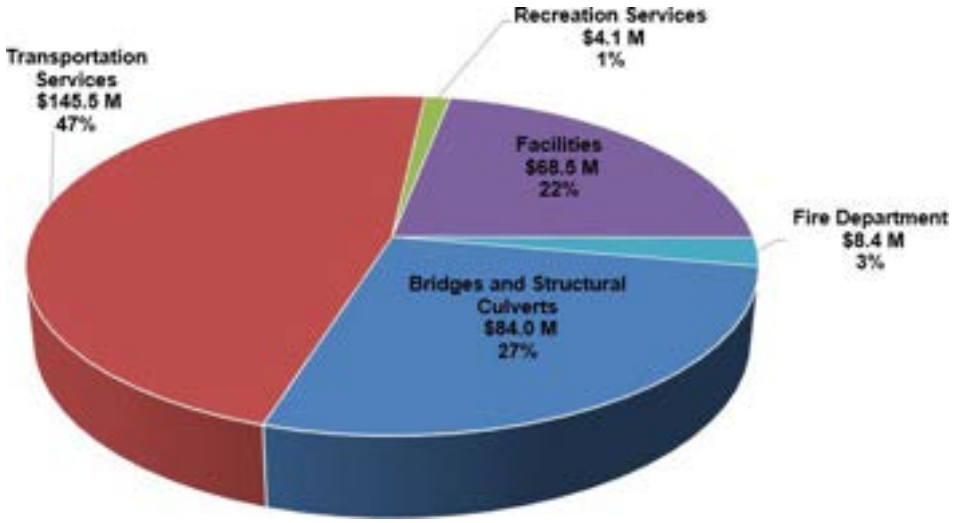

Table 1.1.1 Consolidated Replacement Value

Asset Appendix	Replacement Cost
Bridges and Structural Culverts	$84,007,000
Transportation Services	145,549,893
Recreation Services	4,124,486
Facilities	68,469,440
Fire Department	8,433,768
Total Replacement Cost	**$310,584,587**

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 Oxford County 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. 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 population growth and economic activity will continue to be experienced during the course of 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 25-year planning period on a regular basis (e.g. every 5 years). These forecasts were last updated in 2020, as illustrated in table 2.8.1.

The 2024 Development Charges Background Study completed an analysis of shorter-term growth projections based on updated information, thus resulting in projections to 2034 that differ from the 2020 growth forecasts for the same period. Further, the 2020 forecasts are currently in the process of being reviewed and updated to ensure they continue to reflect current growth drivers and trends. Staff will continue to monitor growth to ensure that capital projects designed to service growth are timed appropriately.

Table 2.8.1 Township of Zorra Growth Projections

	2026	2031	2036	2041	2046
Population	8,990	9,250	9,530	9,830	10,120
Households	3,340	3,440	3,530	3,620	3,710
Employment	2,920	2,960	3,010	3,080	3,150

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. In addition, staff will define and include a data accuracy and reliability rating for the 2025 Asset Management Plan.

3.0 State of Assets

3.1 Inventory

Assets are identified within each appendix by component and quantity. 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.

3.2 Valuation

Replacement cost valuation is forward-looking and accounts for changes in technology and other factors. Replacement costs are based on current tender prices, where available. Current tender prices are adjusted where staff feel cost increases are due to temporary economic situations. Replacement costs provided as part of condition assessments or other studies are also being utilized, where available. The Consumer Price Index tables have also been used to inflate historical costs, where other updated cost information was not available.

3.3 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 score can be determined.

The condition scale and visual inspection ratings are based on the following approach:

- Excellent - Asset is well maintained with no noticeable defects.
- Good - Asset may show signs of minor deterioration and may require some maintenance.
- Fair - Deterioration evident, function affected. Asset may require on-going monitoring.
- Poor - Serious deterioration, function inadequate. Asset may require ongoing monitoring.
- Critical - No longer functional, general or complete failure. Asset may require extensive monitoring.

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, 2023.

3.4 Useful Life

Asset estimated useful lives, for each new build / replacement, based on a run to failure strategy, are identified within each report card. Assets may undergo a continual process of repair, rehabilitation and refurbishment to maintain their intended purpose. By using lifecycle strategies, the Township is able to extend the overall life of certain assets, ensuring that each asset is maintained in the most sustainable manner.

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

4.3 Proposed Levels of Service

Proposed levels of service are not required for reporting until 2025 based on O.Reg. 588/17 requirements. Over the course of 2024, the Township will complete public engagement activities on proposed levels of service scenarios, including financial impacts. This information will be used to help inform the identification of the appropriate and sustainable proposed service levels.

4.4 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.

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.

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.

Risks associated with lifecycle activities include:

- 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.

6.0 Financial Strategy

6.1 Financing Strategies

A financial plan is a critical component of the AMP and brings the plan into action. A sound financial plan demonstrates that the Township has integrated the AMP with financial planning and long-term budgeting, 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 needed to meet growing demands through population increases or demand for new services. 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 portfolios 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 projects will be prioritized 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 existing assets so services can continue to be delivered. This information is utilized to determine the required annual contribution to capital reserves. Utilizing the average annual figure for the required contribution, over a charge based on actual lifecycle needs, 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 has the ability to 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.

In the event that this AMP identifies funding shortfalls in any of the asset categories, the impacts of the shortfall and how the impact will be managed, will be identified. The action plan may include any of the following approaches:

1. Reduce levels of service which will effectively reduce the funding requirement; and
2. Employ financial strategies, such as:
    a. use of debt; and
    b. increase or introduce user fees.

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.

6.2 Budget Process

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

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 decommission) associated with asset lifecycle decisions;
- Utilizing risk to prioritize projects where constraints exist;
- Evaluating each significant new (growth related) asset, including considering the impact on future operation costs; and
- Incorporating new revenue tools and alternative funding strategies where possible.

Service area staff will work closely with financial staff in the preparation of the operating and capital budgets to ensure that the lifecycle activities budgeted are necessary to achieve agreed upon levels of service and accommodate growth over the 10-year capital planning horizon.

6.3 Funding Gap Analysis

Using the anticipated 10-year asset lifecycle needs, along with the current capital investment level, and beginning of year reserve balance, the Township is able to determine if there is an anticipated funding gap within each appendix over the current 10-year period.

Drawing reserve balances to zero may result in increased capital reserve contribution requirements in the subsequent 10-year period in order to fund 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. Staff will work with the asset management software provider to calculate the funds that should be set aside based on where assets are in their lifecycle, which would represent a fully funded asset management program. This information would be utilized to define a target reserve balance, taking into consideration risks and alternative funding sources.

Once the funding deficit or surplus has been identified, the Township would investigate opportunities for reducing the funding gap or maximizing the benefits of available funding. These strategies may include increases to the levy, utilization of grant funding opportunities and further review of lifecycle strategies and proposed levels of service. Funding options will be identified within each appendix and will be incorporated into future budget cycles as appropriate.

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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 components, as a result of differing life spans and maintenance strategies. They are bridges and structural culverts with a span of 3 meters or greater (culverts with spans less than 3 meters are included in the stormwater network). Staff are working to identify the guide rails inventory and will include these needs in a future AMP.

Assets face increased challenges as a result of aging, 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.

1.1 Improvement Plan

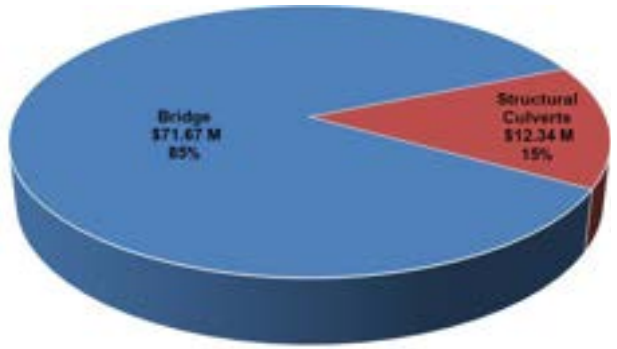
The following recommendations are based on the review of current management practices, inventory, valuation, and condition analysis.

- Incorporate climate change resiliency as part of capital replacement/renewal projects in accordance with applicable emerging guidelines and design standards.
- Update attributes to further enhance the risk profile in the asset management systems.
- Continue to improve data confidence.
- Document lifecycle history on asset components within the asset management systems.

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 anticipated useful lives exclude the management strategies utilized to extend the assets overall life beyond this estimate.



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.

Table 2.1.1 - Inventory

Asset Component	Unit	Current Inventory	Replacement Cost	Average Age	Anticipated Useful Life (years)
Bridges	each	37	$71,665,000	56	60
Structural Culverts	each	26	12,342,000	55	50-65
Total Replacement Cost			**$84,007,000**		

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.

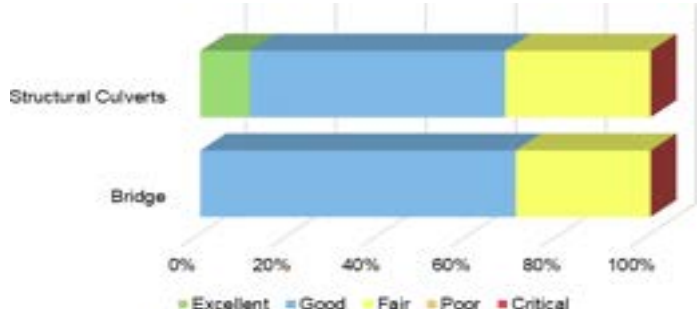
Table 2.2.1 - BCI Score Ratings[1]

Asset Component	Very Good 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 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, 2023. 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. The Township will be establishing it's goal as part of the proposed levels of service requirements for the 2025 AMP.

Table 2.3.1 – Condition Profile

Asset Component	Excellent	Good	Fair	Poor	Critical	Average Condition Rating
Bridges	0%	70%	30%	0%	0%	Good
Structural Culverts	11%	57%	32%	0%	0%	Good
Overall Total	**2%**	**68%**	**30%**	**0%**	**0%**	

3.0 Levels of Service

Table 3.1.1 includes metrics required under the Infrastructure for Jobs and Prosperity Act, 2015 - O.Reg. 588/17, as well as additional metrics the township has included.

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

- *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.*
- *Included in Table 2.2.1 are images illustrating each condition category.*
- *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.*

Table 3.1.1 - Performance Measures

Key Service Attribute	LOS Statement	Performance Measure	2022	2023	Target
Safety	Providing safe bridges and culverts for users	% of bridges in the municipality with loading or dimensional restrictions.	0	0	N/A
Quality	Providing a bridge and culvert network at the appropriate material quality	For bridges in the municipality, the average bridge condition index value	71.49	72.58	TBD
		For structural culverts in the municipality, the average bridge condition index value	70.66	73.03	TBD
Reliability	Providing a bridge and culvert network that is reliable	% of structural culverts in poor or critical condition	0%	0%	TBD
		% of bridges in poor or critical condition	0%	0%	TBD

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 include 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, Poor/Critical**
Disposal	• Activities associated with disposing of an asset once it has reached the end of its useful life, often completed in conjunction with a replacement project • Includes coordination with contractors to ensure safe removal and environmental compliance **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. While a significant percentage of bridges have a major risk rating, this in and of itself 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
Bridges	25%	74%	1%	0%	0%	Major
Structural Culverts	0%	13%	52%	31%	4%	Moderate

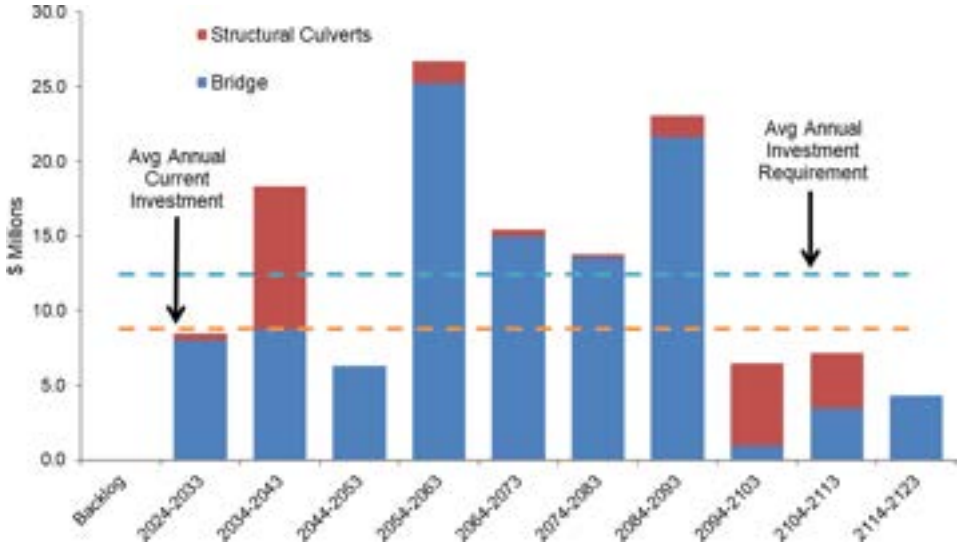
4.3 Climate Change

As part of the asset management planning process, the risks and vulnerabilities of capital assets to climate change will be assessed. Commitment will be made to the utilization of climate adaptation tools, guidelines, and standards as published by Provincial, Federal and/or other regulatory agencies, and included as design criterion for bridge and structural culvert renewal/replacement projects.

5.0 Financial Strategy

5.1 Financing Strategy

This portfolio is currently funded through an annual levy contribution to the Roads – Bridges Reserve and the use of Canada Community Building Funds (CCBF).



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 5.1.1. Staff will review the current lifecycle requirements with each business plan and budget cycle to ensure that the 10-year capital plan reflects the most current information available. 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.

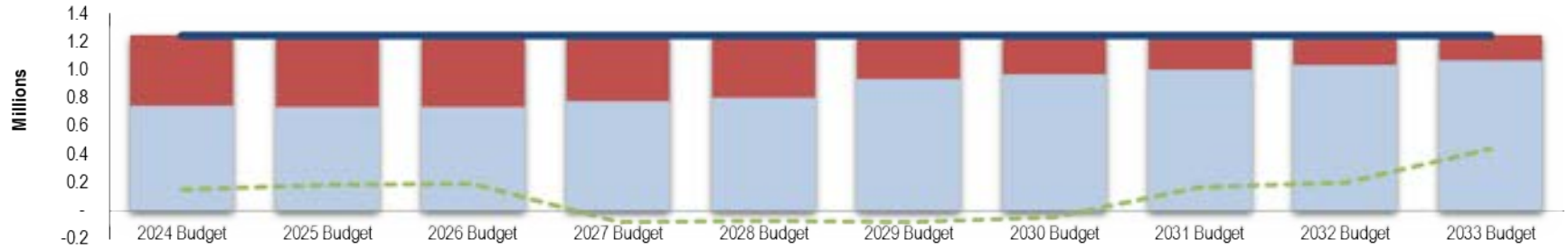
Table 5.1.1 - Lifecycle Requirements (millions)

Asset Component	Backlog	2024-2033	2034-2043	2044-2053	2054-2063	2064-2073	2074-2083	2084-2093	2094-2103	2104-2113	2114-2123
Bridges	$-	$8.04	$8.77	$6.30	$25.23	$14.99	$13.52	$21.64	$0.96	$3.47	$4.31
Structural Culverts	-	0.42	9.57	-	1.48	0.45	0.27	1.45	5.52	3.68	-
Totals	**$-**	**$8.46**	**$18.34**	**$6.30**	**$26.71**	**$15.44**	**$13.79**	**$23.09**	**$6.48**	**$7.15**	**$4.31**

Table 5.1.2 links the average annual investment, based on the lifecycle requirements, to the current funding noted within the 2024 Approved Budget. The reserve balance noted in Table 5.1.2 reflects the lifecycle projects identified in the 10-year capital plan and may not reflect all the lifecycle needs identified in Table 5.1.1.

Table 5.1.2 - Budgeted Funding

	Key	2024 Budget	2025 Budget	2026 Budget	2027 Budget	2028 Budget	2029 Budget	2030 Budget	2031 Budget	2032 Budget	2033 Budget
Annual Required Investment		$1,246,000	$1,246,000	$1,246,000	$1,246,000	$1,246,000	$1,246,000	$1,246,000	$1,246,000	$1,246,000	$1,246,000
Current Investment		745,867	732,568	733,818	772,684	801,624	932,012	963,919	997,421	1,032,599	1,069,535
Funding Deficit		500,133	513,432	512,182	473,316	444,376	313,988	282,081	248,579	213,401	176,465
Funding Surplus		-	-	-	-	-	-	-	-	-	-
Reserve Balance		152,496	182,046	191,196	(81,063)	(76,310)	(80,546)	(50,498)	169,174	199,902	440,390



5.3 Funding Gap Analysis

Table 5.3.1 illustrates the anticipated asset management 10-year lifecycle needs (expenditures) and anticipated funding for the 10-year period of 2024 to 2033. The reserve balance is based on the forecasted 2023 closing balance; as a result, does not reflect final 2023 information. The asset management system calculates the optimal expenditures based on theoretical asset lifecycle needs. Table 5.3.1 reflects an approximate $0.15 million deficit in funding availability over the period 2024 to 2033.

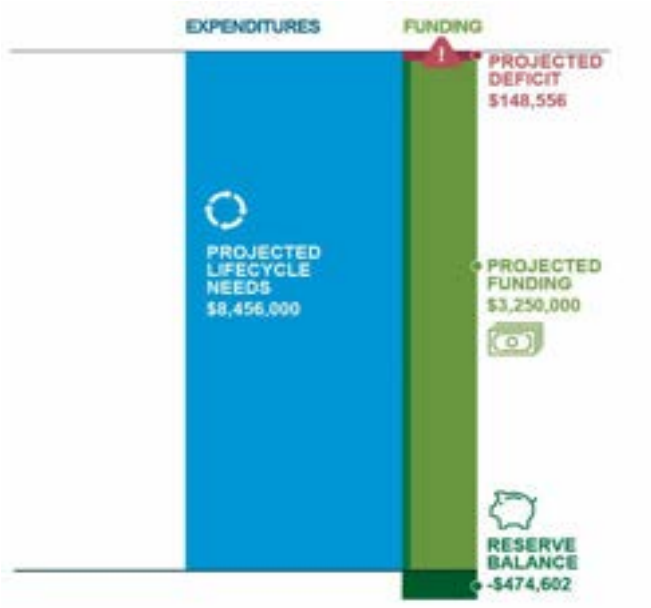


Table 5.3.1 - Funding Gap

2024-2033	Expenditures	Funding
Projected Lifecycle Needs	$8,456,000	-
Reserve Balance	-	($474,602)
Projected Funding	-	8,782,046
Total	**$8,456,000**	**$8,307,444**
Deficit (Surplus)		**$148,556**

It should be noted that the projected reserve balance is below zero in a number of years throughout the 2024 to 2033 period. A below zero balance means that the working capital is temporarily supporting the needs of this portfolio, which has the potential to put strain on other needs and priorities in the Township.

Consideration will be given to utilizing debenture funding where projected funding is not sufficient to support lifecycle needs identified. The Township will also review projected lifecycle needs to determine if projects may be pushed beyond the 2024 to 2033 period at low risk to the Township. Impacts to the subsequent period will be reviewed as part of this decision-making process.

At a minimum, the annual contribution to the Roads – Bridges reserve should increase by the amount of inflation. Additional increases to close the annual funding gap will also be considered with each budget cycle.

Projected levels of service will also be reviewed and determined in preparation for an updated AMP in 2025 in accordance with the requirements from O.Reg. 588/17.

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 Oxford County, analysis on stormwater flows is completed holistically.

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 and 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.

1.1 Improvement Plan

The following recommendations are based on the review of current management practices, inventory, valuation, and condition analysis.

- Update attributes to further enhance the risk profile in the asset management systems.
- Continue to improve data confidence.
- Document lifecycle history on asset components within the asset management systems.
- Establish a procedure for integrating consultant and staff asset inspections into the condition rating process.

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 anticipated useful lives exclude the management strategies utilized to extend the assets overall life beyond this estimate. 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.

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[1]	Replacement Cost	Average Age	Anticipated Useful Life (years)
Collector Road[2]	lane-km	840.67	$77,410,298	72	25
Local Road[3]	lane-km	89.78	17,132,318	26	25
Street Lights	each	674	3,242,135	10	20
Sidewalks	square meter	36,378	3,198,327	13	30
Fleet and Equipment	total	N/A	8,893,655	7	5-20
Culverts <3m	length (m)	19,184	14,957,134	47	50-80
Catchbasins	each	912	3,851,000	29	90
Catchbasin Lead	length (m)	2,439	1,182,867	14	90
Storm Main	length (m)	18,580	15,086,790	13	90
Total Replacement Cost			**$144,954,525**		

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 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 2024. 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.

[1] Current inventory includes unassumed assets as these are built assets the township will be taking ownership of
[2] "Collector Road" means Class 3 and Class 4 highways as determined under the Table to section 1 of Ontario Regulation 239/02
[3] "Local Road" means Class 5 and Class 6 highways as determined under the Table to section 1 of Ontario Regulation 239/02

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 County's standard condition scale.

Table 2.2.1 - PCI Score Ratings[4]

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[5] PCI Score of 0-39
Collector and Local roads					

The Pipeline Assessment Certificate Program (PACP) is the North American Standard for pipeline defect identification and assessment[6]. 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 2.2.2 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.

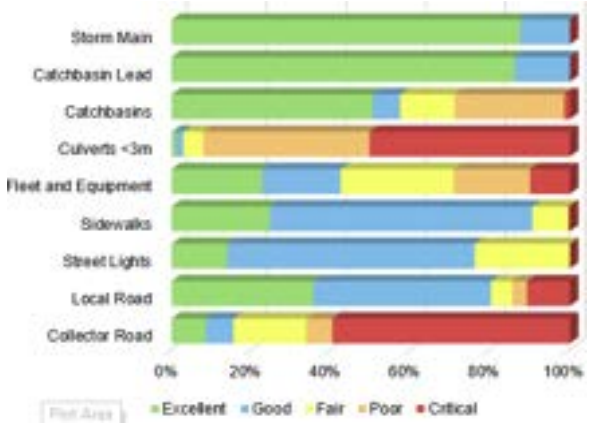
[4] All assets are non-township assets, and are general representations of the condition at the time the photo was taken. Assets may have undergone lifecycle strategies since the date of the image impacting its condition.
[5] The critical score rating image is an example of a non-Township owned asset.
[6] https://www.nassco.org/content/pipeline-assessment-pacp

Table 2.2.2 – PACP Score Ratings[7]

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					

2.3 Current Condition

The condition profile is shown in table 2.3.1, based on the projected condition as of December 31, 2023. 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.

[7] All images are of non-township owned assets and are general representations of the condition at the time the photo was taken.

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. The Township will be establishing it's goal as part of the proposed levels of service requirements for the 2025 AMP.

Collector roads in poor condition generally relate to gravel roads, as the last physical condition assessment complete on these segments was in 2019 and are not reflective of any activities completed since that date. The upcoming Roads Needs Study will inform updated condition ratings reflective of the segments physical condition. The Embro Arena parking lot condition is age based with its lifecycle needs shown as part of the backlog in Table 5.1.1.

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
Collector Road	9%	7%	18%	7%	59%	Poor
Local Road	35%	45%	5%	4%	11%	Good
Street Lights	14%	62%	24%	0%	0%	Good
Sidewalks	25%	66%	9%	0%	0%	Good
Fleet and Equipment	23%	20%	28%	19%	10%	Fair
Culverts <3m	1%	2%	5%	42%	50%	Poor
Catchbasins	51%	7%	14%	27%	1%	Good
Catchbasin Lead	86%	14%	0%	0%	0%	Excellent
Storm Main	87%	13%	0%	0%	0%	Excellent
Overall Total	**22%**	**15%**	**14%**	**10%**	**39%**	

3.0 Levels of Service

Table 3.1.1 includes metrics required under the Infrastructure for Jobs and Prosperity Act, 2015 - O.Reg. 588/17, as well as additional metrics the township has included.

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 Regulation 239/02[8] 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.*
- *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.*

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

- *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.*

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.

Table 3.1.1 - Performance Measures

Key Service Attribute	LOS Statement	Performance Measure	2022	2023	Target
Safety	Providing an operational and accessible transportation network that is safe for all modes and uses of the transportation network and a safe stormwater network which mitigates the impacts of property damage during stormwater events	# 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	N/A
		# 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	N/A
		% of properties in municipality resilient to a 100-year storm	N/A	97.8%	TBD
		% of the municipal stormwater management system resilient to a 5-year storm	-	95.8%	TBD
Quality	Maintaining transportation services in a state of good repair	% of collector roads with surfaces in fair or better condition	37%	34%	TBD
		% of local roads with surfaces in fair or better condition	90%	86%	TBD
		Average Pavement Condition Index (for paved collector roads)	80.1	70.5	TBD
		Average Pavement Condition Index (for paved local roads)	85.0	79.1	TBD

Key Service Attribute	LOS Statement	Performance Measure	2022	2023	Target
Quality	Continued	Average Surface Condition (for unpaved collector roads)	44.1	36.7	TBD
		Average Surface Condition (for unpaved local roads)	50.1	35.1	TBD
Reliability	Providing a transportation network that is reliable Providing stormwater services with minimal impact to the community	% of roads/paved surface area in poor or critical condition	53%	57%	TBD
		% of other Transportation Assets in poor or critical condition	24%	20%	TBD
		% of storm mains in poor or critical condition	0%	0%	TBD
		% of stormwater culverts in poor or critical condition	51%	92%	TBD

Figure 3.1.2 Road Network Connectivity

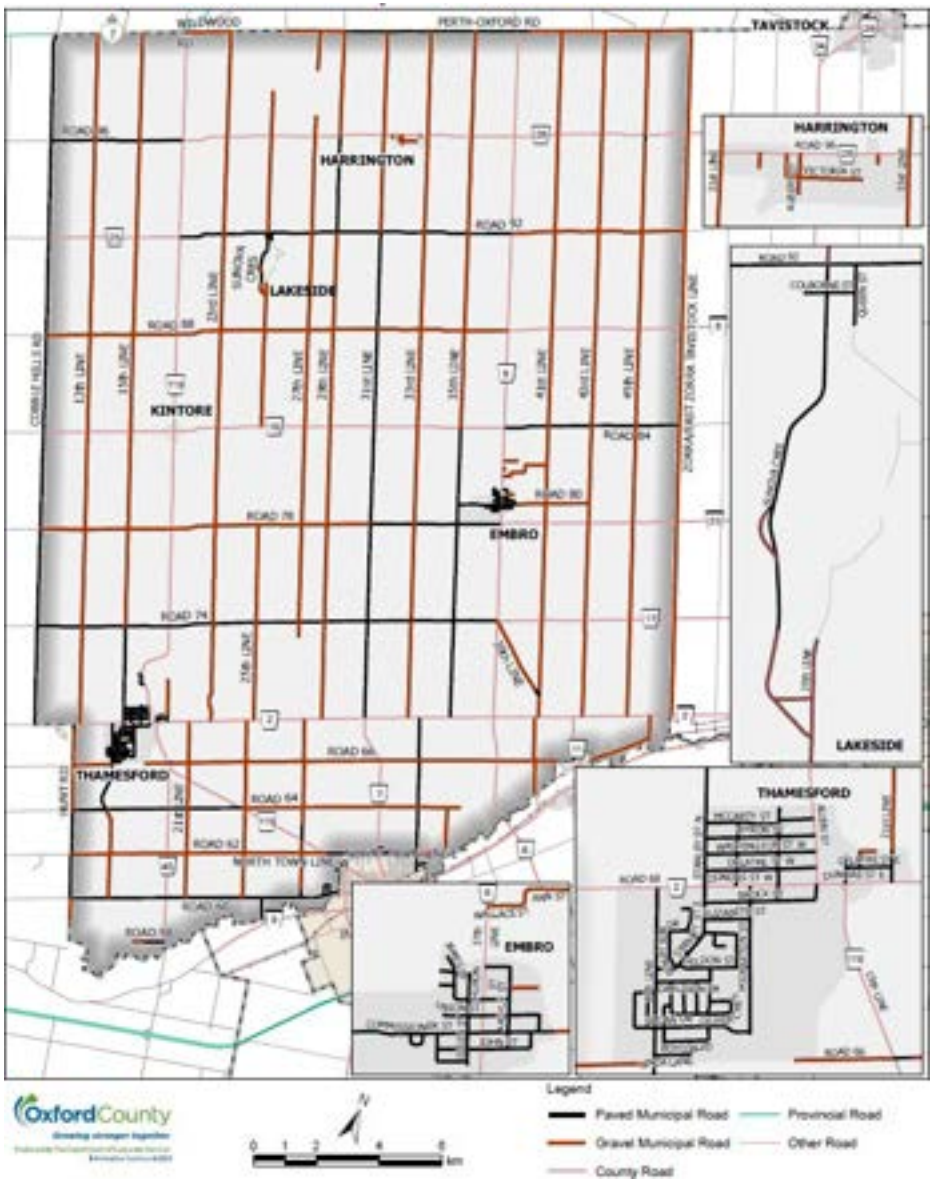
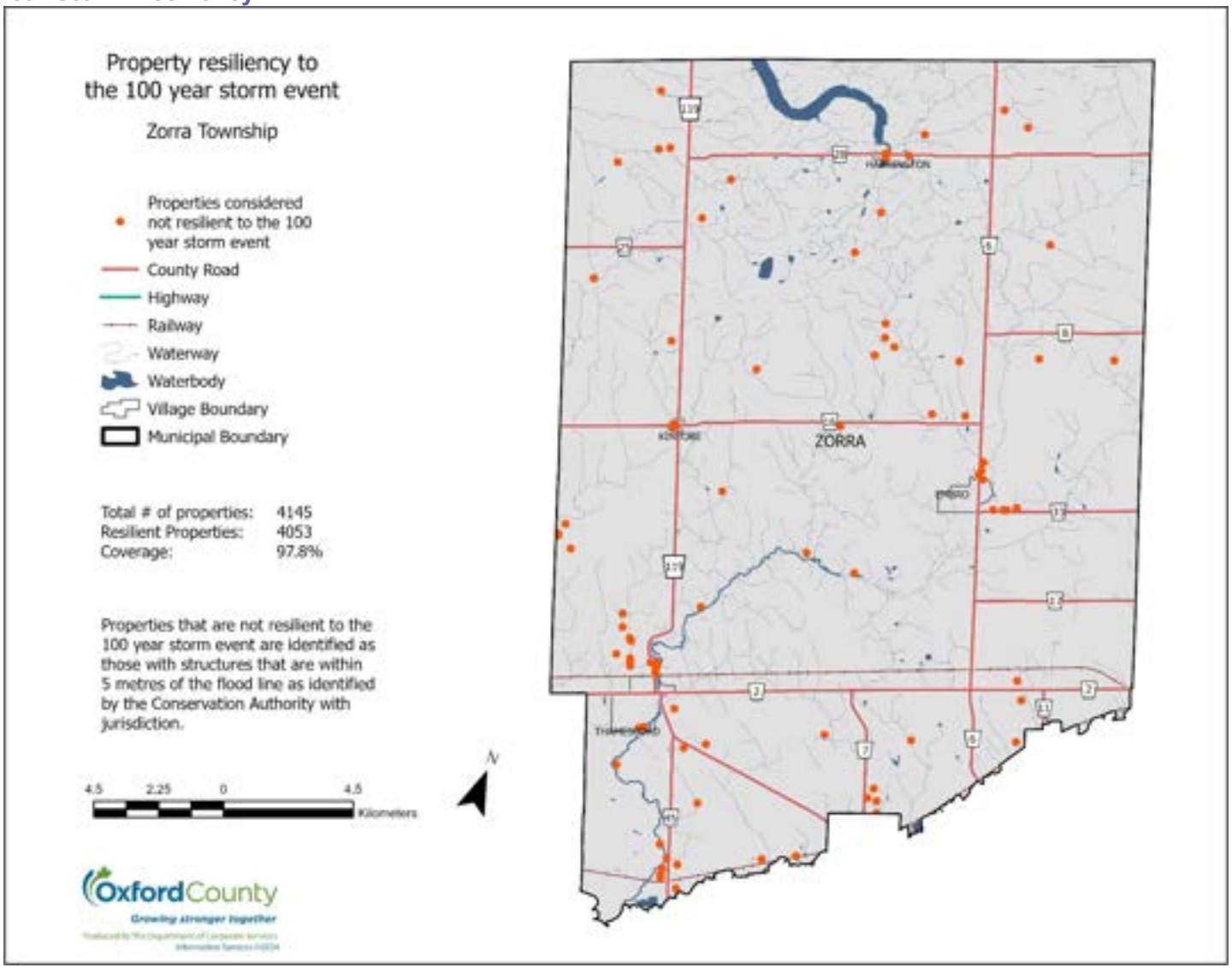


Figure 3.1.3 100-Year Storm Resiliency



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. 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 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 • Storm main lining **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 & 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 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. The Embro Arena parking lot is shown as a severe risk of failure as a result of its age-based condition rating. 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
Collector Road	3%	12%	12%	4%	69%	Minor
Local Road	0%	4%	11%	36%	49%	Insignificant
Street Lights	0%	40%	6%	14%	40%	Minor
Sidewalks	0%	0%	0%	16%	84%	Insignificant
Fleet and Equipment	8%	22%	28%	11%	31%	Minor
Culverts <3m	6%	6%	9%	40%	39%	Minor
Catchbasins	0%	0%	0%	1%	99%	Insignificant
Catchbasin Lead	0%	0%	0%	0%	100%	Insignificant
Storm Main	0%	0%	0%	0%	100%	Insignificant

4.3 Climate Change

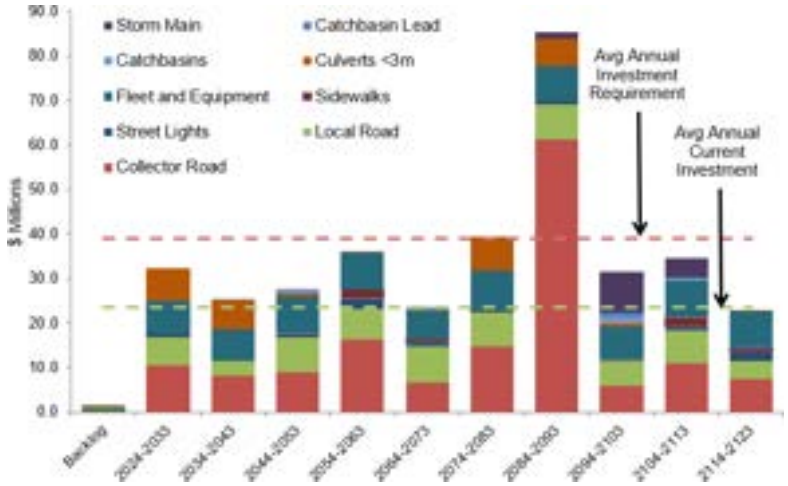
As part of the asset management planning process, the township will consider the risks and vulnerabilities of capital assets to climate change and the resulting actions that may be required. Commitment will be made to the development of tailored actions that make the best use of our resources to mitigate 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.

5.0 Financial Strategy

5.1 Financing Strategy

This portfolio is currently funded through an annual levy contribution to the Roads Reserve, Roads Vehicles and Equipment Reserve, Ministry of Natural Resources Aggregates revenue, and Ontario Community Infrastructure Funds (OCIF).

Based on the lifecycle strategies identified to maintain current levels of service, the capital cost estimates to support the lifecycle needs over the next 100-years are determined in current dollars and summarized in Table 5.1.1. Lifecycle costs related to gravelling of roads are considered a maintenance cost and are funded through the annual operating budget and not included in Table 5.1.1.



Staff will review the current lifecycle requirements with each business plan and budget cycle to ensure that the 10-year capital plan reflects the most current information available. 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.

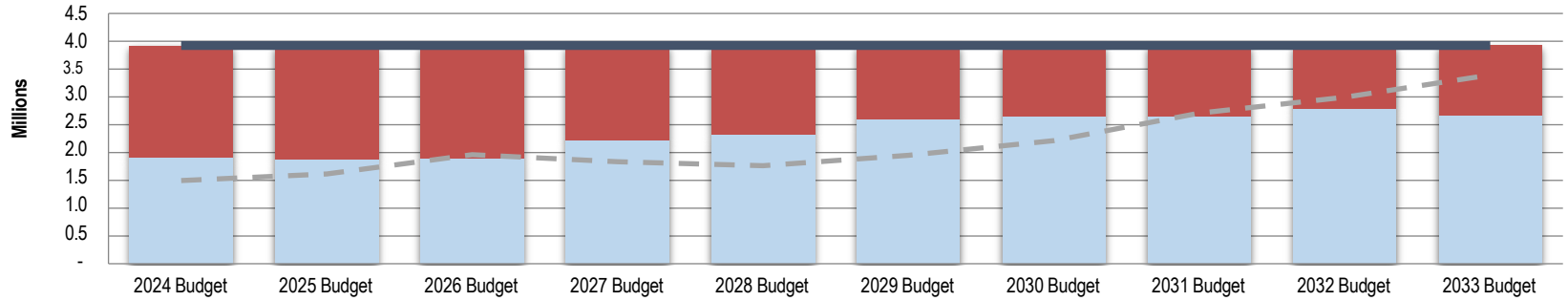
Table 5.1.1 - Lifecycle Requirements (millions)

Asset Component	Backlog	2024-2033	2034-2043	2044-2053	2054-2063	2064-2073	2074-2083	2084-2093	2094-2103	2104-2113	2114-2123
Collector Road	$-	$10.41	$8.13	$8.92	$16.36	$6.72	$14.87	$61.14	$5.82	$10.91	$7.46
Local Road	-	6.32	3.26	7.98	6.92	8.12	7.59	8.02	5.80	7.56	4.05
Street Lights	-	0.77	0.19	0.77	2.20	0.77	0.45	0.77	0.19	0.77	2.20
Sidewalks	0.01	-	-	0.29	2.11	0.79	0.01	-	0.29	2.11	0.79
Fleet and Equipment	0.31	7.34	7.03	8.06	8.23	6.38	8.78	7.68	7.03	8.08	8.22
Culverts <3m	0.25	7.55	6.50	0.72	0.17	0.26	7.62	6.15	0.65	0.14	0.21
Catchbasins	-	-	0.06	1.06	-	0.53	-	0.10	1.64	0.47	-
Catchbasin Lead	-	-	-	-	-	-	-	0.09	0.87	0.23	-
Storm Main	-	-	-	-	-	-	-	1.31	9.34	4.44	-
Totals	**$0.57**	**$32.39**	**$25.17**	**$27.80**	**$35.99**	**$23.57**	**$39.32**	**$85.26**	**$31.63**	**$34.71**	**$22.93**

Table 5.1.2 links the average annual investment, based on the lifecycle requirements, to the current funding noted within the 2024 Approved Budget. The reserve balance noted in Table 5.1.2 reflects the lifecycle projects identified in the 10-year capital plan and may not reflect all the lifecycle needs identified in Table 5.1.1.

Table 5.1.2 - Budgeted Funding

	Key	2024 Budget	2025 Budget	2026 Budget	2027 Budget	2028 Budget	2029 Budget	2030 Budget	2031 Budget	2032 Budget	2033 Budget
Annual Required Investment		$3,894,000	$3,894,000	$3,894,000	$3,894,000	$3,894,000	$3,894,000	$3,894,000	$3,894,000	$3,894,000	$3,894,000
Current Investment		1,916,195	1,874,503	1,895,081	2,211,399	2,322,729	2,600,194	2,646,921	2,648,638	2,785,436	2,664,404
Funding Deficit		1,977,805	2,019,497	1,998,919	1,682,601	1,571,271	1,293,806	1,247,079	1,245,362	1,108,564	1,229,596
Funding Surplus		-	-	-	-	-	-	-	-	-	-
Reserve Balance		1,495,431	1,612,647	1,959,820	1,832,985	1,764,806	1,948,638	2,212,879	2,706,710	2,992,051	3,393,960



5.3 Funding Gap Analysis

Table 5.3.1 illustrates the anticipated asset management 10-year lifecycle needs (expenditures) and anticipated funding for the 10-year period of 2024 to 2033. The reserve balance is based on the forecasted 2023 closing balance; as a result, does not reflect final 2023 information. The asset management system calculates the optimal expenditures based on theoretical asset lifecycle needs. Table 5.3.1 reflects an approximate $7.9 million deficit in funding availability over the period 2024 to 2033.

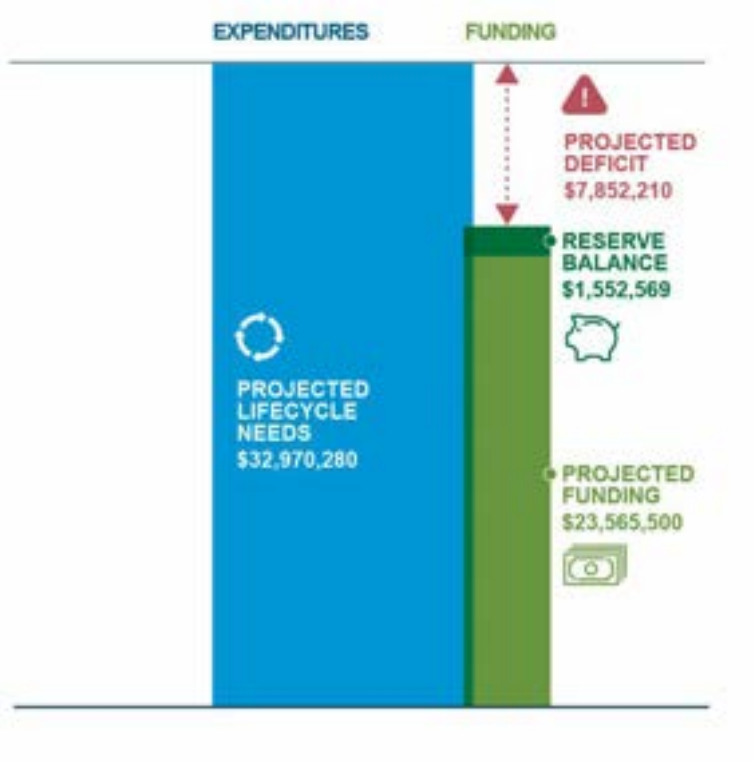


Table 5.3.1 - Funding Gap

2024-2033	Expenditures	Funding
Projected Lifecycle Needs	$32,970,280	-
Reserve Balance	-	$1,552,569
Projected Funding	-	23,565,500
Total	**$32,970,280**	**$25,118,069**
Deficit (Surplus)		**$7,852,210**

The Township will review projected lifecycle needs to determine if projects may be pushed beyond the 2024 to 2033 period at low risk to the Township. Impacts to the subsequent period will be reviewed as part of this decision-making process. There are no projected replacement needs on gravel roads within the 2024 to 2033 period.

At a minimum, the annual contribution to the Roads and Roads Vehicle and Equipment reserves should increase by the amount of inflation. Consideration will be given to the consolidation of these two reserves to provide for greater flexibility in meeting lifecycle needs as they arise. Additional increases to close the annual funding gap will also be considered with each budget cycle.

Projected levels of service will also be reviewed and determined in preparation for an updated AMP in 2025 in accordance with the requirements from O.Reg. 588/17.


EMBRO-WEST-ZORRA
COMMUNITY CENTRE

Table of Contents

1.0 Introduction

The Recreation Department is responsible for the operation and maintenance of 2 arenas and 70 acres of parkland 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.

1.1 Improvement Plan

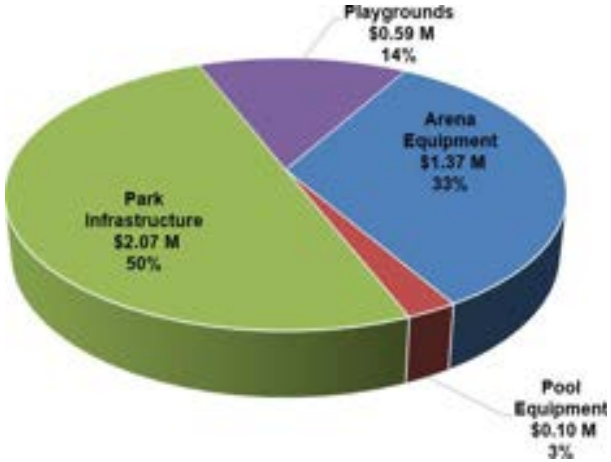
The following recommendations are based on the review of current management practices, inventory, valuation, and condition analysis.

- Continue to work to reduce asset data gaps.
- Update attributes to further enhance the risk profile in the asset management system.
- Determine process to incorporate consultant and staff asset inspections into condition rating.
- Document lifecycle history on asset components within the asset management systems.

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 anticipated useful lives exclude the management strategies that the Township utilizes to extend the overall life beyond this estimate.



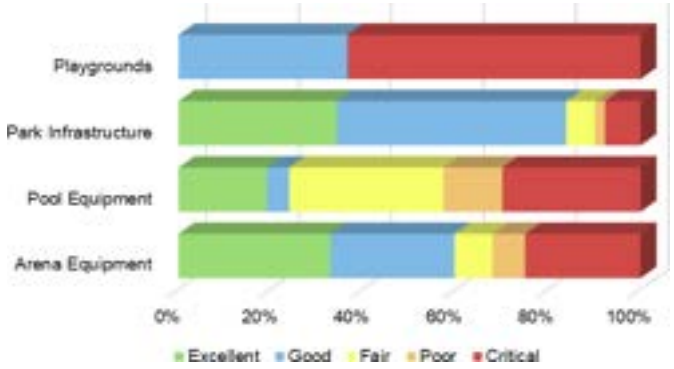
The replacement costs were estimated based on staff reviews, historical costs, and inflation rates.

Table 2.1.1 - Inventory

Asset Component	Unit	Current Inventory	Replacement Cost	Average Age	Anticipated Useful Life (years)
Arena Equipment	total	N/A	$1,365,224	10	7-35
Pool Equipment	total	N/A	103,309	13	15-25
Park Infrastructure	total	N/A	2,065,953	7	15-35
Playgrounds	each	6	590,000	13	15
Total Replacement Cost			**$4,124,486**		

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 as of December 31, 2023. 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. These 3 structures form part of the lifecycle needs listed as backlog in Table 5.1.1.

Table 2.3.1 – Condition Profile

Asset Component	Excellent	Good	Fair	Poor	Critical	Average Condition Rating
Arena Equipment	33%	27%	8%	7%	25%	Fair
Pool Equipment	19%	5%	33%	13%	30%	Fair
Park Infrastructure	35%	50%	6%	2%	7%	Good
Playgrounds	0%	34%	0%	0%	66%	Poor
Overall Total	**29%**	**39%**	**7%**	**4%**	**22%**	

3.0 Levels of Service

The Infrastructure for Jobs and Prosperity Act, 2015 - O.Reg. 588/17, requires the Township to establish metrics to evaluate this portfolio. Table 3.1.1 lists metrics the Township has included. The Township will continue to build on the metrics as the asset management program matures for this service area.

Corporate Objective

The objective of the parks and recreation services is to offer many 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.*

Table 3.1.1 - Performance Measures

Key Service Attribute	LOS Statement	Performance Measure	2022	2023	Target
Safety	Maintaining recreation assets that are safe for all users	Number of unplanned closures	-	0	TBD
Reliability	Providing recreation services that are reliable and accessible.	% of assets in poor or critical condition	20%	22%	TBD

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

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 • Includes coordination with contractors to ensure safe removal and environmental compliance **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
Arena Equipment	0%	0%	0%	27%	73%	Insignificant
Pool Equipment	0%	0%	0%	30%	70%	Insignificant
Park Infrastructure	0%	6%	14%	32%	48%	Insignificant
Playgrounds	0%	0%	0%	63%	37%	Insignificant

4.3 Climate Change

In the asset management planning process, Zorra Township will evaluate the risks and vulnerabilities posed by climate change to its capital assets, and the necessary actions that may follow. We are dedicated to crafting customized strategies that optimize our resources to both mitigate and adapt to climate change impact. Our efforts will align with local reduction targets, financial capacities, and stakeholder support.

5.0 Financial Strategy

5.1 Financing Strategy

This portfolio is currently funded through an annual levy contribution to the recreation reserve.

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 5.1.1. Staff will review the current lifecycle requirements with each business plan and budget cycle to ensure that the 10-year capital plan reflects the most current information available. 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.

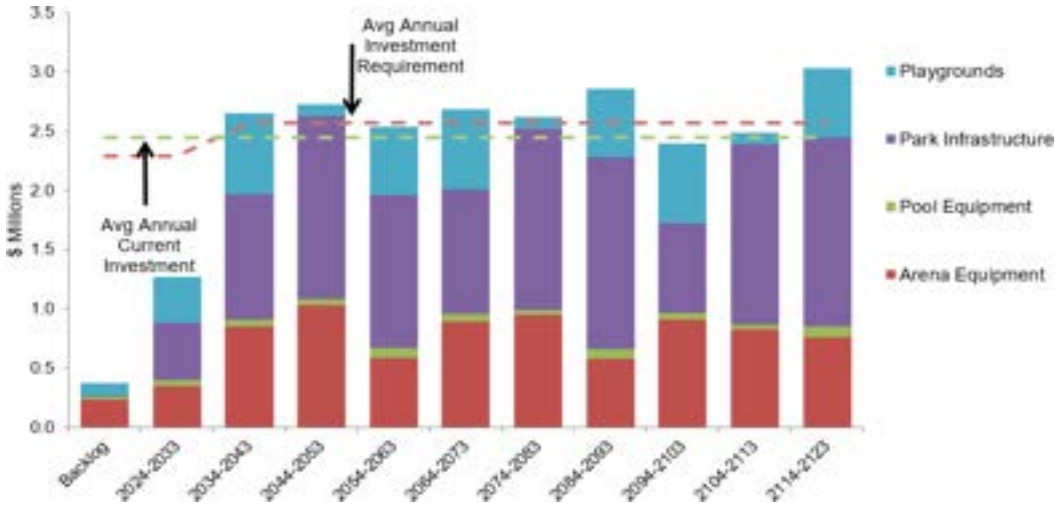


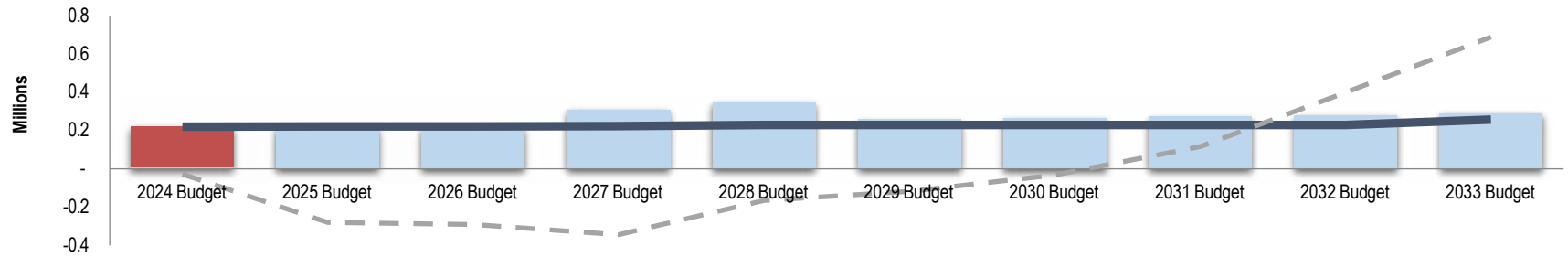
Table 5.1.1 - Lifecycle Requirements (millions)

Asset Component	Backlog	2024-2033	2034-2043	2044-2053	2054-2063	2064-2073	2074-2083	2084-2093	2094-2103	2104-2113	2114-2123
Arena Equipment	$0.23	$0.35	$0.85	$1.03	$0.59	$0.89	$0.95	$0.58	$0.91	$0.83	$0.76
Pool Equipment	0.03	0.05	0.06	0.05	0.08	0.07	0.04	0.08	0.06	0.04	0.09
Park Infrastructure	0.01	0.48	1.06	1.55	1.29	1.05	1.53	1.62	0.75	1.52	1.60
Playgrounds	0.10	0.39	0.68	0.10	0.58	0.68	0.10	0.58	0.68	0.10	0.58
Totals	**$0.37**	**$1.27**	**$2.65**	**$2.73**	**$2.54**	**$2.69**	**$2.62**	**$2.86**	**$2.40**	**$2.49**	**$3.03**

Table 5.1.2 links the average annual investment, based on the lifecycle requirements, to the current funding noted within the 2024 Approved Budget. The reserve balance noted in Table 5.1.2 reflects the lifecycle projects identified in the 10-year capital plan and may not reflect all the lifecycle needs identified in Table 5.1.1.

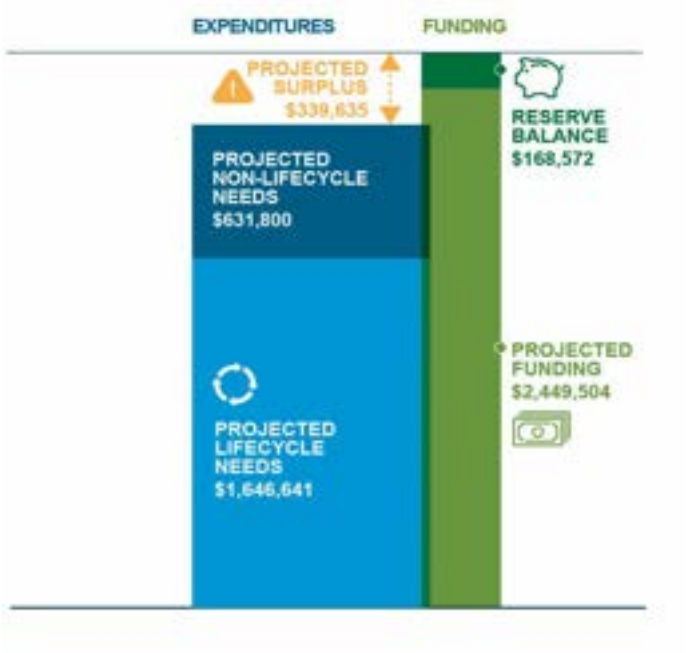
Table 5.1.2 - Budgeted Funding

	Key	2024 Budget	2025 Budget	2026 Budget	2027 Budget	2028 Budget	2029 Budget	2030 Budget	2031 Budget	2032 Budget	2033 Budget
Annual Required Investment		$220,000	$222,000	$222,000	$223,000	$229,000	$229,000	$229,000	$229,000	$229,000	$257,000
Current Investment		7,628	206,121	208,243	310,408	350,000	257,500	265,225	273,182	281,377	289,820
Funding Deficit		212,372	15,879	13,757	-	-	-	-	-	-	-
Funding Surplus		-	-	-	87,408	121,000	28,500	36,225	44,182	52,377	32,820
Reserve Balance		(28,342)	(280,171)	(289,928)	(343,520)	(164,520)	(117,020)	(31,795)	116,387	397,764	687,584



5.3 Funding Gap Analysis

Table 5.3.1 illustrates the anticipated asset management 10-year lifecycle needs (expenditures) and anticipated funding for the 10-year period of 2024 to 2033. The reserve balance is based on the forecasted 2023 closing balance; as a result, does not reflect final 2023 information. The projected non-lifecycle needs included in Table 5.3.1 reflect initial costs for new assets above the amount funded by development charges.



These costs will need to be funded through a levy increase or grant funding sought where possible. The asset management system calculates the optimal expenditures based on theoretical asset lifecycle needs. Table 5.3.1 reflects an approximate $0.3 million surplus in funding availability over the period 2024 to 2033.

Table 5.3.1 - Funding Gap

2024-2033	Expenditures	Funding
Projected Lifecycle Needs	$ 1,646,641	-
Projected Non-Lifecycle Needs	631,800	-
Reserve Balance	-	$168,572
Projected Funding	-	2,449,504
Total	**$2,278,441**	**$2,618,076**
Deficit (Surplus)		**($339,635)**

It should be noted that the reserve balance is projected to be below zero in a number of years during the 2024 to 2033 period. A below zero balance means that the working capital is temporarily supporting the needs of this portfolio, which has the potential to put strain on other needs and priorities in the Township.

As illustrated in Table 5.1.2 the annual contributions required for this portfolio are projected to be fully funded by 2025. Despite this, the annual contribution to reserve for this portfolio should increase by the amount of inflation. An annual surplus is required in the near term to ensure that the reserve balance returns to a positive level and is built in anticipation of significantly higher lifecycle needs during the 2034 to 2043 period.


EMBRO
Community Centre

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 is 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 the ongoing contribution requirements for lifecycle activities are unknown, this facility is not factored into the lifecycle requirements within the 2024 AMP. The Township will incorporate lifecycle requirements as applicable into a future iteration of the AMP.

1.1 Improvement Plan

The following recommendations are based on the review of current management practices, inventory, valuation, and condition analysis.

- Continue to work to reduce asset data gaps.
- Update attributes to further enhance the risk profile in the asset management system.
- Establish a procedure for integrating consultant and staff asset inspections into the condition rating process.
- Refine asset components and lifecycle strategies.
- Document lifecycle history on asset components within the asset management systems.

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 anticipated useful lives exclude the management strategies that the Township utilizes to extend the overall life beyond this estimate.

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

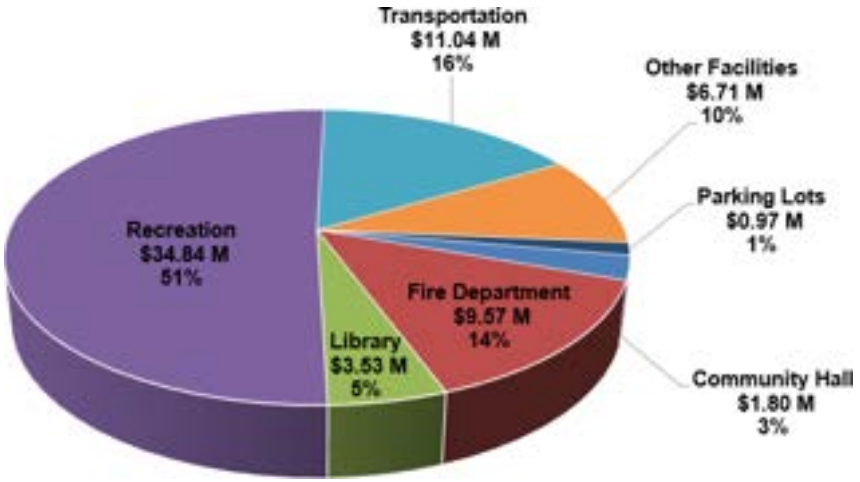


Table 2.1.1 - Inventory

Asset Component	Unit	Current Inventory	Replacement Cost	Average Age	Anticipated Useful Life (years)
Community Hall	bldg	1	1,798,800	70	10-100
Fire Department	bldg	3	9,572,796	24	10-100
Library[1]	bldg	1	3,534,000	21	10-100
Recreation	bldg	6	34,839,192	38	10-100
Transportation	bldg	3	11,040,752	4	10-100
Other Facilities	bldg	2	6,712,400	1	10-100
Parking Lots	each	5	971,500	46	20-40
Total Replacement Cost			**$68,469,440**		

[1] The Library is co-owned with the County of Oxford. 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 condition profile is shown in table 2.3.1, based on the projected condition as of December 31, 2023. The indicator measure in each condition is based on percentage of replacement costs as opposed to the number of assets.

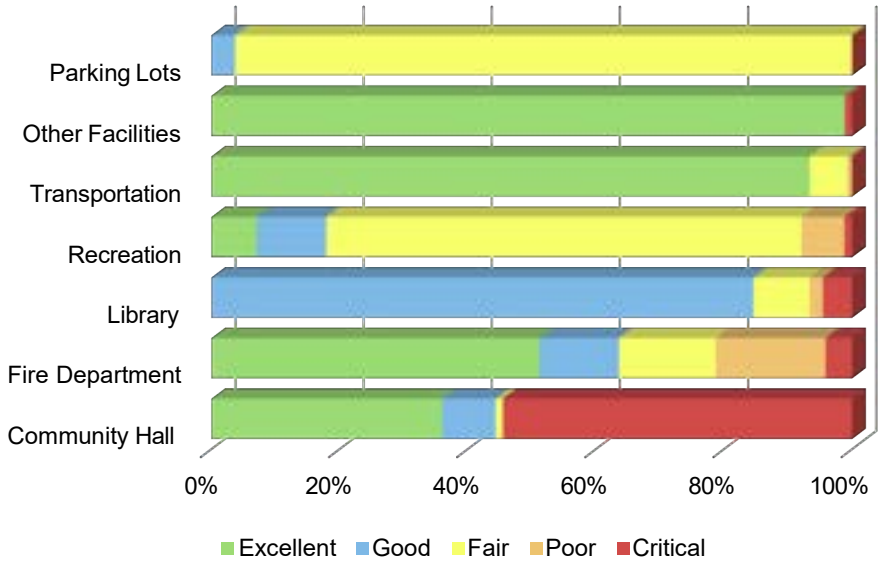


Table 2.3.1 - Condition

Asset Component	Excellent	Good	Fair	Poor	Critical	Average Condition Rating
Community Hall	37%	8%	1%	0%	54%	Fair
Fire Department	51%	12%	15%	17%	4%	Good
Library	0%	85%	9%	2%	5%	Good
Recreation	7%	11%	74%	7%	1%	Fair
Transportation	93%	0%	6%	1%	0%	Excellent
Other Facilities	99%	0%	0%	0%	1%	Excellent
Parking Lots	0%	4%	96%	0%	0%	Fair
Overall Total	**36%**	**12%**	**43%**	**6%**	**4%**	

3.0 Levels of Service

The Infrastructure for Jobs and Prosperity Act, 2015 - O.Reg. 588/17, requires the Township to establish metrics to evaluate this portfolio. Table 3.1.1 lists metrics the Township has included. The Township will continue to build on the metrics as the asset management program matures for this service area.

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 & 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[2] 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.*

Table 3.1.1 - Performance Measures

Key Service Attribute	LOS Statement	Performance Measure	2022	2023	Target
Reliability	Providing facilities that are reliable and accessible.	% of building components in poor or critical condition	9%	12%	TBD
		% of parking lots in poor or critical condition	N/A	0%	TBD

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

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 • Includes coordination with contractors to ensure safe removal and environmental compliance **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
Community Hall	40%	13%	0%	1%	46%	Major
Fire Department	25%	0%	1%	43%	31%	Minor
Library	0%	76%	0%	8%	16%	Moderate
Recreation	67%	5%	6%	7%	15%	Major
Transportation	0%	88%	0%	0%	12%	Major
Other Facilities	0%	0%	0%	26%	74%	Insignificant
Parking Lots	0%	57%	37%	0%	6%	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.

5.0 Financial Strategy

5.1 Financing Strategy

This portfolio is currently funded through an annual levy contribution to the facilities reserve.

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 5.1.1. Staff will review the current lifecycle requirements with each business plan and budget cycle to ensure that the 10-year capital plan reflects the most current information available. 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.

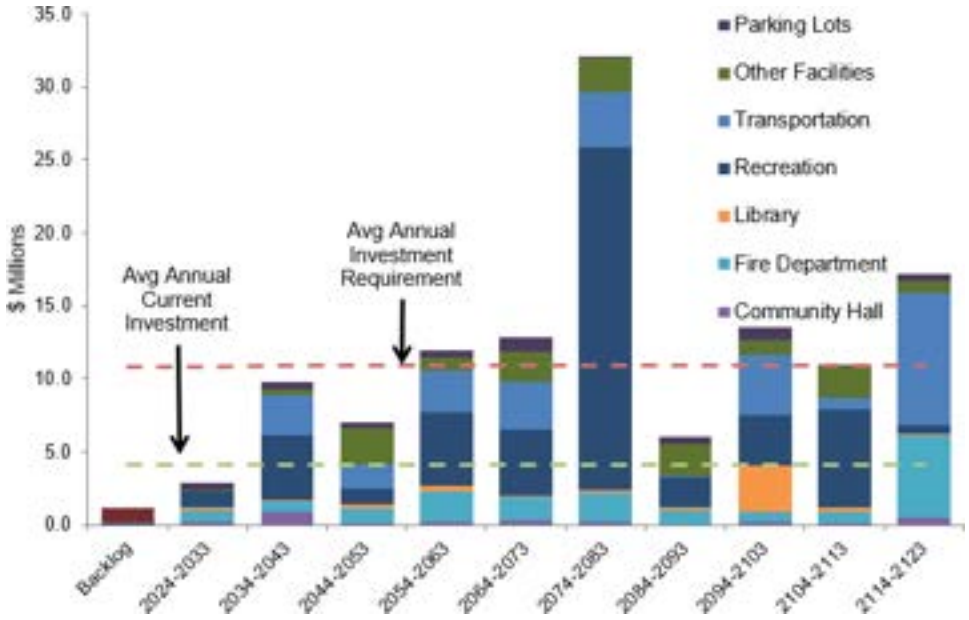


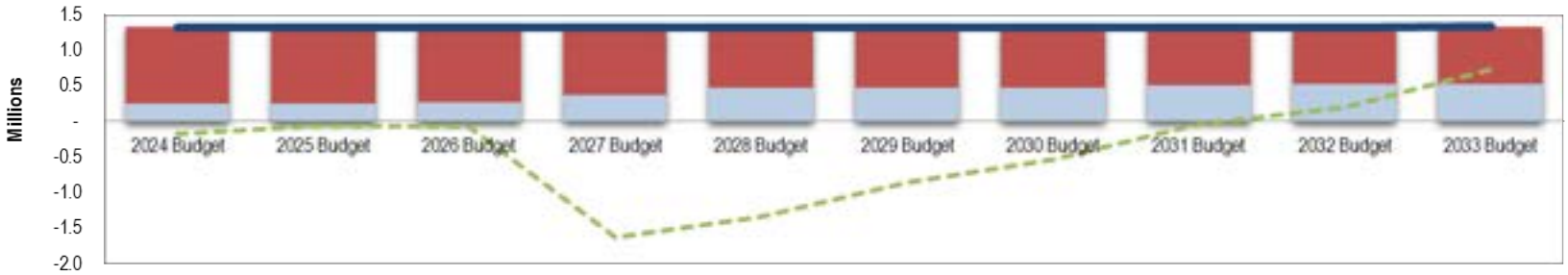
Table 5.1.1 - Lifecycle Requirements (millions)

Asset Component	Backlog	2024-2033	2034-2043	2044-2053	2054-2063	2064-2073	2074-2083	2084-2093	2094-2103	2104-2113	2114-2123
Community Hall	$-	$0.25	$0.90	$0.11	$0.22	$0.30	$0.17	$0.04	$0.24	$0.14	$0.53
Fire Department	0.02	0.71	0.67	0.97	2.10	1.63	1.98	0.99	0.66	0.71	5.57
Library	-	0.23	0.14	0.34	0.38	0.02	0.19	0.19	3.12	0.30	0.14
Recreation	0.09	1.09	4.40	1.03	5.02	4.55	23.55	2.06	3.46	6.78	0.62
Transportation	-	-	2.77	1.72	2.90	3.32	3.76	0.09	4.18	0.75	9.01
Other Facilities	0.03	0.05	0.38	2.41	0.85	2.07	2.35	2.20	0.99	2.15	0.85
Parking Lots	-	0.51	0.57	0.40	0.51	0.94	0.04	0.51	0.94	0.04	0.51
Totals	**$0.14**	**$2.84**	**$9.82**	**$6.98**	**$11.97**	**$12.82**	**$32.04**	**$6.07**	**$13.58**	**$10.87**	**$17.22**

Table 5.1.2 links the average annual investment, based on the lifecycle requirements, to the current funding noted within the 2024 Approved Budget. The reserve balance noted in Table 5.1.2 reflects the lifecycle projects identified in the 10-year capital plan and may not reflect all the lifecycle needs identified in Table 5.1.1.

Table 5.1.2 - Budgeted Funding

	Key	2024 Budget	2025 Budget	2026 Budget	2027 Budget	2028 Budget	2029 Budget	2030 Budget	2031 Budget	2032 Budget	2033 Budget
Annual Required Investment		$1,325,000	$1,325,000	$1,325,000	$1,325,000	$1,325,000	$1,325,000	$1,325,000	$1,325,000	$1,325,000	$1,335,000
Current Investment		250,000	255,000	260,100	365,302	470,608	476,020	481,540	501,786	516,840	532,345
Funding Deficit		1,075,000	1,070,000	1,064,900	959,698	854,392	848,980	843,460	823,214	808,160	802,655
Funding Surplus		-	-	-	-	-	-	-	-	-	-
Reserve Balance		(179,711)	(63,711)	(74,611)	(1,633,629)	(1,338,021)	(862,001)	(540,461)	(38,675)	193,165	725,510



5.3 Funding Gap Analysis

Table 5.3.1 illustrates the anticipated asset management 10-year lifecycle needs (expenditures) and anticipated funding for the 10-year period of 2024 to 2033. The reserve balance is based on the forecasted 2023 closing balance; as a result, does not reflect final 2023 information. The asset management system calculates the optimal expenditures based on theoretical asset lifecycle needs. The projected non-lifecycle needs included in Table 5.3.1 reflect the initial costs for the school gymnasium contribution above the amount funded by development charges. These costs will need to be funded through a levy increase or grant funding sought where possible. Table 5.3.1 reflects an approximate $0.9 million surplus in funding availability over the period 2024 to 2033.

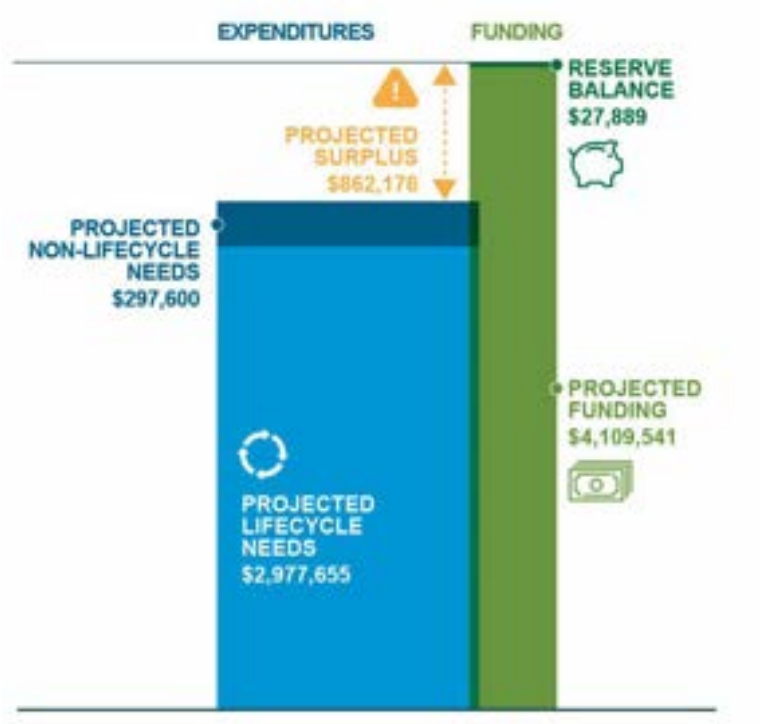


Table 5.3.1 - Funding Gap

2024-2033	Expenditures	Funding
Projected Lifecycle Needs	$2,977,655	-
Projected Non-Lifecycle Needs	297,600	-
Reserve Balance	-	$27,889
Projected Funding	-	4,109,541
Total	**$3,275,255**	**$4,137,430**
Deficit (Surplus)		**($862,176)**

It should be noted that the projected reserve balance is below zero in a number of years throughout the 2024 to 2033 period. A below zero balance means that the working capital is temporarily supporting the needs of this portfolio, which has the potential to put strain on other needs and priorities in the Township.

As the current investment level is below the annual required investment, contributions to the facilities reserve should increase annually by the amount of inflation. Additional increases to close the annual funding gap will also be considered with each budget cycle.

As required through O.Reg. 588/17, proposed levels of service will be included in the 2025 Asset Management Plan. Subsequently, impacts to the funding gap will be reviewed and additional funding strategies recommended as required.


ZORRA FIRE & EMERGENCY SERVICES

Table of Contents

1.0 Introduction

Zorra Township's Fire Department has an overall 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 and permanent Fire Chief are dedicated to ensuring the accountability and teamwork that connect the department to the community are strong to achieve trust in the department's ability to respond to emergencies.

The department received 186 emergency response calls in 2023 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.

1.1 Improvement Plan

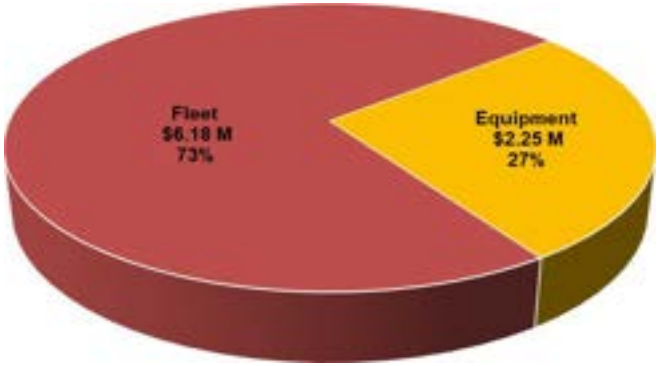
The following recommendations are based on the review of current management practices, inventory, valuation, and condition analysis.

- Continue working to reduce asset data gaps and increase data confidence.
- Incorporate climate change resiliency as part of capital replacement/renewal projects in accordance with applicable emerging guidelines and design standards.
- Determine process to incorporate consultant and staff asset inspections into condition rating.
- Update attributes to further enhance the risk profile in the asset management software.

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 anticipated useful lives exclude the management strategies that are utilized to extend the overall life beyond this estimate. 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 valuation relies on a mixture of current tender prices, inflation based on of historical costs, and research of market prices.

Table 2.1.1 - Inventory

Asset Component	Unit	Current Inventory	Replacement Cost	Average Age	Anticipated Useful Life (years)
Equipment	total	N/A	$2,253,768	7	5-40
Fleet	each	8	6,180,000	12	5-20
Total Replacement Cost			**$8,433,768**		

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 organizations to determine minimum requirements. The Ontario Fire Marshalls 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, and flow tested. All personal protective equipment including all bunker gear is inspected and cleaned 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 has ongoing preventative maintenance checks after every use and additional monthly checks and maintenance. All vehicles also undergo an annual full inspection based on Ministry of Transportation standards for commercial vehicles. All vehicles and equipment are inspected after every emergency or training use.

2.3 Current Condition

The condition profile is shown in table 2.3.1, based on the projected condition as of December 31, 2023. 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
Equipment	26%	34%	6%	7%	27%	Fair
Fleet	34%	11%	0%	27%	28%	Fair
Overall Total	**32%**	**17%**	**1%**	**22%**	**28%**	

3.0 Levels of Service

The Infrastructure for Jobs and Prosperity Act, 2015 - O.Reg. 588/17, requires the Township to establish metrics to evaluate this portfolio. Table 3.1.1 lists metrics the Township has included. The Township will continue to build on the metrics as the asset management program matures for this service area.

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 Ontario Regulation 213/07: Fire Code. 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.*

Table 3.1.1 - Performance Measures

Key Service Attribute	LOS Statement	Performance Measure	2022	2023	Target
Reliability	Providing a fire department with reliable equipment.	% of equipment in poor or critical condition	35%	35%	TBD
		% of fleet in poor or critical condition	60%	55%	TBD

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 • Includes coordination with contractors to ensure safe removal and environmental compliance **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
Equipment	0%	5%	17%	13%	65%	Insignificant
Fleet	53%	11%	11%	0%	25%	Major

4.3 Climate Change

In the asset management planning process, Zorra Township will evaluate the risks and vulnerabilities posed by climate change to its capital assets, and the necessary actions that may follow. We are dedicated to crafting customized strategies that optimize our resources to both mitigate and adapt to climate change impact. This includes building strategies to handle higher heat fires due to the prevalence of electric vehicles, and the potential for more fires due to seasonal droughts increasing in intensity and frequency. Our efforts will align with local reduction targets, financial capacities, and stakeholder support.

5.0 Financial Strategy

5.1 Financing Strategy

This portfolio is currently funded through an annual levy contribution to four fire related reserves: communications equipment, SCBA, vehicles and equipment.

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 5.1.1. Staff will review the current lifecycle requirements with each business plan and budget cycle to ensure that the 10-year capital plan reflects the most current information available. 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.

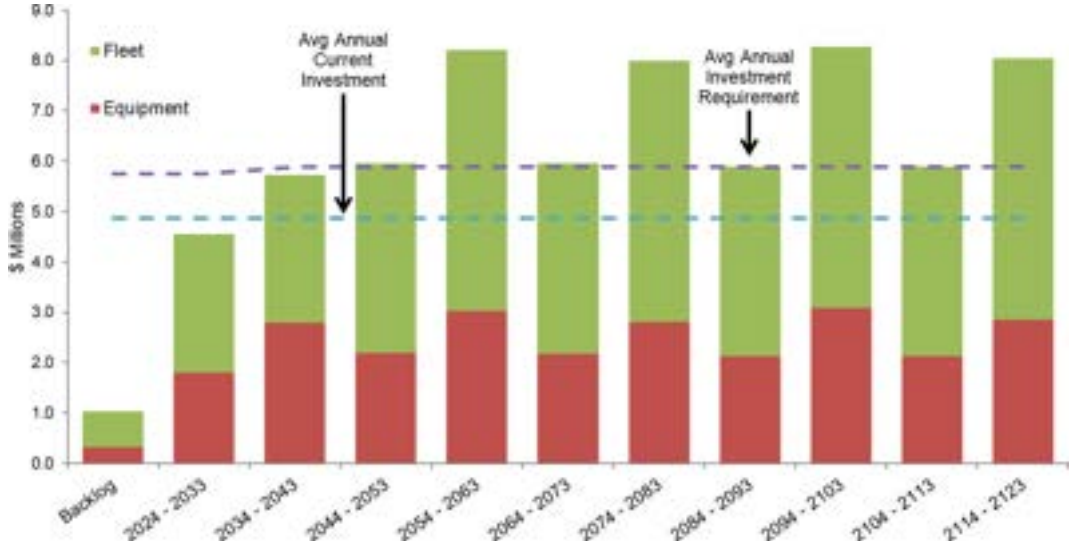


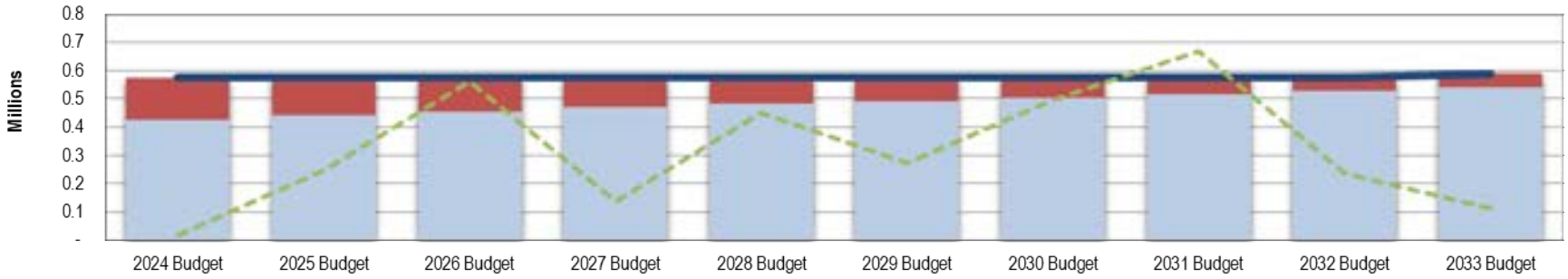
Table 5.1.1 - Lifecycle Requirements (millions)

Asset Component	Backlog	2024-2033	2034-2043	2044-2053	2054-2063	2064-2073	2074-2083	2084-2093	2094-2103	2104-2113	2114-2123
Equipment	$0.33	$1.81	$2.80	$2.19	$3.02	$2.18	$2.81	$2.13	$3.08	$2.13	$2.85
Fleet	0.70	2.74	2.93	3.77	5.19	3.77	5.19	3.77	5.19	3.77	5.19
Totals	**$1.03**	**$4.55**	**$5.73**	**$5.96**	**$8.21**	**$5.95**	**$8.00**	**$5.90**	**$8.27**	**$5.90**	**$8.04**

Table 5.1.2 links the average annual investment, based on the lifecycle requirements, to the current funding noted within the 2024 Approved Budget. The reserve balance noted in Table 5.1.2 reflects the lifecycle projects identified in the 10-year capital plan and may not reflect all the lifecycle needs identified in Table 5.1.1.

Table 5.1.2 - Budgeted Funding

	Key	2024 Budget	2025 Budget	2026 Budget	2027 Budget	2028 Budget	2029 Budget	2030 Budget	2031 Budget	2032 Budget	2033 Budget
Annual Required Investment		$574,000	$574,000	$574,000	$574,000	$574,000	$574,000	$574,000	$574,000	$574,000	$589,000
Current Investment		427,615	441,496	455,920	470,911	482,062	493,516	505,285	517,376	529,798	542,561
Funding Deficit		146,385	132,504	118,080	103,089	91,938	80,484	68,715	56,624	44,202	46,439
Funding Surplus		-	-	-	-	-	-	-	-	-	-
Reserve Balance		19,846	247,346	562,571	135,752	449,129	271,947	497,460	670,428	237,120	113,313



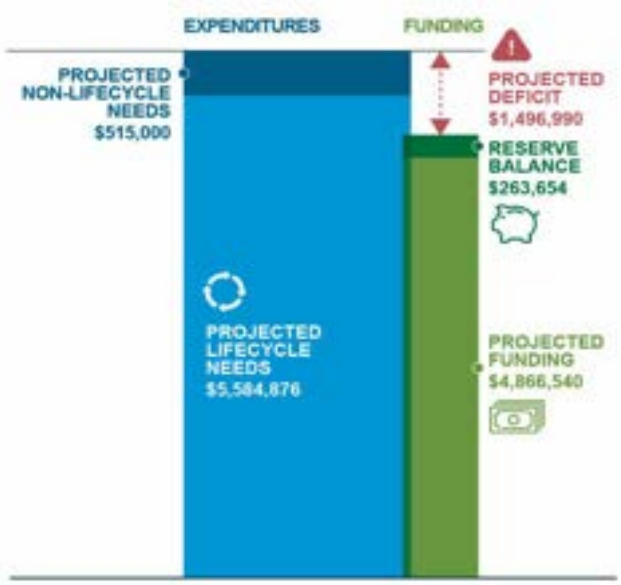
5.3 Funding Gap Analysis

Table 5.3.1 illustrates the anticipated asset management 10-year lifecycle needs (expenditures) and anticipated funding for the 10-year period of 2024 to 2033. The reserve balance is based on the forecasted 2023 closing balance; as a result, does not reflect final 2023 information. The asset management system calculates the optimal expenditures based on theoretical asset lifecycle needs. The projected non-lifecycle needs included in Table 5.3.1 reflect initial costs for new assets above the amount funded by development charges. These costs will need to be funded through a levy increase or grant funding sought where possible. Table 5.3.1 reflects an approximate $1.5 million deficit in funding availability over the period 2024 to 2033

Table 5.3.1 - Funding Gap

2024-2033	Expenditures	Funding
Projected Lifecycle Needs	$5,584,876	-
Projected Non-Lifecycle Needs	515,000	-
Reserve Balance	-	($263,654)
Projected Funding	-	4,866,540
Total	**$6,099,876**	**$4,602,886**
Deficit (Surplus)		**$1,496,990**

It should be noted that the forecasted December 31, 2023, reserve balance is below zero. A below zero balance means that the working capital is temporarily supporting the needs of this portfolio, which has the potential to put strain on other needs and priorities in the Township.



The Township will also review projected lifecycle needs to determine if projects may be pushed beyond the 2024 to 2033 period at low risk to the Township. Impacts to the subsequent period will be reviewed as part of this decision-making process.

At a minimum, the annual contribution to the reserves should increase by the amount of inflation. Consideration will be given to the consolidation of the reserves to provide for greater flexibility in meeting lifecycle needs as they arise. Additional increases to close the annual funding deficit will also be considered with each budget cycle.

Projected levels of service will also be reviewed and determined in preparation for an updated AMP in 2025 in accordance with the requirements from O.Reg. 588/17.