ASSET MANAGEMENT PLAN

COUNTY OF HALIBURTON

FINAL October 2024

Infralevel

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1. Acknowledgements

The development of this Asset Management Plan was a significant corporate-wide initiative involving staff across the organization. Infralevel would like to acknowledge the efforts of the County of Haliburton staff in the various service areas who participated in information gathering and preparation of the asset management plan, providing their time, expertise and support in developing this plan.

This Asset Management Plan reflects a collaborative effort and a shared commitment to building resilient infrastructure and fostering sustainable growth in the County of Haliburton.

We respectfully acknowledge that the County of Haliburton is located on Treaty 20 Michi Saagiig territory, and in the traditional territory of the Michi Saagiig and Chippewa Nations, collectively known as the Williams Treaties First Nations. We acknowledge a shared presence of Indigenous nations throughout the area and recognize its original inhabitants as the stewards of its lands and waters since time immemorial.

2. Executive Summary

This asset management plan serves as a strategic, tactical and financial document ensuring the activities, resources and timelines required for municipal infrastructure are met, while balancing costs, opportunities and risks against the desired performance of assets. Infrastructure plays an essential role in supporting the County's delivery of services.

The County's asset management policy includes the following six guiding principles:

- Customer focused
- Service focused
- Forward looking
- Risk-based
- Value-based
- Holistic

This asset management plan has been developed to support these principles and address the July 1, 2024 and July 1, 2025 requirements of O. Reg. 588/17. It utilizes the best information available to the County at this time and advances asset management maturity through a diligent process.

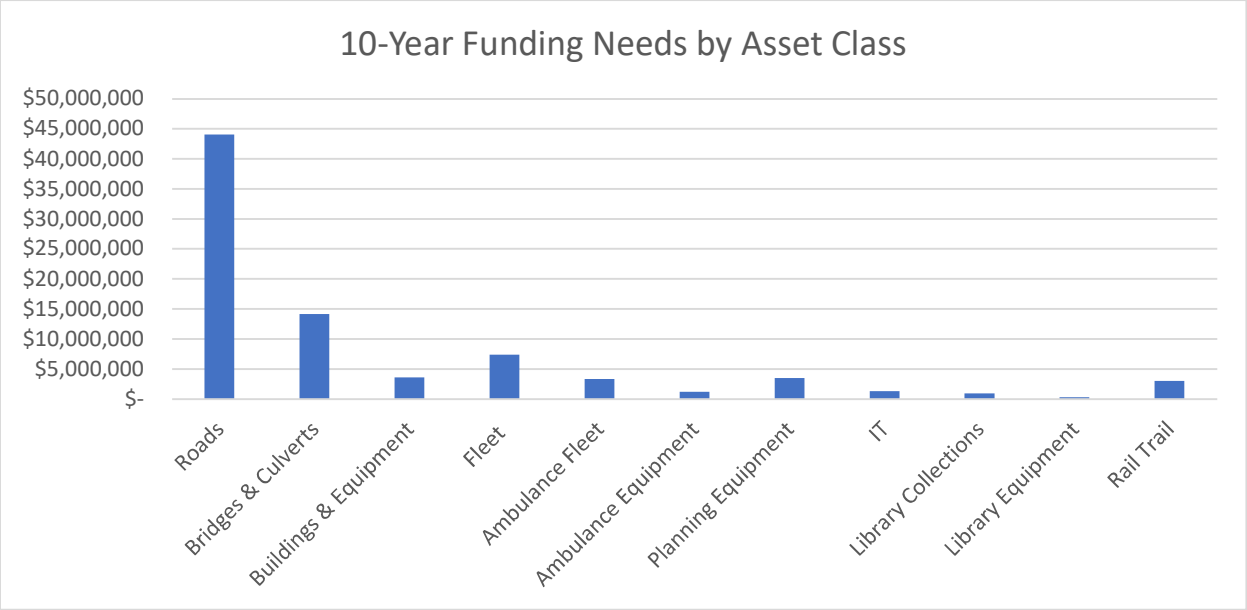
The plan includes all County assets. As detailed in the following table, the County's infrastructure has a replacement value of approximately **$534,930,806** and the overall condition is **Good**.

Asset Class	Replacement Cost (2024$)	Condition
Roads	$337,228,244	Good
Bridges and culverts	$107,674,354	Good
Buildings and equipment	$10,076,866	Fair
Social housing	$57,471,915	Not assessed
Fleet	$7,254,878	Fair
Land ambulance fleet	$1,314,509	Good
Land ambulance services equipment	$657,356	Good
Planning department equipment	$1,617,369	Fair
IT hardware and software	$585,542	Fair
Library collections	$699,581	Fair

Library equipment	$164,190	Good
Rail Trail	$10,186,002	Good
Total:	**$534,930,806**	**Good**

Level of service is a key component of asset management decision-making that describes the planned outcome from the use of the County's assets, from a customer and technical performance perspective. The County's current and proposed level of service statements describe the asset outputs that the County intends to deliver to the community and can be represented in terms of attributes such as availability, cost-effectiveness, reliability, responsiveness, safety, suitability and sustainability.

The County's lifecycle management strategy details the use of a combination of lifecycle activities that maintain these levels of service while planning for growth and striving to optimize costs based on defined risk. The following chart summarizes the total capital lifecycle expenditure needs for each asset class, forecast for the next ten years.



A detailed risk assessment process has been completed that identifies the likelihood and consequence of risk and provides mitigation recommendations to ensure the effective management, resilience, and sustainability of public assets. The risk assessment allows for the strategic prioritization of lifecycle activities. The assets identified to be at the highest risk level are typically those that deliver essential services and are beyond their expected service life. The condition of these assets should be assessed and monitored, with capital projects prioritized as required.

A financing strategy has been prepared to outline the recommended use of available revenue sources to fund the required lifecycle activities that achieve the current and

proposed levels of service recommendations. The following table shows the funding gap for the 10-year evaluation period.

10-Year Funding Analysis	
Funding Need	$82,678,939
Funding Available	$68,433,399
Funding Gap	$14,245,540

It is recommended that the County continue the 1% capital levy introduced in the 2024 budget in an ongoing manner. Continuing the capital levy will provide additional dedicated funding for infrastructure of approximately $3.2M over the next ten years. Over 20 years, the levy will generate approximately $9.7M. Council may consider increasing the capital levy when feasible, to more aggressively bridge the infrastructure funding gap over time.

Continuation of the capital levy provides the following benefits:

- Stable and predictable funding
- Affordability
- Minimized borrowing
- Fair distribution of costs across current taxpayers
- Improved asset management

Purpose

Objectives

Regulatory Environment

Line of Sight

Strategic Alignment

INTRODUCTION

3. Introduction

3.1 Purpose

Municipal asset management planning is the process of making the best possible decisions regarding the building, operating, maintaining, renewing, replacing and disposing of public infrastructure assets. The purpose is to maximize benefits, manage risk, and provide satisfactory levels of service to residents in a sustainable manner.

Asset management requires a thorough understanding of the characteristics and condition of infrastructure assets, as well as the service levels expected from them. It also involves setting strategic priorities to optimize decision making about when and how to proceed with investments. Finally, it requires the development of a financial plan, which is the most critical step in putting the plan into action.

Because it takes a long-term perspective, good asset management can maximize the benefits provided by infrastructure. It also affords the opportunity to achieve cost savings by detecting deterioration early on and taking action to rehabilitate or renew assets.

3.2 Objectives

There are several objectives that this Asset Management Plan will fulfill to enable the County to achieve the full extent of benefits derived from a diligent infrastructure planning process. The key objectives are to:

- **Achieve regulatory compliance**: A comprehensive asset management plan provides compliance with Ontario Regulation 588/17, mitigating the risk of legal and regulatory issues, and ensuring eligibility for ongoing Provincial funding.

- **Maintain a long-term focus:** Financial sustainability over the long term is of primary importance. Significant contributing factors will be weighed, including the implications of climate change, population and employment growth, and future levels of service.

- **Utilize data-driven decision-making:** The asset management plan relies on data collection and analysis, enabling informed decision-making. Data gained through supporting projects, such as Building Condition Assessments, informs this process and enhances the efficiency of asset management.

- **Manage the municipality's risk:** The asset management plan's risk assessment and prioritization process enable the County to identify vulnerabilities and take proactive measures to enhance the resilience of its infrastructure.

- **Foster continuous improvement:** Preparation of an asset management plan contributes to a culture of continuous improvement, ensuring that asset

management practices evolve with changing circumstances, emerging technologies, and lessons learned from past experiences.

3.3 Regulatory Environment

In January 2018, the province of Ontario enacted *O.Reg. 588/17: Asset Management Planning for Municipal Infrastructure*, which was created under the 2015 Federal Infrastructure for Jobs and Prosperity Act. The regulation was created because the province recognized that many Ontario municipalities were facing similar issues with existing infrastructure deteriorating faster than it was being repaired or replaced. The goals of the regulation were to standardize asset management plans, spread best practices among municipalities, and improve infrastructure planning in municipalities.

O. Reg. 588/17 prescribed timelines and scope requirements that municipalities were to adhere to for the preparation of a Strategic Asset Management Policy (SAMP), and Asset Management Plans (AMPs). The regulation separated the AMP requirements into core and non-core assets and current and proposed levels of service.

Core assets are those supporting the delivery of the following services: roads, bridges & culverts, water, wastewater, and stormwater. It is noted that water, wastewater and stormwater infrastructure and related services are delivered by the local municipalities. Non-core assets are any other assets supporting all other municipal services.

Levels of service are the means of defining the outcomes and outputs that customers can expect from asset-based activities, measured through a combination of customer values, customer performance measures and technical performance measures.

The timelines and requirements of O. Reg. 588/17 are summarized in the following table:

Schedule	Regulatory Requirement	County Status
July 1, 2019	Completion of an Asset Management Policy that outlines asset management principles, commitments to best practices and continuous improvement	Completed in 2019, updated in 2024
July 1, 2022	Completion of an Asset Management Plan for **core** assets, including current levels of service	Completed in 2019
July 1, 2024	Completion of an Asset Management Plan for **all** assets, including current levels of service	This document provides compliance
July 1, 2025	Completion of an Asset Management Plan for all assets, including current and proposed levels of service, assessment of achievability and affordability, and preparation of a financial strategy	This document provides compliance

3.4 Line of Sight

The concept of *Line of Sight* in municipal asset management is crucial for aligning the organization's strategic goals with the value expected from the assets. It ensures a clear connection between all activities performed within an organization and the achievement of the organization's overall objectives.

In the context of municipal infrastructure, having a line of sight from asset information to organizational objectives enables an organization to be agile if circumstances, such as extreme weather events and the consequences of climate change, require organizational objectives to change.

Line of sight in asset management achieves two important things:

1. People doing the physical work on the infrastructure can see how the work they do supports the strategic goals of the County.
2. People setting the strategic goals of the County can see how their decisions change how infrastructure is managed. Asset Management at the County enables this line of sight, connecting the service outcomes down to the assets that support them.

3.5 Strategic Alignment

The County's strategic goals and objectives are shaped by internal drivers such as Council-approved strategies and plans, as well as external forces such as resident expectations, and legislative and regulatory requirements. Asset Management supports the strategic objectives of Council, the delivery of services to the public, and the sustainability of the County.

Numerous relevant planning and governance documents have been prepared by and for the County. The following documents have been reviewed and considered for alignment purposes in the preparation of this Asset Management Plan.

Document Title	Date
2024 Budget Summary Report	2024
Asset Registry	2024
Detailed Operating & Capital Budgets	2022 - 2024
Reserve Summary	2024
Roads Five-Year Capital Forecast	2024
Structures Five-Year Capital Forecast	2024

County of Haliburton Official Plan (Office Consolidation)	2024
Comprehensive Review (Draft)	2023
Multi-Year Joint Accessibility Plan 2023 - 2027	2023
Halliburton County Paramedic Master Plan	2022
2022 Bridge and Large Culvert Biennial Inspections	2022
Asset Disposal Policy	2020
Asset Management Plan	2018
Traffic Corridor Assessment Study – County Road 21	2017
Tangible Capital Asset Policy	2011
Property Condition Assessments	Varies

Infralevel reviewed a number of relevant regulations, industry standards and guiding documents in order to adhere to best practices and ensure regulatory compliance. These documents are listed in the following table.

Document Title	Date
MFOA Asset Management Framework	2021
O. Reg. 588/17 (amended by O. Reg. 193/21)	2017 / 2021
Building Together: Guide for Municipal Asset Management Plans	2016
Infrastructure for Jobs and Prosperity Act	2015
ISO 55000 Series	2014

Scope of Work for Compliance

Assets included in the Scope of Work

Methodology

SCOPE AND METHODOLOGY

4. Scope and Methodology

4.1 Scope of Work for Compliance

The scope of work for this asset management plan has been developed to address the July 1, 2024 and July 1, 2025 requirements of O. Reg. 588/17. It utilizes the best information available to the County at this time and advances asset management maturity through a diligent process. The regulatory requirements of O. Reg. 588/17 for 2024 and 2025 are detailed in the following table.

2024 Requirements	2025 Requirements
Asset management plan for all assets with the following scope: • Current levels of service • State of local infrastructure • Lifecycle activities and costs • Growth impacts	Asset management plan for all assets with the following *additional* scope: • Proposed levels of service • Updated state of local infrastructure • Lifecycle management strategy • Financial strategy to manage funding gaps • Impact of growth on lifecycle and financial strategies

4.2 Assets included in the Scope of Work

The County of Haliburton is an upper tier municipality that includes four municipalities: Dysart et al, Highlands East, Minden Hills and the Township of Algonquin Highlands. Resident services are provided by both levels of government, with asset ownership and responsibility split accordingly. In accordance with the requirements of O.Reg. 588/17, the scope of this document includes all assets owned by the County. Ownership and responsibility for each asset class are summarized in the following table.

Asset Class	Asset Ownership & Responsibility	
	County of Haliburton	Lower Tier Municipalities
Roads	County roads, traffic signals and controls	Local roads, traffic signals and controls
Bridges and Culverts	County road bridges and culverts	Local road bridges and culverts
Water	None	All water assets
Wastewater	None	All wastewater assets
Stormwater	None	All stormwater assets

Buildings & Building Equipment	County buildings and equipment, including Social Housing*	Local buildings and equipment
Trails	Rail Trail	Local trails
Fleet	Corporate and Land Ambulance Fleet	Local fleet
Equipment	Equipment for Land Ambulance Service, GIS, Planning and Library	Local equipment
Library Collections	County library collections	None
Information Technology	County hardware and software licences	Local hardware and software licences

*Social housing is financially supported by the County of Haliburton with the City of Kawartha Lakes.

4.3 Methodology

The objectives of the asset management plan are met through the completion of the main report sections detailed in the following table.

Report Section	Content
State of Local Infrastructure	What assets the County has, what condition they are in, and what they are worth.
Levels of Service	How the County's assets should perform to meet the needs of residents and other stakeholders.
Proposed Levels of Service	Asset performance objectives that are the future target state, in 10 years time.
Risk Management Strategy	How the County minimizes risk exposure by focusing the limited available funding on critical assets that have a high level of consequence.
Lifecycle Management Strategy	A set of actions that should be undertaken on the right assets at the right time to ensure they continue to meet their levels of service over the long term.
Growth Impacts	How changes in population and economic activity impact lifecycle management and financial strategies.
Financial Strategy	A forecast for the spending required to support the Lifecycle Management Strategy, and a plan to fund and prioritize the work.
Advancing Asset Management Maturity	Recommendations for actions that can be undertaken to improve the maturity of asset management practices in the County.

Asset Summary

Asset Inventory, Age and Replacement Cost

Asset Condition

State of Local Infrastructure

5. State of Local Infrastructure

O. Reg. 588/17 requires Asset Management Plans to include the following information for each asset category:

- Summary of the assets
- Replacement cost of the assets
- Average age of the assets (weighted based on replacement cost)
- Information available on the condition of assets
- The municipality's approach to condition assessments

This information is detailed in the following report sections.

5.1 Asset Summary

As required by O. Reg. 588/17, this asset management plan includes all County assets. The assets are categorized as follows.

Roads	Equipment – Land Ambulance Services, Planning Department and Library
Bridges and culverts	Information Technology Hardware and Software
Buildings and Building Equipment	Library Collections
Social Housing	Rail Trail
Fleet – Operations and Land Ambulance	

Some of the County's green infrastructure assets are included within these asset categories:

- **Rail Trail**: this category includes features such as trees, natural drainage features, rivers, waterfalls and bogs.

- **Buildings**: this category includes site features such as natural drainage features, engineered drainage and trees.

Over time, the County will continue to add green infrastructure assets to the asset register and incorporate these assets into lifecycle management planning, documented levels of service and the risk management strategy.

5.2 Asset Inventory, Age and Replacement Cost

Asset inventory, age and replacement cost data was sourced from the County's asset register or from condition assessment reports where available. Average ages have been calculated based on weighting of replacement costs.

Replacement costs are derived from industry costs, user-defined costs and, as appropriate, the application of historical cost inflation. Asset replacement values represent the cost the County would have to pay to acquire an equivalent new asset with the same service potential at the time of reporting.

5.2.1 Roads

The County's road network consists mainly of rural roads that are a combination of hot mix asphalt-paved roads, referred to as High Class Bituminous, and surface treated roads, referred to as Low Class Bituminous. Related assets include guide rails, small culverts and warning and regulatory signs. Road related equipment, such as spreaders, steamers, tools and patchers have also been included in this asset category.

Asset	Quantity	Average Age (years)	Replacement Cost
Surface treated roads	216.25 km	19	$86,500,000
Paved roads	179.15 km		$232,895,000
Road signs	4,400	Unknown	$2,640,000
Culverts	1,255	Unknown	$5,020,000
Guide rails	697 sections 73.3 km	Unknown	$9,162,500
Road equipment	23 assets	16	$1,010,744
		Total:	**$337,228,244**

5.2.2 Bridges and Culverts

The County has jurisdiction over a total of 17 bridges and 24 culverts. Two of the 17 bridges are associated with the Rail Trail and have been included in the Rail Trail asset class. Two of the culverts have spans of less than 3 meters, however these culverts are included in the County's OSIM report and have been included in this asset class for consistency.

Structure types include concrete rigid frames, concrete box culverts, corrugated steel pipe, concrete deck on steel beams and concrete slab on steel girders.

The County's bridges and their respective ages are summarized in the following table.

Name	Age	Name	Age
Drag River Bridge	55	Horseshoe Lake Bridge	101
Eagle Lake Road Bridge	52	Allsaw Bridge	74
West Guilford Bridge	52	Head Lake Bridge	61
Hollow River Bridge	52	Dorset Bridge	117
Paudash Lake Bridge	51	Furnace Falls Bridge	74
York River Bridge	37	Gooderham Bridge	53
Hawk Lake Road Bridge	4	Dark Lake Bridge	46
Ingoldsby Bridge	39		

The County's bridges and their respective ages are summarized in the following table.

Name	Age	Name	Age
Kendrick Creek Culvert	18	Kingscote Road Culvert	44
Sinclair Pond Culvert	18	Haliburton Lake Road Culvert	43
Gelert Culvert	11	Parson's Road Culvert	22
Haliburton Culvert	14	Camp Northland Culvert	18
Little Bob Lake Culvert	24	County Road 503 Box Culvert	64
Bluehawk Lake Culvert	9	Bark Creek Culvert	54
Esson Lake Culvert	34	County Road 503 Culvert	54
Eagle Lake Culvert	19	County Road 503 Twin Culvert	21
Pivot Lake Culvert	64	Wood Box Culvert	74
McGillvary Road Culvert	44	Hudson Creek Culvert	54
Inlet Bay Culvert	54	County Road 648 Culvert	44
Fishtail Lake Road Culvert	3	Lower Cup Lake Culvert	94

The following table summarizes the bridge and culvert assets, their ages and associated replacement costs.

Asset	Quantity	Average Age (years)	Replacement Cost
Bridges	15 (excludes 2 Rail Trail bridges)	62	$81,636,714
Culverts	24	44	$26,037,639
		Total:	**$107,674,354**

5.2.3 Buildings and Equipment

The County has two administrative buildings, three paramedic services buildings and nine operations buildings. Building-related equipment includes audio visual equipment, photocopiers, a postage machine and a generator. The County's buildings and equipment, their age and replacement cost are summarized in the following table.

Building Name	Number of Buildings	Age (years)	Replacement Cost
11 Newcastle Street – Administration	1	72	$2,319,387
12 Newcastle Street – Old Admin Office	1	59	$927,755
Paramedic Services Buildings	3	7, 9 & 30	$3,307,446
Operations Buildings	9	10 - 59	$3,403,700
Building equipment	N/A	8 (average)	$118,578
		Total:	**$10,076,866**

5.2.4 Social Housing

Social housing services are provided by Kawartha Lakes-Haliburton Housing Corporation and non-profit housing providers that include Haliburton Community Housing Corporation, Staanworth Non-Profit and Monmouth Township Non-Profit Housing Corporation.

It is understood that the County is responsible for funding all capital projects for these buildings.

Kawartha Lakes-Haliburton Housing Corporation

Asset	Number of Units	Age (years)	Replacement Cost
610 Mountain Street	32	46	$5,755,608
4977 County Road 21	24	10	$4,379,745
6 Parkside Street	20	46	$3,408,172
57 Parkside Street	12	7	$1,590,460
		Total:	**$15,133,985**

Non-Profit Housing Providers

Asset	Number of Units	Age (years)	Replacement Cost
Halliburton Community Housing Corporation			
1 Victoria Street	50	37	$9,463,334
13 Independence Street	45	33	$7,794,346
Staanworth Non-Profit			
1 – 20 Floralan Court	20	32	$6,132,371
30 Prentice Street	22	40	$4,880,637
44 Parkside Street	32	35	$5,789,761
Monmouth Township Non-Profit Housing Corporation			
2117 Loop Road	6	29	$1,256,372
2117 Loop Road	24	29	$5,870,556
2117 Loop Road	4	30	$1,150,553
		Total:	**$42,337,930**

5.2.5 Fleet

The County fleet assets are comprised of licensed operations vehicles, unlicensed operations vehicles (heavy equipment) and operations trailers. The following tables summarize the County's fleet assets.

Pickup Trucks	Year
Pickup 1500 4x4 diesel (Chev)	2024
Pickup 1500 4x4 diesel (Chev)	2024
Pickup Colorado 4x4 Orange (Chev)	2024
Pickup 1500 4x4 gas (Ram)	2023
1/2 ton 4x4 cab and half	2014
1/2 ton 4x4 cab and half	2014
1/2 ton 4x4 cab and half	2016
1/2 ton 4x4 cab and half	2016
1/2 ton 4x4 cab and half	2018
1/2 ton 4x4 cab and half	2018
1/2 ton 4X4 reg cab	2019
PHEV SUV – White	2020
Orange Mid-size 4x4	2022
White Mid-size 4x4	2022
White Mid-size 4x4	2023
White SUV – Jeep	2023

One Tons	Year
One Ton	2016
One Ton	2018
One Ton	2020
One Ton	2020
One Ton	2021

Service Vans	Year
Service Van	2015
Service Van	2017

Tandems	Year
Tandem with Plow – spare	2014
Tandem with Plow – spare	2015
Tandem with Plow	2018
Tandem with Plow	2018
Tandem with Plow	2019
Tandem with Plow	2021
Tandem with Plow	2023
Tandem with Plow	2024

Backhoes, Graders, Gradalls, Loaders	Year
4x4 Tractor Backhoe	2019
4x4 Tractor Backhoe	2021
4x4 Tractor Backhoe	2023
Grader	2003
Gradall	2021
Loader	2024
Loader	2015
Loader	2020

Trailers & Equipment	Year
7-ton Tag-a-long	2007
20-ton Tag-a-long	2010
Hot Box Patching Trailer	2013
Hot Box Patching Trailer	2020
Sweeper (attached to 44-24-01)	2024
Sweeper (attached to 47-19-01)	2019
Asphalt Roller	2013
Wood Chipper	2015
Steamer	2016
Steamer	1989
20-ton Tag-a-long	2016
Riding Mower	2013
High Pressure Water Pump	2019
2 portable road closure sign trailers	2020
Fuel tanks at patrol yards	2021
Miscellaneous	Varies
Plow & Sander for One Ton Truck	2024
Tow-behind Grader	2024

The following table summarizes the number of assets included in the asset registry, their average age and the associated current replacement value. Based on significant fleet cost increases in recent years, the replacement costs have been derived based on an average 6% annual inflation factor.

Asset	Quantity	Average Age (years)	Replacement Cost
Fleet equipment	5 assets	6	$148,616
Fleet	40 assets	7	$6,886,114
Trailers	6 assets	10	$220,148
		Total:	**$7,254,878**

5.2.6 Land Ambulance Fleet

The County's Land Ambulance Services department maintains a fleet of seven ambulances and five support vehicles. A sixth support vehicle is planned to be received in December 2024.

Asset	Quantity	Average Age (years)	Replacement Cost
Ambulances & support vehicles	7 ambulances, 5 support vehicles	2	$1,314,509
		Total:	**$1,314,509**

5.2.7 Land Ambulance Services Equipment

Land Ambulance Services equipment includes office furniture, defibrillators, computer equipment, stretchers, generators, laptops, tablets and a water treatment system.

Asset	Quantity	Average Age (years)	Replacement Cost
Equipment	39 assets	6	$585,056
Hardware	18 assets	3	$54,436
Software	5 assets	4	$17,864
		Total:	**$657,356**

5.2.8 Planning Department Equipment

Planning Department Equipment includes the Global Positioning System (GPS) unit, South Central Ontario Ortho-photography Project (SCOOP) tiles, Light Detection and Ranging (LiDAR) data and a Bizhub colour copier machine.

Asset	Quantity	Average Age (years)	Replacement Cost
Planning department equipment	30 assets	4	$1,617,369
		Total:	**$1,617,369**

5.2.9 Information Technology

The County's software inventory includes email licencing, remote desktop licencing, Windows server licencing, SQL server licencing, Office licencing, backup software, antivirus and spam filter.

The County's hardware includes firewalls, servers, storage and switches. The County also maintains an inventory of computers, laptops and tablets.

Asset	Quantity	Average Age (years)	Replacement Cost
Hardware	43 assets	3	$194,841
Software	38 assets	4	$390,701
		Total:	**$585,542**

5.2.10 Library Collections

The Haliburton County Public Library (HCPL) has approximately 40,696 books, 7,456 CDs and DVDs, and 71 book club sets.

The HCPL has access to a shared Provincial collection of e-books through the Ontario Library Service Consortium, which includes over 80,000 titles.

Information pertaining to HCPL's collections in each of the four local municipalities is included in the following table.

Municipality	Number of Branches	Average Age of Collections (Years)	Replacement Cost
Minden Hills	1	4	$699,581
Dysart et al	2		
Highlands East	4		
Algonquin Highlands	2		
		Total:	**$699,581**

5.2.11 Library Equipment

Library equipment includes computers, an early literacy station and a dedicated library vehicle.

Asset	Quantity	Average Age (years)	Replacement Cost
Equipment	14 assets	2	$103,450
Vehicle	1 asset	1	$60,740
		Total:	**$164,190**

5.2.12 Rail Trail

The Rail Trail was purchased by the County in 1988 and includes 34 km of abandoned rail bed with a granular B surface. The Rail Trail includes 2 bridges, 68 small culverts, 12 gates and 12 stone benches.

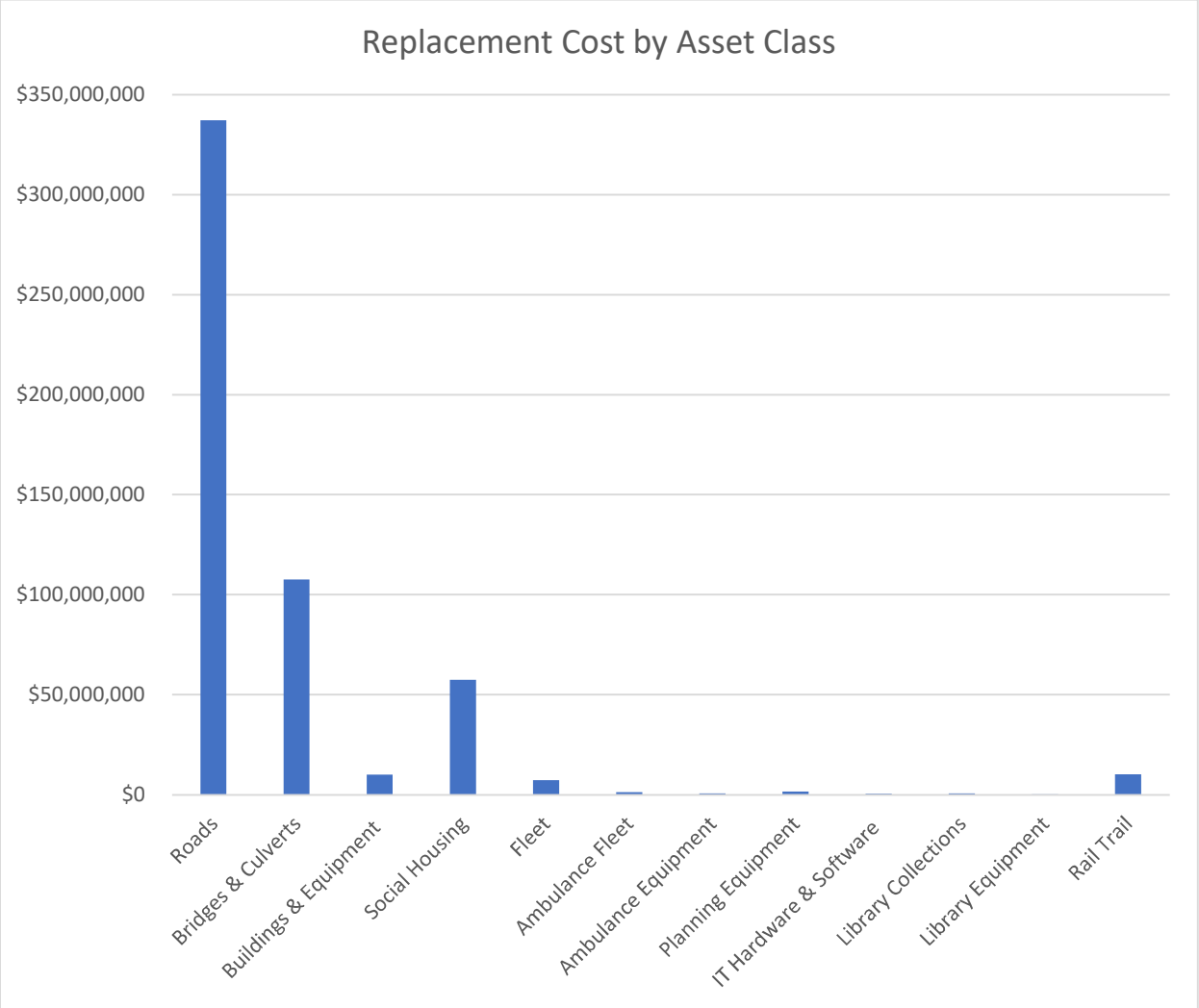
Asset	Quantity	Average Age (years)	Replacement Cost
Land value	34 km	36	$144,865
Improvements	3 assets	3	$286,084
Bridges	2	92	$9,755,053
		Total:	**$10,186,002**

5.2.13 Asset Replacement Cost Summary

Total replacement cost by asset class is summarized in the following table and chart.

Asset Class	Replacement Cost (2024$)
Roads	$337,228,244
Bridges and Culverts	$107,674,354
Buildings and Equipment	$10,076,866
Social Housing	$57,471,915
Fleet	$7,254,878
Land Ambulance Fleet	$1,314,509
Land Ambulance Services Equipment	$657,356
Planning Department Equipment	$1,617,369

Information Technology Hardware and Software	$585,542
Library Collections	$699,581
Library Equipment	$164,190
Rail Trail	$10,186,002
Total:	**$534,930,806**



5.3 Asset Condition

Assessed condition is the preferred measurement for planning lifecycle activities to ensure assets deliver the agreed-upon levels of service and reach their expected useful life.

Although the County considers condition as the ideal basis for infrastructure planning, some assets do not yet have a process to determine condition. For assets with no known condition information, the condition was assumed based on the asset's age, expected useful life and remaining service life.

In the future, the County is investigating completing condition assessments for assets where no program currently exists. For some assets, condition assessments are not economical, but for many assets, regular inspections provide strategic value to the municipality. There is an opportunity to implement processes to allow for these inspections to output a documented condition score.

A summary of available asset condition data is included in the following table:

Assets with Available Condition Data	Assets with No Available Condition Data (condition is based on age)
Roads	Social Housing
Bridges and culverts	Fleet
Buildings & Building Equipment*	Land Ambulance Fleet
	Land Ambulance Services Equipment
	Planning Department Equipment
	IT Hardware and Software Licences
	Library Collections
	Library Equipment
	Rail Trail

**Comprehensive condition assessment reports were completed for the administrative and operations buildings in 2022. These reports include detailed capital plans for each building. Inspection reports were also completed for the three paramedic services buildings in 2022. The reports provide a summary of conditions and deficiencies, however no costing or capital planning information is provided.*

The following report sections provide detailed information regarding the condition of each asset class. Using a weighted average, the overall condition of the County's assets falls within the '**Good**' category.

5.3.1 Condition Based on Inspection Data

Asset condition data is available for roads, bridges and culverts, and buildings. The following table details the condition assessment reports that were reviewed for these asset classes to inform the asset management plan.

Asset Class	Report Title	Prepared By	Report Date
Roads	Spreadsheet of road data and PCI scores	County software	2024
Bridges and culverts	2022 Bridge & Large Culvert Biennial Inspections	Keystone Bridge Management Corp.	2022
Buildings	Inspection reports for EMS buildings	Done Right Commercial Inspections	2022
	Facility Condition and Needs Assessment reports for administrative and operations buildings	McIntosh Perry	2022

5.3.1.1 Roads

A spreadsheet with road asset data and PCI information was provided by the County and is included as Appendix C. Condition ratings from the spreadsheet have been mapped to the condition grading methodology of the asset management plan as follows.

Condition Grading	Condition Description	Pavement Condition Index
Very Good	No noticeable defects	80 – 100
Good	Minor deterioration	70 – 79
Fair	Deterioration evident, function is affected	60 – 69
Poor	Serious deterioration, function is inadequate	50 – 59
Very Poor	No longer functional, general or complete failure	< 50

Paved roads are in fair condition overall, with an average pavement condition index of 64. Surface treated roads are in good condition overall, with an average pavement condition index of 74. The percentage of paved and surface treated roads in each condition grading category is summarized in the following table. The average pavement condition index is a weighted value based on road segment length.

Asset	Condition Grading	% of Assets	Average Pavement Condition Index
HCB (Paved Roads)	Very Good	24%	Fair (64)
	Good	10%	
	Fair	19%	
	Poor	18%	
	Very Poor	30%	
LCB (Surface Treated Roads)	Very Good	41%	Good (74)
	Good	27%	
	Fair	4%	
	Poor	21%	
	Very Poor	6%	

5.3.1.2 Bridges and Culverts

The condition of County bridges and culverts was assessed in a report titled '2022 Bridge & Large Culvert Biennial Inspections' prepared by Keystone Bridge Management Corp. The assessment was completed as part of the inspections required to be completed every two years by O. Reg. 104/97. The assessment follows the Ontario Structure Inspection Manual (OSIM).

Bridge condition index ratings from the Keystone report have been mapped to the condition grading methodology of the asset management plan as follows.

Condition Grading	Condition Description	Bridge Condition Index
Very Good	Minimal short-term work required	80 – 100
Good	Some maintenance required	70 – 79
Fair	Repair or renewal work is required in the short term	60 – 69
Poor	Major renewal work is required in the short term	50 – 59
Very Poor	Nearing the end of its service life, load limits may be required	< 50

The Keystone report assigned a Bridge Condition Index (BCI) score to each bridge and culvert. The average condition and the percentage of bridges and culverts in each condition grading category are summarized in the following table. The average bridge condition index is a weighted value based on replacement cost.

Asset	Condition Grading	% of Assets	Average Bridge Condition Index
Bridges	Very Good	3%	Good (74%)
	Good	66%	
	Fair	31%	
	Poor	0%	
	Very Poor	0%	
Culverts	Very Good	40%	Good (73%)
	Good	29%	
	Fair	16%	
	Poor	5%	
	Very Poor	10%	

5.3.1.3 Buildings & Building Equipment

Inspection reports were prepared by Done Right Commercial Inspections in 2022 for the three paramedic services buildings. These reports do not include overall condition statements, costing or capital planning information that would typically inform this asset management plan.

Facility Condition and Needs Assessment reports were prepared for the administrative buildings (11 and 12 Newcastle Street) and operations buildings (Patrol 1, Patrol 2 and Patrol 3 Yard Buildings). Based on information included in the condition assessment reports, County buildings are in fair condition overall. Building conditions as reported in the condition assessments are included in the following table.

Asset	Condition	Overall Condition
Paramedic Services Buildings	Not available	**Fair**
11 Newcastle Street	Fair	
12 Newcastle Street	Poor	
Patrol 1 Yard Buildings	Fair	
Patrol 2 Yard Buildings	Fair	
Patrol 3 Yard Buildings	Fair	

5.3.2 Condition Based on Asset Age

Asset age, expected useful life and remaining useful life are used to determine the condition of assets that have no assessed condition data available. The following table maps the percentage of remaining useful life to the standard condition grading categories used in this report.

Condition Grading	Condition Description	Remaining Useful Life (%)
Very Good	The asset is new, recently rehabilitated, or very well maintained. Only preventative maintenance is required.	80 - 100
Good	The asset is adequate and has slight defects and shows signs of some deterioration that has no significant impact on asset's usage. Minor/preventative maintenance may be required.	60 - 80
Fair	The asset is sound but has minor defects. Deterioration has some impact on asset usage. Minor to significant maintenance is required.	40 – 60
Poor	The asset has significant defects and deterioration. Deterioration has an impact on asset usage. Rehabilitation or major maintenance is required in the next year.	20 – 40
Very Poor	The asset has serious defects and deterioration, rendering it unfit for use. Urgent rehabilitation or closure is required.	0 – 20

5.3.2.1 Roads – Miscellaneous Assets

The age-based condition of road-related equipment assets is summarized in the following table. The average condition is a weighted value based on replacement cost.

Age information is not available for guide rails, culverts and warning and regulatory signs. In the absence of condition assessments and age information, County staff have provided condition ratings based on working experience with the assets.

Asset	Expected Useful Life (years)	Average Age (years)	Condition Grading	Average Condition (%)
Road signs	25	Unknown	Very Good	80
Culverts	35	Unknown	Good	70
Guide rails	50	Unknown	Good	70
Road equipment	5 – 25	16	Poor	22

The percentage of road equipment assets in each condition grading category is summarized in the following table.

Asset	Condition Grading	% of Assets	Average Condition
Road Equipment	Very Good	1%	Poor (22%)
	Good	17%	
	Fair	0%	
	Poor	0%	
	Very Poor	82%	

5.3.2.2 Buildings & Equipment

The age-based condition of the County's building equipment assets is summarized in the following table. The average condition is a weighted value based on replacement cost.

Asset	Expected Useful Life (years)	Average Age (years)	Condition Grading	Average Condition (%)
Building equipment	5 - 15	8	Poor	30

The percentage of building equipment assets in each condition grading category is summarized in the following table.

Asset	Condition Grading	% of Assets	Average Condition
Building equipment	Very Good	0%	Poor (30%)
	Good	8%	
	Fair	65%	
	Poor	0%	
	Very Poor	28%	

5.3.2.3 Social Housing

The County funds social housing but does not own the associated assets. A review of the condition of the social housing assets has not been completed as part of this report.

5.3.2.4 Fleet

The age-based condition of fleet assets is summarized in the following table. The average condition is a weighted value based on replacement cost.

Asset	Expected Useful Life (years)	Average Age (years)	Condition Grading	Average Condition (%)
Fleet equipment	5	6	Very Poor	6%
Fleet vehicles	4 - 20	7	Fair	46%
Trailers	15 – 20	10	Fair	43%

The percentage of fleet assets in each condition grading category is summarized in the following table.

Asset	Condition Grading	% of Assets	Average Condition
Fleet	Very Good	25%	Fair (45%)
	Good	15%	
	Fair	25%	
	Poor	5%	
	Very Poor	30%	

5.3.2.5 Land Ambulance Fleet

The age-based condition of land ambulance fleet assets is summarized in the following table. The average condition is based on County condition assessment as well as a weighted value based on replacement cost.

Asset	Expected Useful Life (years)	Average Age (years)	Condition Grading
Land Ambulance Fleet	4 - 5	2	Good

The percentage of machinery and equipment assets in each condition grading category is summarized in the following table:

Asset	Condition Grading	% of Assets	Average Condition
Land ambulance fleet	Very Good	0%	Good
	Good	64%	
	Fair	8%	
	Poor	13%	
	Very Poor	14%	

5.3.2.6 Land Ambulance Equipment

The age-based condition of land ambulance equipment assets is summarized in the following table. The average condition is based on County condition assessment as well as a weighted value based on replacement cost.

Asset	Expected Useful Life (years)	Average Age (years)	Condition Grading
Equipment	2 - 15	6	Good
Hardware	3 - 5	3	Good
Software	5	4	Good

The percentage of land ambulance equipment assets in each condition grading category is summarized in the following table:

Asset	Condition Grading	% of Assets	Average Condition
Land ambulance Equipment	Very Good	5%	Good
	Good	11%	
	Fair	4%	
	Poor	14%	
	Very Poor	66%	

5.3.2.7 Planning Department Equipment

The age-based condition of planning department equipment assets is summarized in the following table. The average condition is a weighted value based on replacement cost.

Asset	Expected Useful Life (years)	Average Age (years)	Condition Grading	Average Condition (%)
Planning Department Equipment	5 - 20	4	Fair	41

The percentage of planning department equipment assets in each condition grading category is summarized in the following table:

Asset	Condition Grading	% of Assets	Average Condition
Planning Department Equipment	Very Good	21%	Fair (41%)
	Good	19%	
	Fair	24%	
	Poor	13%	
	Very Poor	23%	

5.3.2.8 Information Technology

The age-based condition of information technology assets is summarized in the following table. The average condition is a based on County assessment and weighted value based on replacement cost.

Asset	Expected Useful Life (years)	Average Age (years)	Condition Grading	Average Condition (%)
Hardware	5	3	Fair	44
Software	5 - 10	4	Poor	23

The percentage of information technology assets in each condition grading category is summarized in the following table:

Asset	Condition Grading	% of Assets	Average Condition
Information Technology	Very Good	8%	Fair
	Good	17%	
	Fair	19%	
	Poor	29%	
	Very Poor	27%	

5.3.2.9 Library Collections

The age-based condition of library collection equipment assets is summarized in the following table. The average condition is a weighted value based on replacement cost.

Asset	Expected Useful Life (years)	Average Age (years)	Condition Grading	Average Condition (%)
Library Collections	7	4	Fair	46

The percentage of library collection assets in each condition grading category is summarized in the following table:

Asset	Condition Grading	% of Assets	Average Condition
Library Collections	Very Good	10%	Fair (46%)
	Good	23%	
	Fair	20%	
	Poor	31%	
	Very Poor	16%	

5.3.2.10 Library Equipment

The age-based condition of library equipment assets is summarized in the following table. The average condition is a weighted value based on replacement cost.

Asset	Expected Useful Life (years)	Average Age (years)	Condition Grading	Average Condition (%)
Equipment	5	2	Fair	51
Vehicle	10	1	Very Good	90

The percentage of library equipment assets in each condition grading category is summarized in the following table:

Asset	Condition Grading	% of Assets	Average Condition
Library Equipment	Very Good	48%	Good (65%)
	Good	24%	
	Fair	23%	
	Poor	0%	
	Very Poor	5%	

5.3.2.11 Rail Trail

The age-based condition of rail trail assets is summarized in the following table. The average condition is a weighted value based on replacement cost.

Asset	Expected Useful Life (years)	Average Age (years)	Condition Grading	Average Condition (%)
Improvements	5 - 10	3	Good	70
Bridges	100 - 120	92	Good	80

The percentage of rail trail assets in each condition grading category is summarized in the following table:

Asset	Condition Grading	% of Assets	Average Condition
Rail Trail	Very Good	62%	Good (79%)
	Good	38%	
	Fair	0%	
	Poor	0%	
	Very Poor	0%	

5.3.3 Asset Condition Summary

A summary of average condition for each asset class is provided in the following table.

Asset Class	Average Condition
Roads	Good
Bridges & culverts	Good
Buildings & equipment	Fair
Social Housing	Not assessed
Fleet	Fair
Land ambulance fleet	Good
Land ambulance services equipment	Good
Planning department equipment	Fair
Information technology	Fair
Library collections	Fair
Library equipment	Good
Rail trail	Good

Current Levels of Service

Proposed Levels of Service

Levels of Service Tables

LEVELS OF SERVICE

6 Levels of Service

6.1 Current Levels of Service

Levels of service is a key component of asset management decision-making that describe the planned outcome from the use of an asset, from a customer and technical performance perspective.

The County's current level of service statements describe the asset outputs that the County intends to deliver to the community and can be represented in terms of attributes such as availability, cost-effectiveness, reliability, responsiveness, safety, suitability and sustainability. Current levels of service measures for each service area are established through discussions with County staff or are prescribed metrics included in O. Reg. 588/17.

In addition to the measures required by O. Reg. 588/17, the County has developed other foundational asset service measures which assist the County in defining its performance levels and identifying areas of improvement. The levels of service inform the planned actions required to deliver the expected service levels and this link enables the County to gain an understanding of the costs associated with delivering its services to the community.

The service levels and performance reporting in this asset management plan are compliant with O. Reg. 588/17. Through each update of the plan, the County will continue to develop and refine service levels, performance measurements and targets. The County will also consider impacts of external factors affecting levels of service, such as changing regulations, population growth, customer expectations and trends, demographic changes, and climate change impacts. Internal and external factors may lead to changes in the current levels of service provided by the County; proposed levels of service address these changes.

6.2 Proposed Levels of Service

The County is evolving over time and resident needs and expectations also change due to numerous internal and external factors. Strategic corporate documents such as the Official Plan, master plans and annual budget present and propose new initiatives and projects that represent changes to current levels of service.

These proposed changes to the current levels of service are referred to as 'proposed levels of service' and for the purposes of asset management planning and in relation to O. Reg. 588/17, they are considered the future target state, in 10 years' time. Proposed levels of service are often categorized as impacting capacity and use, function, condition or affordability.

Service Attribute	Strategic Theme	Description
Capacity and Use	Capacity	Convenient and accessible to the community
	Availability	Consistent readiness for use
Function	Regulatory Compliance	Conforms with appropriate legislation and other standards
	Enhanced Safety	Safe for community use
	Resilience	Withstands stresses and continues to perform as expected
	Enhanced Environment	Contributes positively to a sustainable environment
Quality	Reliability	Continued function without failure
	Customer Satisfaction	The community is informed and needs are met
Affordability	Financial Sustainability	Value is achieved for the community now and into the future

O. Reg. 588/17 requires an assessment of the appropriateness of the proposed levels of service for the municipality, including a review of achievability, affordability, available options, the risks associated with the options, and the differences between the current and proposed levels of service.

Differences Between Current and Proposed Levels of Service

The differences between the current and proposed levels of service pertain mainly to higher standards for asset condition and reliability, improved performance and enhanced due diligence for asset condition assessments.

Achievability

The proposed levels of service are driven by community needs and expectations. They are determined to be achievable based on a review of resource availability, including personnel, equipment, technology and funding. Infrastructure capacity and regulatory compliance have also been considered as part of the achievability assessment.

Affordability

The County's finite budget resources have been taken into account when developing its proposed levels of service. A long-term perspective has been applied to forecast and

plan for operating, maintenance, rehabilitation and replacement costs over the lifecycle of each asset.

Options & Risks

Options have been reviewed for each proposed level of service and a cost-benefit analysis has been utilized to distinguish between and prioritize the various available options. Costs and benefits have been adjusted for the potential impacts of risk, providing decision makers with a realistic understanding of the potential outcomes of a service level change and informing decisions that seek long term sustainability for the County.

6.3 Levels of Service Tables

The levels of service tables in this section follow the same structure for each service area. They include components such as identifying customer values, customer- and Council-focused performance measures, and technical-focused performance measures. Each table contains the following components:

Component	Description
Service attribute	Summarizes the type of service being provided to residents, businesses and the wider community.
Performance measures	*Community Levels of Service* - Communicates service outcomes from the perspective of the customer, for both current and proposed levels of service.
	Technical Levels of Service - Communicates service outcomes in technical terms, for both current and proposed levels of service.
Current performance	The current performance of the metric quantified through the best available information.
Performance target	The future performance of the metric representing the target state, in 10 years' time.

Where appropriate, proposed levels of service have been included in the tables for each asset class.

6.3.1 Roads

Community and technical levels of service for the roads asset class are included in the following tables.

Service Attribute	Community Levels of Service	Current Performance
Scope	Map of the road network and its level of connectivity	Refer to map in Appendix B
Quality	Images that illustrate the different levels of road class pavement condition	Refer to images in Appendix D

Service Attribute	Technical Levels of Service	Current Performance
Scope	Lane kilometres of arterial roads per County land area	0.08 lane km/km^2
	Lane kilometres of collector roads per County land area	0.08 lane km/km^2
	Lane kilometres of local roads per County land area	0 lane km/km^2
Quality	Average pavement condition index for paved roads	Fair (64)
	Average surface condition for surface treated roads	Good (74)
	Centreline kilometres of paved roads with pavement condition index less than 50	54.1
	Centreline kilometres of surface treated roads with Average Annual Daily Traffic count over 100 and surface condition less than 50	13.9

Service Attribute	Proposed Levels of Service	Performance Target
Quality	Achieve a PCI of 80 or higher	PCI > 80

6.3.2 Bridges and Culverts

Community and technical levels of service for the bridges and culverts asset class are included in the following tables.

Service Attribute	Community Levels of Service	Current Performance
Scope	Description of the traffic that is supported by municipal bridges	Municipal bridges provide passage for heavy transport vehicles, motor

		vehicles, emergency vehicles, pedestrians and cyclists
Quality	Images of the condition of bridges and how this affects use	Refer to images in Appendix D
	Images of the condition of culverts and how this affects use	Refer to images in Appendix D

Service Attribute	Technical Levels of Service	Current Performance
Scope	Percentage of bridges with loading or dimensional restrictions	12% (two bridges have load postings)
Quality	Average bridge condition index for bridges	74
	Average bridge condition index for structural culverts	73

Service Attribute	Proposed Levels of Service	Performance Target
Quality	All bridges with a condition index of 70 or higher	BCI > 70
	All culverts with a condition index of 70 or higher	BCI > 70

6.3.3 Buildings & Equipment

Community and technical levels of service for buildings and equipment assets are included in the following tables.

Service Attribute	Community Levels of Service	Current Performance
Scope	Number of paramedic services buildings per 1,000 residents	0.15
Service	Percentage of municipal buildings with public access during posted operating hours	100%

Service Attribute	Technical Levels of Service	Current Performance
Capacity	Percentage of buildings providing fair or better functional capacity	86%

Service Attribute	Proposed Levels of Service	Performance Target
Quality	Maintain buildings in fair or better condition	Facility Condition Index > 70
Quality	Maintain current building condition assessments for all buildings	Complete building condition assessments on a five-year cycle

6.3.4 Social Housing

Social housing is not owned by the County, therefore Levels of Service are not set by the County and are not considered within the scope of this report.

6.3.5 Fleet

Community and technical levels of service for the fleet asset class are included in the following tables.

Service Attribute	Community Levels of Service	Current Performance
Scope	Number of vehicles in the fleet	29 active vehicles (excluding large equipment and trailers)
Quality	Description of common lifecycle activities	Inspections, regulatory maintenance, oil change, tire rotation, collision repair, component replacement such as breaks, transmission and shocks, etc.

Service Attribute	Technical Levels of Service	Current Performance
Quality	% of fleet assets beyond their expected useful life	20%

Service Attribute	Proposed Levels of Service	Performance Target
Quality	Maintain fleet in fair condition or better	Good or better condition

6.3.6 Land Ambulance Fleet

Community and technical levels of service for the land ambulance fleet asset class are included in the following tables.

Service Attribute	Community Levels of Service	Current Performance
Scope	Number of ambulances in the fleet	7
	Number of support vehicles in the fleet	5

Service Attribute	Technical Levels of Service	Current Performance
Quality	% of fleet assets beyond their expected useful life	35%

Service Attribute	Proposed Levels of Service	Performance Target
Quality	% of ambulances maintained to the original equipment manufacturer preventive maintenance standards	100%

6.3.7 Land Ambulance Services Equipment

Community and technical levels of service for the land ambulance services equipment asset class are included in the following tables.

Service Attribute	Community Levels of Service	Current Performance
Scope	Contribution to a safe, equitable and sustainable municipality	Machinery and equipment support the delivery of essential healthcare services

	Description of essential services supported with land ambulance services equipment	First response services for emergency health and safety issues

Service Attribute	Technical Levels of Service	Current Performance
Quality	Average remaining useful life per centage	10%

Service Attribute	Proposed Levels of Service	Performance Target
Quality	Maintain equipment in fair condition or better	Fair condition or better

6.3.8 Planning Department Equipment

Community and technical levels of service for the planning department equipment asset class are included in the following tables.

Service Attribute	Community Levels of Service	Current Performance
Scope	Contribution to a safe, equitable and sustainable municipality	Equipment supports the delivery of informed and diligent planning services for the County and the local municipalities
	Description of services supported by planning department equipment	GPS, Lidar, floodplain mapping, bathymetry

Service Attribute	Technical Levels of Service	Current Performance
Quality	Average condition of equipment	Fair

Service Attribute	Proposed Levels of Service	Performance Target
Quality	Maintain equipment in fair or better condition to minimize downtime	Fair condition or better

6.3.9 Information Technology

Community and technical levels of service for the information technology asset class are included in the following tables.

Service Attribute	Community Levels of Service	Current Performance
Scope	Contribution to a safe, equitable and sustainable municipality	Information technology equipment supports the delivery of services across the organization
	Description of technology solutions supported with hardware and software	Computers, laptops, monitors, switches, docking stations, UPS, servers; Questica and Diamond software

Service Attribute	Technical Levels of Service	Current Performance
Quality	Average condition of assets	Poor

Service Attribute	Proposed Levels of Service	Performance Target
Quality	Maintain IT hardware and software in fair or better condition	Fair condition or better

6.3.10 Library Collections

Community and technical levels of service for the library collection asset class are included in the following tables.

Service Attribute	Community Levels of Service	Current Performance
Scope	Contribution to an educated and socially supported municipality	Library collections support education, access to information and knowledge, cultural enrichment, social equity and inclusion

	Description of library services supported with collections	Book pool, cataloguing, local author books

Service Attribute	Technical Levels of Service	Current Performance
Quality	Average condition of assets	Poor

Service Attribute	Proposed Levels of Service	Performance Target
Quality	Maintain library collections in fair or better condition to ensure assets are current and relevant to residents	Fair condition or better

6.3.11 Library Equipment

Community and technical levels of service for the library equipment asset class are included in the following tables.

Service Attribute	Community Levels of Service	Current Performance
Scope	Contribution to an educated and socially supported municipality	Library equipment supports early literacy, computer access, video conferencing and TV access
	Description of services supported with library equipment	The County provides access to computers, TVs and early literacy tools

Service Attribute	Technical Levels of Service	Current Performance
Quality	Average condition of assets	Fair

Service Attribute	Proposed Levels of Service	Performance Target
Quality	Maintain library equipment in fair or better condition to ensure resident satisfaction	Fair condition or better

6.3.12 Rail Trail

Community and technical levels of service for the rail trail asset class are included in the following tables.

Service Attribute	Community Levels of Service	Current Performance
Scope	Contribution to a healthy and engaged municipality	The rail trail encourages an active lifestyle by promoting walking, cycling, jogging; this also supports mental health
	Description of services and community benefits supported by the rail trail	Health and wellness, transportation alternatives, social and community engagement, historical and cultural preservation

Service Attribute	Technical Levels of Service	Current Performance
Quality	Average condition of assets	Good

Service Attribute	Proposed Levels of Service	Performance Target
Quality	Maintain the rail trail in good condition to ensure safe usage	Good condition

Emerging Risks and Challenges

Climate Change

Risk Management Process

Risk Assessment

Current Risks

Risk Treatment

Risk-Based Prioritization

RISK MANAGEMENT STRATEGY

7 Risk Management Strategy

Risk is defined as the effect of uncertainty on objectives. In the context of a municipal asset management plan, risk presents uncertainty in the County's objective to effectively manage its infrastructure and assets to ensure sustainability, functionality, and longevity. Risk is often expressed as the consequences of an event in combination with the associated likelihood of that event occurring.

Risk management is an essential component of effectively managing infrastructure assets. The County is maturing to a state where it will manage risk and opportunities through a formal risk analysis process. Through continuous application and expansion of the risk process, the County will ensure that it explicitly and continually considers risks to its objectives. This process will be completed as part of the asset management planning process and will enable the County to address risk proactively versus reactively.

The purpose of infrastructure risk management is to document the findings and recommendations resulting from the periodic identification, assessment and treatment of risks associated with providing services from infrastructure, using the fundamentals of International Standard ISO 31000:2018 Risk management – Principles and guidelines.

The risk management strategy outlined in this report will allow the County to minimize its risk exposure by focusing the available funding on critical assets that have high financial, social or environmental consequences. By continuously monitoring risk, the County can:

- Prioritize maintenance and upgrade work
- Optimize resource allocation
- Mitigate unexpected costs, service interruptions and downtime
- Enhance resilience and sustainability
- Comply with regulatory requirements
- Make informed, fact-based decisions

7.1 Emerging Risks and Challenges

The County is a dynamic, thriving community that is facing a changing environment especially as it continues the recovery stage of COVID-19. There are several challenges and unknown conditions underlying the asset portfolio that result in increased service pressures and create infrastructure risks for which the municipality must be prepared.

Major trends which are resulting in increased service pressures and more complex community challenges include:

Growing and Rapidly Aging Population

A growing and aging population increases service demands and places stress on existing infrastructure, creating more demand for new infrastructure investment.

Aging Infrastructure

The County's infrastructure is aging, requiring increased levels of investment to keep it in a state of good repair.

Climate Change

Climate change leading to extreme weather events presents risks for effective and long-lasting infrastructure.

Changing Economy

Changes to economic conditions including inflation, energy costs, grants and subsidies may adversely affect the Financing Strategy. Impacts of COVID-19 on the economy will have a long-term effect on financial sustainability.

Rapidly Changing Technology

Rapidly changing technology in a changing and uncertain macro environment challenges how quickly we adapt in the way we connect with residents and deliver services.

Changing Legislative Environment

Constantly evolving legislation and regulations impact infrastructure decisions.

Continued Pandemic Recovery

Continued COVID-19 pandemic recovery can have multi-year implications on how the County operates and maintains assets. COVID-19 may also cause permanent impacts on asset design and delivery of capital programs.

7.2 Climate Change

Ontario municipalities are experiencing the impacts of climate change. Anticipated future impacts, including severe heat waves, threats to the water supply, extreme storms, and adverse health effects, could disrupt society and the economy. Integrating climate change into asset management means taking stock of the physical and financial impacts climate change will have on the condition, performance, and longevity of assets and service delivery, and using this information to identify and prioritize investment needs, both in the near and long-term.

O. Reg. 588/17 requires the County to consider climate change in the development of its asset management policy and asset management plan. The following sections outline climate change considerations and adaptation action plans for the asset classes most impacted by climate change.

7.2.1 Municipal Buildings and Social Housing

- Rising extreme and average summer temperatures strain the cooling systems provided in County facilities. It is recommended that summer air conditioning demand be monitored to identify where capacity issues may be a concern as summer temperatures rise. Cooling system capacity should be upgraded as required, typically when lifecycle replacement is completed, to meet future cooling demands.

- Prior to replacement of HVAC systems, assess and upgrade the electrical system as required based on increased maximum cooling loads. Energy efficiency opportunities can be leveraged through the design process.

- Replacement of old cooling systems with energy efficient units has the additional benefit of reducing emissions; low carbon heating and cooling options should be prioritized.

- The County may consider designating central facilities for use as community cooling stations. Facilities utilized by vulnerable populations may be prioritized.

- To address increasing storm intensity and resulting power outages, provide backup power generation where feasible; prioritize facilities that are critical for safe gathering/sheltering and maintaining essential services during power outages.

- Continue to inspect and maintain roof systems regularly and after extreme wind events. Proactively repair signs of material distress to avoid roof failure.

- As part of lifecycle activities, replace roofs with reflective roofing where feasible. This will reduce the heat island effect, mitigate the impact of heat waves, reduce energy demand for cooling buildings and lower maintenance costs.

- Monitor air quality for key municipal facilities. When lifecycle replacement is completed, consider upgrading HVAC systems to accommodate improved filters to address poor air quality events related to wildfires and increased temperatures.

- Store electrical and mechanical equipment above grade where possible to avoid damage from flooding.

7.2.2 Roads, Bridges and Culverts

- There is a need to enhance the resilience of infrastructure by using more durable materials and construction techniques. For example, bridges might need to be designed to handle higher loads and more significant flooding events.

- Extreme temperatures and more severe weather conditions can accelerate the deterioration of roads and bridges. This could lead to increased maintenance needs and shorter lifecycles for infrastructure assets.

- The costs associated with repairing damage from climate events or upgrading infrastructure to handle new conditions is likely to rise. Asset management plans need to incorporate these potential cost increases and budget accordingly.

7.2.3 County Fleet and Land Ambulance Fleet

- Higher temperatures can affect vehicle engines, tires, and other components, potentially leading to more frequent breakdowns and increased maintenance needs. Cold temperatures can also impact battery performance and fluid viscosity.
- Municipalities might need to adjust their fleet composition to include vehicles better suited for changing conditions, such as those equipped for off-road capabilities in areas prone to flooding, and those suitable for rescue and recovery operations during extreme events.
- Fleet management strategies may need to incorporate climate resilience measures, such as investing in vehicles that are more durable or that use alternative fuels to reduce emissions and dependency on fossil fuels.
- There may be increased availability of incentives for transitioning to electric or hybrid vehicles, influencing fleet renewal strategies.

7.3 Risk Management Process

This report presents an infrastructure-based risk process to ensure that all assets will be reviewed utilizing a standardized approach. This will ensure that the County is able to measure and compare risks consistently across a broad spectrum of assets and services.

The risk assessment process seeks to identify credible risks, the likelihood of the risk event occurring, the consequences should the event occur, development of a risk rating, evaluation of the risk and development of a risk treatment plan for non-acceptable risks. An assessment of risks associated with service delivery identifies risks that will result in loss or reduction in service, personal injury, environmental impacts, financial setbacks, reputational impacts, or other consequences.

7.4 Risk Assessment

To ensure a consistent approach to risk, this report standardizes scales for both consequence and likelihood.

7.4.1 Risk Consequence Matrix

Standardized risk consequence categories can be applied municipality-wide with respect to assets and services. The risk categories are:

- Interruption/reduction of services
- Financial
- Human safety
- Reputational
- Environmental

The risk consequence categories are assigned values from 1 (minimal) to 5 (catastrophic). Descriptions of the consequences of risk along this scale, for each risk category, are included in the following Risk Consequence Matrix.

	Service	Financial	Safety	Reputation	Environmental
1 Negligible	Little to no service interruption	< $2.5K	Potential for minor injury	Minimal concern	Negligible impact (restored within 1 week)
2 Minor	Minor service interruption (< 4 hr of downtime)	$2.5K - $25K	Lost time incident, minor injury to few people	Internal concerns	Minor impact (restored within 1 month)
3 Moderate	Moderate service interruption (4 – 24 hrs downtime)	$25K - $250K	Permanent injury	Public concerns, phone calls, Council questions	Significant short-term impact (restored within 2 months)
4 Major	Major service interruption (1 day to 1 week downtime)	$250K - $2.5M	Disabling injury or casualty	Local news, TV, social media	Significant long-term impact (up to 1 year)
5 Catastrophic	Catastrophic interruption of service (>1 week of downtime)	> $2.5M	Multiple casualties	National/ international news coverage	Major long-term impact (> 1 year/ permanent)

Every County asset has been assigned a risk consequence score based on the above matrix. The risk consequence score for each asset category is provided in the following table.

Asset Class	Asset	Risk Consequence
Roads	Paved roads	3
	Surface treated roads	3
	Road signs and guardrails	2
	Small culverts	2
	Road equipment	2
Bridges & Culverts	Bridges	4
	Culverts	4
Buildings and Equipment	Administration	2

	Operations	3
	Paramedic services	4
	Social housing	3
	Building equipment	2
Fleet	Land ambulance services	4
	Transportation services	3
	Trailers	2
Equipment	Library	2
	Ambulance	4
	Fleet	2
	Planning department	2
Information Technology	Ambulance hardware	4
	Ambulance software	4
	Admin hardware	3
	Admin software	3
Library	Collections	2
Rail Trail	Bridges, land and improvements	3

7.4.2 Risk Likelihood Scale

The likelihood of an asset risk event indicates how likely it is for the risk event to happen. The likelihood can be measured through qualitative or quantitative methodologies. Alternatively, it can be quantified as the probability or frequency within a specified timeframe. Evaluating the likelihood of failure is done individually for each asset, utilizing a qualitative scoring system ranging from 1 (very unlikely) to 5 (commonly occurring), as defined in the following table.

	Likelihood	Description	Condition Grading	Remaining Useful Life (%)
1	Rare	Event only occurs in exceptional circumstances; it is not expected.	Very Good	80 - 100
2	Unlikely	Event could occur, but infrequently.	Good	60 - 80
3	Possible	Event is expected to occur at some time.	Fair	40 - 60
4	Regular	Event will probably occur regularly or in most circumstances.	Poor	20 - 40
5	Almost certain	Event is expected to occur very frequently.	Very Poor	0 - 20

7.4.3 Risk Rating Matrix

A quantitative risk rating is determined based on the following equation:

$$\text{Risk} = \text{Consequence} \times \text{Likelihood}$$

For example, an aging but important drinking water asset with a consequence rating of 4 and a likelihood rating of 5 would generate a risk score of 20. A high-risk score draws attention to an asset that requires attention in the short term.

The range of risk rating scores is summarized in the following risk rating matrix.

Likelihood	Consequence				
	1 Negligible	2 Minor	3 Moderate	4 Major	5 Catastrophic
5 Almost Certain	5	10	15	20	25
4 Regular	4	8	12	16	20
3 Possible	3	6	9	12	15
2 Unlikely	2	4	6	8	10
1 Rare	1	2	3	4	5

Definitions for each range of risk rating scores, ranging from 1 to 25, are included in the following table.

Risk Category / Score	Definition
Extreme Risk (20 – 25 Points)	The process, task or activity in question must not occur or must cease until actions are taken to eliminate the hazard or minimise the risk.
Very High Risk (15 – 16 points)	Actions are to be taken to eliminate the hazard or minimise the risk.
High Risk (10 – 12 points)	Attention is required to plan improved controls or actions to minimise the risk.
Moderate Risk (4 – 9 points)	The process or activity may continue; however effort is required to ensure that controls are effective.
Low Risk (1 – 4 points)	The process or activity in question continues with existing controls.

All levels of the organization should have awareness of the risks the organisation is exposed to, even moderate and low risks. Senior management may not need to be involved in the active management of these risks but should be aware of them – particularly regarding common themes between minor risks and the catastrophic events that the organization may be exposed to but is controlling with its safety systems.

7.5 Current Risks

A risk map has been prepared for all asset classes and is presented in the table below. The risk map shows the quantity and value of assets in each risk category, as measured by 2024 dollar value.

Consolidated Risk Matrix					
Likelihood	**Consequence**				
	1 Negligible	2 Minor	3 Moderate	4 Major	5 Catastrophic
5 Almost certain	0 $0	62 $1,501,766	60 $76,745,375	51 $620,790	0 $0
4 Regular	0 $0	6 $1,457,573	42 $59,917,920	12 $4,091,980	0 $0
3 Possible	0 $0	10 $3,004,621	56 $94,392,118	16 $31,789,304	0 $0
2 Unlikely	0 $0	43 $14,925,660	63 $52,718,385	52 $69,034,664	0 $0
1 Rare	0 $0	24 $3,159,248	89 $114,154,474	19 $7,403,842	0 $0

7.6 Risk Treatment

A complete list of projects/replacements corresponding with the extreme and very high risk assets is included in the appendices and summarized in the discussion below. It is recommended that the County prioritize the completion of these projects in the short term.

An inspection plan should be put in place for assets that are nearing the end of their useful life to identify those requiring replacement. Risk should be monitored going forward to ensure that assets in the moderate risk category do not move to the high-risk classification. Infralevel recommends improving condition data, thus replacing age-based condition with assessed condition wherever possible, to improve the accuracy of the risk assessment process; risk may be overstated when age-based condition is used.

7.7 Risk-Based Prioritization

The results of the Risk Assessment and the Current Risks table provide direction as to which projects the County may choose to prioritize in the near term. The list is not exhaustive and should also be weighed in consideration of resident input, non-infrastructure requirements, broader priorities and the financial strategy presented in this report. High priority infrastructure projects, categorized as extreme or very high risk, include the following:

Asset Class	High Priority Projects	Asset Replacement Cost
Roads	Rehabilitate HCB roads with a PCI less than 50	$16,236,000
	Rehabilitate LCB roads with a PCI less than 50	$1,388,000
Bridges and Culverts	Rehabilitate/replace McGilvary Road Culvert	$785,868
	Rehabilitate/replace Inlet Bay Culvert	$835,247
Buildings and Equipment	Capital improvements for paramedic services building in Minden	$100,000
Fleet	Replace aged transportation fleet	$2,999,453
	Replace aged ambulance fleet	$358,830
Equipment	Replace aged ambulance equipment, hardware and software	$527,862
IT	Replace aged admin IT hardware and software	$156,932

Note that many assets in the very high and extreme risk categories have conditions determined by age and should have their condition verified prior to prioritizing lifecycle activities.

Lifecycle Activity Categories

Lifecyle Activity Options and Risks

Asset Class Lifecycle Strategies - Operating Budget

Asset Class Lifecycle Strategies - Capital Budget

LIFECYCLE MANAGEMENT STRATEGY

8 Lifecycle Management Strategy

8.1 Lifecycle Activity Categories

The County's lifecycle management strategy details the use of a combination of lifecycle activities that maintain current levels of service while striving to optimize costs based on defined risk. This strategy includes activities for maintenance, rehabilitation and replacement, and regular investments in planning studies, while continuing to prepare for population change and introduce service improvements. The standard lifecycle activity categories are defined in the following table.

Lifecycle Activity	Definition
Acquisition	Adding new assets or improving an existing asset through purchasing, design and construction, or assumption.
Operations & Maintenance	The ongoing management of deterioration, including all actions necessary for retaining or returning an asset as near as practicable to an appropriate service condition including regular ongoing day-to-day work necessary to keep assets operating.
Rehabilitation	Significant treatment intended to restore an asset to its former condition, thus extending its useful life.
Replacement	Activities that are expected to occur once an asset has reached the end of its service life and rehabilitation is no longer an option.
Disposal	Activities associated with the disposal of a decommissioned asset including sale, closure, decommissioning or relocation.
Non-infrastructure solutions	Activities that consider how to influence, plan and manage assets, including planning studies, process improvements and technology implementation

When feasible, the County strives to optimize asset lifecycle activities by coordinating and synchronizing work across multiple assets or asset categories, which can result in cost and service efficiencies.

8.2 Lifecycle Activity Options and Risks

O. Reg. 588/17 requires the identification of the lifecycle activities required to be undertaken for each asset category to maintain the current levels of service over a ten-year period. Options for lifecycle activities are to be considered along with associated costs and risks. Asset-specific lifecycle activity options are included in the following report sections, however there are two general approaches that are relevant to all asset classes:

- Proactive maintenance of assets; or,
- Reactive repair and replacement of assets.

A proactive approach to asset maintenance is utilized by the County for most assets. The benefits of this approach include:

- **Extended Asset Lifespan:** Proactive maintenance involves timely interventions to address minor issues before they escalate into major problems. By identifying and addressing potential infrastructure issues early on, the overall lifespan of the assets is extended. This aligns with the overarching goal of lifecycle activity analysis, ensuring that assets remain in optimal condition for as long as possible.

- **Cost Savings:** Early identification and remediation of maintenance issues can lead to significant cost savings in the long run. Proactive maintenance is more cost-effective than reactive measures, as it prevents the need for extensive repairs or, in some cases, full-scale replacements.

- **Enhanced Safety and Performance:** Proactive maintenance contributes to improved infrastructure safety and performance. Regular inspections and interventions help identify and address potential safety hazards, ensuring that infrastructure meets or exceeds established levels of service.

- **Optimized Capital Planning:** By systematically maintaining assets, the County can better plan and allocate their capital budgets. Proactive maintenance allows for a more predictable expenditure pattern, enabling better financial planning and resource allocation.

- **Community Satisfaction:** Well-maintained municipal assets contribute to overall community satisfaction. Proactive maintenance measures, such as timely repairs and improvements, have a positive impact on the quality of life for residents.

The risks associated with a reactive approach to asset lifecycle activities include:

- Asset deterioration and reduced lifespan
- Increased repair costs
- Service disruptions and operational inefficiencies
- Public safety concerns
- Environmental degradation
- Negative community perception
- Inefficient resource allocation

The Regulation requires similar information and analysis for the lifecycle activities required to achieve the County's proposed levels of service. This information is included in the following sections.

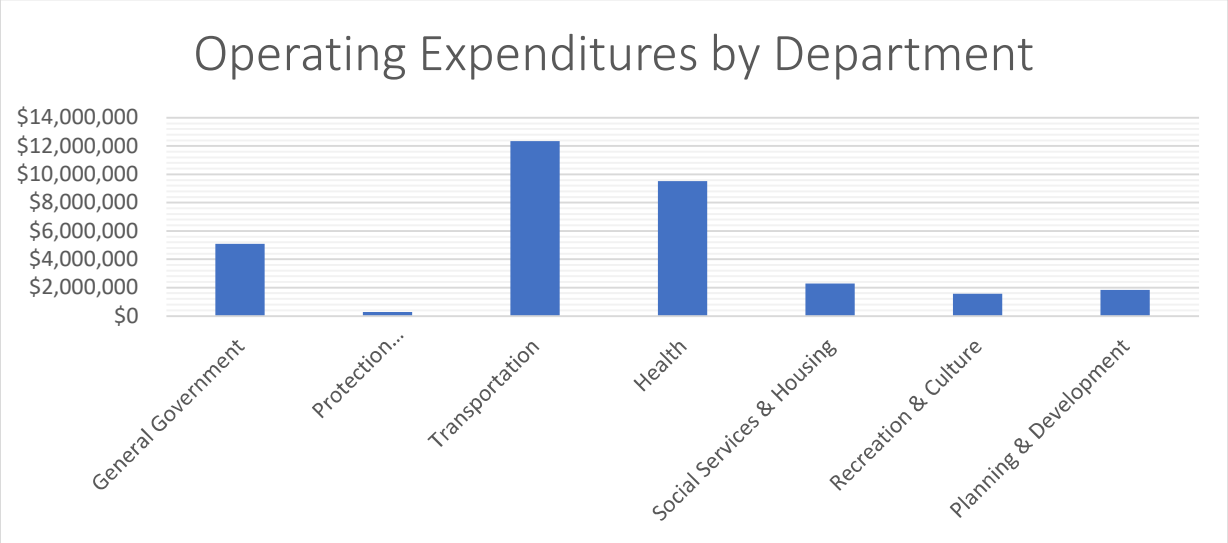
8.3 Asset Class Lifecycle Strategies – Operating Budget

The majority of the asset lifecycle activities outlined in Section 8.1 are funded through the capital budget, including acquisition, rehabilitation, replacement and disposal. Operations and maintenance activities are funded from the operating budget, while non-infrastructure solutions can be funded through capital or operating.

Infralevel completed a review of operating expenditures included in the County's 2024 Operating Budget, which include staffing and operations and maintenance activities.

The review process also yielded an understanding of the lifecycle activities undertaken within each department and for each asset class. The following table and chart outline the 2024 operating expenditures.

Asset Class	2024 Operating Expenditure
General Government	$5,082,922
Protection to Persons and Property	$274,525
Transportation	$12,338,572
Health	$9,530,661
Social Services and Housing	$2,280,072
Recreation and Cultural Services	$1,564,602
Planning and Development	$1.843,398
Total	**$31,071,354**



It is understood that the County's operations and maintenance expenditures, while controlled through a diligent budget process, are adequate to maintain current levels of service. Therefore, no funding gap has been identified in relation to actual operating expenditures versus the operating expenditures required to achieve the current levels of service.

A review of the impact of proposed levels of service on the operating budget was completed to determine the adequacy of funding and the potential need to increase the operating budget over the 10-year period over which proposed levels of service are phased in. The proposed levels of service mainly impact the capital budget, therefore the operating budget is considered adequate for the proposed levels of service.

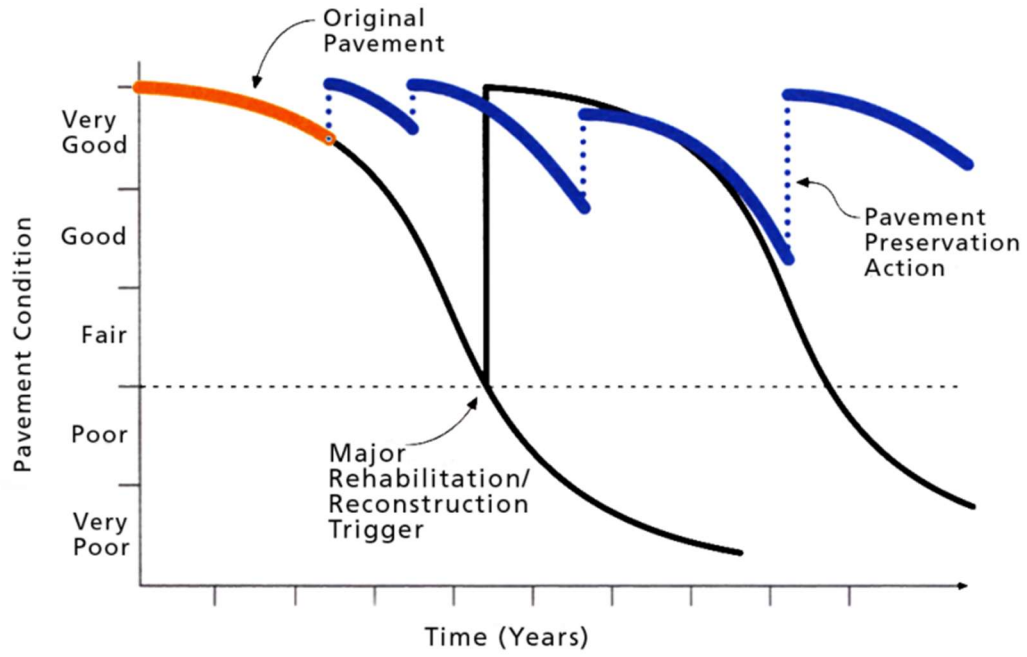
8.4 Asset Class Lifecycle Strategies – Capital Budget

The capital budget includes expenditures required to rehabilitate, renew and replace County assets, as detailed in the following report sections.

8.4.1 Roads

8.4.1.1 Lifecycle Model

For illustration purposes, a typical lifecycle model for the management of road pavements is provided below.



Inspection, operation and maintenance activities typically occur throughout the life of the asset. They ensure that the asset is functioning as intended and is safe for users.

Early life interventions like crack sealing, minor repairs and minor resurfacing over a localized area or small section of pavement are some of the treatment options considered when an asset is in the first quarter of its life.

Mid-life intervention activities are considered when an asset is in the second or third quarter of its life. For road pavement assets, these interventions would include larger section resurfacing and full roadway rehabilitation. These actions reset the degradation curve.

As indicated in the lifecycle model above, later life intervention activities such as reconstruction can be deferred significantly through diligent rehabilitation. In some cases, reconstruction is only considered for road widening, underground infrastructure replacement or change of use.

8.4.1.2 Lifecycle Management Activities

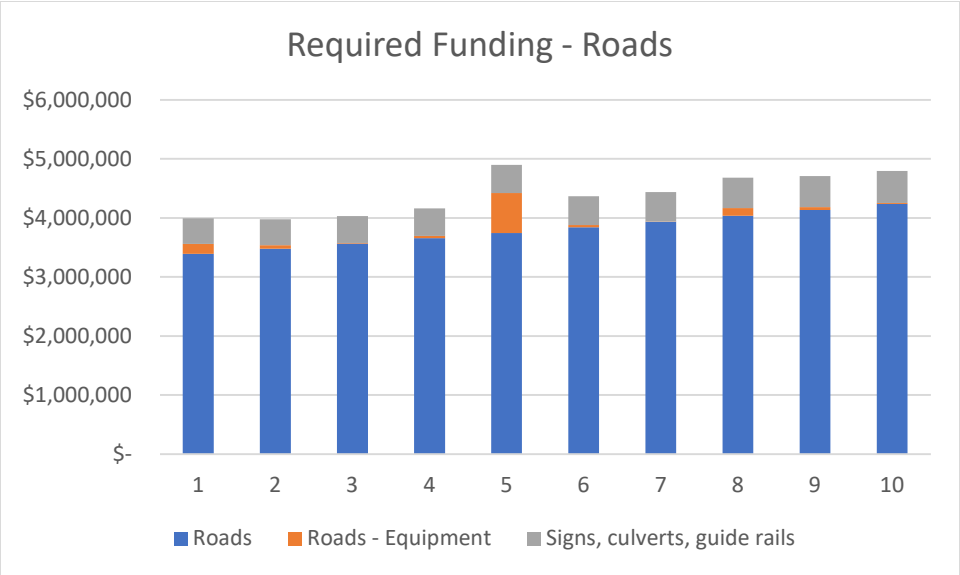
The County undertakes the following lifecycle activities to maintain the current levels of service related to road assets.

Asset	Lifecycle Activity	Description
Paved roads	Maintenance	Condition assessments, crack sealing, slurry sealing, pothole filling, patch repairs
	Rehabilitation	Surface grinding, mill and pave, pulverize and pave
	Replacement	Road reconstruction, including full granular replacement
Surface treated roads	Maintenance	Condition assessments, sweeping
	Rehabilitation	Re-application of surface treatment, applying bituminous rejuvenator
	Replacement	Full-depth replacement, base stabilization
Culverts, Signs & Guide Rails	Maintenance	Reflectivity testing, cleaning, debris clean out/flushing
	Rehabilitation	Component replacement, localized repair
	Replacement	Full replacement

For asphalt and surface treated roads, maintenance and rehabilitation works are more cost effective than full replacement. Therefore, maintenance and rehabilitation activities are preferred as the methodology to maintain the current levels of service for the lowest cost. Full replacement is rarely carried out.

8.4.1.3 Lifecycle Expenditure Forecast

The ten-year lifecycle expenditure forecast for roads is summarized in the following figure. It provides an estimate of the costs associated with maintaining all of the County's paved and surface treated roads, and other transportation assets. Costs are based on road needs data, and for other transportation assets, the County's asset registry.



The average annual expenditure for road assets over the next 10 years is $4,406,054.

Proposed levels of service for roads include metrics for achieving a Pavement Condition Index of 80 or higher. The proposed levels of service do not impact the lifecycle expenditure forecast, as the proposed performance levels will be met through the completion of the lifecycle activities identified through the condition assessments.

8.4.2 Bridges and Culverts

8.4.2.1 Lifecycle Management Activities

The County undertakes the following lifecycle activities to maintain the current levels of service related to bridge and culvert assets:

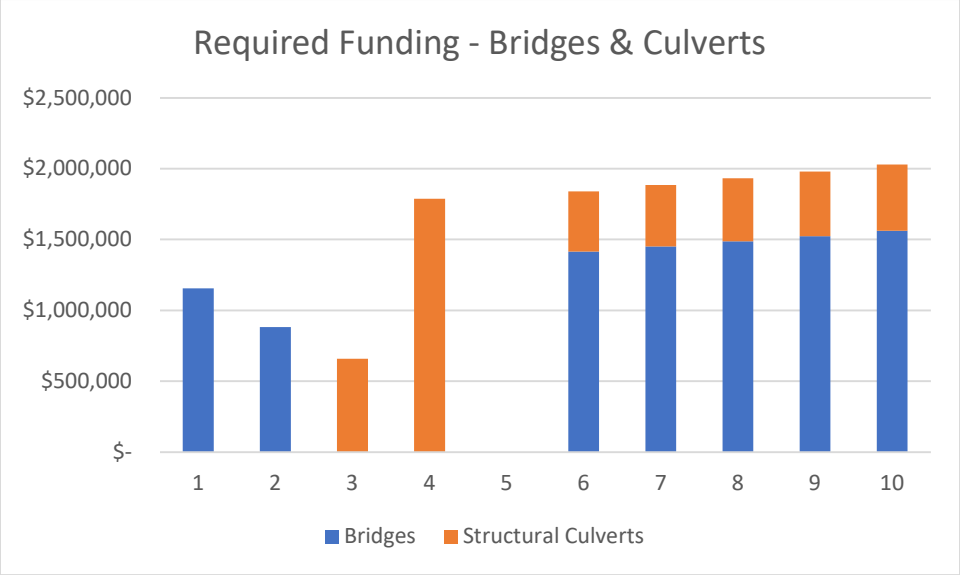
Asset	Lifecycle Activity	Description
Bridges	Maintenance	Inspections, sweeping, erosion protection, joint cleaning/repair, end treatment repairs
	Rehabilitation	Concrete repairs, road surface repaving
	Replacement	Full bridge removal and replacement

Culverts	Maintenance	Vegetation removal, cleaning clogged drains
	Rehabilitation	Lining, partial replacement
	Replacement	Full culvert replacement

The maintenance and rehabilitation activities outlined above represent an efficient means of minimizing the cost of ownership over the life of the assets.

8.4.2.2 Lifecycle Expenditure Forecast

The ten-year lifecycle expenditure forecast for bridges and culverts is summarized in the following figure. It provides an estimate of the costs associated with maintaining all of the County's bridges and culverts at their current levels of service. Costs are obtained from the most recent OSIM report. The report presents short-term costs in specific years for specific rehabilitation and replacement projects from year 1 to year 9, whereas year 10 costs are based on the long-term funding level required to maintain the proposed service level (BCI>70) well into the future.



The average annual expenditure for bridges and culverts over the next 10-years is $1,415,233.

Proposed levels of service for bridges and culverts specify a BCI score over 70. The proposed levels of service will be achieved by transitioning to average annual funding levels included in year 10.

8.4.3 Buildings & Equipment

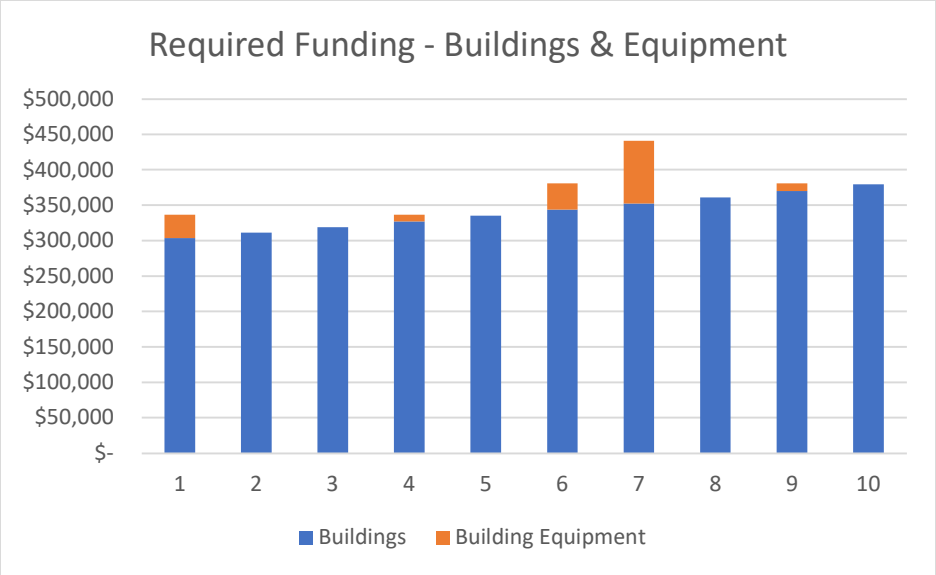
8.4.3.1 Lifecycle Management Activities

The County undertakes the following lifecycle activities to maintain the current levels of service related to its buildings and equipment assets:

Asset	Lifecycle Activity	Description
Buildings & Equipment	Maintenance	Inspections, cleaning, equipment maintenance, minor repairs and component replacements
	Rehabilitation	Mid-life renewal of facilities and major overhauls and modernization of equipment, such as roof replacement, HVAC replacement, window and door replacement
	Replacement	Building demolition and construction of new facility, often driven by functionality requirements

8.4.3.2 Lifecycle Expenditure Forecast

The ten-year lifecycle expenditure forecast for buildings and equipment assets is summarized in the following figure. Condition assessments with long-term capital forecasts are not available for all buildings, therefore a reinvestment rate methodology has been applied to estimate the long-term funding requirements. Reinvestment rates for buildings typically have a low range of 1% for new buildings in good condition, and a high range of 3% for older buildings that require moderate rehabilitation. The higher value of 3% is considered appropriate for the County building assets.



The average annual expenditure for building and equipment assets over the next 10-years is $358,227.

Proposed levels of service for building assets include maintaining a Facility Condition Index greater than 70 and completing building condition assessments on a five year cycle. The associated costs have been included in the lifecycle expenditure forecast.

8.4.4 Social Housing

Social housing is not owned by the County, therefore the associated lifecycle strategies have not been reviewed as part of this report.

8.4.5 Fleet

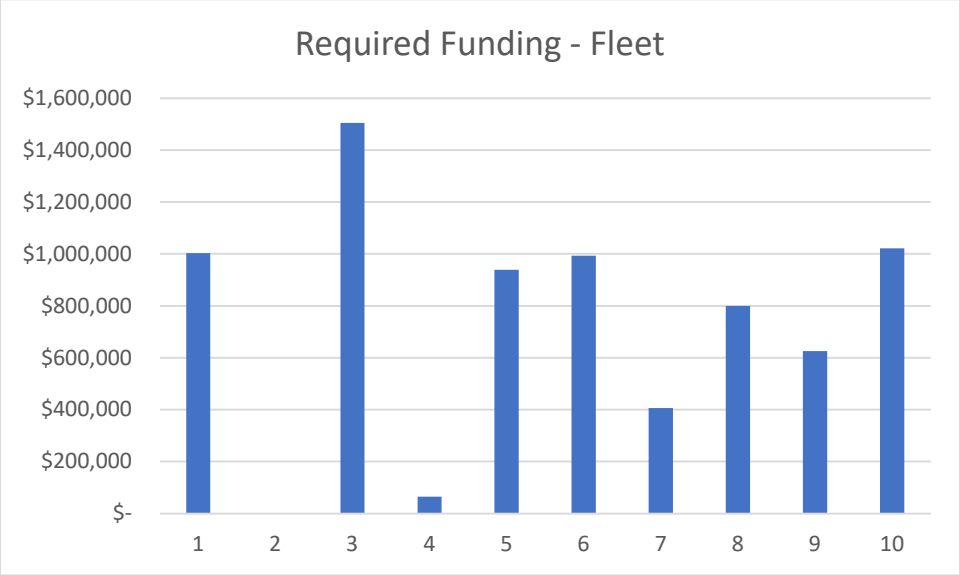
8.4.5.1 Lifecycle Management Activities

The County undertakes the following lifecycle activities to maintain the current levels of service related to fleet assets:

Asset	Lifecycle Activity	Description
Fleet	Maintenance	Inspections, regulatory maintenance, oil change, tire rotation
	Rehabilitation	Deer collision repair, component replacement such as breaks, transmission and shocks
	Replacement	Sale of vehicle and replacement with new vehicle

8.4.5.2 Lifecycle Expenditure Forecast

The ten-year lifecycle expenditure forecast for fleet is summarized in the following figure. It provides an estimate of the costs associated with maintaining all of the County's fleet assets at their current levels of service. Costs are obtained from the County's asset registry.



The average annual expenditure for fleet assets over the next 10-years is $735,753.

Proposed levels of service for fleet assets include a target to maintain the fleet in fair or better condition. The associated costs have been included in the lifecycle expenditure forecast.

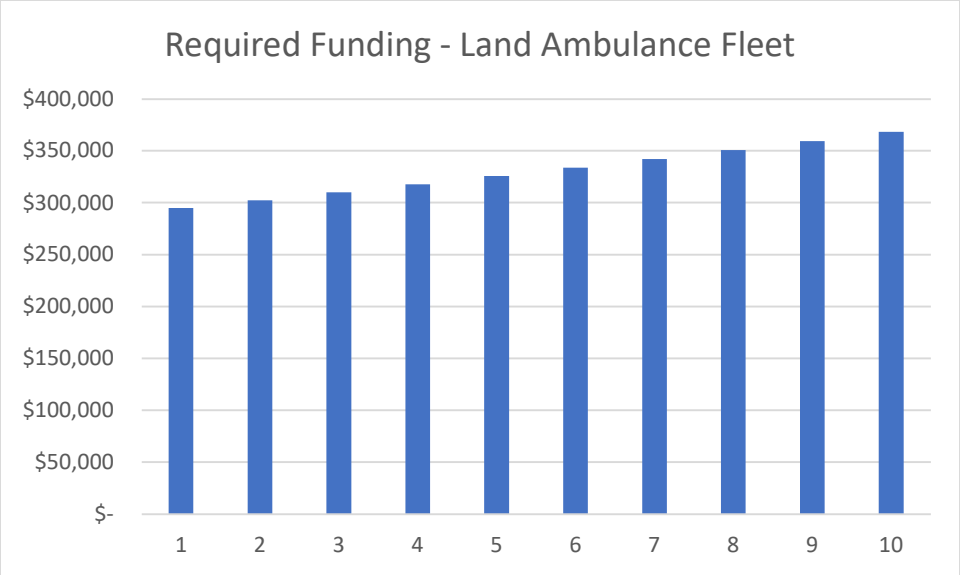
8.4.6 Land Ambulance Fleet

8.4.6.1 Lifecycle Management Activities

The County undertakes similar maintenance, rehabilitation and replacement activities for the land ambulance fleet as those undertaken for County fleet referenced in Section 8.4.5. In some cases, the maintenance standards are higher for land ambulance fleet given the nature of the services provided.

8.4.6.2 Lifecycle Expenditure Forecast

The ten-year lifecycle expenditure forecast for land ambulance fleet is summarized in the following figure. It provides an estimate of the costs associated with maintaining all of the County's land ambulance fleet assets at a high level. Costs are obtained from the County's asset registry.



The average annual expenditure for fleet assets over the next 10-years is $330,500.

Proposed levels of service for fleet assets include a target to adhere to the original equipment manufacturer preventive maintenance standards. The associated costs have been included in the lifecycle expenditure forecast.

8.4.7 Land Ambulance Services Equipment

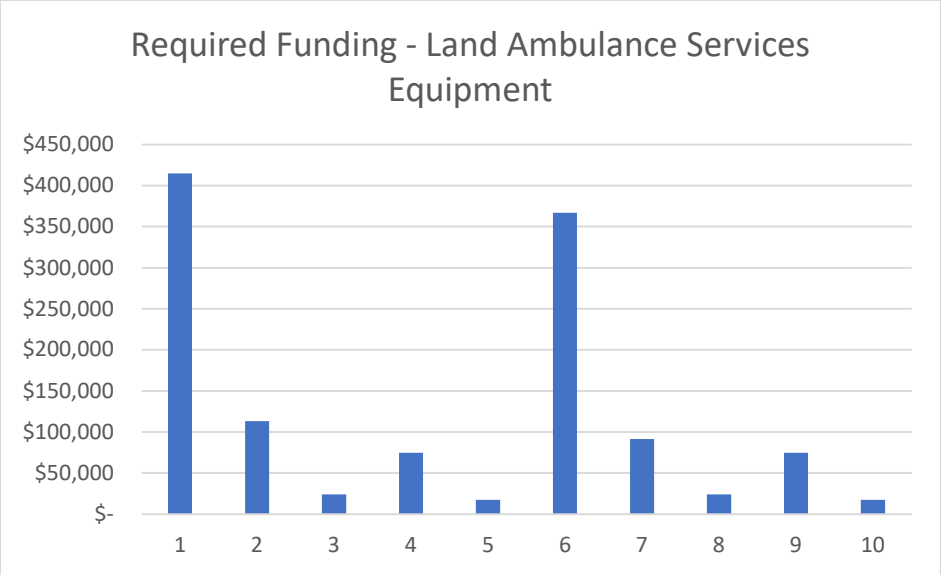
8.4.7.1 Lifecycle Management Activities

The County undertakes the following lifecycle activities to maintain the current levels of service related to land ambulance services equipment.

Asset	Lifecycle Activity	Description
Land Ambulance Services equipment	Maintenance	Inspection, cleaning, minor repairs and updates
	Rehabilitation	Major repair, component replacement, upgrade
	Replacement	Full replacement of equipment, hardware and software

8.4.7.2 Lifecycle Expenditure Forecast

The ten-year lifecycle expenditure forecast for land ambulance services equipment is summarized in the following figure. It provides an estimate of the costs associated with maintaining all of the County's land ambulance services equipment assets at their current levels of service. Costs are obtained from the County's asset registry.



The average annual expenditure for land ambulance services equipment assets over the next 10-years is $121,827.

Proposed levels of service for land ambulance services equipment assets include metrics for the percentage of assets in fair condition or better. The associated costs have been included in the lifecycle expenditure forecast.

8.4.8 Planning Department Equipment

8.4.8.1 Lifecycle Management Activities

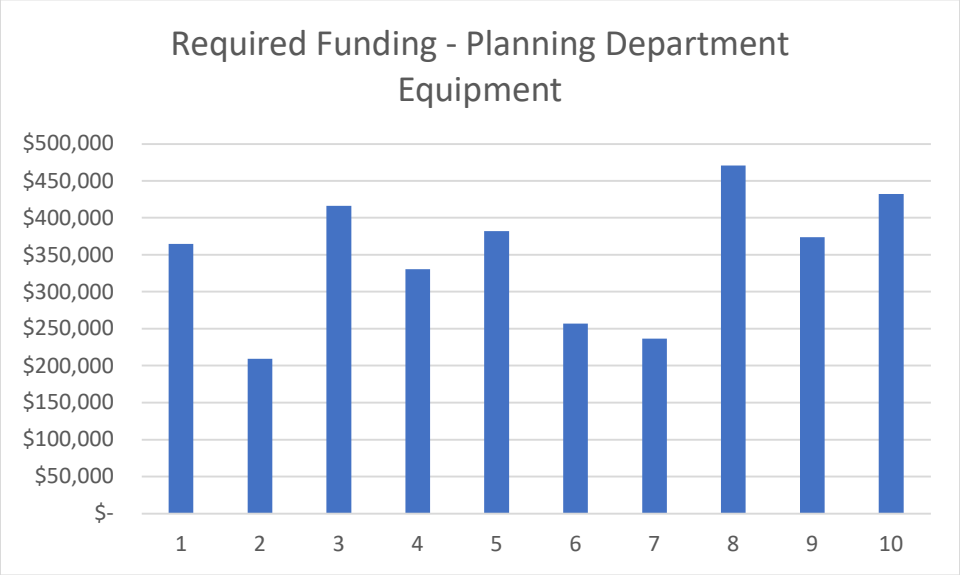
The County undertakes the following lifecycle activities to maintain the current levels of service related to planning department equipment.

Asset	Lifecycle Activity	Description
Planning Department equipment	Maintenance	Inspection, cleaning, minor upgrades, GPS unit servicing
	Rehabilitation	Major repair, upgrades or component replacement
	Replacement	Full replacement of equipment and systems

8.4.8.2 Lifecycle Expenditure Forecast

The ten-year lifecycle expenditure forecast for planning department equipment is summarized in the following figure. It provides an estimate of the costs associated with

maintaining all of the County's planning department equipment assets at their current levels of service. Costs are obtained from the County's asset registry.



The average annual expenditure for planning department equipment assets over the next 10-years is $347,233.

Proposed levels of service for planning department equipment assets include metrics for the percentage of assets in fair condition or better. The associated costs have been included in the lifecycle expenditure forecast.

8.4.9 Information Technology

8.4.9.1 Lifecycle Management Activities

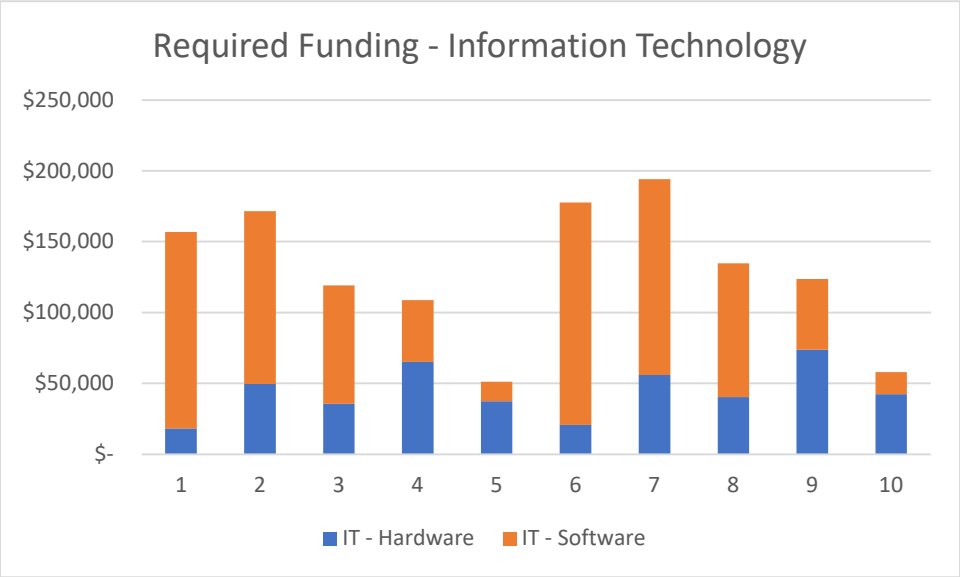
The County undertakes the following lifecycle activities to maintain the current levels of service related to information technology equipment.

Asset	Lifecycle Activity	Description
Hardware	Maintenance	Routine inspection, cleaning
	Rehabilitation	Upgrades to memory, storage and processors
	Replacement	Replacement of outdated or malfunctioning equipment
Software	Maintenance	Regularly updating operating systems, applications and security software

	Rehabilitation	Monitoring and renewing software licenses; bug fixes and troubleshooting
	Replacement	Replacement of outdated software

8.4.9.2 Lifecycle Expenditure Forecast

The ten-year lifecycle expenditure forecast for information technology equipment is summarized in the following figure. It provides an estimate of the costs associated with maintaining all of the County's information technology equipment assets at their current levels of service. Costs are obtained from the County's asset registry.



The average annual expenditure for information technology equipment assets over the next 10-years is $129,551.

Proposed levels of service for information technology equipment assets include metrics for the percentage of assets in fair condition or better. The associated costs have been included in the lifecycle expenditure forecast.

8.4.10 Library Collections

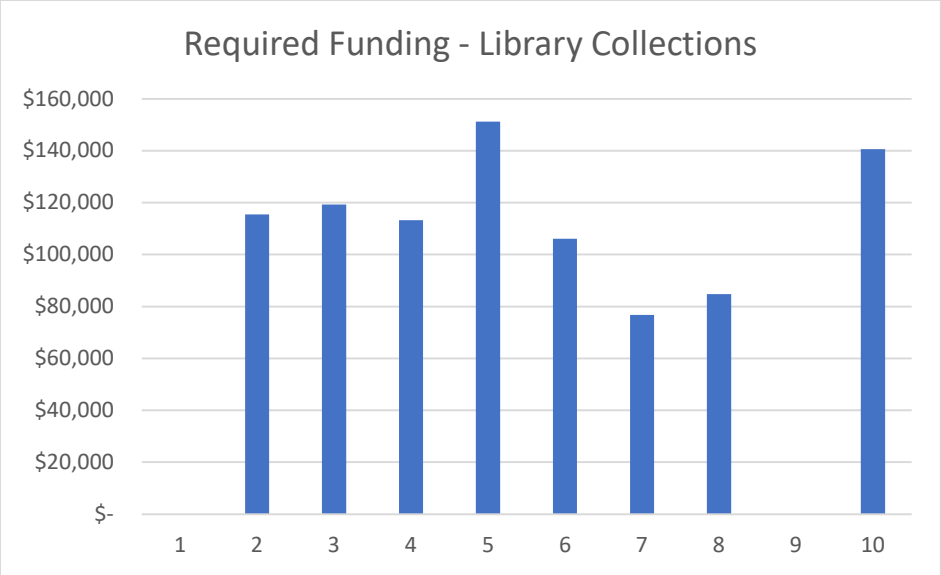
8.4.10.1 Lifecycle Management Activities

The County undertakes the following lifecycle activities to maintain the current levels of service related to library collections.

Asset	Lifecycle Activity	Description
Library Collections	Maintenance	Condition inspections, review of circulation
	Rehabilitation	Not applicable
	Replacement	Replacement of items in fair or poor conditions; disposal of low circulation items

8.4.10.2 Lifecycle Expenditure Forecast

The ten-year lifecycle expenditure forecast for library collections is summarized in the following figure. It provides an estimate of the costs associated with maintaining all of the County's library collections assets at their current levels of service. Costs are obtained from the County's asset registry.



The average annual expenditure for library collections assets over the next 10-years is $90,747.

Proposed levels of service for library collections assets include metrics for maintaining assets in fair condition or better. The associated costs have been included in the lifecycle expenditure forecast.

8.4.11 Library Equipment

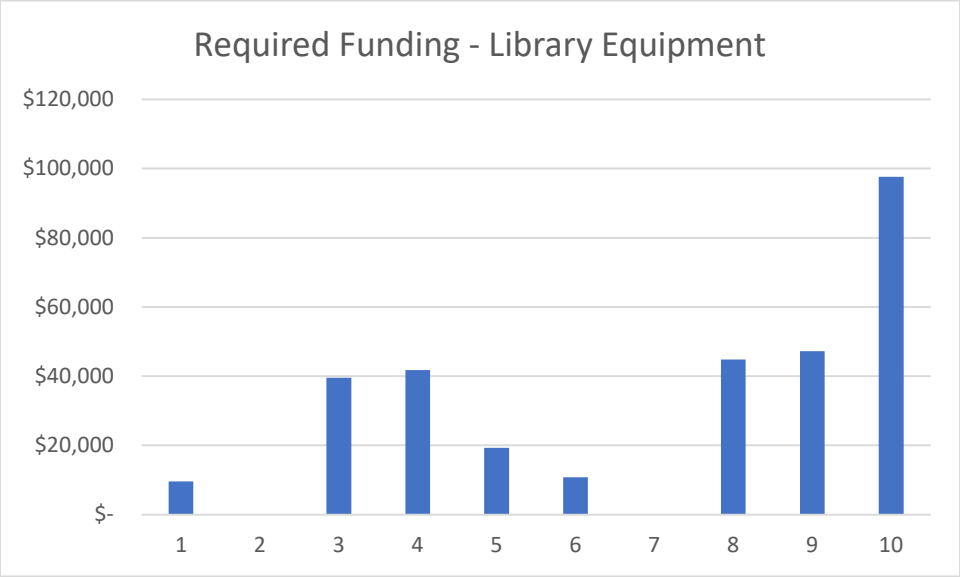
8.4.11.1 Lifecycle Management Activities

The County undertakes the following lifecycle activities to maintain the current levels of service related to library equipment.

Asset	Lifecycle Activity	Description
Library Equipment	Maintenance	Condition inspections, minor repairs
	Rehabilitation	Not applicable
	Replacement	Replacement is planned at five years

8.4.11.2 Lifecycle Expenditure Forecast

The ten-year lifecycle expenditure forecast for library equipment is summarized in the following figure. It provides an estimate of the costs associated with maintaining all of the County's library equipment assets at their current levels of service. Costs are obtained from the County's asset registry.



The average annual expenditure for library equipment assets over the next 10-years is $31,063.

Proposed levels of service for library equipment assets include metrics for maintaining assets in fair condition or better. The associated costs have been included in the lifecycle expenditure forecast.

8.4.12 Rail Trail

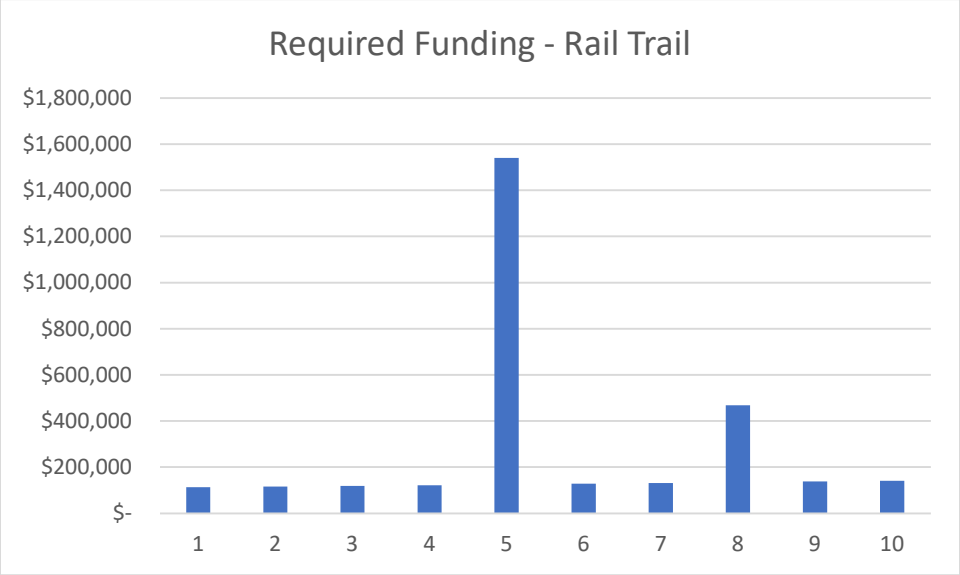
8.4.12.1 Lifecycle Management Activities

The County undertakes the following lifecycle activities to maintain the current levels of service related to the rail trail.

Asset	Lifecycle Activity	Description
Rail Trail	Maintenance	Condition inspections, minor repairs
	Rehabilitation	Resurfacing, grading, drainage improvements; bridge rehabilitation
	Replacement	Bridge replacement

8.4.12.2 Lifecycle Expenditure Forecast

The ten-year lifecycle expenditure forecast for the rail trail is summarized in the following figure. It provides an estimate of the costs associated with maintaining all of the County's rail trail assets at their current levels of service. Costs are obtained from the County's asset registry.

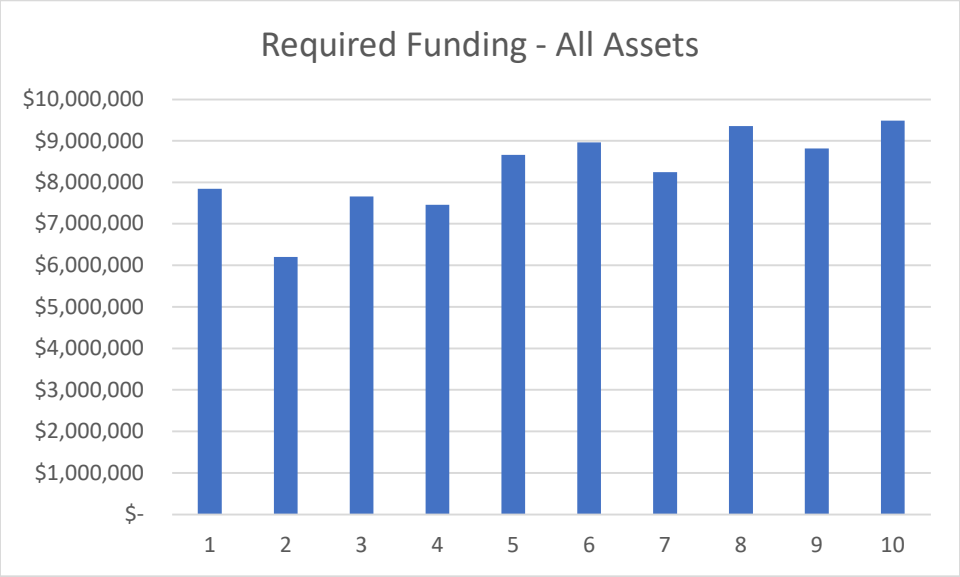


The average annual expenditure for rail trail assets over the next 10-years is $301,707.

Proposed levels of service for rail trail assets include metrics for maintaining assets in good condition. The associated costs have been included in the lifecycle expenditure forecast.

8.4.13 Total Capital Expenditure Forecast

The following chart summarizes the total capital expenditure requirements forecast for the next ten years.



Impact of Growth on Lifecycle Activities

Impact of Growth on the Financial Strategy

Growth Management Plan

GROWTH IMPACTS

9 Growth Impacts

Future growth and development have the potential to contribute to a more economically vibrant, healthy and sustainable County. However, there is an impact on both capital and operating expenditures as growth continues, since population growth changes demographics and expectations, demand, and usage of infrastructure. Planning for growth is primarily documented in the County's Comprehensive Review Phase I Draft Report, dated November 2023, and Official Plan, dated 2024 (office consolidation). Future population and employment growth is quantified and projected as follows.

Population Growth

As of 2021, the County population was approximately 21,000. The County's Comprehensive Review projects a population of 31,000 under the medium growth scenario by 2051. This represents a population growth rate of 1.3% annually.

Employment Growth

The Comprehensive Review indicates that total employment for the County is anticipated to reach 10,000 jobs by 2051, under the medium growth scenario, an increase of 3,100 employees. This represents an employment growth rate of 1.3% annually.

The demand on the County's infrastructure assets will change over time based on several contributing internal and external factors, including growth. One effect that growth will have on the County's assets is increased demand resulting in higher usage and accelerated deterioration of some existing assets. Planning for population growth may require expansion of the infrastructure network (e.g., roadway widening, building expansion) to ensure the appropriate levels of service can be maintained. Additionally, as the asset portfolio increases in size and value due to the assumption of new developments, maintenance and renewal of the new assets will require more resources including operations, maintenance and rehabilitation.

9.1 Impact of Growth on Lifecycle Activities

The assumptions regarding future changes in population and economic activity inform the County's lifecycle management strategy. The following table summarizes the anticipated impacts of growth on the lifecycle activity categories previously identified in Section 8.

Lifecycle Activity	Growth Impacts
Acquisition	Growth triggers the expansion of municipal services, which requires additional asset acquisition activities. Funding for acquisition is commonly achieved through development charges and direct developer contributions.
Operations & Maintenance	Once acquired or assumed, new assets that accommodate growth require standard O&M activities to ensure longevity. A growth factor is typically applied to the current O&M lifecycle costs to plan for expected growth.
Rehabilitation	Frequency of use of assets will increase and will require either enhanced or more frequent rehabilitation. With increased usage, some assets are more prone than others to accelerated degradation.
Replacement	The effects of growth may impact the timing of implementing replacement activities for some assets. For example, increased wear and tear on equipment that is utilized until failure may shorten the lifecycle of the asset.
Disposal	Disposal costs are relatively minor in relation to the other lifecycle activities, with costs likely to increase consistent with the County's growth factor.
Non-infrastructure Solutions	With growth there will be increased requirement for, and benefit derived from, non-infrastructure solutions such as education, usage management and master planning.

9.2 Impact of Growth on the Financial Strategy

Population and economic growth impact lifecycle management activities as noted above, which must be factored into the County's financial strategy. In terms of operating budget impacts, increased revenue from taxation, user fees and other sources is assumed to adequately address the increased costs of infrastructure operations and maintenance.

The impacts of growth on the capital budget will also be addressed through the County's future undertaking of a Development Charge Background Study. The study will identify projects to add new assets, expand or replace facilities and improve roadway capacity and safety.

9.3 Growth Management Plan

The County actively manages growth through various processes including the preparation of a Comprehensive Review, departmental master plans, annual capital and operating budgets, and the Official Plan.

The following recommendations are made to enhance the maturity of the County's growth management planning, and further develop a strategic framework that guides growth and development in a sustainable and organized manner.

- The effectiveness of lifecycle activities should be monitored and analysed to ensure that rehabilitation and replacement activities are timed in an optimized manner. Timing may change based on increased usage associated with population growth.
- Complete a DC Background Study and update departmental master plans on a regular basis to ensure growth projections are accommodated and founded on current data.
- Monitor the changing demographics of residents over time and plan for the associated changes in demand for infrastructure. Seek user input through public consultation, surveys or other means.
- Monitor the advancement of technology to leverage new technologies that support lifecycle management and the efficient and effective delivery of services.
- Continue to incorporate the most up-to-date growth projections in the County's financial strategy to ensure change is managed proactively and in a financially sustainable manner.
- Options for achieving the current and proposed levels of service may change as the County grows. Complete a regular review of lifecycle activities to ensure the lifecycle management program achieves the desired levels of service at the lowest cost.

Funding Sources & Needs

Bridging the Funding Gap

FINANCIAL STRATEGY

10 Financial Strategy

The financing strategy outlines the recommended use of various funding sources to finance the asset management strategy and levels of service recommendations.

The financing strategy provides a framework through which the County can strive to achieve long-term financial sustainability. The strategy strives to maintain a balance between three pillars: financial sustainability, financial vulnerability and financial flexibility. Asset Management supports all three pillars of the strategy.

Financial Sustainability

The County's ability to provide and maintain planned service levels and infrastructure assets without unplanned increases in rates or disruptive cuts to services.

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Financial Vulnerability

The degree to which the County is dependent on external funding sources that it cannot control; it is the level of risk that could impact the ability to meet existing financial obligations and commitments, including the delivery of services.

Financial Flexibility

The County's ability to change either debt levels, taxes and user fees to meet financial obligations and ensure intergenerational equity.

10.1 Funding Sources

The funding sources included in the financial strategy include the following.

Funding Sources	
Taxation	Rentals
Gains on sale	Grants
User charges	Donations
Investment income	Miscellaneous items

Over the 10-year evaluation period, these funding sources are anticipated to provide, in a sustainable manner, a total of $68,433,399 for capital budget asset management funding purposes. This is based on an average of funding provided for each asset class in the 2023 and 2024 capital budgets. The available funding for each asset class is summarized in the following table.

Asset Class	10-Year Available Funding
Roads	$38,855,866
Bridges & Culverts	$7,673,061
Buildings & Equipment	$6,050,636
Fleet	$6,469,913
Land Ambulance Fleet	$2,696,448
Land Ambulance Services Equipment	$1,494,115
Planning Department Equipment	$1,308,029
Information Technology	$2,014,780
Library Collections	$887,131
Library Equipment	$137,696
Rail Trail	$845,726
Total Funding Need	**$68,433,399**

10.2 Funding Needs

The following table summarizes the County's asset lifecycle funding needs over the next 10 years, as determined by the Lifecycle Management Strategy. The funding needs have been escalated for inflation at an annual rate of 2.5% over the ten-year evaluation period.

Asset Class	10-Year Funding Need
Roads	$44,060,541
Bridges & Culverts	$14,152,328
Buildings & Equipment	$3,582,272
Fleet	$7,357,526

Land Ambulance Fleet	$3,304,998
Land Ambulance Services Equipment	$1,218,274
Planning Department Equipment	$3,472,329
Information Technology	$1,295,508
Library Collections	$907,468
Library Equipment	$310,631
Rail Trail	$3,017,066
Total Funding Need	**$82,678,939**

10.3 Funding Gap

Analysis of the County's asset lifecycle needs over the next 10 years, in comparison with the available capital funding, provides an indication of the annual funding gap as outlined below.

10-Year Funding Gap	
Funding Need	$82,678,939
Funding Available	$68,433,399
Funding Gap	$14,245,540

The identified funding gap is $14,245,540 over the next ten years; or $1,424,554 per year.

10.4 Funding Recommendations

It is recommended that the County continue the 1% capital levy introduced in the 2024 budget in an ongoing manner. Continuing the capital levy will provide additional dedicated funding for infrastructure of approximately $3.2M over the next ten years. Over 20 years, the levy will generate approximately $9.7M.

The following table provides a summary of the revenue generated by different levels of capital levies.

Timeframe	1% Capital Levy	1.5% Capital Levy	2% Capital Levy
10 years	$3.2M	$4.9M	$6.7M
20 years	$9.7M	$15.2M	$21.3M

A base 1% capital levy is recommended, with consideration given by Council to increase the amount when feasible.

Continuation of the capital levy provides the following benefits:

- **Stable and Predictable Funding**: A 1% capital levy creates a dedicated, predictable revenue stream specifically earmarked for infrastructure projects. Unlike one-time grants or uncertain transfers from higher levels of government, a capital levy provides a consistent source of funding each year.

- **Affordability**: The County's tax rate is considered relatively low. The County has the second lowest tax rate amongst the 13 members of the Eastern Ontario Wardens' Caucus. Continuing with a 1% annual capital levy is reasonable given the relatively low tax rate.

- **Preservation of Credit Rating**: By avoiding additional borrowing, the County can maintain or improve their credit rating. This reduces the cost of future borrowing if needed for emergencies or larger capital projects.

- **Fair Distribution of Costs**: By implementing a capital levy, the cost of maintaining and upgrading infrastructure is spread more equitably across current taxpayers, rather than shifting the financial burden to future generations through borrowing. This ensures that those benefiting from infrastructure improvements help pay for them.

- **Improved Asset Management**: The predictable nature of a capital levy encourages the County to continually advance asset management practices, ensuring infrastructure is maintained, rehabilitated and replaced efficiently.

10.5 Additional Options to Bridge the Funding Gap

Several additional options for funding the infrastructure gap have been reviewed, however they are not recommended for implementation by the County for various reasons as discussed below.

- **Reserve Funds**: The County has a total uncommitted reserve fund balance of approximately $4.9M. Reserves related to asset management, such as transportation-related reserves, have been built up over time but are ideally saved

for extenuating circumstances or major projects as opposed to funding ongoing infrastructure requirements.

- **User Fees and Charges**: The County imposes user fees and charges for specific services, such as facility permits and road permits. These fees can be structured to cover the costs of providing the services and generate revenue to support infrastructure maintenance and improvements. Significant user fee increases would be required to make a notable difference in the funding gap. Such increases are difficult to justify at a time of affordability challenges for residents.

- **Grants and Federal Funding**: The County receives various grants from upper levels of government. These grants are typically earmarked for specific types of infrastructure projects, such as transportation improvements or facility renewal. Securing additional grants and external funding can help alleviate the financial burden on the municipality and support critical infrastructure investments. Although every effort should be made to increase grant funding as a means of reducing the infrastructure gap, increased grant funding has significant uncertainty and as such, it is not prudent to budget for potential future increases.

- **Borrowing and Debt Financing**: The County can issue bonds, debentures, or other forms of debt to finance infrastructure projects. Debt financing allows municipalities to spread the cost of infrastructure investments over time and leverage future revenue streams to fund projects upfront. However, borrowing entails interest costs and repayment obligations, and the current rate environment is less favourable than past years. Increased debt also reduces financial flexibility and may place an unfair burden on future taxpayers,

- **Asset Monetization and Leasing**: The County may explore opportunities to monetize or lease existing infrastructure assets to generate revenue. This may include selling surplus property, leasing municipal facilities to private operators, or entering into long-term lease agreements for infrastructure assets. Asset monetization can provide an immediate infusion of funds and unlock the value of underutilized assets, however the associated revenues are unpredictable, and implications for service delivery and public ownership must be considered.

10.6 Non-Revenue Tools

There are additional initiatives that can be undertaken that seek to minimize the funding gap as opposed to increasing revenue. These include:

- **Implement Operational Efficiencies**: Identify opportunities to improve operational efficiencies within the County to generate cost savings and/or additional revenue streams. This may include streamlining administrative processes, optimizing resource allocation, renegotiating contracts with vendors,

and implementing technology solutions to automate tasks and reduce operational expenses. By maximizing efficiency, the County can free up resources to allocate towards addressing the funding gap.

- **Enhance Asset Condition Data**: Invest in improving asset condition data collection, analysis, and management systems. By enhancing the accuracy and reliability of asset condition data, the County can make more informed decisions about asset maintenance, rehabilitation, and replacement, ultimately optimizing asset lifecycle management and minimizing long-term costs. The use of age as a proxy for the condition of infrastructure often results in overstated investment projections and a larger funding gap than actual condition data may justify.

- **Apply Risk-Based Prioritization**: The risk assessment completed as part of this asset management plan identifies high risk assets and prioritizes projects accordingly. By comparing the risk rating of each asset to the County's risk tolerance level, opportunities may be identified to adjust lifecycle activities for low-risk assets with relatively high tolerance levels for risk.

Strategies

Initiatives

ADVANCING ASSET MANAGEMENT MATURITY

11 Advancing Asset Management Maturity

The County's asset management program is guided by industry best practices and regulatory requirements. As the County strives to optimize the management of its infrastructure assets and ensure long-term sustainability, it is imperative to continually advance asset management maturity across all departments and functions. This section outlines the key strategies and initiatives aimed at enhancing asset management practices and increasing maturity levels within the municipality.

11.1 Strategies

The County's asset management program has matured significantly over the past several years. Further development of the following strategies will assist the County in maturing its asset management program.

- **Establishment of Clear Governance Structure**: Effective asset management begins with clear governance structures that define roles, responsibilities, and decision-making processes. The County is committed to establishing and maintaining a robust governance framework that aligns asset management activities with organizational goals and objectives. This includes defining accountability structures, establishing performance metrics, and fostering a culture of transparency and accountability.

- **Integration of Asset Management Principles into Planning Processes**: Asset management principles are integrated into all phases of the planning process, from strategic planning to capital budgeting and project prioritization. By aligning infrastructure investment decisions with asset management objectives, the County ensures that resources are allocated efficiently to address the most critical needs and maximize the lifespan of assets.

- **Capacity Building and Training**: Building internal capacity and fostering a culture of continuous learning are essential for advancing asset management maturity. The County is committed to providing training and professional development opportunities for staff at all levels to enhance their asset management knowledge and skills. This includes workshops, seminars, certifications, and knowledge-sharing initiatives to empower staff with the tools and resources needed to effectively manage assets.

- **Engagement and Collaboration**: Asset management is a collaborative effort that requires engagement and collaboration across departments, disciplines, and stakeholders. The County actively engages with internal and external stakeholders to solicit input, share best practices, and foster partnerships that enhance asset management effectiveness. This includes regular communication, stakeholder consultations, and participation in municipal networks and associations.

11.2 Initiatives

Improving asset management maturity requires a holistic approach that involves various initiatives aimed at enhancing processes, systems, skills, and collaboration within a municipality. Several initiatives have been identified through the completion of this asset management plan that will advance the County's asset management maturity:

- The County has invested in condition assessments for its facilities, roads, bridges and structural culverts. The condition data for these assets contributes significantly to the completion of a robust asset management plan. Condition assessments are recommended to be completed for the remaining assets where practical. This will allow for informed lifecycle renewal decision making and decreased risk of service failures.

- Regularly update the data register with the current list of assets and associated data sets such as replacement value in current dollars. Conduct periodic reviews of asset inventories to identify redundant, underutilized, or non-essential assets.

- Implement performance monitoring systems to track the condition, performance, and service levels (current and proposed) of infrastructure assets over time.

- Incorporate the risk management framework into future master planning processes.

- Complete the following reports to inform the County's asset management program: DC Background Study, Corporate Strategic Plan, Climate Change Adaptation and Mitigation Plan.

Appendix A

Definitions

Asset - An item, thing or entity that has potential or actual value to an organization. The value can be tangible or intangible, financial or nonfinancial, and includes consideration of risks and liabilities.

Asset management - The combination of management, financial, economic, engineering, operational and other practices applied to physical assets with the objective of providing the required level of service in the most cost-effective manner.

Asset management plan - A plan developed for the management of one or more infrastructure assets that combines multidisciplinary management techniques (including technical and financial) over the life cycle of the asset in the most cost-effective manner to provide a specified level of service. A significant component of the plan is a long-term cash flow projection for the activities.

Asset management policy - A high-level statement of an organization's principles and approach to asset management.

Asset management strategy - A strategy for asset management covering the development and implementation of plans and programs for asset creation, operation, maintenance, rehabilitation/replacement, disposal, and performance monitoring to ensure that the desired levels of service and other operational objectives are achieved at optimum cost.

Asset register - A table which documents assets owned by the County and the required attributes that support asset management decision making. It contains pertinent details about each fixed asset and is used to track information such as replacement value, age, location, condition, criticality rating, etc.

Consequence of failure - The outcome or impact of an asset failing its condition or capacity targeted level of service.

Customer levels of service - Measures that are expressed in non-technical terms that describe the general public's understanding of services being provided by municipal infrastructure.

Expected Useful Life - The estimated amount of time, typically in years, that an asset is expected to maintain its performance or function.

Levels of service - The defined service quality for a particular activity or service area against which service performance may be measured. Service levels usually relate to quality, quantity, reliability, responsiveness, environmental acceptability, and cost.

Lifecycle costing - A method of expressing cost, in which both capital costs and operations and maintenance costs are considered, to compare alternatives. Present worth is one way to express life cycle costs. The present worth represents the current investment that would have to be made at a specific discount (or interest) rate to pay for the initial and future cost of the works.

Lifecycle models - Mathematical, statistical and logistic models of planned actions as well as the behaviour or deterioration of assets over time. They are used to forecast required asset lifecycle activities and their impacts on levels of service, risk and funding levels.

Likelihood of failure - The likelihood or probability of an asset failing to meet its targeted levels of service.

Line of sight - The connection between the County's high-level strategic objectives and detailed day-to-day activities, carried out by the County's staff, programs and assets. It clearly illustrates how organizational objectives link to day-to-day activities.

Rehabilitation - Works to rebuild or replace parts or components of an asset, to restore it to a required functional condition and extend its life, which may incorporate some modification. Generally involves repairing the asset to deliver its original level of service without resorting to significant upgrading or renewal, using available techniques and standards.

Replacement - The complete replacement of an asset that has reached the end of its service life, to provide an alternative that satisfies a targeted level of service.

Reinvestment - Funds allocated to capital projects that are rebuilding the existing municipal infrastructure asset base. New capacities and operations are excluded from infrastructure reinvestment decisions.

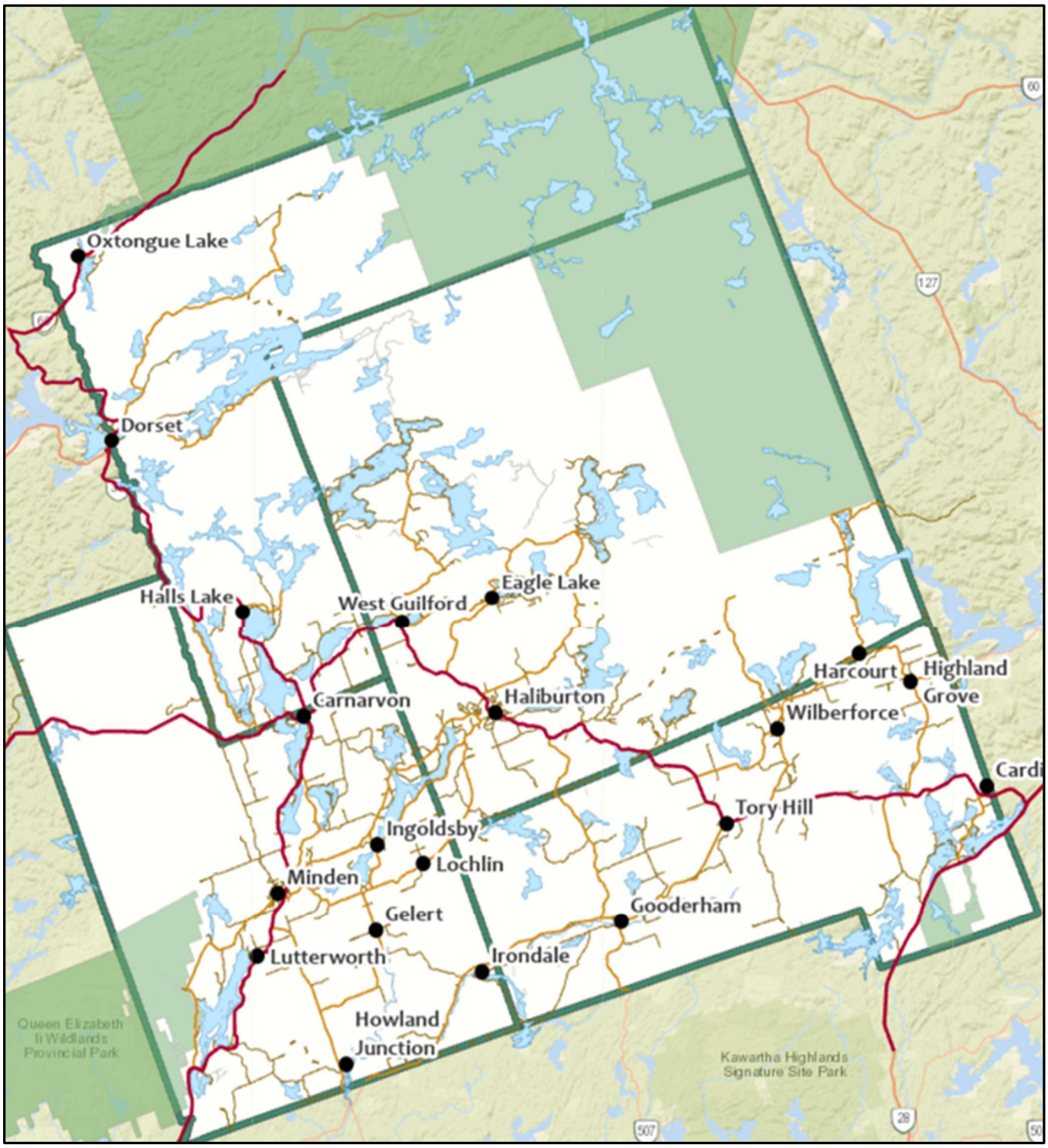
Risk - The effect of uncertainty on objectives. Risk is often expressed as the consequences of an event in combination with the associated likelihood of that event occurring.

Service life - The period that an asset provides an acceptable level of service. The economic service life is defined as the period when the present worth of the future maintenance costs are equal to the present worth of its replacement.

Technical levels of service - Technical measures applied against assets and overall systems that define the performance requirements to support customer levels of service. The are used to determine which criteria will be used to drive business decisions.

Appendix B

Road Network Map


Oxtongue Lake
Dorset
Halls Lake
West Guilford
Eagle Lake
Carnarvon
Haliburton
Harcourt
Highland Grove
Wilberforce
Tory Hill
Ingoldsby
Lochlin
Minden
Gelert
Gooderham
Lutterworth
Irondale
Howland Junction
Queen Elizabeth II Wildlands Provincial Park
Kawartha Highlands Signature Site Park
60
127
507
28

Appendix C

Road Condition Assessment

ID	New ID	Street	New Length	Surf Type	Perceived MMS	AADT	Spd Lmt	Ride Condition	PCI
1316	1316	1- GELERT ROAD	400	HCB	3	3850	50	7	28.8
648203	648203	648- LOOP ROAD	2120	HCB	4	770	80	7	28.8
11012	11033	11-KUSHOG LAKE ROAD	2560	LCB	5	650	50	6	29.0
6064	6064	6-EAGLE LAKE ROAD	800	HCB	3	650	80	8	31.9
503000	503000	503- COUNTY ROAD 503	6870	HCB	3	1880	80	7	33.3
1311	1313	1- GELERT ROAD	285	HCB	3	3850	50	8	36.4
648000	648000	648- LOOP ROAD	5510	HCB	3	1730	80	8	36.4
18077	18076	18-KASHAGAWIGAMOG LAKE RD	5180	LCB	4	680	50	7	39.6
3062	3061	3-GLAMORGAN ROAD	5125	HCB	3	900	80	8	40.9
503120	503119	503- COUNTY ROAD 503	6590	HCB	3	1660	80	8	40.9
10031	10030	10-ELEPHANT LAKE ROAD	3140	LCB	4	490	50	8	41.2
3032	3032	3-GLAMORGAN ROAD	2920	HCB	3	1070	80	7	42.3
503069	503069	503- COUNTY ROAD 503	5065	HCB	3	1880	80	9	43.3
3113	3112	3-GLAMORGAN ROAD	1810	HCB	3	900	80	8	45.4
7012	7014	7-KENNISIS LAKE ROAD	5020	HCB	3	1830	80	8	45.4
21223	21226	21-COUNTY ROAD 21	100	HCB	3	8740	50	8	45.4
10000	10000	10-ELEPHANT LAKE ROAD	3000	LCB	4	490	80	8	45.7
1129-3	1184	1- GELERT ROAD	3685	HCB	3	1200	80	10	49.5
4085	4085	4-ESSONVILLE LINE	445	HCB	4	710	50	8	49.9
21000	21000	21-COUNTY ROAD 21	1925	HCB	3	3510	80	8	49.9
21000-2	21019	21-COUNTY ROAD 21	2600	HCB	3	3510	80	8	49.9
21000-3	21045	21-COUNTY ROAD 21	1590	HCB	3	3510	80	8	49.9
21000-4	21061	21-COUNTY ROAD 21	1260	HCB	3	3510	80	8	49.9
12000	12000	12-LIVINGSTONE LAKE ROAD	3600	LCB	5	500	60	8	50.2
14077	14077	14-HALIBURTON LAKE ROAD	820	LCB	4	750	50	8	50.2
19038	19039	19-HARBURN ROAD	4265	LCB	5	470	50	7	53.1
20046	20046	20-HORSESHOE LAKE ROAD	3000	LCB	5	280	50	7	53.1
13000	13000	13- LITTLE HAWK LAKE ROAD	810	HCB	5	440	50	8	54.4
14000-2	14051	14-HALIBURTON LAKE ROAD	2670	HCB	4	750	80	8	54.4
21074	21074	21-COUNTY ROAD 21	5300	HCB	3	2870	80	8	54.4
14085	14085	14-HALIBURTON LAKE ROAD	3480	LCB	4	850	70	8	54.7
20000	20000	20-HORSESHOE LAKE ROAD	4600	LCB	5	1120	50	8	54.7
1000	1000	1- GELERT ROAD	4610	HCB	4	700	80	8	58.9
7109	7112	7-KENNISIS LAKE ROAD	600	HCB	3	1210	80	8	58.9
14000	14000	14-HALIBURTON LAKE ROAD	5050	HCB	4	750	80	8	58.9
21152	21156	21-COUNTY ROAD 21	4290	HCB	3	3090	80	8	58.9
21214	21214	21-COUNTY ROAD 21	1125	HCB	3	8740	50	8	58.9
121050-2	121069	121-COUNTY ROAD 121	2125	HCB	3	2140	80	8	58.9
121050-3	121090	121-COUNTY ROAD 121	2065	HCB	3	2140	80	8	58.9
121050-5	121131	121-COUNTY ROAD 121	1120	HCB	3	2140	80	8	58.9
648175	648176	648- LOOP ROAD	2710	HCB	4	670	80	8	58.9
7115	7118	7-KENNISIS LAKE ROAD	7265	LCB	3	680	80	8	59.2
10056	10061	10-ELEPHANT LAKE ROAD	2990	LCB	4	490	80	8	59.2
12118	12118	12-LIVINGSTONE LAKE ROAD	5350	LCB	5	200	60	8	59.2
15016	15016	15-BURLEIGH ROAD	3765	LCB	5	130	60	8	59.2
507002	507003	507- BUCKHORN ROAD	3460	LCB	4	840	80	8	59.2
507037	507037	507- BUCKHORN ROAD	3050	LCB	4	840	80	8	59.2
7062	7064	7-KENNISIS LAKE ROAD	4790	HCB	3	1830	80	9	61.3
648078	648079	648- LOOP ROAD	6655	HCB	3	1560	80	9	61.3
121050-4	121111	121-COUNTY ROAD 121	2050	HCB	3	2140	80	8	63.4
503374	503377	503- COUNTY ROAD 503	325	HCB	3	1420	60	8	63.4
14121	14120	14-HALIBURTON LAKE ROAD	4115	LCB	4	500	70	8	63.7
14121-2	14161	14-HALIBURTON LAKE ROAD	1995	LCB	4	500	70	8	63.7
15008	15007	15-BURLEIGH ROAD	920	LCB	5	130	60	8	63.7
19182	19184	19-HARBURN ROAD	825	LCB	5	180	50	8	63.7
1307	1309	1- GELERT ROAD	440	HCB	3	3850	50	8	67.9
2176	2176	2-DEEP BAY ROAD	510	HCB	4	1160	50	8	67.9
6072	6072	6-EAGLE LAKE ROAD	880	HCB	3	650	50	8	67.9

ID	New ID	Street	New Length	Surf Type	Perceived MMS	AADT	Spd Lmt	Ride Condition	PCI
121000	121000	121-COUNTY ROAD 121	5130	HCB	3	2220	80	8	67.9
503258	503259	503- COUNTY ROAD 503	7015	HCB	3	1420	80	8	67.9
503327	503329	503- COUNTY ROAD 503	4810	HCB	3	1420	80	8	67.9
648055	648055	648- LOOP ROAD	800	HCB	3	2530	50	8	67.9
648063	648063	648- LOOP ROAD	380	HCB	3	2530	50	8	67.9
13036	13035	13- LITTLE HAWK LAKE ROAD	1430	LCB	5	220	50	8	68.2
9062	9076	9-McGILLVRAY ROAD	480	LCB	4	530	70	7	71.1
1264	1265	1- GELERT ROAD	3110	HCB	3	1720	80	8	72.4
1295	1297	1- GELERT ROAD	1195	HCB	3	3850	60	8	72.4
7000	7000	7-KENNISIS LAKE ROAD	200	HCB	3	2750	60	8	72.4
21127	21127	21-COUNTY ROAD 21	2885	HCB	3	3090	80	8	72.4
21198	21199	21-COUNTY ROAD 21	1590	HCB	3	4190	50	8	72.4
503184	503185	503- COUNTY ROAD 503	5715	HCB	3	1650	80	8	72.4
8121	8123	8-KAWAGAMA LAKE ROAD	5560	LCB	5	350	60	8	72.7
9000	9000	9-McGILLVRAY ROAD	2193	LCB	4	420	70	8	72.7
11059	11058	11-KUSHOG LAKE ROAD	6836	LCB	5	90	50	8	72.7
48000	48000	48- DYNO ROAD	4940	LCB	4	580	80	8	72.7
7008	7009	7-KENNISIS LAKE ROAD	480	HCB	3	2750	50	9	74.8
39010	39000	39-DORSET ROAD	750	HCB	5	1740	50	8	76.9
121050	121051	121-COUNTY ROAD 121	1765	HCB	3	2140	80	8	76.9
648066	648067	648- LOOP ROAD	1240	HCB	3	2530	60	8	76.9
2000	2000	2-DEEP BAY ROAD	2900	LCB	4	550	60	8	77.2
2029	2029	2-DEEP BAY ROAD	3400	LCB	4	550	50	8	77.2
6000	6000	6-EAGLE LAKE ROAD	6400	LCB	3	1030	80	8	77.2
8018	8019	8-KAWAGAMA LAKE ROAD	2260	LCB	5	350	60	8	77.2
8041	8042	8-KAWAGAMA LAKE ROAD	3965	LCB	5	350	60	8	77.2
9057	9072	9-McGILLVRAY ROAD	360	LCB	4	530	70	8	77.2
10056-2	10091	10-ELEPHANT LAKE ROAD	2955	LCB	4	490	80	8	77.2
10056-3	10121	10-ELEPHANT LAKE ROAD	1116	LCB	4	490	80	8	77.2
11000	11000	11-KUSHOG LAKE ROAD	3280	LCB	5	650	50	8	77.2
14121-3	14181	14-HALIBURTON LAKE ROAD	1680	LCB	4	500	70	8	77.2
19106	19107	19-HARBURN ROAD	4245	LCB	5	470	50	8	77.2
20077	20076	20-HORSESHOE LAKE ROAD	1765	LCB	5	280	50	8	77.2
648223-2	648263	648- LOOP ROAD	5495	LCB	4	770	80	8	77.2
15000	15000	15-BURLEIGH ROAD	680	HCB	5	500	60	8	81.4
648159	648161	648- LOOP ROAD	1545	HCB	4	670	80	8	81.4
2060	2063	2-DEEP BAY ROAD	5660	LCB	4	550	70	8	81.7
4000	4000	4-ESSONVILLE LINE	2390	LCB	4	740	80	8	81.7
4023	4024	4-ESSONVILLE LINE	2000	LCB	4	740	80	8	81.7
4043	4044	4-ESSONVILLE LINE	4155	LCB	4	740	80	8	81.7
15079	15081	15-BURLEIGH ROAD	4150	LCB	5	130	60	8	81.7
16035	16035	16-SOUTH LAKE ROAD	4010	LCB	4	1040	60	8	81.7
648223	648224	648- LOOP ROAD	3900	LCB	4	770	80	8	81.7
648146	648146	648- LOOP ROAD	1470	HCB	3	1560	80	9	83.8
10140	10149	10-ELEPHANT LAKE ROAD	5815	HCB	4	200	80	8	85.9
2116	2120	2-DEEP BAY ROAD	2790	LCB	4	1160	70	8	86.2
2145	2148	2-DEEP BAY ROAD	2800	LCB	4	1160	70	8	86.2
5000	5000	5-SOUTH BAPTISTE LK ROAD	3050	LCB	4	660	60	8	86.2
8007	8008	8-KAWAGAMA LAKE ROAD	1100	LCB	4	1170	60	8	86.2
12076	12076	12-LIVINGSTONE LAKE ROAD	4200	LCB	5	340	60	8	86.2
15053	15054	15-BURLEIGH ROAD	2690	LCB	5	130	60	8	86.2
18014	18014	18-KASHAGAWIGAMOG LAKE RD	1780	LCB	4	370	40	8	86.2
18057	18057	18-KASHAGAWIGAMOG LAKE RD	1970	LCB	4	370	50	8	86.2
19000	19000	19-HARBURN ROAD	1200	LCB	4	750	70	8	86.2
19012	19012	19-HARBURN ROAD	2650	LCB	4	750	70	8	86.2
19148	19149	19-HARBURN ROAD	3445	LCB	5	180	50	8	86.2

ID	New ID	Street	New Length	Surf Type	Perceived MMS	AADT	Spd Lmt	Ride Condition	PCI
17000	17000	17-INGOLDSBY ROAD	3720	LCB	5	300	60	9	87.8
18032	18032	18-KASHAGAWIGAMOG LAKE RD	2470	LCB	4	370	50	9	87.8
18000	18000	18-KASHAGAWIGAMOG LAKE RD	1420	HCB	4	800	50	9	88.3
503241	503242	503- COUNTY ROAD 503	1665	HCB	3	2060	80	9	88.3
507000	507000	507- BUCKHORN ROAD	260	HCB	4	840	60	9	88.3
13051	13049	13- LITTLE HAWK LAKE ROAD	200	HCB	5	220	50	10	90.0
8080	8081	8-KAWAGAMA LAKE ROAD	4160	LCB	5	350	60	8	90.7
9022	9022	9-McGILLVRAY ROAD	2520	LCB	4	500	50	8	90.7
12036	12036	12-LIVINGSTONE LAKE ROAD	4000	LCB	5	340	60	8	90.7
12174	12172	12-LIVINGSTONE LAKE ROAD	4500	LCB	5	200	60	8	90.7
12219	12217	12-LIVINGSTONE LAKE ROAD	3200	LCB	5	200	60	8	90.7
19081	19081	19-HARBURN ROAD	2550	LCB	5	470	50	8	90.7
10056-4	10132	10-ELEPHANT LAKE ROAD	1730	LCB	4	490	80	9	92.3
13009	13008	13- LITTLE HAWK LAKE ROAD	2690	LCB	5	440	50	9	92.3
3000	3000	3-GLAMORGAN ROAD	3200	HCB	3	1070	80	9	92.8
1095	1094	1- GELERT ROAD	3595	HCB	4	700	60	10	94.5
1129-2	1140	1- GELERT ROAD	4450	HCB	4	700	60	10	94.5
1220	1221	1- GELERT ROAD	4435	HCB	3	1200	80	10	94.5
3131	3131	3-GLAMORGAN ROAD	3740	HCB	3	900	80	10	94.5
7002	7002	7-KENNISIS LAKE ROAD	675	HCB	3	2750	50	10	94.5
8000	8000	8-KAWAGAMA LAKE ROAD	800	HCB	4	1170	50	10	94.5
9047	9047	9-McGILLVRAY ROAD	2520	LCB	4	500	50	9	96.8
12251	12249	12-LIVINGSTONE LAKE ROAD	2470	LCB	5	200	50	9	96.8
1050	1046	1- GELERT ROAD	4820	HCB	4	700	80	10	99.0
1129	1130	1- GELERT ROAD	950	HCB	4	700	60	10	99.0
16000	16000	16-SOUTH LAKE ROAD	1490	HCB	4	1410	60	10	99.0
16015	16015	16-SOUTH LAKE ROAD	1995	HCB	4	1410	60	10	99.0

Appendix D

Asset Condition Images

Roadway in **Very Good** condition – no noticeable defects

Roadway in **Good** condition – minor deterioration

Roadway in **Fair** condition – deterioration evident, function is affected

Roadway in **Poor** condition – serious deterioration, function is inadequate

Roadway in **Very Poor** condition – no longer functional, general or complete failure

Appendix E

10-Year Financial Forecast

Required Funding & Available Funding

Asset Class	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	Total
Required Funding											
Roads	$ 3,394,225	$ 3,479,080	$ 3,566,057	$ 3,655,209	$ 3,746,589	$ 3,840,254	$ 3,936,260	$ 4,034,666	$ 4,135,533	$ 4,238,921	**$ 38,026,794**
Roads - Equipment	$ 165,473	$ 57,714	$ 9,948	$ 41,510	$ 676,183	$ 40,028	$ 1,042	$ 135,108	$ 46,965	$ 16,787	**$ 1,190,760**
Signs, culverts, guide rails	$ 432,279	$ 443,086	$ 454,163	$ 465,517	$ 477,155	$ 489,084	$ 501,311	$ 513,844	$ 526,690	$ 539,857	**$ 4,842,987**
Bridges	$ 1,156,000	$ 882,000	$ -	$ -	$ -	$ 1,414,901	$ 1,450,273	$ 1,486,530	$ 1,523,693	$ 1,561,786	**$ 9,475,183**
Structural Culverts	$ -	$ -	$ 659,000	$ 1,788,000	$ -	$ 424,278	$ 434,885	$ 445,757	$ 456,901	$ 468,324	**$ 4,677,145**
Buildings	$ 303,706	$ 311,298	$ 319,081	$ 327,058	$ 335,234	$ 343,615	$ 352,205	$ 361,011	$ 370,036	$ 379,287	**$ 3,402,530**
Building Equipment	$ 32,988	$ -	$ -	$ 9,646	$ -	$ 37,323	$ 88,870	$ -	$ 10,914	$ -	**$ 179,741**
Fleet	$ 1,003,000	$ -	$ 1,504,365	$ 64,102	$ 938,857	$ 993,754	$ 406,677	$ 799,928	$ 625,576	$ 1,021,267	**$ 7,357,526**
Land Ambulance Fleet	$ 295,000	$ 302,375	$ 309,934	$ 317,683	$ 325,625	$ 333,765	$ 342,110	$ 350,662	$ 359,429	$ 368,415	**$ 3,304,998**
Land Ambulance Services Equipment	$ 414,756	$ 113,106	$ 23,994	$ 74,768	$ 17,329	$ 366,812	$ 91,511	$ 23,901	$ 74,861	$ 17,236	**$ 1,218,274**
Planning Department Equipment	$ 364,479	$ 209,106	$ 416,142	$ 330,431	$ 381,871	$ 256,986	$ 236,584	$ 470,826	$ 373,852	$ 432,051	**$ 3,472,329**
IT - Hardware	$ 18,224	$ 49,466	$ 35,589	$ 65,207	$ 37,456	$ 20,618	$ 55,966	$ 40,266	$ 73,775	$ 42,378	**$ 438,944**
IT - Software	$ 138,708	$ 122,086	$ 83,559	$ 43,468	$ 13,755	$ 156,936	$ 138,129	$ 94,540	$ 49,821	$ 15,563	**$ 856,564**
Library Collections	$ -	$ 115,449	$ 119,263	$ 113,227	$ 151,181	$ 106,073	$ 76,796	$ 84,816	$ -	$ 140,664	**$ 907,468**
Library Equipment	$ 9,551	$ -	$ 39,582	$ 41,770	$ 19,247	$ 10,806	$ -	$ 44,783	$ 47,259	$ 97,632	**$ 310,631**
Rail Trail	$ 113,141	$ 115,969	$ 118,869	$ 121,840	$ 1,540,890	$ 128,008	$ 131,209	$ 467,991	$ 137,851	$ 141,297	**$ 3,017,066**
Total Required Funding	**$ 7,841,529**	**$ 6,200,735**	**$ 7,659,548**	**$ 7,459,436**	**$ 8,661,372**	**$ 8,963,241**	**$ 8,243,829**	**$ 9,354,629**	**$ 8,813,157**	**$ 9,481,464**	$ 82,678,939

Asset Class	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	Total
Available Funding											
Roads - Rehabilitation	$ 3,237,425	$ 3,334,548	$ 3,434,584	$ 3,537,622	$ 3,643,750	$ 3,753,063	$ 3,865,655	$ 3,981,624	$ 4,101,073	$ 4,224,105	**$ 37,113,449**
Roads - Equipment	$ 151,992	$ 156,552	$ 161,248	$ 166,086	$ 171,068	$ 176,200	$ 181,486	$ 186,931	$ 192,539	$ 198,315	**$ 1,742,417**
Bridges & Culverts	$ 669,325	$ 689,405	$ 710,087	$ 731,389	$ 753,331	$ 775,931	$ 799,209	$ 823,185	$ 847,881	$ 873,317	**$ 7,673,061**
Buildings & Equipment	$ 527,800	$ 543,634	$ 559,943	$ 576,741	$ 594,044	$ 611,865	$ 630,221	$ 649,127	$ 668,601	$ 688,659	**$ 6,050,636**
Fleet	$ 564,374	$ 581,305	$ 598,744	$ 616,707	$ 635,208	$ 654,264	$ 673,892	$ 694,109	$ 714,932	$ 736,380	**$ 6,469,913**
Land Ambulance Fleet	$ 235,213	$ 242,269	$ 249,537	$ 257,023	$ 264,734	$ 272,676	$ 280,856	$ 289,282	$ 297,960	$ 306,899	**$ 2,696,448**
Land Ambulance Services Equipment	$ 130,332	$ 134,242	$ 138,270	$ 142,418	$ 146,690	$ 151,091	$ 155,624	$ 160,292	$ 165,101	$ 170,054	**$ 1,494,115**
Planning Department Equipment	$ 114,100	$ 117,523	$ 121,049	$ 124,680	$ 128,421	$ 132,273	$ 136,241	$ 140,329	$ 144,538	$ 148,875	**$ 1,308,029**
IT	$ 175,750	$ 181,023	$ 186,453	$ 192,047	$ 197,808	$ 203,743	$ 209,855	$ 216,151	$ 222,635	$ 229,314	**$ 2,014,780**
Library Collections	$ 77,385	$ 79,706	$ 82,098	$ 84,561	$ 87,097	$ 89,710	$ 92,402	$ 95,174	$ 98,029	$ 100,970	**$ 887,131**
Library Equipment	$ 12,011	$ 12,372	$ 12,743	$ 13,125	$ 13,519	$ 13,924	$ 14,342	$ 14,772	$ 15,215	$ 15,672	**$ 137,696**
Rail Trail	$ 73,773	$ 75,986	$ 78,266	$ 80,614	$ 83,032	$ 85,523	$ 88,089	$ 90,732	$ 93,454	$ 96,257	**$ 845,726**
Total Available Funding	**$ 5,969,480**	**$ 6,148,564**	**$ 6,333,021**	**$ 6,523,012**	**$ 6,718,702**	**$ 6,920,264**	**$ 7,127,871**	**$ 7,341,708**	**$ 7,561,959**	**$ 7,788,818**	**$ 68,433,399**
Funding Gap	**$ 1,872,049**	**$ 52,171**	**$ 1,326,526**	**$ 936,424**	**$ 1,942,670**	**$ 2,042,977**	**$ 1,115,957**	**$ 2,012,922**	**$ 1,251,198**	**$ 1,692,647**	**$ 14,245,540**