Corporate Asset Management Plan – Part A

Transportation Network and Stormwater Network Services

May 2022

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Report

Chapter 1
Introduction

1. Introduction

1.1 Overview

Oakville is a beautiful lakeside town; boasting of a vibrant and impressive community within the Greater Toronto Area (GTA). It is situated on Lake Ontario and has a strong heritage, preserved and celebrated by residents and visitors alike. Founded in 1857, this striking town has become one of the most coveted residential and business centres in Ontario, and for good reason:

- Great neighbourhoods
- Great places to do business
- Quality schools
- A full-service acute care community hospital
- Proximity to Lake Ontario and recreational areas
- Easy access via QEW, 403, 407 and GO Transit
- Charming shopping districts within its downtown core areas

A 30-minute drive from downtown Toronto, and an hour's drive from the U.S. border, Oakville is a great destination for visitors.

Residents enjoy a suite of various services such as; the acres of parks and outdoor leisure spaces; groomed hiking trails and multi-use pathways, recreation & cultural centres and libraries which provides programs for all ages; an interconnected roadway network; fire prevention and emergency services; public transit; a well designed storm water management network and preservation of natural heritage spaces. People who live here are proud of the quality of life this great community has to offer.

The Town of Oakville's ("town") infrastructure systems are the backbone of our community. They support a range of municipal services that enable the quality of life

experienced by residents, businesses, and other stakeholders. The town's Corporate Asset Management Program is designed to enable management of infrastructure assets in a way that connects Council strategies and community objectives to day-to-day infrastructure investment decisions.

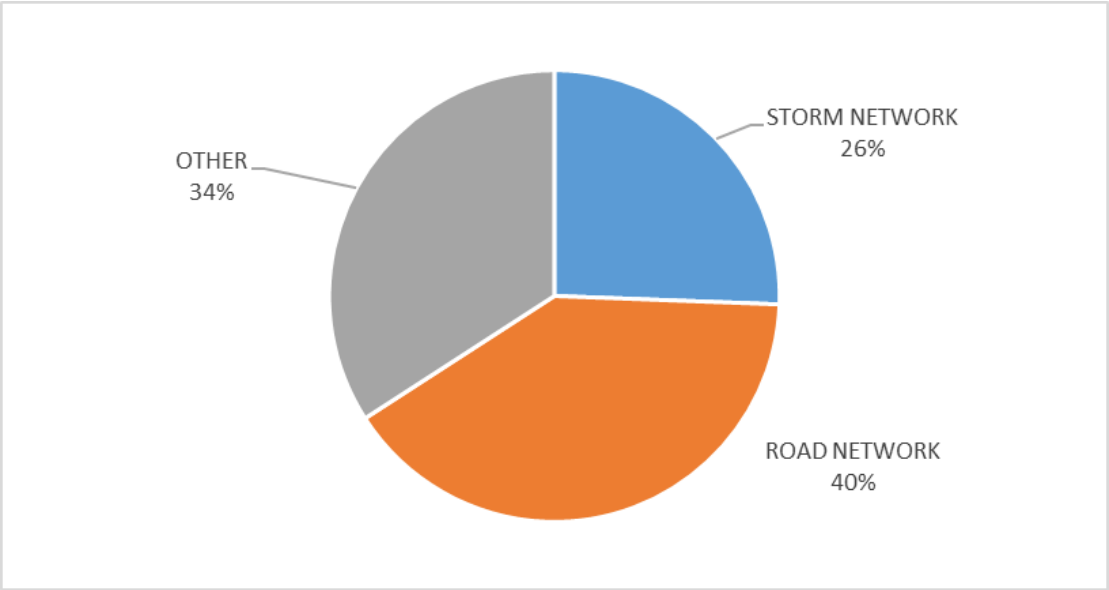
The town has been on the asset management journey since 2013, working to align with the standards set out by ISO 55000 and set out specific goals to further enhance the town's Asset Management plan. Goals were established to develop a more comprehensive asset management strategy, policy and governance structure to align Council's strategic vision and fully integrate the town's organizational goals into our asset management principles.

In February 2018, staff were pleased to present the first comprehensive Asset Management Plan to Council along with the 2018 Long-term Capital Forecast. In order to more clearly align with the requirements outlined in the O. Reg. 588/17 and to align with Council's most recent Strategic Plan 2018-2021, staff revised a number of asset management documents which were presented to Council in 2021 and include the following:

a. Asset Management Policy (May 2021)
b. Draft Asset Management Strategy (May 2021)
c. State of Local Infrastructure Report (SOIR) for Roads, Parks, Facilities, Transit, Fleet and Environmental Networks – June 2021

The Corporate Asset Management Plan (CAMP) is a strategic document that states how the $3.6 Billion worth of infrastructure assets (excluding land) under the direct ownership and control of the town are to be managed over a period of time Figure 1.0 proportionally shows the percentage of road and stormwater asset as a portion of the total town portfolio. The plan describes the characteristics and condition of infrastructure assets, the Customer Level of Service (CLOS) expected from them, planned lifecycle activities and technical measures to ensure the assets are providing the expected CLOS, and financing strategies to implement these actions.

Figure 1-0: Distribution of Town Assets by Replacement Value



The assets included in this iteration of the CAMP are the core municipal assets as defined in O. Reg. 588/17 and some additional assets that are directly related to the core assets (i.e., road-related infrastructure). The assets included in this CAMP fall into the following broad asset classes and categories.

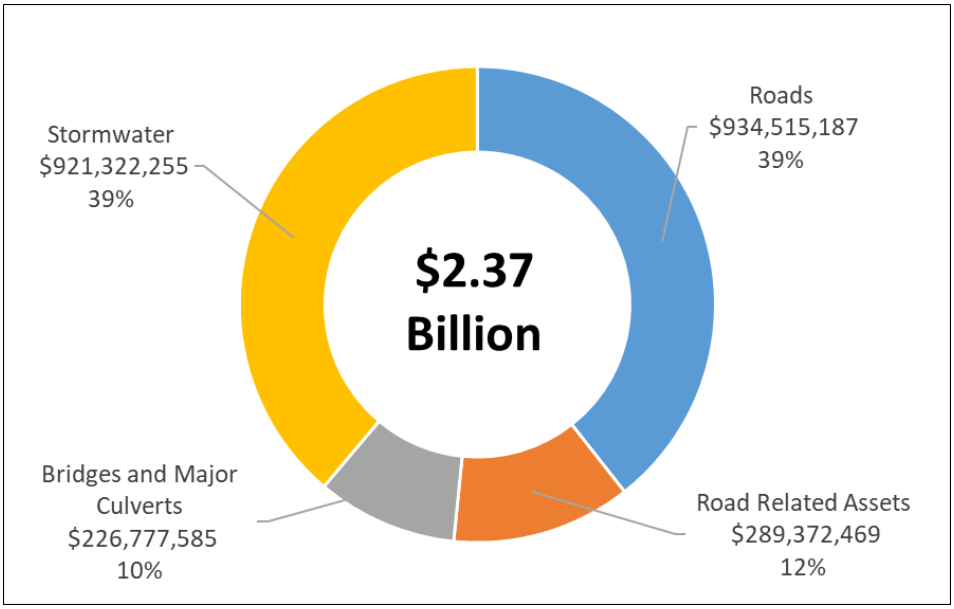
- Road Network Class
  - Roads
  - Bridges and Major Culverts;
  - Road related Infrastructure
    - Pedestrian Facilities
    - Traffic Components
    - Street Poles/Lights
    - Acoustic/Retaining Walls/Guiderails
- Stormwater Network Class
  - Storm Mains
  - Catch basins / Maintenance Holes
  - Lateral Structures
  - Inlet/Outlet/Pond Structures
  - Water Quality Control Devices
  - Storm Water Chambers

The current replacement cost of the town's road and stormwater assets is estimated at $2.4 billion. Table 1-1 and Figure 1-1 provide a breakdown of the total replacement costs by asset class. Roads account for approximately 39.4% of the replacement cost, followed by stormwater at 38.8%, roads related infrastructure at 12.2%, and lastly, bridges and major culverts at 9.6%.

Table 1-1: Asset Classes and Replacement Costs (2021$)

Asset Class	Replacement Cost
Roads (Base & Surface)	$934,515,187
Roads Related Infrastructure	$289,372,469
Bridges and Major Culverts	$226,777,585
Stormwater	$921,322,255
Total	**$2,371,987,496**

Figure 1-1: Distribution of Replacement Cost by Asset Class



1.2 Legislative Context for the Asset Management Plan

Asset management planning in Ontario has evolved significantly over the past decade.

Before 2009, capital assets were recorded by municipalities as expenditures in the year of acquisition or construction. The long-term issue with this approach was the lack of a capital asset inventory, both in the municipality's accounting system and financial statements. As a result of revisions to section 3150 of the Public Sector Accounting Board (PSAB) handbook, effective for the 2009 fiscal year, municipalities were required to capitalize tangible capital assets, thus creating an inventory of assets.

In 2012, the Province launched the municipal Infrastructure Strategy. As part of that initiative, municipalities and local service boards seeking provincial funding were required to demonstrate how any proposed project fits within a detailed asset management plan. In addition, asset management plans encompassing all municipal assets needed to be prepared by the end of 2016 to meet Federal Gas Tax agreement requirements. To help define the components of an asset management plan, the Province produced a document entitled Building Together: Guide for Municipal Asset Management Plans. This guide documented the components, information, and analysis that were required to be included in municipal asset management plans under this initiative.

The Province's *Infrastructure for Jobs and Prosperity Act, 2015* (IJPA) was proclaimed on May 1, 2016. This legislation detailed principles for evidence-based and sustainable long-term infrastructure planning. IJPA also gave the Province the authority to guide municipal asset management planning by way of regulation. In late 2017, the Province introduced O. Reg. 588/17 under IJPA. The intent of O. Reg. 588/17 is to establish standard content for municipal asset management plans. Specifically, the regulations require that asset management plans be developed that define the current levels of service, identify the lifecycle activities that would be undertaken to achieve these levels of service, and provide a financial strategy to support the levels of service and lifecycle activities.

Ontario Regulation 588/17 sets out some key requirements for Asset Management over the coming years. Specifically.

1) Every municipality shall prepare its first strategic asset management policy by July 1, 2020, and shall review and, if necessary, update it at least every five years.
2) Every municipality shall prepare an asset management plan in respect of its core municipal infrastructure assets by July 1, 2022, and in respect of all of its other municipal infrastructure assets by July 1, 2024.

Core infrastructure assets are defined in the Regulation as Water, Wastewater, Storm Water, Roads, Bridges and Culverts.

This plan has been developed to address the July 1, 2022, requirements of O. Reg. 588/17. It utilizes the best information available to the town at this time.

1.3 Asset Management Policy and Strategy

Ontario Regulation 588/17 has been developed in response to greater demands for improved transparency and scrutiny around investment decisions in infrastructure assets both by the Province and by municipal residents and other customers. It incorporates some key concepts that have been embodied in the established discipline of Asset Management and which have now been formalized in an international standard called ISO 55000.

Asset Management as defined in ISO5500 is the “coordinated activities of an organization to realize value from its assets”. In a municipal context, this value is realized through the delivery of levels of service at the lowest achievable whole life cost and with an acceptable level of risk. The Town of Oakville has been managing its assets since its inception but has adopted this more holistic Asset Management philosophy as a key method in realizing value for the community and in addressing the various challenges that exist both now and in the future.

With this in mind, over the several years the Town has been developing and implementing an asset management improvement program which is aligned with the requirements of ISO55000 and includes fundamental aspects that are now required by Regulation 588 including policy, levels of service and asset management plans. The Town has also been growing an Asset Management culture through the ongoing delivery of Asset Management Training courses and education awareness.

Together, the Town’s Asset Management Policy and Asset Management Strategy will fulfill regulatory requirement (1) and provide a framework for successful delivery of regulatory requirements for the asset management plans. These documents are both available on the Corporate Asset Management page on the town’s website.

The town's AM Policy was initially approved by Council in 2017 and was recently revised in 2021 to incorporate the town's principles regarding climate change strategy. The following is the revised policy endorsed by Council in May 2021.

Town of Oakville
Asset Management Policy

The Town's asset management mission is to protect and enhance the quality of life in Oakville by making the best possible decisions regarding Town of Oakville (town) assets in a way that provides targeted levels of service and manages risk in a cost-effective manner throughout the entire asset life cycle in order to create customer value through enhancing community asset management.

The town will manage infrastructure assets in a strategic, comprehensive, enterprise-wide manner through an integrated business approach that relies on well-devised strategies, trained knowledgeable staff, and good communication with all stakeholders to achieve desired levels of service. This requires that all assets be treated as interrelated components in a unified system, rather than as isolated parts.

This Policy supports our four Key Strategic Directions, as detailed in our Strategic Plan, and defines the principles by which we will develop our asset management capability, ensuring we understand our asset needs and develop effective solutions. Successfully delivering these principles will drive the required service and value from our assets, meeting or exceeding our customer expectations.

The scope of this Policy covers the management of all of the Town's infrastructure asset portfolio. The principles below have been established in line with leading practices.

Our Key Strategic Directions

Create it!
How we will create our community

Live it!
How we will live in our community

Preserve it!
How we will preserve our environment

Afford it!
How we will afford our future

Our Asset Management Principles

Forward Looking and Sustainable

We will incorporate social, legislative, environmental and financial considerations into decisions, taking into account present and future service commitments, giving due attention to the long-term stewardship of assets

Sound Asset Information

We will collect, collate, control, and circulate the right asset information, at the right time, informing the right asset management decision-making.

Robust, Repeatable, & Transparent Decision-Making

We will utilize a formal but scalable, consistent, and repeatable approach to manage infrastructure assets, enabling services to be provided in the most efficient and cost-effective manner.

Whole Life Cycle Cost Perspective

We will consider the combined impact of all aspects of the asset life-cycle – acquiring, operating, maintaining, renewing, and retiring assets. No new assets will be constructed/acquired without considering future operating and maintenance costs. Asset performance will be monitored throughout the asset life cycle and will be used to inform recommendations on future asset acquisition.

Risk-Based Perspective

We will direct resources, expenditures, and priorities to achieve the agreed service outcomes and benefits, at acceptable levels of risk and proactively plan for climate related impacts that have the potential to compromise town assets.

People-Focused(Customers and Staff)

We will adopt a serviceability-based approach to managing our assets and will only accommodate additional demand for services without detriment to current levels of service. The town will recruit, train, and retain the right staff.

This Asset Management Strategy is intended to support the implementation and ongoing sustainment of the principles outlined in the Asset Management Policy and incorporates the Town of Oakville's vision "To be the most livable town in Canada". The Town's 2057 Sustainable Community Framework, Council Strategic Plan (2019-2022) and Livable Oakville Official Plan sets high level direction and strategic objectives for the Asset Management Strategy and provides guidance for decision making towards this unified vision for the future.

Asset Management is fully complementary to and supports the delivery of the Sustainable Community Framework. A key concept of Asset Management is the development of a "line of sight" between the Town's strategic objectives, its associated asset management objectives and the related asset management plans which set out the specific activities (e.g. capital projects, operation and maintenance regimes) that are to be carried out on the asset portfolio. With this in mind the town's Asset Management strategy has adopted the ISO 55000 recommended framework for Asset Management:

The "Organizational Strategic Plan" should be considered to be the Guiding Principles and Strategic Directions as set out in the Sustainable Community Framework.

The Asset Management Policy sets out the principles that are going to be adopted from an asset management perspective in order to deliver these organizational objectives.

The Asset Management Strategy (this document) then sets out how these asset management principles are to be delivered within the organization and how the high-level strategic objectives are to be translated into more meaningful asset management objectives which drive asset management decision making.

Asset Management Plans then set out the activities, timescales and resources (including capital and operational expenditures) required to deliver the previously defined asset management objectives.

1.4 Land Use Planning and Growth Asset Management

Oakville is a lower-tier municipality within the Region of Halton, in which according to "A Place to Grow – Growth Plan for the Greater Golden Horseshoe", Halton Region is predicted to increase its population to 780,000 by 2031. As part of the Region's Official Plan, they set out the parameters of the overall Regional Structure which represents Halton's basic position on the use of land and natural resources within its planning area and is the framework within which Local Official Plans, amendments and by-laws are prepared. Based on the Region's most recent Official Plan the distribution of population and employment allocated to Oakville represents a target population of 255,000 and employment of 127,000 jobs by 2031 as outlined in the table below.

HALTON REGION POPULATION AND EMPLOYMENT DISTRIBUTION

	Population[1]		Employment	
Municipality	**2006**	**2031**	**2006**	**2031**
Burlington	171,000	193,000	88,000	106,000
Oakville	172,000	255,000	82,000	127,000
Milton	56,000	238,000	28,000	114,000
Halton Hills	58,000	94,000	20,000	43,000
Halton Region[2]	456,000	780,000	218,000	390,000

1. Population numbers in this table are "total population" numbers including approximately 4% undercoverage from the official "Census population" numbers reported by Statistics Canada.
2. Totals for the Region may not add up due to rounding.

The Town of Oakville's, Official Plan is referred to as, "Livable Oakville" and establishes the policies and land use designations that implement the Town's vision "to be the most livable Town in Canada." The Livable Oakville Plan (2009 Town of Oakville Official Plan) applies to all lands within the town except the North Oakville East and West

Secondary Plan areas. It sets out Council's policies on how the lands should be used and growth should be managed through to 2031 and was prepared to conform to the Province of Ontario's Growth Plan for the Greater Golden Horseshoe, 2006 ("the Growth Plan"), as required by the Places to Grow Act, 2005.

It should be noted that the Region of Halton is currently undertaking an update to their Official Plan to prepare long-term growth targets beyond 2031. Once the Region completes the revised growth projections, the Town will undertake updates to their Official Plans, Planning Studies, Masterplans (transportation, parks & recreation, library, etc.), the DC Study and other related studies.

As the town grows, the Town is required to manage the infrastructure needs to ensure services and functions remain at the levels and standards that are currently enjoyed by residents. In order to ensure services are maintained and are financially sustainable, the town undertakes a number of studies that help predict growth demands and identify future infrastructure requirements through service related Master Plans, Planning and Land Use studies, Community Benefit Charge study and Development Charges Background Study.

Municipalities are required to complete a Development Charges (D.C.) Background study every 5 years which helps translate the population and employment growth into housing and commercial/industrial unit forecasts which enable the town to anticipate future demand for town services and the related infrastructure required. Also, an analysis must be undertaken to assess the long-term operating cost impacts for the capital infrastructure projects identified within the development charge study. The incremental operating expenditures directly associated with these capital projects as well as life-cycle replacement costs are estimated in Appendix C of the 2022 Development Charges Study. The D.C. study allows the town to collect development charge fees to recover capital costs arising from growth and currently has a municipal-wide D.C. charge for services related to a highway, transit services, fire protection services, parks and recreation, library services, by-law enforcement and growth studies. A technical update of town's D.C. study is available on the town website titled: "2022 Development Charges Background Study". https://www.oakville.ca/town-hall/budget-finances/growth-infrastructure-financing-tools/development-charges/

Planning for growth related infrastructure needs is an integral part of the Corporate Asset Management Plan. The initial purchase or construction capital costs of an asset are significant, but the costs associated with operating and maintaining the assets through the duration of their lifecycle can often be more significant than the initial capital costs. The principles outlined in the CAMP will help ensure growth needs of the Town are considered along-side of on-going renewal of existing assets to provide a

comprehensive plan that realizes the greatest value of the town investments and minimize any risk.

Chapter 5 of this report outlines the planning strategies and procedures used to incorporate long-term capital and operating costs identified through the D.C. study into the CAMP and Budget forecasts. The estimated capital expenditures related to the lifecycle activities required to maintain the current levels of service considering the projected increases in demand caused by growth are included in the 10-year capital forecasts presented.

1.5 Asset Management Plan & Climate Change

The Town of Oakville has taken many steps in integrating asset management decisions with climate change perspectives. The town recently declared a climate emergency and has developed climate change action plans as well as climate targets, including net-zero GHG targets. Asset management and climate change both require long-term, forward-thinking plans. The town recognizes that climate change poses chronic stresses that impact built and natural infrastructure and therefore has begun to incorporated climate adaption activities into asset life cycle strategies. O. Reg. 588/17 requires municipalities to set out the municipality's commitment to consider actions that may be required to address the vulnerabilities that may be caused by climate change to the municipality's infrastructure such as:

- Adaptation Opportunities
- Mitigation Approaches
- Disaster Planning and Contingency Funding

The town's asset management plans considers and responds to threats of climate change on infrastructure by:

- Recognizing the need to incorporate and routinely update our knowledge and understanding of climate change and climate prediction models within plans that are influenced by climate
- Assessing infrastructure performance against predictive climate models and developing responsive action plans for identified needs
- Adjusting/improving infrastructure standards – ensuring new infrastructure meets tomorrows foreseen demands
- Increasing and enhancing green infrastructure
- Decreasing energy consumption
- Supporting proactive inspections and maintenance (e.g. before a storm)
- Increasing functional redundancy

The Town has a number of climate initiatives listed on the town's website at Environment (oakville.ca). Some highlights are listed below.

Climate Projections Report This report was completed in 2020 and depicts the expected trends in climate related to temperature, precipitation, wind, snow and ice under both high and low GhG emission scenarios. Each climate variable is compared to the baseline years of 1976-2005 and projected into the two future timeframes of 2021-2050 and 2051-2080. The findings of this report are being used to inform the town's asset and emergency management programs.

- **Climate Change Strategy**

  This report was endorsed by Council in 2014 and presents the town's initial climate change risk and vulnerability assessment conducted by an inter-departmental staff team. This report pinpoints the town's highest vulnerabilities related to climate change and identifies key actions that the corporation can take to increase resilience.

- **Energy Conservation and Demand Management Plan**

  Sets out the targets and areas of focus that corporate operations will focus on to reduce energy use and greenhouse gas (GHG) emissions from all of our corporate operations, including facilities. Work related to this plan will include the development of studies and standards that will determine the direction of the Town's efforts to greatly reduce energy use and GHG emissions, in alignment with our corporate commitment to GHG emissions reductions. Energy efficiency and GHG emissions will become more important as our facilities are renewed.

Chapter 2
State of Local Infrastructure

2. State of Local Infrastructure

2.1 Introduction

This chapter provides an analysis of the town's assets.

O. Reg. 588/17 requires that for each asset category included in the asset management plan, the following information must be identified[1]:

- Summary of the assets;
- Replacement cost of the assets;
- Average age of the assets (it is noted that the regulation specifically requires average age to be determined by assessing the age of asset components);
- Information available on the condition of assets; and
- The municipality's approach to condition assessments (based on recognized and generally accepted good engineering practices where appropriate).

It is necessary to perform statistical analysis to assist with Capital Investment Decision-Making for very long-life assets where condition and performance information is poor or interdependencies between different assets or components exist the use of age can facilitate some of that analysis.

Having an understanding the timing of when our infrastructure was built and the age of our assets can assist with long range planning from a high-level perspective in particular to estimate the timing of future financial outlays for long-lived assets.

For many assets, the estimated remaining useful life, based on the age of the asset, is considered a good starting point to estimate the overall well being of an asset. However, in many cases, the percentage of useful life consumed, based purely on age, may not be the most suitable indicator of current asset condition and replacement need.

Understanding the current condition of our infrastructure is an important piece of planning for asset renewal. Risk is also an important factor to consider when

[1] The asset management plan contains asset summary information that has been compiled from various sources, including the town's asset inventory database, and various asset management reports. For further information regarding these background sources please contact Director of Asset Management
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determining life cycle strategies for the different asset categories. Many factors, particularly how the assets are managed, contributes to asset life cycle planning.

- Certain assets receive little maintenance and/or rehabilitation throughout the asset life, therefore require replacement or renewal at end or close to end of life. – An example would be Storm pipes and Noise walls.

- Certain assets receive proactive maintenance and/or regular rehabilitation to maintain their intended purpose which may prolong the life of the asset beyond its useful life. Example – road pavement is continually maintained

- Some assets present less risk of service disruption and have quick replacement time and/or alternative options therefore it may be satisfactory to let this asset run to end of life – i.e. Equipment

- Asset condition and performance should be reviewed routinely as matters such as poor design/selection; quality of build/installation and improper/incorrect use of the asset can contribute to early asset failure

The town has adopted the Federation of Canadian Municipalities 5-point scale for assessing condition which has been summarized in Appendix A. For reporting purposes, the 5 point scale has been simplified into 3 categories “Good”, “Fair” and “Poor”. Maintaining the right balance between stage of life and good, fair and poor conditions indicates that funds are being apportioned strategically.

Assets in good condition are generally new or are supported by robust maintenance schedules, Assets in Fair condition are midlife and still performing well but may need increased monitoring or minor upgrades. Assets in poor condition are typically those reaching end of life and become the priority for which plans for near-term replacement or renewal are developed and coordinated with other infrastructure needs/projects.

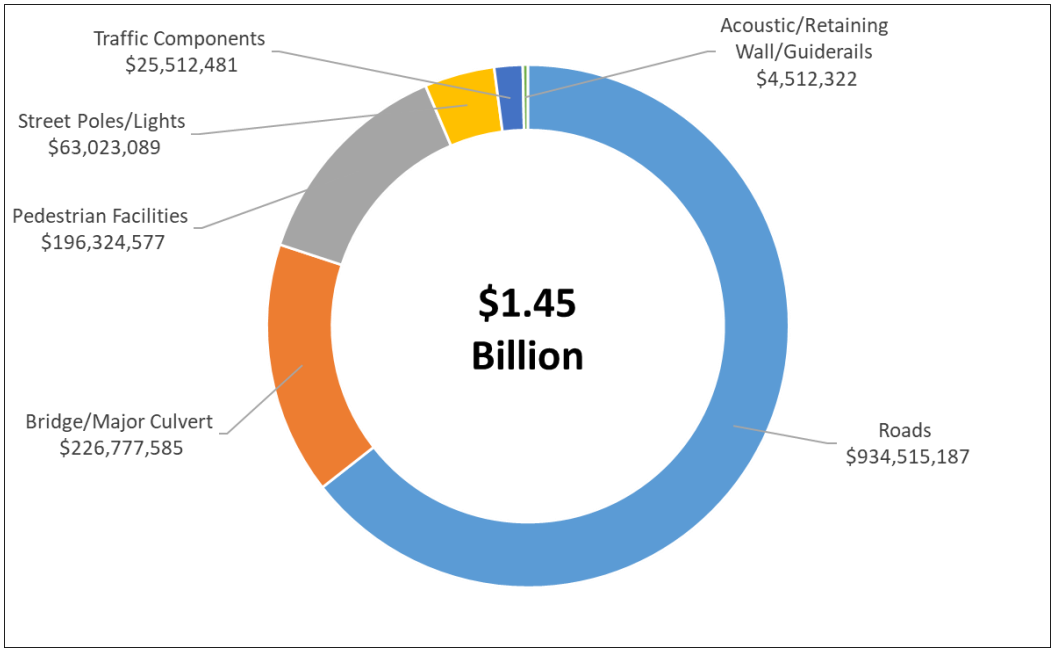
2.2 Road Network Service

2.2.1 State of Local Infrastructure

The town's service mission with respect to the Road Network Service is managing the road network to facilitate the safe, efficient and reliable movement of people and goods throughout the town.

The Road Network Service comprises six asset categories that together support the safe and efficient movement of people and goods. The current replacement value of these assets is estimated at $1.45 Billion. A breakdown of the total replacement value, by asset category, is illustrated in Figure 2-1.

Figure 2-1
Road Network Replacement Values



The core assets that support the town's Road Network service are comprised of roads, roads related infrastructure, bridges, and major culverts. Although the roads related infrastructure assets such as Traffic components and streetlights are not considered core assets in O. Reg. 588/17, the town includes them as part of the overall road network service.

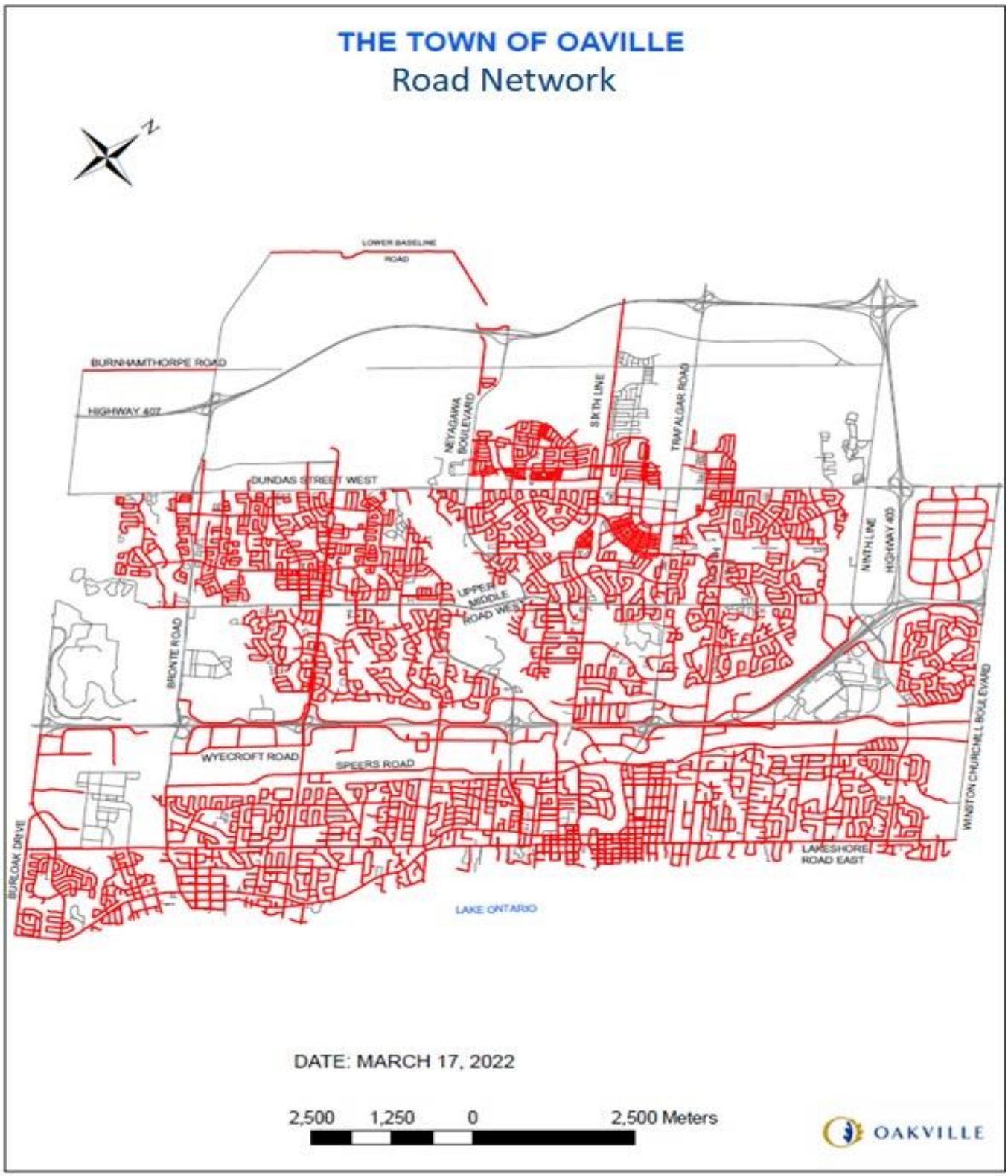
The road network consists of roads with various classification types, such as arterials, collectors, and local roads. The estimated replacement cost of roads is approximately $934.5 million. Along with roads, the town has various roads related infrastructure assets and bridges/major culverts, with a total replacement cost of $516.2 million. In total, the replacement cost of the town's road network is $1.45 billion.

Table 2-1 provides a breakdown of the road network quantities, age, and replacement cost, by asset category. The town's Road network is illustrated spatially in Map 2-1.

Table 2-1: Road Network – Summary of Quantity, Age, and Replacement Cost by Asset

Asset Category	Quantity	Unit of Measure	Average Age	Replacement Cost (2021$)
Roads				
Arterial	172	Linear Kilometres	35	$206,916,416
Collector	233	Linear Kilometres	28	$162,228,116
Local	1,145	Linear Kilometres	27	$565,370,655
Roads Related Infrastructure				
Sidewalks (Pedestrian Facilities)	1,139,536	Linear metres	23	$196,324,577
Street poles/lights	10,131	Each	13	$63,023,089
Traffic Components	549	Each	8	$25,512,481
Acoustic / Retaining Wall / Guiderails	7,525	Linear metres	20	$4,512,322
Bridges and Major Culverts				
Bridges	46	Each	42	$153,919,894
Major Culverts	75	Each	34	$72,857,691
Total	**1,550**			**$1,450,665,242**

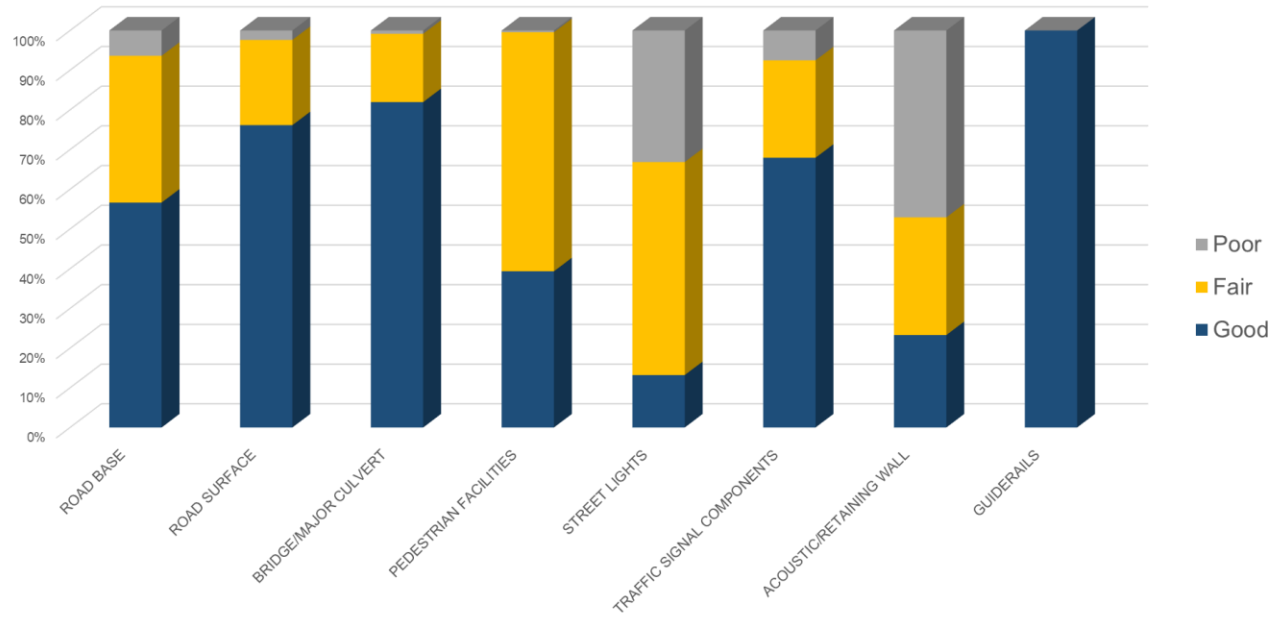
Map 2-1
Road Network



2.2.2 Condition

On average, the various assets that comprise the Road Network are estimated to be in Good condition. Figure 2-2 provides a summary of the condition of the Road Network assets, by asset category.

Figure 2-2
Road Network Condition



Road conditions are reported using a Pavement Quality Index (PQI) Score system. The town contracts out road condition assessments every 5 years. The condition assessments are based on a combination of ride condition rating, traffic volumes, road composition, staff knowledge of historical performance of the roadway, and appraisal criteria from the Ministry of Transportation Inventory Manual for Municipal Roads. For each section of road, a PQI score (0 to 100) is calculated (with 100 being perfect conditions and 0 being very poor conditions). These scores are also converted into an alphabetical ranking of A, B, C, D, and F (with A being highest), as well as qualitative condition states of “Good”, “Fair”, and “Poor”.

Table 2-2 summarizes how the numeric PQI ratings have been segmented into letter scores and qualitative condition states. Images of roads in these condition states are also provided in Table 2-2 to better communicate the condition to the reader.

Table 2-2: Road Condition States Defined with Pavement Quality Index

PQI Rating	Letter Score	Condition State	Example
100-80	**A**	**Good**	
79-70	**B**		
69-60	**C**	**Fair**	
59-50	**D**		
49-0	**F**	**Poor**	

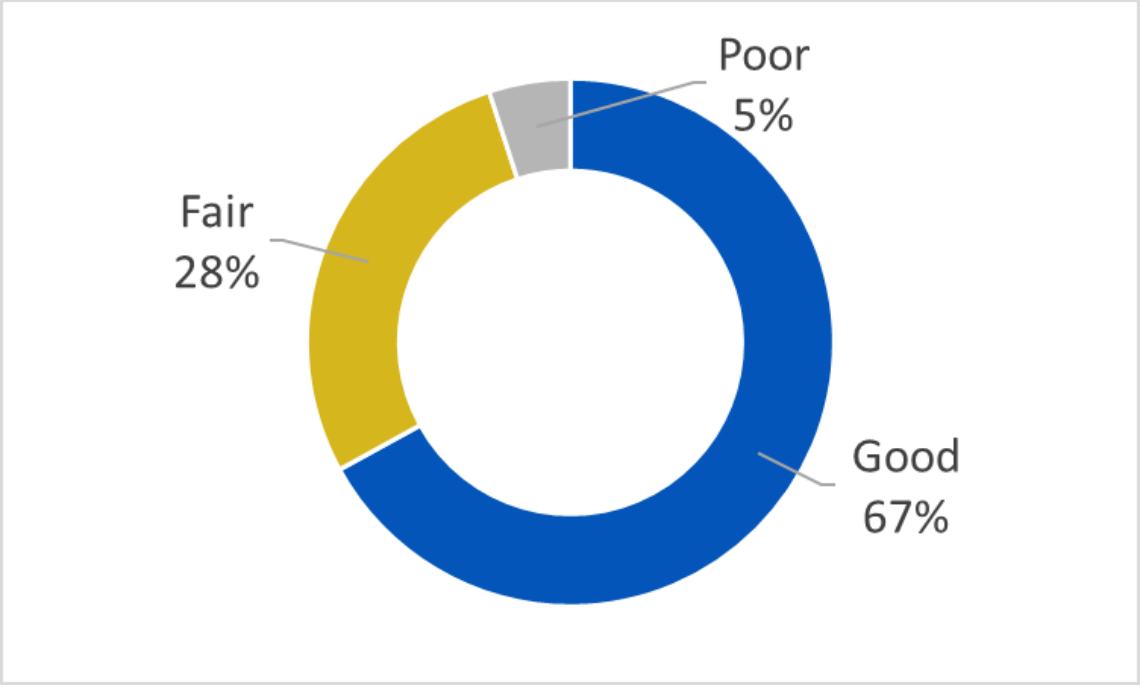
Table 2-3 shows the average condition of town roads by class. On average, Arterial and Local roads are in a good condition state, while the town's Collector roads are in a Fair condition state.

Table 2-3: Road Condition Analysis

Road Class	Lane-Kilometres	Average Condition State
Arterial	172	**Good**
Collector	233	**Fair**
Local	1,145	**Good**
Total	**1,550**	

The following figure shows the overall distribution of town roads by condition state. As indicated in the chart, overall, 95% of town roads are in Good or Fair condition, with only 5% Poor.

Figure 2-3: Distribution of Road Length (lane-kilometres) by Condition State



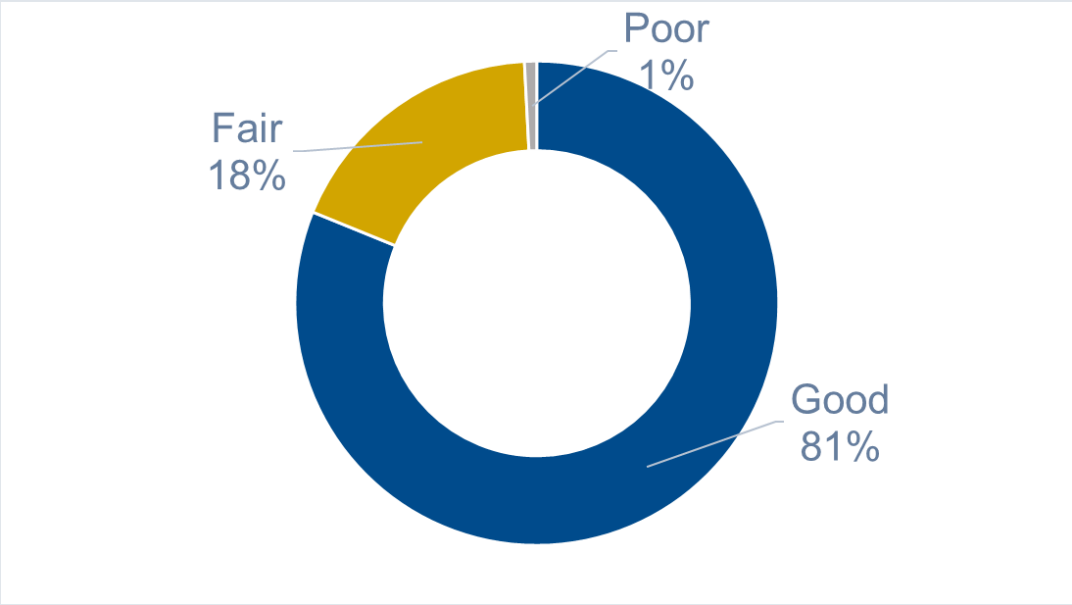
The condition of the town's bridges and culverts was assessed as part of the biennial inspections required by O. Reg. 104/97, following the Ontario Structure Inspection Manual (OSIM). Each bridge and culvert were assigned a Bridge Condition Index (BCI) score between 0 to 100 (with 100 being the highest). These scores are also converted into an alphabetical ranking of A, B, C, D, and F (with A being the highest), as well as qualitative condition states of "Good", "Fair", and "Poor". Table 2-4 summarizes the BCI ratings and the condition state they represent. The table also includes photographs of these condition states to better communicate the condition to the reader.

Table 2-4: Examples and Descriptions of Bridge and Culvert Condition States

BCI Rating	Letter Score	Condition State	Bridge Photos	Culvert Photos
100-80	**A**	**Good**		
79-70	**B**			
69-60	**C**	**Fair**		
59-50	**D**			
49-0	**F**	**Poor**		

On average, 99% of bridges and culverts are in Good or Fair condition, with 1% in Poor. The overall distribution of the town's bridges and culverts by condition state is presented in Figure 2-4.

Figure 2-4: Distribution of Bridges and Major Culverts by Condition State



For all other road-related assets age has been used as basis to approximate the condition of the assets. A general description of their condition rating is provided in Appendix A.

2.3 Stormwater Network Service

2.3.1 State of Local Infrastructure

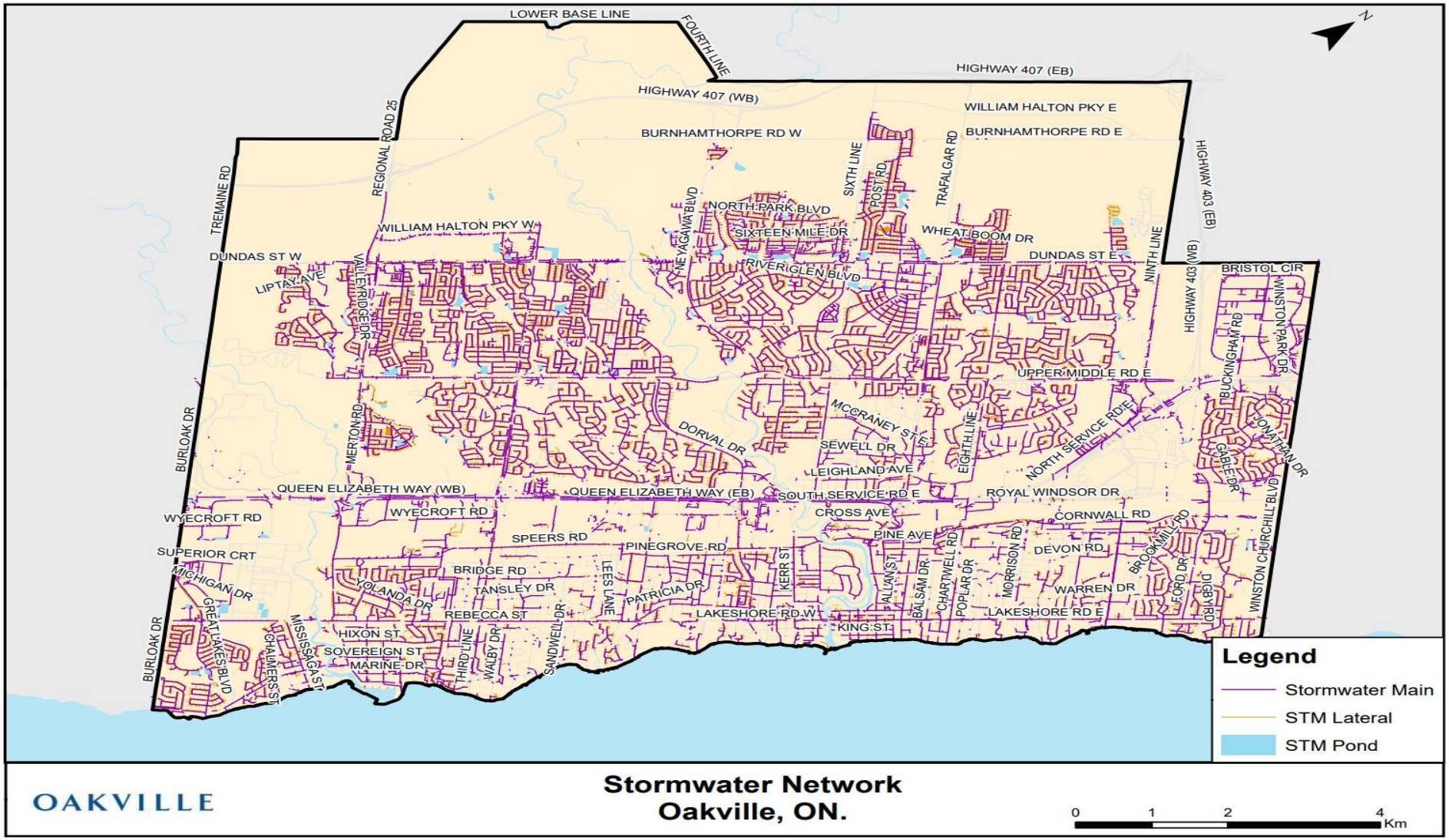
The town's service mission with respect to the Stormwater Network Service is: having a well designed and maintained stormwater system that considers changes in climate factors.

The Stormwater Network Service comprises various assets that together protect people, property, and environment from storm water. The current replacement value of these assets is estimated at $921.3 million. Table 2-5 provides a summary of the assets with quantity, average age, and replacement cost, by asset category. A spatial illustration of the stormwater infrastructure is provided in Map 2-2.

Table 2-5: Stormwater System – Summary of Quantities, Age, and Replacement Cost by Asset Category

Asset Category	Quantity	Unit of Measure	Average Age (Years)	Replacement Cost (2021$)
Storm mains	622,698	Metres	31	$615,686,140
Storm Chambers	2,783	Each	2	$4,870,562
Catchbasin / Maintenance Hole	30,176	Each	31	$181,133,679
Inlet/Outlet/Pond Structure	410	Each	31	$16,469,008
Lateral Structures	384,471	Metres	29	$97,145,994
Water Quality Control Device	75	Each	14	$6,016,872
Total				**$921,322,255**

Map 2-2: Stormwater Infrastructure Location



2.3.2 Condition

The condition of the town's total stormwater infrastructure has not been formally assessed through a physical condition assessment. Therefore, condition ratings identified in this AMP has been derived by using age-based rating. Catch basins, ponds, and inlet/outlet structures are inspected annually (with some inspections undertaken internally by town staff, with others being contracted out). For ponds, the annual inspections are visual only. Sedimentation surveys are done approximately every four years. While regular inspections are performed on some of the stormwater assets on a regular basis, those inspections currently do not produce a condition rating that is assigned to the assets. Therefore, in this AMP condition ratings are primarily age-based[1]. The storm mains identified in the Storm water Master Plan were recently assessed through CCTV/Zoom camera inspections, with condition results to be incorporated into future State of Infrastructure reports. Beginning in 2023, CCTV cameral inspections will be performed annually on approximately 10% of the storm mains that are over 30 years old.

Table 2-6 provides information on how the percentage of useful life utilized and the overall condition rating (from A to F) correlates with qualitative condition states (from Good to Poor). For general descriptions of the overall condition rating letter grades, please refer to Appendix A.

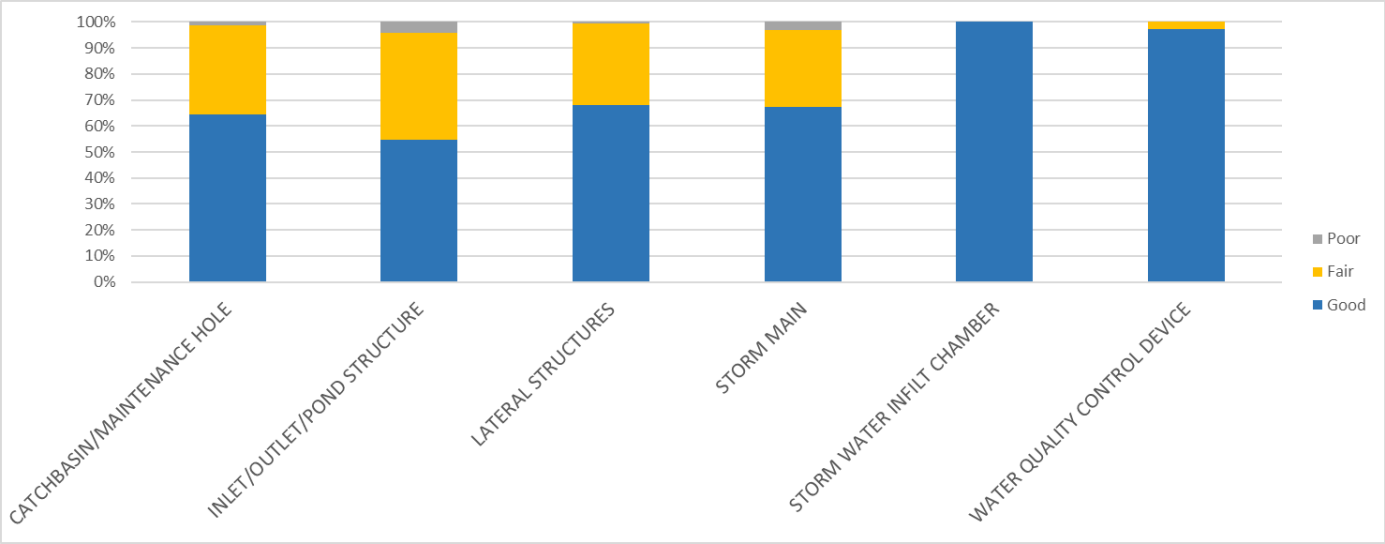
Table 2-6: Stormwater Infrastructure Overall Condition Ratings and Corresponding Condition States

Percentage of Useful Life Utilized	Overall Condition Rating	Condition State
0-26	A	Good
27-50	B	
51-75	C	Fair
76-99	D	
100+	F	Poor

The distribution of the town's stormwater infrastructure by condition state and asset category is presented in Figure 2-5.

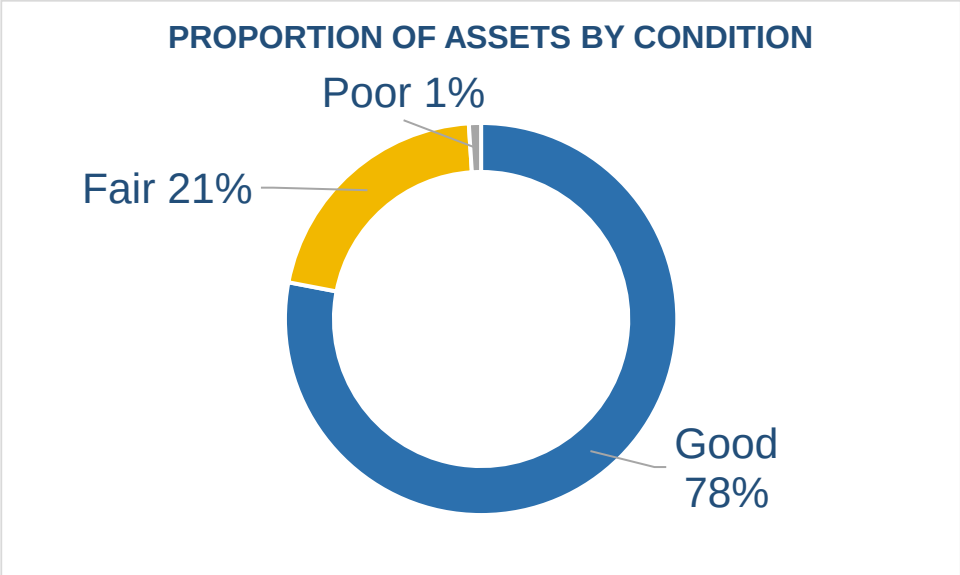
[1] Some condition ratings have been assigned to certain assets. However, those ratings have not yet been brought into the town's asset inventory database. Therefore, for the purposes of this report, asset condition has been estimated based on age.

Figure 2-5: Distribution of Stormwater Infrastructure by Condition State and Asset Category



Overall, 78% of the town's stormwater infrastructure assets are in the good condition state, as illustrated in Figure 2-6, with 21% in Fair condition and only 1% in Poor. This reflects the long life of the Storm mains and Lateral which represent the largest portion of this asset category which are currently in early to mid stages of life.

Figure 2-6: Overall Distribution of Stormwater Infrastructure by Condition State



Chapter 3
Level of Service

3. Levels of Service

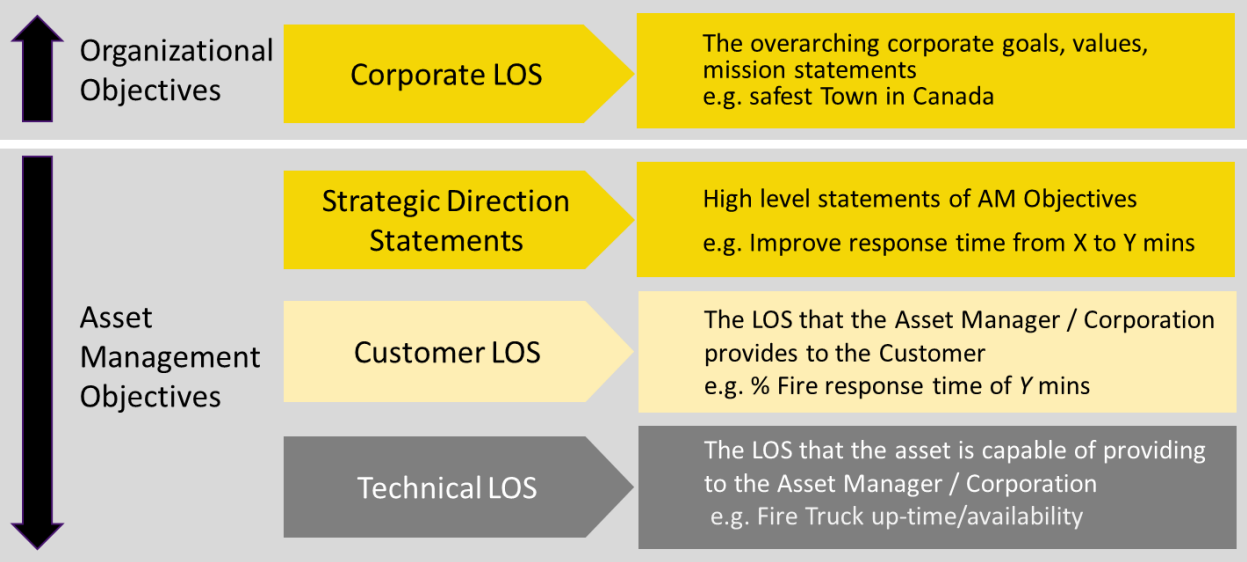
3.1 Introduction

A cohesive suite of LOS measures is recommended as part of ISO 55000 standards. When measures are set at the appropriate levels within the organization as illustrated in Figure 3-1, they can ensure alignment from the corporate performance vision down to day-to-day asset management decision-making, ultimately enabling customers to assess the suitability, affordability, and equity of services offered.

Levels of Service (LOS) statements describe the outputs or objectives that the town intends to deliver to customers. Delivering LOS is fundamentally why the town exists. LOS can be framed at the following three levels:

- Corporate LOS – answers the question 'why we're here' and are typically high-level statements.
- Customer LOS – answers the question 'what does the customer get', are typically quantitative, and are written in language that the customer understands.
- Technical LOS – answers the question 'what we do' and describes things about assets/activities that are measurable.

Figure 3-1
Level of Service Objectives



A service delivery approach involves identifying LOS and then costing how much is required to maintain the LOS. This approach can be used as the basis for assessing the benefits/costs associated with enhancing specific areas of service. It also enables the justification and prioritization of investment, considering the capability of a system of assets to deliver LOS to customers, now and into the future. The LOS framework and associated measures are useful for the town staff as they are used:

- As a basis to inform customers of the proposed LOS to be offered.
- To identify the costs and associated benefits of the services offered – through linking investment to customer outcomes.
- To assess the suitability, affordability and equity of the services offered.
- As a measure of the effectiveness of the AMP and asset management principles.
- As a focus for developing the asset management strategies to deliver the agreed LOS.

O. Reg. 588/17 requires that Asset Management plans identify the current levels of service being provided for each asset category and has identified minimum service level reporting requirements for core municipal infrastructure. Similar to ISO 55000 standards, these requirements include levels of service reporting at two different levels: customer levels of service and technical levels of service.

In addition to the prescribed levels of service identified in the regulation, the town has also established a set of customer levels of service (CLOS) and technical LOS measures based on six universal customer values that relate to service accessibility, quality, availability, reliability, safety, and shine (aesthetics).

3.1.1 Road Network

O. Reg. 588/17 has identified minimum levels of service reporting requirements for Roads and Bridges. Table 3-1 and 3-2 provide the required Community and Technical Levels of Service prescribed by the legislation, respectively. These summaries also include the town's current performance measures.

Table 3-1: O. Reg. 588/17 Community Levels of Service – Roads and Bridges

Service Attribute	Community Levels of Service
Scope	The road network provides connection within the town and to regional roads. Map 2-1 depicts the extent of the town's Road network.
Quality	General descriptions of how different condition states may affect the use of roads, bridges and major culverts are provided in Table 2- and Table 2-.

Table 3-2: O. Reg. 588/17 Technical Levels of Service – Roads and Bridges

Service Attribute	Technical Levels of Service	2021 Performance
Scope	Number of lane-kilometres of arterial roads as a proportion of square kilometres of land area of the town	1.24 km/km²
	Number of lane-kilometres of collector roads as a proportion of square kilometres of land area of the town	1.68 km/km²
	Number of lane-kilometres of local roads as a proportion of square kilometres of land area of the town	8.26 km/km²
	Percentage of bridges in the town with loading or dimensional restrictions	0%
Quality	For paved roads in the town, the average pavement condition index value	72.0[1]
	For unpaved roads in the town, the average surface condition	N/A[2]
	For bridges in the town, the average bridge condition index value	Good 75
	For culverts in the town, the average bridge condition index value	Good 75

[1] The town measures condition using a Pavement Quality Index (PQI). The average PQI has been used in place of the Pavement Condition Index (PCI).
[2] The town does not have any unpaved roads.

As noted above, the town has also established a set of customer levels of service (CLOS) and technical (TLOS) measures that align with ISO5500 standards which were developed at a facilitated workshops with town staff in the fall of 2021. Table 3-3 provides a summary of the three universal customer values that best describe the town's customer service objectives for the Road Network Service. These CLOS help answer the question "what can the customer expect" in respect to the road network service and provide qualitative information about the functionality, reliability, and quality of a service.

Table 3-3
Roads Levels of Service Statements

Service Attribute	Customer Service Objective
Quality	To manage the road infrastructure condition to provide a reasonable travel quality which minimizes hazards.
Functional	To plan, direct and control traffic flows to provide an accessible road network by managing congestion.
Reliability	To take appropriate actions to mitigate disruptions associated with seasonal and unforeseen events within the road network.

In order to answer the question 'what we do' and describe the individual asset activities, technical level of service (TLOS) measures have been identified for each customer value statement to help quantify road network service objectives. Technical levels of service describe the performance of the assets through measures that can be quantified and evaluated to help identify how effectively a municipality is delivering services.

These TLOS are reported in Table 3-4.

Table 3-4
Town of Oakville's Specific Customer and Technical Levels of Service - Roads

Service Attribute	Level of Service Measure	Level of Service Class	2021 Performance
Quality	That a minimum of 90% of the road network infrastructure be maintained in a "good" or "fair" rated condition.	CLOS	95%
	That a maximum of 10% of the overall road network fall below maintenance standard PQI of 65 for arterial or maintenance standard PQI of 55 for local	TLOS	14%
	That 90% of bridges and major culverts be maintained at a condition rating of fair or better	TLOS	99%
Functional	That current arterial/collector road network service level quantity per capita be maintained as the town continues to grow	CLOS	2.9 lane km of arterial/collector road per 1,000 capita
	% of Traffic signal system performance (intersections level of service) at acceptable level (level D) on the scale.	TLOS	100%
	% of Transportation Master Plan projects under way or in progress as a total of all TMP projects.	TLOS	13.8%
	% of Km completed within Active Transportation Master Plan Network as a total of all ATMP projects.	TLOS	92.5%
Reliable	That the % of unplanned maintenance work is less than 20% of total maintenance activities per year.	CLOS	22%
	That the % of road network service activities that meet minimum maintenance standards (MMS) per O.Reg. 239/02 or town approved standard is 100% (winter control, sidewalk trip hazards, pot hole repair, signage etc.)	CLOS	100%
	That the % of winter control response for roads that meets town approved standards	TLOS	100%
	That the % of winter control response for sidewalks that meets town approved standards	TLOS	91.7%
	That the % of bulk leaf pick up deem eligible get bulk leaf pick up.	TLOS	100%
	That the % of road, bridge & sidewalk deficiencies and streetlight, sign & signal repairs treated as per O.Reg. 239/02 MMS	TLOS	100%
	The # of reported collisions on town roads per total centre lane km of town roads.	TLOS	86.8%

3.1.2 Stormwater Network

Similar to roads, O. Reg. 588/17 has identified minimum levels of service reporting requirements for Stormwater. Table 3-5 and 3-6 provide the required Community and Technical Levels of Service, respectively. These summaries also include the town's current performance measures.

Table 3-5: O. Reg. 588/17 Community Levels of Service – Stormwater

Service Attribute	Community Levels of Service
Scope	The scope of the town's stormwater system is illustrated by the Map 2-2

Table 3-6: O. Reg. 588/17 Technical Levels of Service – Stormwater

Service Attribute	Technical Levels of Service	2021 Performance
Scope	Percentage of properties in municipality resilient to a 100-year storm	3.4%
	Percentage of the municipal stormwater management system resilient to a five-year storm	100%

The town has also established a set of customer levels of service (CLOS) and technical (TLOS) measures that align with ISO5500 standards which were developed at a facilitated workshops with town staff in the fall of 2021. Table 3-7 provides a summary of the three universal customer values that best describe the town's CLOS objectives for the Stormwater Network Service and provide qualitative information about the functionality, reliability, and quality of service.

Table 3-7
Stormwater Customer Service Objectives

Service Attribute	Customer Service Objective
Quality	To manage the storm infrastructure condition to minimize community disruption and hazards.
Functional	Mitigate or reduce the risk to people and property from storm water.
Reliable	To ensure Storm water is controlled and managed prior to entering into the natural system.

Technical level of service (TLOS) measures has been identified for each customer value statement to help quantify stormwater network service objectives. Technical levels of service describe the performance of the assets through measures that can be quantified and evaluated to help identify how effectively a municipality is delivering services.

These TLOS are reported in Table 3-8.

Table 3-8
Town of Oakville's Specific Customer and Technical Levels of Service - Stormwater

Service Attribute	Performance Measure	Level of Service Class	2021 Performance
Quality	That 90% of the storm water network infrastructure be maintained in a "good" or "fair" rated condition	CLOS	92%
	That 90% of storm pipes are in fair condition or better	TLOS	96%
	That 90% of outfall/inlet pipes are in fair condition or better	TLOS	95%
Functional	That 100% of the town is at low risk of flooding after a typical storm event	CLOS	100%
	# of properties that the flood risk is reduced from 100-year storm.	CLOS	TBD
	# meters of new storm water conveyance enhancements added in established neighbourhoods.	TLOS	650m
	# of road or lane closures due to storm flooding incidents.	TLOS	3
Reliable	That the % of unplanned maintenance work is less than 20% of total maintenance activities per year	CLOS	13%
	Number of locations or meters re-ditched per year	TLOS	2,770
	Number of blockage/collapses of storm pipes in 3-year average	TLOS	1
	That 100% of on street Catch Basins are cleaned throughout a 2-year period	TLOS	100%
	100% of treatment components inspected/cleaned (OGS, CB Shields) throughout a 2-year period	TLOS	100%
	Percentage of storm ponds inspected annually	TLOS	100%
	Stormwater Management Ponds will be dredged based on MECP guidelines	TLOS	100%

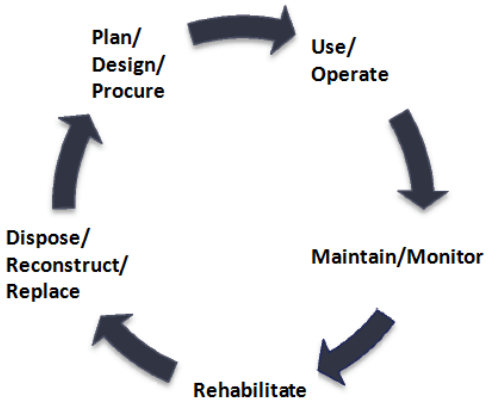
Chapter 4
Lifecycle Management Strategy

4. Lifecycle Management Strategy

4.1 Introduction

An asset lifecycle management strategy provides a comprehensive and effective approach to asset management and is illustrated in Figure 4-1. It enables the town to manage and optimize the cost and performance of an asset by considering the whole lifecycle. Within the lifecycle management strategy climate change adaption measures are considered. Making infrastructure resilient to changes in the climate and reduce any impacts of extreme weather to limit any service disruption.

Figure 4-1
Asset Lifecycle



4.2 Lifecycle Strategies

There are a variety of strategies to cost-effectively manage an asset throughout its life-cycle. The optimal strategy will depend on the type of asset, the criticality of the asset, and the customer LOS that the asset is contributing to. The following are asset lifecycle stages:

- Operations and Maintenance – the phase in which the asset is in operation, and maintenance is required to keep the asset meeting the required level of service.
- Refurbishment – when significant repairs are required to extend the life of the asset, and to keep the asset meeting the required level of service.
- Replacement – when the asset can no longer be cost-effectively operated, maintained, or refurbished to meet the level of service that it is required to meet; this is the time that the asset is to be replaced.

- Disposal – the phase in the asset life when it is required to be disposed of because it has reached the end of its useful life, or is otherwise no longer needed by the municipality.
- Non-infrastructure solutions – actions or policies that can lower costs or extend useful lives.
- Expansion – planned activities to extend services to previously unserved areas or expand services to meet growth demands (e.g. Master Plan).

The town takes all of these lifecycle stages into account when defining the suite of lifecycle management activities and programs required to meet Level of Service objectives. These asset management programs are described in detail in section 4.3. Where affordability or other relevant constraints are present, the town uses an overall asset level risk ranking to set the priority of individual assets in any given year. Further details on the town's risk assessment approach are provided in section 4.4.

4.3 Asset Management Programs

Chapter 3 of the AMP reviewed the Customer objectives and current CLOS and documented the performance measures that town staff are monitoring to ensure they meet the customer LOS. This section provides the strategies and programs that are being implemented to ensure the LOS are met and help to drive investment decisions.

This section of the AMP provides an overview of how the town makes investment decisions on its assets to maximize their value to the organization. Traditionally an asset stewardship approach has been used by the town to define the appropriate level of capital maintenance – the capital expenditure required to maintain the current LOS to the community and/or other stakeholders. This approach uses three key parameters to identify the required level of capital maintenance: condition; performance; and age.

The town has various programs and services that help manage the overall lifecycle of our infrastructure, these programs have been categorized to align with the Customer Values and help provide visibility of the financial investment associated with delivering the identified CLOS.

4.3.1 Road Network Programs

Quality Customer Value Programs

Roadway Maintenance & Renewal

The objective of this program is to maintain roads in a state of good repair. This is done through capital projects and operational maintenance activities. Road condition assessments are performed every 5 years and condition ratings are assigned to every road segment using Pavement Quality Index (PQI). The selection of roads for re-surfacing is driven by condition (i.e., Pavement Quality Index).

All road segments with a PQI less then a certain threshold are candidates for the 10-year forecasted re-surfacing program. Within the 10-year program, there are three criteria that are informally used to prioritize road segments which allow for the development of a 'complete street' repair project if/where possible.

- Segments with lower PQIs are prioritized first
- If adjacent segments also have relatively low PQI and will require re surfacing within the next 10 years, opportunities for bundling projects to achieve economies of scale is reviewed
- Coordination with other infrastructure demands identified within the subject road segment (storm sewer, sidewalks, utilities, ditching, historic area challenges)
- Coordination with the Region's schedule for underground infrastructure (e.g., replacement of water mains, sanitary sewers)

The town has a dedicated Road Patrol whose responsibilities are to patrol and review the roads routinely capturing any unacceptable deviations and triggering corrective work orders where necessary. This is part of the mandated Minimum Maintenance Standards.

Bridge & Culvert Maintenance & Renewal

The objective of this program is to maintain bridges and culverts in a state of good repair to ensure the safety of roadway users. Bridges and large culverts are critical assets, impacting the safety of the general public. Accordingly, O. Reg. 104/97 establishes the standards for bridges/culverts and the Ontario Structure Inspection Manual (OSIM) provides a guideline for meeting the standard. Bridges and major culverts are inspected every 2 years, in accordance with O. Reg. 104/97. The Bridge Condition Index (BCI) is used to rate the condition of the assets and technical

recommendations are provided by a qualified inspector for consideration in the capital budget.

Active Transportation Maintenance & Renewal

The objective of this program is to maintain active transportation assets in a state of good repair and safe for public use. The program currently targets sidewalk assets. There is an annual inspection of all sidewalk assets to identify deficiencies following the Minimum Maintenance Standard for sidewalks. Based on inspections, sections of sidewalk are identified for repairs, rehabilitation or replacement. Currently there is no sidewalk condition index (like roads) however, there are plans to develop an index over the next 5 years to inform the development of sidewalk/walkway capital rehabilitation/upgrading program. A condition audit was performed on the Multi Use Pathways (MUPs) within the Road Right Way in 2018 and another condition audit is schedule for MUPs later this year. The plan is to perform a condition audit every 4 years. Based on the results of the 2022 audit a formal robust renewal forecast will be developed.

Traffic Maintenance & Renewal

The objective of this program is to maintain the traffic related assets in a state of good repair. Each intersection is broken down into the LED signal heads, cabinets, and controllers. LED signal heads are a critical asset and are replaced every 7 years as a means of ensuring a high level of reliability. Cabinets are also a critical asset and a planned replacement regime is in place. The expected life of a cabinet is 12-14 years. The target replacement is every 12 years, but depending on the back-log, can be stretched to 14 years. Controllers (the internal technology components) are replaced on the same cycle as the cabinet.

All cabinets, signal lenses and detection equipment are annually inspected and cleaned. Identified maintenance is noted and actioned through a work order. Malfunction Management Units are inspected and tested semi annually.

Road Right of Way Maintenance & Renewal

The objective of this program is to maintain roadside assets including retaining walls, acoustic noise walls, guide rails, and fencing in a state of good repair to ensure the safety of the general public. There is currently no formal inspection process in place for the renewal of roadside assets. Observations made in the field by staff or requests by the public through Service Oakville are documented, inspected and maintenance and/or renewal recommendations identified. Over the next 5 years, the town plans to develop a formal inspection program for these assets using a criticality-based approach.

Functional Customer Value Programs

Transportation Master Plan (TMP) Implementation

The objective of this program is to develop a practical, sustainable long-term plan to guide the town's transportation system to meet the capacity needs of anticipated growth to 2031. The Transportation Master Plan was last updated in 2018 as part of the TMP - Switching Gears. Oakville's TMP, Switching Gears looks at all modes of transportation including public transit, walking, cycling and ride-sharing and sets out to identify necessary roadway improvements (widening's, new roads, special projects (road/rail separations, interchange connections) to ensure the safe, convenient and efficient movement of people and goods. It identifies the transportation facilities, services and policies that the town will implement to serve a projected population of 246,400 people by 2031.As growth projections in the Master Plan are realized, funding is made available through development charges to implement the respective projects in the Transportation Master Plan. Details of the TMP are available on the town's website: https://www.oakville.ca/transportation-roads/transportation-roads-studies-and-plans/transportation-master-plan/

Midtown Implementation

The objective of this program is to implement the transportation and active transportation infrastructure improvements associated with the redevelopment of the town's Midtown core area. The town has proposed an Official Plan Amendment (OPA) to help Midtown Oakville become a vibrant, people-oriented, mixed-use community capable of accommodating more than 13,000 residents and 7,000 jobs in the coming decades. The draft OPA amendment is available on the Midtown Oakville Growth Area Review web page. Midtown is Oakville's primary growth area - approximately 103 hectares bounded by the QEW/Highway 403 to the north, Chartwell Road to the east, Cornwall Road to the south and the Sixteen Mile Creek valley to the west. It is being planned as an urban community where people are able to live, work, and play in a walkable, mixed-use neighbourhood, connected to the rest of Oakville by pedestrian, cycling, transit and street networks.

Active Transportation Master Plan (ATMP) Implementation

The objective of this program is to implement to infrastructure improvements identified in the ATMP which was last updated in 2017. The Oakville ATMP is the town's blueprint to improve walking and cycling infrastructure, programs and initiatives over the next 20+ years in order to inform policies, process and programs needed to respond to

new community trends and the growing demand for active transportation. More details of the ATMP is available on the town's website: https://www.oakville.ca/transportation-roads/transportation-roads-studies-and-plans/active-transportation-master-plan/

Road Urbanization & Streetscape

The objective of this program is to provide and enhance the LOS to customers, with a focus on improvements to support multi-modal transportation including transit, cycling and walking. The streets that are included in this program currently have rural cross-sections with roadside ditches along transit supported routes. The improved urbanized standard includes curb and gutter, underground storm sewers (in-lieu of roadside ditches), new or upgraded sidewalks, on-road bike lanes and improved street lighting.

This program also includes capital improvements to enhance aesthetics along the right of way such as street-scaping along specific road segments that abut commercial/retail/industrial land uses. The boulevard space in these areas tend to provide enhanced functionality such as patios, resting space, bike racks, lay-by parking, etc.. Specific studies are performed to justify the need for and design of individual street-scaping components.

Reliability Customer Value Programs

Traffic Management & Optimization

The objective of this program is to improve traffic and safety through signal optimization, intersection improvements, and road re-purposing.

Neighborhood Traffic Safety

The objective of this program is to implement traffic calming measures to maintain the safety of all road users. There is a formal procedure in place to identify, assess, and implement traffic calming measures. Needs are identified through internal staff observations, resident petitions and Councillor/Service Oakville requests. Speed surveys are conducted to assess if the request meets the set criteria for traffic calming. If the request meets the criteria, traffic calming options are reviewed, and a preferred solution is selected and considered for implementation within the 10-year plan. School zone crossings were identified as critical locations for traffic calming measures and have been assessed.

Criteria for evaluating the need for traffic calming measures have been established based on an 85th percentile speed. For example, if the 85^{th} percentile speed recorded on a 50 km/hr street is $\geq$ 56 km/hr, the location qualifies for traffic calming. A similar standard has been developed for 40 and 60 km/hr roadways.

Streetlight Maintenance & Renewal

The objective of this program is to maintain the functionality of streetlights to ensure visibility of the roadway. The town has a Service Level Agreement with Oakville Hydro that follows Ontario's Minimum Maintenance Standards (MMS). Requests for service for an 'outed' streetlight flow through the ServiceOakville request system and flow to Oakville Hydro via work order for inspection and maintenance/replacement as necessary. The town recently adopted an Adaptive Control System that is intended to allow for active monitoring and detection failures which should lessen the 'out of service hours' for our streetlights by allowing for more timely replacements. The Adaptive Control System could (if proven reliable) eliminate the current procedure of driving streets at night, 2x per year to assess conditions.

Streetlight poles that are down are reported through the same ServiceOakville customer care centre, however work orders flow to the Traffic Operations team for inspection and replacements if/when required.

Road Service Operations

The Road service operational programs include a variety of activities required to maintain minimum maintenance standards related to road, bridge & sidewalk maintenance and inspections and streetlight, sign & signal repairs outlined as part of O.Reg. 239/02 MMS. In addition, this program includes winter control response for roads and sidewalks, bulk leaf pick up and the one call services. Full details of the various services provided are included in **Appendix B.**

4.3.2 Stormwater Network Programs

Quality Customer Value Programs

Storm Sewer Inspection, Maintenance, and Renewal

The objective of this program is to maintain the storm sewer pipe system in a state of good repair. CCTV cameral inspections are performed annually on approximately 10% of the storm sewer system that is over 30 years old. The CCTV camera inspections provide a structural condition rating of 1 (excellent) to 5 (very poor) and an operation and maintenance condition rating of 1 (excellent) to 5 (very poor).

The CCTV camera inspections help to identify maintenance and rehabilitation needs for the 10-year capital plan. Structural rehabilitation recommendations can include full pipe replacement, spot repairs and pipe relining. The maintenance recommendations may

include pipe cleaning, flushing, specialized grouting and reaming. Renewal activities identified in the 10-year capital plan are coordinated with growth/capacity needs and road renewal needs.

Outfall/Inlet Inspection and Renewal

The objective of this program is to maintain the functionality of outfall/inlet structures. There is currently no formal inspection program for outfalls. Outfall/inlet structures identified as critical are inspected more frequently and are regularly inspected after significant rainfall events to identify and resolve maintenance/repair needs.

During the creek/shoreline assessments which are conducted every 5 years, maintenance and capital needs for priority outfall/inlet structures are identified for consideration in the 10-year capital budget. There are plans to incorporate all outfall/inlet structures into the town's asset register.

Functional Customer Value Programs

Storm Sewer Upgrade/Urbanization

The objective of this program is to construct new storm sewers on streets that currently have rural cross-sections with roadside ditches and driveway culverts. This program includes 2 types of projects: 1) the addition of new storm sewers that maintain the existing roadside ditches and 2) full urbanization with the addition of new storms sewers and the removal of the existing ditches.

The projects that include new storm sewers and maintain the existing roadside ditches are typically in areas that have a history of nuisance ponding in boulevard areas because of poorly draining ditches. The topography in these areas is generally flat which pose a challenge that often prohibit a simple re-ditching solution. The addition of the new storm sewers is required to provide effective drainage relief to the area and its roadside ditches.

The projects that include full urbanization with the addition of new storms sewers and the removal of the existing ditches are streets that are being upgraded to support multi-modal transportation including transit, cycling and walking. The streets generally have rural cross-sections with roadside ditches and are transit routes. The urbanized standard generally includes curb and gutter, new storm sewer, removal of roadside ditches, new sidewalks and on-road bike lanes.

Storm Sewer Growth Capacity

The objective of this program is to develop a practical, sustainable long-term plan to guide the town's storm water system to meet the capacity needs of anticipated growth to 2031. The Transportation Master Plan (TMP) identifies improvement and expansion projects to the town's road network and also include the replacement and/or expansion of the storm sewer systems within the individual project limits. As such, storm sewer projects related to growth capacity are implemented along with the road work as growth unfolds and as development charge funding is available.

Rainwater Management Infrastructure Strategy

The objective of this program is to assess vulnerabilities in the stormwater system. The first Stormwater Master Plan was completed in the spring 2018 and included multiple phases; examining structural condition followed by capacity needs assessment. The study looked at drainage needs for both major and minor systems and developed a prioritized list of works to improve drainage in older areas of the town. A number of "quick win" opportunities identified in the master plan were incorporated into the capital budget and are currently underway. This study has now been rolled under the Rainwater Management (RWM) Strategy that was recently launched in 2022.

The RWM strategy, builds on the previously completed work from various studies and assessments and provides a framework for delivering a comprehensive approach for planning and implementing identified rainwater related infrastructure needs. It will encompass all town-owned tangible and natural assets including, storm water pipes, natural and harbour shorelines, piers, riverine, storm ponds, culverts and ditches. This strategy will be a multi-year project that will provide a long-term capital plan roadmap, a supporting financing plan and provide residents and Council information about the town's strategy to improve resiliency and adapt to climate change.

Reliability Customer Value Programs

Stormwater Pond Inspection, Maintenance, and Renewal

The objective of this program is to maintain stormwater ponds in a functional, safe, and aesthetically acceptable state. The program includes biennial inspections that are used to identify maintenance/repair needs implemented through the work management system. Routine monitoring of the ponds functional attributes (storage capacity

consumption) is completed to predict and plan for more extensive maintenance work such as pond clean-outs.

Ponds are cleaned out as necessary to ensure compliance with the issued Environmental Compliance Approval.

Ditch Cleaning, Inspection and Renewal

The objective of this program is to maintain the functionality of the roadside ditches on town streets with rural cross-sections. The town currently has approximately 280 km of roadside ditches. Town staff perform a number of activities to ensure the network operates as planned and that actionable responses are available if unexpected situations arise. Staff perform routine inspections in which locations are scheduled through proactive inspection programs. Results of these inspections may result in minor maintenance activities, more extensive investigation/engineering review, and/or addition to the capital program for longer term improvements. Also, as part of this program, ditch condition assessments will be completed on an annual basis to evaluate known problem areas with the objective of identifying appropriate remedial actions which may include the development capital project solutions.

Staff monitor weather and community conditions and proactively review site conditions in advance of severe weather events to ensure infrastructure responds appropriately. During a storm event, staff monitors service calls and are deployed to inspect, service, support and remedy (where possible) emergency issues that arise such as clearing blockages. When a ditching issue is identified through Service Oakville, a work order is initiated to visit the site and identify remedial actions which are then programmed through the work order system.

Catchbasin, Oil & Grit Separator Maintenance

The objective of this program is to maintain the functionality of catch basins and oil/grit separators. Catch basins are inspected and cleaned once every 2 years to prevent debris from entering the storm sewer system. Catch basin deficiencies are also identified through the cleaning and inspection program and resolved through the work management system.

The inspection and cleaning of oil/grit separators is completed once every 2 years. Oil/grit separators need to be cleaned on a regular basis in order to maintain their functionality per their certificate of Environmental Compliance Approval.

Stormwater Maintenance Activities

The objective of this program is to maintain the functionality of the storm sewer mains, laterals, manholes, and catch basins. Deficiencies and maintenance requirements may be historic in nature requiring remedial or maintenance works before or after rainfall events. The storm sewer inspection program may identify maintenance requirements based on the maintenance condition ratings from the CCTV camera inspections. Maintenance issues are also identified through resident concerns received by Service Oakville which initiates the creation of a work order.

Regular maintenance activities include pipe cleaning, clearing debris jams and minor repairs to the sewer mains, laterals, manholes, and catch basins.

4.4 Risk Assessment

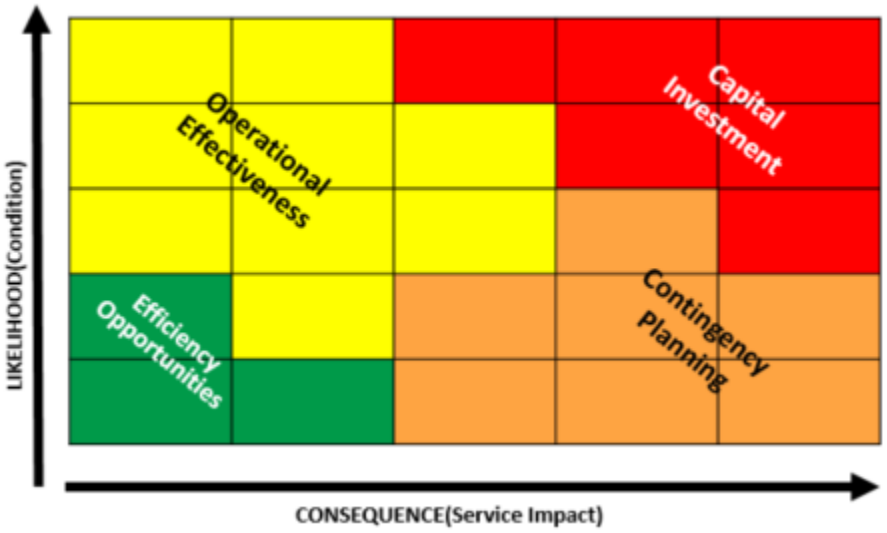
Risk assessment is about balancing the likelihood of failure and the consequence of the service being disrupted or discontinued. For example, there is a difference between the impact from a service disruption related to an individual trail being closed compared to the service disruption of a water utility.

Condition or age may be an indication of the likelihood of failure of an asset. However, just because assets are in poor condition, or at end of its useful life, this does not directly translate into a need for major intervention or capital replacement as consequence need to be considered. Using asset criticality or consequence of asset failure in conjunction with age and condition, gives us a more objective assessment and considers impact on service by:

- Identifying critical assets with the highest consequences
- Considers the likelihood of failure(condition) with the consequences to determine most urgent needs
- Links AM activities to service levels
- Draw upon institutional knowledge and experience

Alternative strategies to capital replacement can be considered if the consequence of failure is lower, such as monitoring operational effectiveness with increased inspections or undertaking preventative maintenance. If consequence is high but likelihood low, then contingency plans can be put in place in the event a service failure occurs. Figure 4-1 illustrates the asset management strategy based on the asset criticality vs likelihood continuum.

Figure 4-1
Continuum of Asset Risk Strategies



The process to assess asset criticality typically utilizes asset health and other asset data, combined with the experience and knowledge of town staff to identify, assess and evaluate risks associated with the town's asset base. Asset criticality considers the consequences of asset failure in terms of Safety, Level of Service, Regulatory Compliance, Environmental Protection, Replacement times, Cost etc. Assets that exhibit high risks are typically targeted for implementation of appropriate risk mitigation actions. The town has created a scoring system to evaluate the consequence of asset failure based on a set of five criteria which have been weighted to create an overall criticality score from 1 to 5 for individual asset categories, 1 representing low risk and 5 high risk. A summary of the Consequence factors and scoring system are summarized in Figure 4-2.

Figure 4-2
Consequence Factors and Scoring System

Consequence Factor	Scoring Descriptions	Score
Health / Safety / Environmental Impact 35%	Fatality / Serious Illness / Reportable Environmental Incident Disabling injury (Long Term) Lost time injury (Set Period of Time) / Minor injury No injury	5 4 3 2 1
Regulatory Impact 20%	Direct Regulatory (Legislative) effect Town Policy or Procedure No Effect	5 3 1
Customer Service Impact 25%	Major interruption in service until mitigation Moderate interruption/break in service until mitigation Minor break in Service/customer concerns no mitigation required Repeat occurrences/ regular complaints Constant minor No effect	5 4 3 2 1
Single Point Failure 15%	Multiple/asset network effect One parent asset effect Single effect	5 3 1
Replacement Time 5%	Major planned replacement (potentially more than 12 months) Requires Planned replacement but can be done within 6 - 12 months Replacement within normal operations (0-6months)	5 3 1

The purpose of asset criticality criteria is to assess the relative importance of assets with other assets. The town's methodology will identify critical assets that will have the greatest impact on the service. The results of the relative criticality assessments for the Transportation Network and Stormwater Network are summarized in Figures 4-4 and 4-5 respectively.

Figure 4-4
Asset Criticality Assessment – Roads

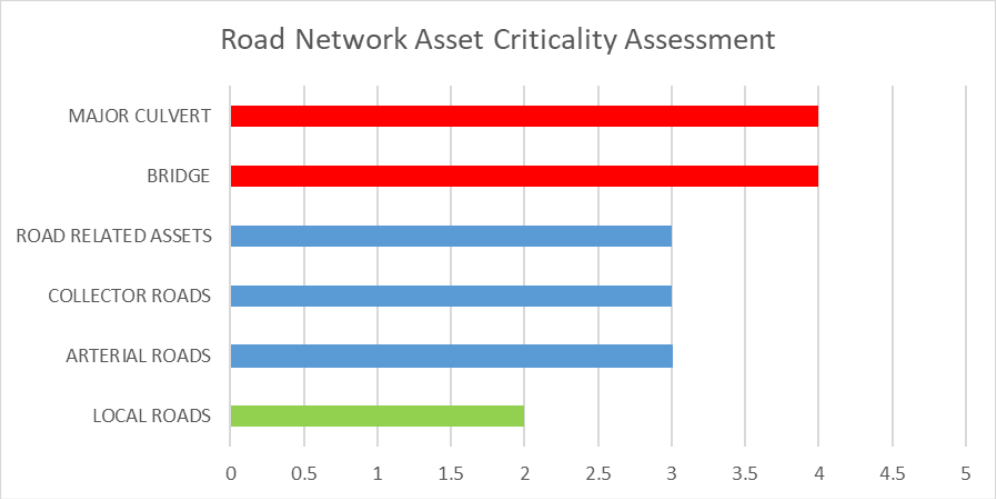
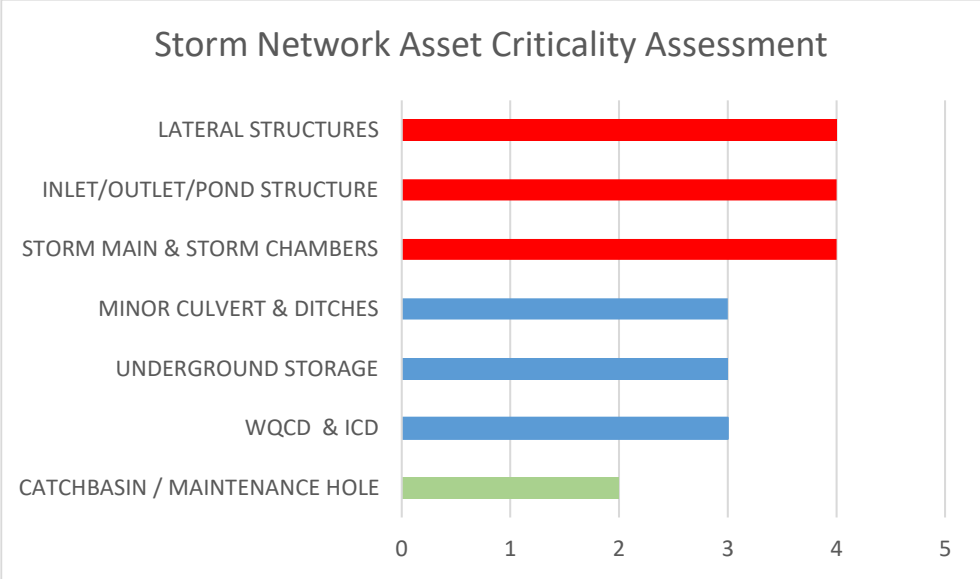


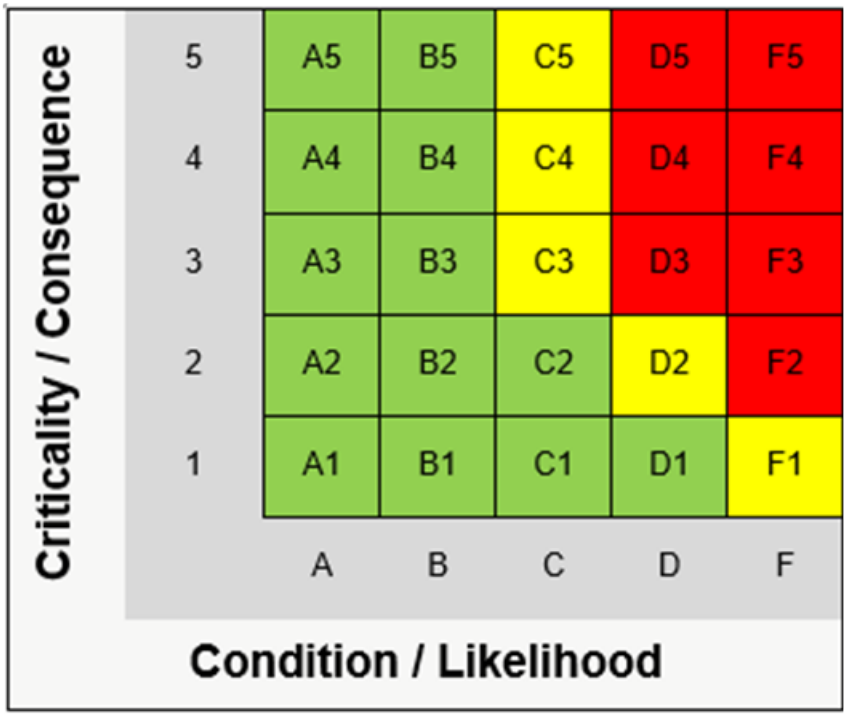
Figure 4-5
Asset Criticality Assessment – Storm



The Criticality/Consequence rating is then combined with the Condition/Likelihood rating to create an overall asset level risk ranking which can be used to set the priority of the individual assets in any given year based on the consequence and likelihood of failure. For example, assets in good condition and low consequence would be ranked at the bottom of the priority scale and alternatively assets in poor condition and high

consequence would rank at the top. As the asset ages and condition begins to deteriorate the priority ranking of the individual asset would increase. Figure 4-3 is the Priority Rating Matrix that will be used to assess the overall risk of town assets.

Figure 4-3
Priority Rating Matrix



Based on the risk assessment results, Bridges, Major Culverts, Laterals, Inlet/Outlet & Pond Structures and Storm Mains were all rated high criticality with a score of 4. Therefore, those assets in poor condition D or F would be forecasted for renewal or replacement in the near term.

Currently, Asset Risk is routinely but informally considered using the experience of the town's planning and operational staff when proposing lifecycle management activities. However, with the establishment of this risk matrix a formal process to incorporate the risk framework into the planning process and begin to be able to assess risk across all town assets is the next step that has been identified in the Asset Management Improvement Plan.

Chapter 5
Asset Management Programs and Financing Strategy

5. Asset Management Planning and Financing Strategy

Asset Management Planning Practices and Procedures

As indicated in the Asset Management Strategy, the principles and practices used to guide the development of Asset Management planning for the town have been built on the foundation of Council's vision "To be the most livable town in Canada". The 2057 Sustainable Community Framework and Council's Strategic plan set out the high-level direction and strategic objectives and provides guidance for decision making towards this unified vision for the future.

The Corporate Asset Management plan is the basis of the town's Operating Budget and Long-term Capital Forecast. Overall, the annual update of the Operating Budget and Long-term capital plan incorporates the various asset life cycle needs identified through the asset management plans and processes to ensure current service levels are maintained for the various programs and services offered across the town. The town's budget forecasts not only plans for renewal and replacement of existing infrastructure used to support town services, but also takes into consideration future needs.

Section 7 of the Asset Management Strategy (AMS) outlines the risk-based approach and decision-making principles used to identify, evaluate and prioritize asset replacement, renewal and maintenance needs. In particular, the table in section 7.6 of the AMS outlines the project prioritization and selection hierarchy that outlines broad strategies on how to evaluate or prioritize capital projects within the town. These strategies consider health and safety or legislative requirements, the benefit of the project to the community and alignment of the project with council's strategic goals. These principles have been adopted in the development of the Long-term Capital Forecast and have been explained in the Executive Summary of the budget document.

Current Budget Practices

The town of Oakville's budget is prepared using a performance-based, program-based budgeting (PB2) methodology. PB2 focuses on programs rather than departments and emphasis is on the allocation of resources based on desired outcomes and measurement of actual program results against expected outcomes.

In general, asset maintenance activities, including regularly scheduled inspections, preventative maintenance, and minor repairs are planned for in the town's work order management system and are funded from the town's operating budget. The operating

budget is also used to address unplanned repairs where emergency repairs are dealt with through the town's emergency repair policy.

The capital budget includes larger life-cycle expenditures to address renewal/rehab activities, major repairs and replacements for all asset types.

One of the key budget principles included in the Annual Budget Policy is the need to address "Interdependency" in which the operating and capital budgets must be reviewed with a coordinated effort as capital expenditures and financing decisions will impact future operating budgets. As well as the need for "Multi-Year Budgets" **–** multi-year budgets will be developed for operating and capital expenditures according to an approved guideline. Multi-year budgets will incorporate the operating impacts of capital initiatives. As such it is the town's practice to forecast all anticipated operational costs as part of the capital plan development in particular for growth. These operating impacts include additional personnel, materials and supplies, utilities, contracted services, transfers to reserve for future replacement of assets and any revenues associated with fees for service. As a result, the Long-term Capital Forecast not only outlines 10-Year capital requirements but also a 10-Year forecast of the operating cost required to support those assets.

In general, the Long-term Capital Forecast is built on a framework based on "drivers" in which to review and assess capital project needs.

Infrastructure Renewal - The information stored in the Corporate Information System (CIS) is used to prepare the Infrastructure Renewal Capital Plan based on life cycle replacement and scheduled maintenance programs. Condition of assets is then evaluated at the beginning of each budget cycle to optimize the life of the assets while balancing risk of unanticipated failures. It is the town's practice that as replacement of assets are executed, existing assets are disposed, and any salvage value is transferred into the capital reserves.

Growth – Every 5 years a Development Charges Background Study is undertaken which outlines in detail the infrastructure required in order to maintain service levels as the town's population and employment grows. Detailed projects are included for the various asset classifications that would be required to meet program needs for Fire, Library, Recreation, Parks, By-law Enforcement, Roads, Road Operations and Transit which have been identified through various Master Plan needs assessments. As a result of legislative changes to the *Planning* Act, the town has initiated a Community Benefits Charge Strategy, which will be completed every 5 years. The Strategy includes detailed projects to meet program needs for services that are ineligible for development charges, including Parking, Civic Administration and Culture. On an annual basis project

needs are re-evaluated based on actual population and employment growth development.

Service Enhancement and Strategic Priorities - projects for planned expansion activities that support infrastructure requirements to meet various community needs as identified through Master Plan updates and to meet Council's strategic goals.

Based on the Asset Management Programs provided in Chapter 4, the town has prepared a 10-year forecast and financing strategy for the Roads Network and Stormwater Network. For the purposes of identifying the expenditures required to support Transportation Network and Stormwater Network life cycle activities the town's operating and capital budgets have been organized to align with the Customer Values and key AM Programs identified in Chapter 4. These costs represent direct costs only and will not match entirely to the related program budgets in the budget document.

5.1 10-Year Capital Forecast

5.1.1 Road Network Forecast

This section presents a preliminary estimate of the costs associated with maintaining all of the town's roads and related infrastructure, bridges, and culverts at their current level of service based on information in the 2022 budget and long-term forecast. For roads, the estimate is based on a combination of deterioration models and asset treatment strategies, modelled in the town's pavement management system. For bridges and culverts, the estimate is based on the repair, rehabilitation and replacement recommendations identified through the 2021 OSIM Bridge and Culvert Inspection Program.

The ten-year lifecycle expenditure forecast for roads and related, bridges, and culverts is summarized in Figure 5-1 which is broken down by the town's customer service values: Quality, Functional and Reliable road infrastructure. A further breakdown of the lifecycle expenditure forecast by individual program is provided in Table 5-1. Over the 10-year period the total expenditure investment required over the 10 year period to

support the Road Network services programs at existing service levels is $845.3 million and averages $84 million annually over the forecast period.

Figure 5-2: Lifecycle Expenditure Forecast for Roads, Bridges, and Structural Culverts (2022$)

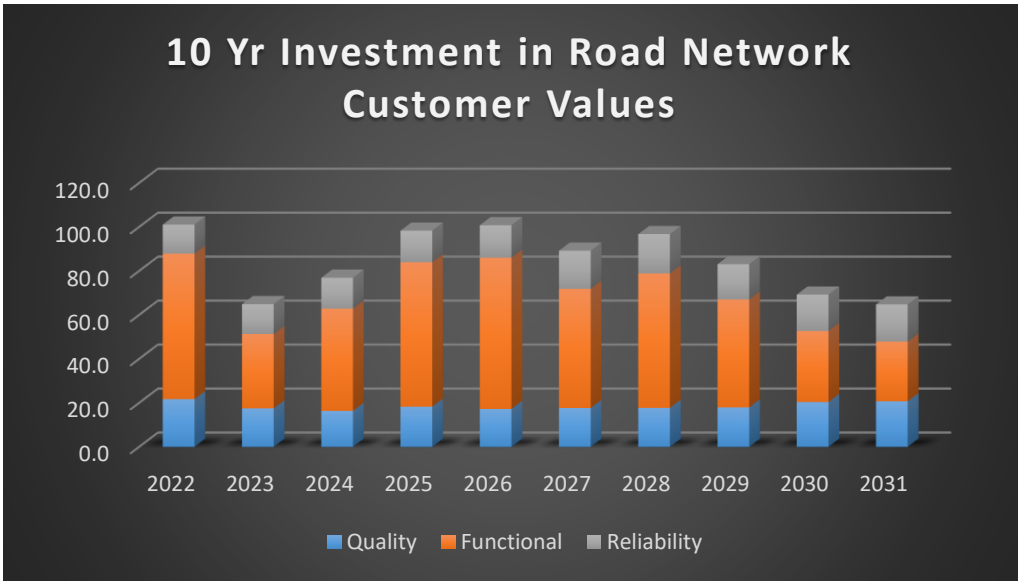


Table 5-2
Lifecycle Expenditure Forecast for Transportation Network Services (2022$)

ROAD NETWORK SERVICE - PROGRAMS

10 Year Operating and Capital Expenditures

		2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	Total
Quality	Roadway Mtce & Renwal	10.3	10.4	10.3	10.5	10.4	10.6	10.5	10.7	13.6	13.7	**$ 111.1**
	Bridge and Culvert Mtce & Renewal	5.9	1.9	0.6	2.0	0.6	0.7	0.6	0.8	0.6	0.8	**$ 14.5**
	AT Mtce & Renewal	1.5	0.8	1.3	1.2	1.5	1.6	1.7	1.5	1.0	1.0	**$ 13.2**
	Traffic Mtce & Renewal	3.6	3.7	3.8	3.9	4.0	4.1	4.3	4.3	4.5	4.6	**$ 40.7**
	ROW Mtce & Renewal	0.5	0.7	0.3	0.7	0.7	0.7	0.7	0.7	0.7	0.7	**$ 6.4**
Functional	Transp. Master Plan ROW Implementation	49.2	19.0	38.9	29.8	42.0	29.2	7.7	22.9	8.2	18.0	**$ 264.9**
	Midtown ROW and AT Implementation	4.3	2.5	0.6	22.0	6.1	8.3	44.8	17.6	1.6	0.9	**$ 108.7**
	Road Urbanization & Streetscape	9.4	3.2	0.6	7.0	2.6	3.8	1.7	3.2	4.7	2.7	**$ 38.9**
	AT Master Plan Implementation	2.2	7.3	4.5	5.1	16.3	11.0	5.2	3.5	15.9	3.8	**$ 75.0**
Reliability	Traffic Management & Optimization	1.0	1.7	1.9	1.9	1.7	1.9	1.7	1.8	1.9	1.7	**$ 17.3**
	Traffic Calming & Safety	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	**$ 6.1**
	Streetlight Mtce & Renwal	3.1	3.2	3.2	3.3	3.3	3.4	3.5	3.6	3.6	3.7	**$ 34.0**
	Road Service Operations	9.5	9.8	10.2	10.5	10.8	13.3	13.8	11.9	12.3	12.5	**$ 114.7**
Total		**$ 101.1**	**$ 64.9**	**$ 76.9**	**$ 98.3**	**$ 100.8**	**$ 89.2**	**$ 96.8**	**$ 83.1**	**$ 69.3**	**$ 64.8**	**$ 845.3**

5.1.2 Stormwater Network Forecast

This section presents a preliminary estimate of the costs associated with maintaining all of the town's stormwater infrastructure at the current level of service based on information in the 2022 budget and long-term forecast. The estimate is based on work by the town's Finance and Asset Management Departments through facilitated discussions on the selection of proposed capital investment projects over the long-term planning period.

The ten-year lifecycle expenditure forecast for stormwater infrastructure is summarized in Figure 5-2, broken down by the town's customer service values; Quality, Functional and Reliable. A further breakdown of the lifecycle expenditure forecast by individual program is provided in Table 5-2. The total investment required over the 10 year forecast period to support the Stormwater Network services programs at existing service levels is $107.1 million, averaging $11 million annually.

Figure 5-3
Lifecycle Expenditure Forecast for Stormwater Infrastructure (2022$)

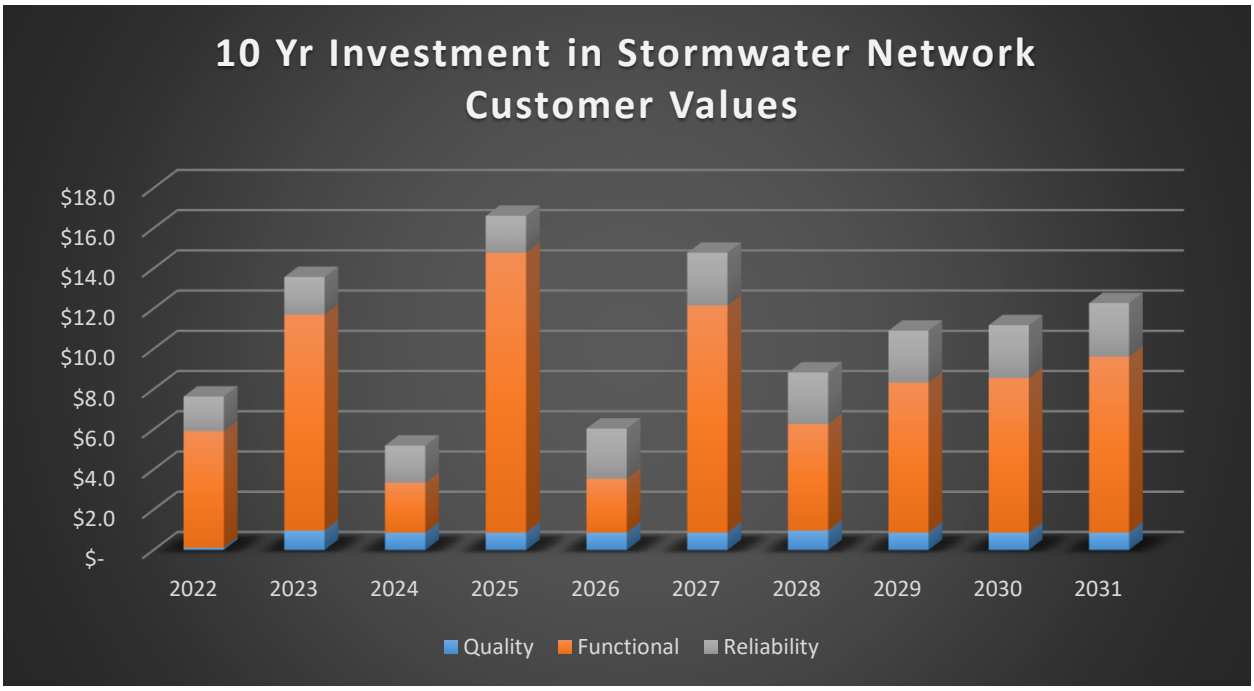


Table 5-3
Lifecycle Expenditure Forecast for Stormwater Network Services (2022$)

STORM NETWORK SERVICE - PROGRAMS
10 Year Operating and Capital Expenditures

		2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	Total
Quality	Storm Sewer Inspection & Renewal	$ -	$ 0.8	$ 0.8	$ 0.8	$ 0.8	$ 0.8	$ 0.8	$ 0.8	$ 0.8	$ 0.8	**$ 7.5**
	Outfall/Inlet Inspection & Renewal	$ 0.1	$ 0.2	$ 0.1	$ 0.1	$ 0.1	$ 0.1	$ 0.2	$ 0.1	$ 0.1	$ 0.1	**$ 0.8**
Functional	Storm Sewer Upgrade/Urbanization	$ 1.4	$ 10.7	$ 0.0	$ 3.6	$ 0.4	$ 1.8	$ 0.2	$ 1.7	$ 1.5	$ 1.5	**$ 23.0**
	Storm Sewer Growth Capacity	$ 4.4	$ -	$ 2.4	$ 10.3	$ 2.3	$ 9.5	$ 5.1	$ 5.8	$ 6.2	$ 7.2	**$ 53.1**
Reliability	Storm Pond Mtce, Inspection and Renewal	$ 0.2	$ 0.3	$ 0.2	$ 0.2	$ 0.8	$ 0.9	$ 0.8	$ 0.8	$ 0.8	$ 0.8	**$ 5.6**
	Ditch Cleaning, Inspection & Renewal	$ 0.7	$ 0.7	$ 0.7	$ 0.7	$ 0.8	$ 0.8	$ 0.8	$ 0.8	$ 0.8	$ 0.8	**$ 7.6**
	Catchbasin, Oil/Grit Separator Maintenance	$ 0.6	$ 0.7	$ 0.7	$ 0.7	$ 0.7	$ 0.7	$ 0.7	$ 0.7	$ 0.8	$ 0.8	**$ 7.1**
	Stormwater Maintenance Activities	$ 0.2	$ 0.2	$ 0.2	$ 0.2	$ 0.2	$ 0.3	$ 0.3	$ 0.3	$ 0.3	$ 0.3	**$ 2.5**
Total		**$ 7.6**	**$ 13.6**	**$ 5.2**	**$ 16.6**	**$ 6.0**	**$ 14.8**	**$ 8.8**	**$ 10.9**	**$ 11.2**	**$ 12.3**	**$ 107.1**

5.2 Financing Strategy

This section contains the financial plan for putting the asset management plan into action. The financial information discussed in this section is based on the best available information to date for current budget period as presented in the 2022 Operating and Long-term Capital Forecast, both of which are currently available on the town's website. Plans for the ongoing improvement of information quality and the planning process will be an integral part of the town's Corporate Asset Management Program going forward. In order to ensure the effective implementation of the AMP, it is important that it is integrated with the town's financial planning and long-term budgeting process as well as departmental master plans. The development of a comprehensive financial plan that reflects the timely rehabilitation and maintenance of assets will allow the town to identify the financial resources required for sustainable asset management based on long term asset needs, agreed LOS, legislative requirements, and projected growth requirements.

Having a financial plan is critical for putting the AMP into action. In addition, by having a strong financial plan, the town can demonstrate that they have made a concerted effort to integrate asset management planning with financial planning and budgeting and to make full use of all available infrastructure financing tools.

Financing Policies and Assumptions

The capital forecast and financing plan has been developed with the following financing policies and assumptions. These financial strategies form the basis of the town's strong financial position and are monitored to ensure the town's long-term financial position is sustained into the future:

- Debt re-payment levels including the hospital commitment remain within the council approved policy limits;
- Outstanding debt to reserve levels do not exceed the 1:1 ratio to maintain AAA credit rating;
- The 1% Capital levy increase is maintained over the 10 year period;
- Timing of Growth projects aligns with anticipated residential and non-residential development;
- Development Charge reserve funds maintain a surplus position;
- Capital reserves are maintained at sufficient levels to minimize risk, support future initiatives and provide for unknown contingencies;
- Equipment reserves are maintained at sufficient levels to support on-going life cycle replacements; and

- Building replacement reserve contributions are maintained and as new facilities are built contributions are increased.

The capital forecast is built on a framework based on drivers in order to review and assess capital project needs. As some financing sources are specific for only certain types of projects, all financial tools available to the town need to be managed as a whole with the overall fiscal picture in mind.

The capital investment program is funded from a wide range of sources. Broadly speaking there are five main sources:

- Capital Levy– which represents annual tax revenue received in the financial year that is allocated directly to the capital program;
- Debt – external borrowing within strict limits;
- Reserves – the town maintains several reserves that are built up and drawn down to cover peak in expenditure;
- Other levels of government – Provincial and Federal grants, subsidies and programs that may be ongoing or time limited; and
- Other third-party funds – such as development charges

The operating budget is primarily financed through the tax levy, which is offset by user fees and external recoveries for specific programs. Table 5-3 provides an outline of all the sources of funding that may be available to the town; not all are currently utilized.

Table 5-3: Sources of Funding

Source	Description
Property Taxation	Each year the Town levies and collects property taxes for the provision of services. These are based on a tax rate applied to assessed values of land and buildings.
User Fees	Charges to residents or the general public for use of certain amenities, such as entry fees to recreation centers (swimming pools and ice arenas) and transit fees.
Capital Reserves	Funds that are set aside annually from operations for future purchases (new and replacement) of assets. These reserves are calculated according to different formula, such as equivalent to a year's worth of depreciated value of an asset
Development Charge (DC) Reserves	Monies are collected from developers under the Town's Development Charges Bylaw. Development Charges are used to finance the development (growth) share of the capital programs and are stored in designated DC reserve funds until they are needed to pay for growth-related infrastructure as prescribed in the Bylaw
Capital Levies (Pay-As-You-Go)	Current revenues, including property taxes and utility rates collected from residents, are used to finance tax-supported programs. Rate supported budgets which are separate from property tax supported budgets, are strongly rooted in pay-as-you-go practices.
Grants & Subsidies	Transfers from Provincial and Federal government, such as Gas Tax Funding. Grants are often the result of a stimulus or other one-time funding events
Donations	Monies that are given to the organization.
Public-Public Partnerships	A capital project delivery method whereby two or more public entities co-operate for the purpose of delivering public infrastructure.
Public Private Partnerships (P3s)	A form of cost sharing. A capital project delivery method whereby the Town (public entity), partners with a private entity for the purpose of delivering public infrastructure. The Federal government offers grants in support of these shared initiatives.
Contribution from operating	A surplus in the operating fund is re-appropriated towards a capital expense.
Prior years surplus brought forward	Unspent surplus from the operating budget is brought forward as an input to the following year as revenue.
Contingencies	Funds are set aside within the operating budget to address unknown, unbudgeted expenditures that arise during the year.
Stabilization	The utilization of an operating reserve for one-time initiatives that impact the current year's operations only.
Debt Funding/ Debt Management	The Province sets a debt-capacity guideline for municipalities which is currently 25% of the individual municipality's revenues.

Road & Stormwater Network Financing

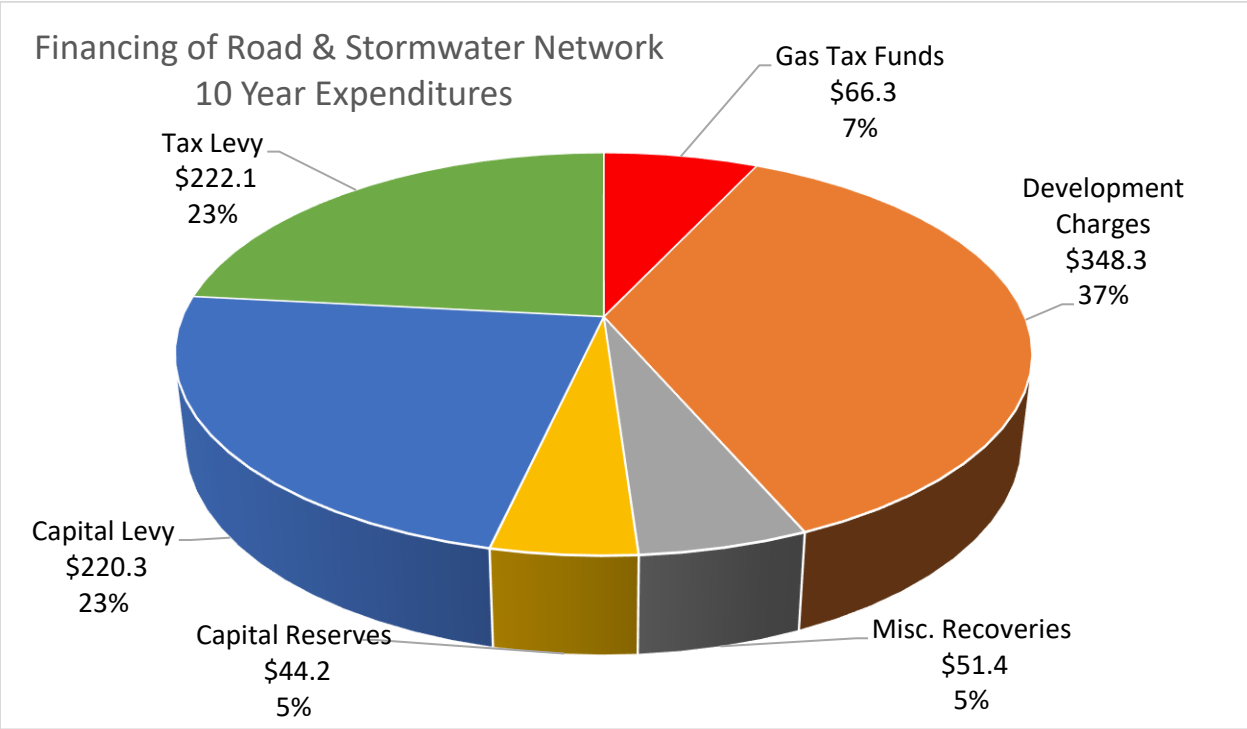
As indicated in the previous sections the total 10-year expenditure required to support the Road and Stormwater Network services is $952.4 million and includes costs to support infrastructure renewal, growth and council's strategic priorities, which is summarized in Table 5-4.

Table 5-4: Summary of Expenditures by Customer Value ($ in Millions)

ROAD NETWORK SERVICE - CUSTOMER VALUE		
	10 Yr Expenditure	
Quality		**185.9**
Functional		**504.7**
Reliability		**154.7**
sub-total	**$**	**845.3**
STORM NETWORK SERVICE - CUSTOMER VALUE		
Quality	**$**	**8.2**
Functional	**$**	**76.1**
Reliability	**$**	**22.8**
sub-total	**$**	**107.1**
Total	**$**	**952.4**

As noted above, there are a number of funding sources available some of which are restricted for specific purposes such as development charges. Figure 5-3 provides a breakdown of the sources of funding identified in the 2022 Operating Budget and Long-term Capital Forecast that support the Transportation and Stormwater Network services included in this AMP.

Figure 5-3: Breakdown of Sources of Funding



As illustrated in the chart, the primary sources of funding for the $952.4 million proposed in the 2022 budget is development charges at $348.3 million representing 37% of the overall financing. This reflects the current emphasis on growth needs of the town to support the developing community. The second largest source of financing is the Capital Levy with $220.3 million or 23% which is primarily used to support capital infrastructure renewal needs. The Tax Levy funding totals $222.1 million (23%) and represents the operating activities such as maintenance, inspection and operational services. Gas Tax funding ($66.3 million), Capital reserves ($44.2 million) are used to help support various capital initiatives and the miscellaneous recoveries ($51.4 million) are the estimated contributions from external sources to support Growth projects in particular Midtown.

Chapter 6
Plan Improvement

6. Plan Improvement

This asset management plan has been developed to address the July 1, 2022, requirements of O. Reg. 588/17. The plan provides summary information for the town's core infrastructure assets as well as additional assets directly related to the core assets (i.e., road-related infrastructure), including replacement cost valuation and condition. The plan also identifies current levels of service and describes the strategies and programs that the town has developed to maintain the current levels of service. Finally, the plan includes a ten-year financial forecast including expenditures associated with the lifecycle management strategies and sources of funding. The plan is based on the best information available to the town at this time.

The foundation of good asset management is the consideration of a long-term, whole-life, whole-system approach thus implementing asset management plans requires improved asset management practices, competencies, and capabilities both within the individual services and across the town as a whole. To advance the state of asset management practice, an asset management maturity assessment was conducted in 2017 using the Comprehensive Asset Management Review and Assessment (CAMRA) tool. CAMRA is an assessment methodology which is fully aligned with the requirements of ISO55000 Asset Management and helps to assess a municipalities asset management organizational capability and create an improvement plan road map. The road map developed in 2017 recently expired in 2021 and was designed to move the organization from the maturity level "developing" to "competent" level. In late 2022 an updated CAMRA exercise will be completed to re-assess the town's asset management maturity and develop a new five-year roadmap for continual improvement of its asset management practices. This will identify initiatives to further progress the town's current asset maturity level.

Over the coming years, the town will be further expanding its asset management plan to include all town assets, to determine proposed levels of service and performance measures (as opposed to current) and develop a detailed financial strategy to achieve the proposed levels of service. The ongoing expansion of the AMP will ensure the town's compliance with the July 1, 2024, and July 1, 2025 requirements of O. Reg. 588/17.

Asset Management plans are intended to be a living document to be used on an on-going basis to help monitor asset performance and inform key infrastructure management decisions. As such, the regulation requires that every municipality review and update its asset management policy, strategy and plans every five years.

The Asset Management department intends to provide an updated State of Infrastructure report to Council every two years which will outline:

- Summary of all assets;
- Replacement cost of the assets;
- Average age of the assets;
- Condition of assets

This information helps the organization understand the overall age and condition of the different infrastructure and informs future capital renewal needs. The last SOIR was presented to Council in 2021, therefore the next report is scheduled in 2023.

In addition, a reporting mechanism to monitor and analyze trends related to the technical levels of service (TLOS) measures identified in this AMP will be developed to be able to provide regular reports on current asset performance against service level targets.

Appendices

Appendix A
General Condition Table

To assess the town's state of local infrastructure, the asset condition is examined. The asset Condition is a commonly used indicator of overall asset health and condition data is derived from periodic asset inspections. Typically, assets in poor condition are at higher likelihood of failure with associated potential adverse impacts on Customer Levels of Service. The Town of Oakville utilizes a standard condition rating scale as one means of tracking Asset Health. The scale is shown in the table below:

Condition Table			
Rank	**Description of Condition**	**General Description**	**Asset Report Category**
A	Very Good Condition - Only Normal Maintenance Required	Well secured and operational, sound of function and appearance.	**Good**
B	Minor Defects Only - Minor Maintenance Required (10%)	Operational and functional, minor wear and tear.	**Good**
C	Maintenance Required to Return to Accepted Level of Service - Significant Maintenance Required (10 - 30%)	Generally operational. Minor breakage.	**Fair**
D	Requires Renewal - Significant renewal/Upgrade required (30 - 50%)	poor quality and appearance, increase in inoperable times.	**Fair**
F	Asset Unserviceable - Over 50% - Asset Requires Replacement	Inoperable or damaged.	**Poor**

Appendix B
Road Operations
Minimum Maintenance & Town Standards
Summary Chart

Minimum Maintenance Standards O.Reg. 239/02

	Activity	Arterial	Min. Art	Collector	Bus routes	Industrial/ Commecial	Rural	Loc. Res	Laneways
ROADS	Patrols	3x every 7 days	1x every 7 days					1x per month	
	Response to Deficiencies (potholes)	repair deficiences within 4 days	repair deficiences within 7 to 14 days					repair deficiencies within 30 days	
	Response to Deficiencies (cracks)	repair deficiences within 30 days	repair deficiences within 60 to 180 days					repair deficiencies within 180 days	
	Response to Surface Discontinuities (5cm vertical)	repair deficiences within 2 days	repair deficiences within 7 to 21 days					repair deficiencies within 21 days	
	Response to Bridge Deck Spalls	repair deficiences within 4 days	repair deficiences within 4 to 7 days					repair deficiencies within 7 days	
SIDEWALKS	Patrols	Once every 12 months							
	Treat Deficiencies (2cm) - by Painting OR by Repair)	Treat within 14 days of noting							
	Treat Encroachments (protect or remove)	Treat within 28 days of noting							

Town Winter Control Standards

Ver 2.0 Dec 2021		WINTER MAINTENANCE SERVICE LEVEL - By Road Classification								LEGEND	
										anti-ice/salt	plowing
		MAINS		SECONDARYS					RESIDENTIALS		
	Accumulation	Arterial	Commercial (BIA's)	Min. Art	Collector	Bus routes	Industrial	Rural	Loc. Res	Laneways	Windrows
ROADS	Freeze rain/ice NOTE 1	Anti-icing in advance de-icing during event		de-icing at and during event					salt/sand as needed during event		
ROADS	Up to 2.5cm	service completed 6 hours after event									
ROADS	at 5cm	service completed 6 hours after event		service completed 12 hours after event					NOTE 2		
ROADS	at 7.5cm	service completed 6 hours after event		service completed 12 hours after event					service completed 24 hrs after event		service completed 36 hrs after event
General target/acceptable conditions				  							
General target/acceptable conditions		Bare Dry/Wet		Bare Dry/Wet to Centre Bare to Partially Snow Covered					Track Bare	Snow Covered (packed)	
SIDEWALKS	Freeze rain/ice NOTE 1	sand/salt as needed	salt as needed	sand/salt as needed					sand as needed		
SIDEWALKS	At 5cm	service completed 24 hrs after event		service completed 24 hrs after event							
SIDEWALKS	At 8cm	service completed 24 hrs after event		service completed 24 hrs after event					service completed 48 hrs after event		

*NOTE: Minimum Maintenance Standard Requirement for **snow** on sidewalks is to complete plowing within 48 hours after event to reduce snow level to 8cm*

*NOTE: Minimum Maintenance Standard Requirement for **ice** on sidewalks is to treat (sand/salt) within 48 hours after becoming aware*

BIKE LANES	Freeze rain/ice NOTE 1	sand/salt as needed									
BIKE LANES	Speers Cycle Lane at 2.5cm	service completed 8 hrs after event									
BIKE LANES	Trafalgar Cycle Facility at 5cm										

Note 1:	Salt/sand decisions are made based on the predicted weather conditions that preceed the event; time of day; temperature trends and event post event weather predictions.
Note 2:	Supervisors 'may' exercise judgement and advance plowing/salting operations on residential streets where weather conditions may produce challenging on-road conditions that may be offest by early intervention (plow/salt)

Town Bulk Leaf Pick Up Standards

SERVICE LEVEL

CANOPY AGE

Area Canopy Factor	AREA LEVEL OF SERVICE			
	No Service Provided	1 Service Pass	2 Service Passes	3 Service Passes
Area tree age < 25 years				
Street(s) adjacent to **Mature Woodlot**		STREET SPECIFIC		
Area tree age >25 but <40 years				
Area tree age >40 but <60 years				
Area tree age >60 years				