THE CORPORATION OF THE CITY OF

BRANTFORD

2021
Asset Management
Plan Overview

Public Works Core Assets
City of Brantford, Ontario

RECORD SHEET

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2021 Asset Management Plan	Publishing Date
Council Review	September 7th, 2021
Council Approval	September 28th, 2021

Asset Management Document Set	Asset Group	First Issuance
Strategic Asset Management Policy	All	May 2019
Asset Management Plan Overview	Core Assets	(this document)
Asset Management Plan, Core Assets	Transportation Environmental Services	September 2021
Asset Management Plan Overview	Non-Core Assets	July 1, 2024
Asset Management Plan, Non-Core Assets	Facilities Fleet & Transit Parks & Recreation Housing Fire Services Local Boards Economic Development and Tourism IT Services	July 1, 2024

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ABBREVIATIONS

The following abbreviations may be used throughout the report and are located here for reference:

AIM	Asset Information Management
AMP	Asset Management Plan
CCO	Climate Change Officer
CMMS	Computerized Maintenance Management System
ESL	Estimated Service Life
FCM	Federation of Canadian Municipalities
GIS	Geographic Information System
IT	Information Technology
KPI	Key Performance Indicator
LiDAR	Light Detection and Ranging
LOS	Level of Service
O&M	Operations & Maintenance
OSIM	Ontario Structure Inspection Manual
SAM	Strategic Asset Management
SOGR	State of Good Repair

KEY DEFINITIONS

The following terms are used throughout the report and are defined below:

Asset: An item, thing or entity that has potential or actual value to an organization. A further definition is contained in Section 5 of the 2019 Strategic Asset Management Policy (CORPORATE-045) referring to an item, thing or entity that has high individual value (minimum $5,000) or high group value; high operation, maintenance, or energy consumption cost; or is low value but critical to the safe and reliable operation of another asset or City service.

Asset Class: Assets that are grouped together because they work together to deliver a service.

Asset Management: A series of coordinated activities by an organization to realize value from assets.

Key Performance Indicator: A metric which provides objective, quantifiable evidence to the degree of which a performance result is occurring over time

Level of Service: How well the asset is functioning from the perspective of stakeholders.

Lifecycle Costs: Considers the overall cost the asset will have to the organization over its lifetime including: initial costs to obtain the asset, routine maintenance, scheduled replacement of components, and operating costs etc.

Risk: Considers the probability of an asset failure and the consequence to the City and community if that asset failed.

2021 ASSET MANAGEMENT PLAN (AMP) OVERVIEW

1. INTRODUCTION

The City of Brantford is a progressive city located along the picturesque Grand River with a population of approximately 108,000 residents.

The 2021 Asset Management Plan (AMP) is a continuation of the process set out in accordance with O.Reg 588/17, which began with the 2019 Strategic Asset Management Policy, and will be referenced throughout this report.

This plan will assist our City with achieving our vision of being a contemporary community, thriving in a modern economy. A place that respects its past, and embraces its future.

2. ASSET MANAGEMENT PLANNING

Asset Management at its core is making decisions about City assets in a way that balances level of service, risk, and lifecycle costs, while also working towards City priorities to support our vision. In simpler terms, it is about *doing the right work, at the right time, for the right cost*. This ensures the City is realizing the most value from our assets and making sure taxpayer money goes to good use.

This report is intended to present information related to City assets as well as act as a tool to identify gaps and help build on current asset management policies and procedures. This report also brings our City's Asset Management Plan into compliance with current provincial regulations.

In addition, this report answers the following questions posed in the 2019 Strategic Asset Management Policy about our core infrastructure assets:

- What are our assets?
- Where are our assets?
- What condition are our assets in?
- How much would it cost to replace our assets?
- What level of service are our assets expected to provide and at what cost?
- How are our assets performing in service delivery?
- When will our assets need to be replaced/repaired/upgraded?
- What will our cost be to replace/repair/upgrade the assets?
- Are there any growth or expansion requirements to meet future demand?
- What work has been planned and what will it cost?

2.1. O.REG 588/17 OVERVIEW AND SUMMARY

O.Reg 588/17, Asset Management Planning for Municipal Infrastructure, was enacted in January 2018. The Province created this regulation in response to the Federal Infrastructure for Jobs and Prosperity Act, 2015. These regulations were created because it was recognized that, in many parts of Canada and Ontario, existing infrastructure was degrading faster than it was being repaired or replaced.

The goal of the regulation is to:

-   Standardize asset management plans;
-   Spread best practices in order to enable the comparison of data among municipalities; and
-   Improve the way municipalities plan for their infrastructure.

Originally, the 2021 Asset Management Plan was to be completed by July 1st, 2021, however, due to the challenges associated with the COVID-19 pandemic, the Ministry of Infrastructure extended the Asset Management Plan (AMP) timelines by a full year. The new timelines for O.Reg 588/17, with a brief snapshot of what is required for each iteration of the Asset Management Plan, is shown in **Figure 1** below. A more detailed description of what is required for each iteration can be found in **Table 2**.

July 1st, 2019
• Strategic Asset Management Policy

July 1st, 2022
• Asset Management Plan, Core Municipal Assets*
• Current Levels of Service

July 1st, 2024
• Asset Management Plan, All Municipal Assets**
• Current Levels of Service

July 1st, 2025
• Asset Management Plan, All Municipal Assets
• Proposed Levels of Service
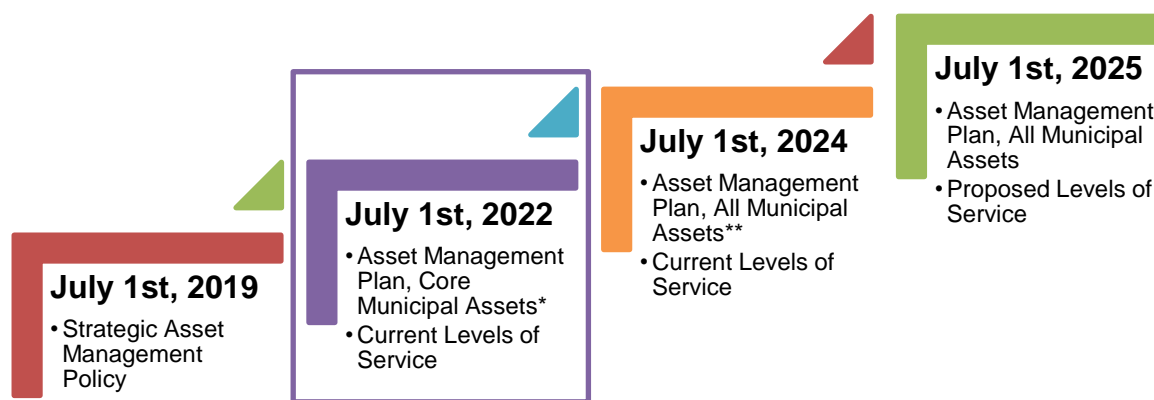
*Core Municipal Assets include: Roads, Bridges & Culverts, Water, Wastewater, and Stormwater.
**Including assets belonging to Local Boards: Police, Library, Housing, and John Noble Home.

Figure 1: O.Reg 588/17 Asset Management Plan Timelines

To facilitate easy navigation of the AMP, the AMP report currently contains three (3) reports, and will be modified to contain more reports as non-core assets are added as shown in **Figure 2.** The **AMP Overview** contains general information related to asset

management as well as information which applies across asset classes, and will be modified when non-core assets are included in the plan. Currently, there are two (2) individual AMP reports: **Environmental Services** and **Transportation** which contain asset specific information.Additional individual AMP reports will be added when non-core assets are included in the plan in 2024.
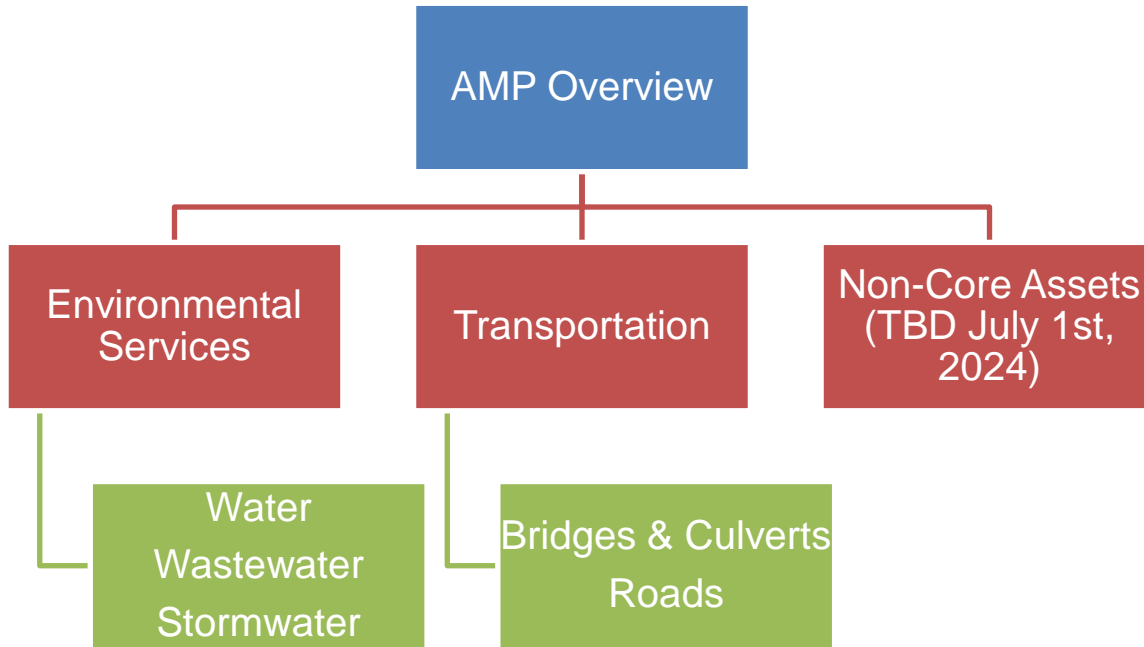
Figure 2: Asset Management Plan Navigation

2.1.1.   2019 STRATEGIC ASSET MANAGEMENT (SAM) POLICY

The Strategic Asset Management (SAM) Policy for City of Brantford was created in 2019 and is referenced throughout this document. The intent of the SAM Policy was to provide a consistent approach to asset management planning across all City commissions. The policy was also created to ensure compliance with O.Reg. 588/17 while supporting the City in making evidence based, cost-effective, decisions for infrastructure assets through the planning, acquisition, operation, maintenance, rehabilitation, replacement and disposal phases of the asset lifecycle.

The guiding principles for this Asset Management Plan as identified in the SAM Policy are as follows:

1. Be Consistent and Clear
2. Minimize Service Disruption
3. Support Reasonable Expectations
4. Support Innovation and Development
5. Support the Environment
6. Seek and Incorporate Feedback from the Community and other governments and agencies

The Council Report for the SAM identified twenty (20) Action Items with deliverables and expected timelines for the City to complete to achieve our Asset Management goals. The four (4) Action Items identified in the SAM which are addressed in this report are included in **Table 1**.

Table 1: 2019 Strategic Asset Management Policy Action Items addressed in this report

Item No.	SAM Policy Section	Deliverable	Description	Status
10	Stakeholder Engagement	Citizen Surveys and Public Information Centre(s) Feedback	The City and its applicable Local Boards will consult with the public and other stakeholders to determine the desired levels of service for all City commissions and Local Board assets. This information will be incorporated into the creation of the Asset Management Plans.	Included in this document for core assets. Not started for non-core assets.
11	Guiding Principles	Prioritization Criteria	Criteria for how infrastructure assets will be prioritized for repair, replacement or creation (new assets) across all commissions and Local Board assets. These criteria will be used to prioritize projects submitted during the budgets process.	Included in this document.
16	Entire Policy	Condition Information and Inventory of Infrastructure Assets	The City Commissions, and Local Board assets, currently have varying degrees of maturity for asset condition information and asset inventories. Filling data gaps in asset inventory and condition information will allow for more accurate asset management planning.	Included in this document for core assets. Partially complete for non-core assets.
17	Entire Policy	Asset Management Plans – Public Works	The completion, approval and publication of an updated Asset Management Plan for Public Works assets.	Included in this document.

2.1.2. ASSET MANAGEMENT PLANNING

Table 2 below describes what is required for each AMP in detail per the timeline described in **Figure 1**.

It is a requirement that the municipality update its asset management plan at least five (5) years after the plan is completed and every five (5) years thereafter. In addition, the City is required to review the AMP every year before July 1st after this plan is completed. This review includes: the AMPs implementation progress, identifying factors impeding the AMPs implementation, and any strategies to improve the AMP implementation progress.

Table 2: O.Reg 588/17 AMP Requirements Summary

2021 Asset Management Plan (due July 1st, 2022)	2024 Asset Management Plan (due July 1st, 2024)	2025 Asset Management Plan (due July 1st, 2025)
Assets Included:		
Core Assets: • Water Distribution/ Treatment; • Wastewater Collection/ Treatment; • Stormwater Collection/ Management; • Roads; and • Bridges & Culverts.	**Non-Core Assets:** • Facilities; • Solid Waste and Landfill; • Fleet and Transit; • Parks and Recreation; • Housing; • Fire; • Local Boards (Police, Library, John Noble Home, Housing); • Economic Development and Tourism; and • IT Services.	**All Assets:** **Core Assets:** • Water Distribution/ Treatment; • Wastewater Collection/ Treatment; • Stormwater Collection/ Management; • Roads; and • Bridges & Culverts. **Non-Core Assets:** • Facilities; • Solid Waste and Landfill; • Fleet and Transit; • Parks and Recreation; • Housing; • Fire; • Local Boards (Police, Library, John Noble Home, Housing); • Economic Development and Tourism; and • IT Services.
Information Included:		
• Summary of Assets (incl. total number, replacement costs, age, and available condition information); • Lifecycle Activities for Assets • Current Levels of Service (incl. required O.Reg 588/17 and municipally defined) • Current Performance (incl. energy and operating performance) • 10 Year Capital & Operating Expenditure related to lifecycle activities	• Summary of Assets (incl. total number, replacement costs, age, and available condition information); • Lifecycle Activities for Assets • Current Levels of Service (incl. required O.Reg 588/17 and municipally defined) • Current Performance (incl. energy and operating performance) • 10 Year Capital & Operating Expenditure related to lifecycle activities	• Proposed Levels of Service (including required O.Reg 588/17 and municipally defined); • Proposed Performance (including energy and operating performance); and • Lifecycle Management and Financial Strategy.

2.2. FEDERATION OF CANADIAN MUNICIPALITES (FCM) READINESS SCALE

The FCM Readiness Scale was created as a self-assessment tool for cities to complete to assess their current asset management practices. The readiness scale is intended to:

- Assess current asset management practices;
- Identify opportunities to adopt new practices, or formalize existing asset management activities into documented business practices; and
- Measure and track the progress of asset management practices and activities (FCM, 2021).

In the past, many grant applications have required that this tool be used to assess how a project would contribute to improving the City's asset management planning.

After the 2021 AMP document was completed, the City filled out a new FCM Readiness Scale to update the City-wide score.

The tool assesses the City based on five (5) categories, each with five (5) levels (Level 1 – least mature, Level 5 – most mature). The categories and City's achieved level upon the completion of this plan are described below in **Table 3**. The completed tool can be found in **Appendix A**.

Based on the information below, the City typically scores a 2 or 3 on the FCM readiness scale, with an average score of Level 2. Most of these categories will develop as the City continues achieving the deliverables set out in O.Reg 588/17, and as the AM team continues to grow. However, the City will investigate the Contribution to Asset Management Practice category to improve its level by providing more opportunities for staff training, and knowledge sharing.

Table 3: FCM Readiness Scale Levels

Category	Description	City of Brantford Level
Policy and Governance	By developing this competency, the organization is putting in place policies and objectives related to asset management, bringing those policies to life through a strategy and roadmap, and then measuring progress and monitoring implementation over time.	3
People and Leadership	By developing this competency, the organization is setting up cross-functional teams with clear accountability and ensuring adequate resourcing and commitment from senior management and elected officials to advance asset management.	2
Data and Information	By developing this competency, the organization is collecting and using asset data, performance data, and financial information to support effective asset management planning and decision-making.	2
Planning and Decision-making	By developing this competency, the organization is documenting and standardizing how the organization sets asset management priorities, conducts capital and operations and maintenance (O&M) planning, and decides on budgets	3
Contribution to Asset Management Practice	By developing this competency, the organization is supporting staff in asset management training, sharing knowledge internally to communicate the benefits of asset management, and participating in external knowledge sharing.	1

3. READING THE 2021 ASSET MANAGEMENT PLAN

The 2021 AMP has been designed to facilitate navigation as well as to minimize duplicated information. It is recommended that the individual navigating this document review the information provided in this Asset Management Plan Overview Document as it provides an overview of how the City typically manages its assets as well as provides core asset summary information, and then reviews the appropriate Asset Management Plan which includes detailed core asset information. The separate Asset Management Plans function as their own summary reports and reference information in the AMP Overview. A summary of the information provided in each section can be found below:

- **Asset Management Plan Overview Document**
    - Introduction
    - Asset Management Planning
    - Reading the 2021 Asset Management Plan
    - Asset Inventory and Condition
    - Lifecycle Approach
    - Levels of Service and Performance Approach
    - Work Order Management Approach
    - Project Prioritization Approach
    - Budget Forecasting
    - Climate Change Mitigation

- **Transportation Asset Management Plan**
    - **Asset Classes: Bridges & Culverts and Roads**
        - Assets' Data Inventory and Condition Approach;
        - Summary of Assets;
        - Lifecycle Activities and Cost of Assets;
        - Current Assets' Levels of Service;
        - Current Asset Performance; and
        - Conclusion.

- **Environmental Services Asset Management Plan**
    - **Asset Classes: Water, Wastewater, and Stormwater**
        - Assets' Data Inventory and Condition Approach;
        - Summary of Assets;
        - Lifecycle Activities and Cost of Assets;
        - Current Assets' Levels of Service;
        - Current Asset Performance; and
        - Conclusion.

4. ASSET INVENTORY AND CONDITION

The purpose of this section is to explain where the City typically obtains inventory data for reporting purposes, how that data is collected, and to define data confidence.

Currently, many data sources and background reports used to obtain inventory, condition, age, and replacement cost data for this report have not been made available to the public. To access any reports not readily available on the City website, a member of the public could submit a Freedom of Information (FOI) request which is privy to the Municipal Freedom of Information and Protection of Privacy Act (MFIPPA) by following the process on the City website.

4.1. DATA INVENTORY SOURCES AND CONFIDENCE

To include an asset summary in the 2021 AMP, existing asset data was collected from various sources. It is important to consider where asset data has originated from and the data confidence associated with those data sources so that the City can pinpoint where to focus to improve data integrity for future plans.

4.1.1. DATA INVENTORY SOURCES

Brantford maintains a large ArcGIS geodatabase, which hosts the City's asset data. The majority of the inventory information provided in this report was obtained from information already available in the GIS geodatabase. The most common ways departments collect inventory data on core assets to be input into the GIS inventory is below:

- Information from As-Built drawings input into GIS;
- Historically input GIS data that has not yet been verified with As-Built drawings;
- Sketches and service sheets created by operators;
- Assumptions based on known asset information of surrounding infrastructure (e.g. if a pipe is unknown material and the pipes on either side are known, an assumption may be made that that pipe is the same material as the adjacent pipes);
- Field inventory confirmations using City created applications using the ArcGIS Collector Application – either internal or consultant collected;
- Consultant completed inventories;
- Inventories using purchased LiDAR data;
- Google Maps Streetview for estimated inventories where other information is unavailable; and
- Data provided by Brant County for information related to assets that were acquired during the 2017 Boundary Expansion.

4.1.2.   DATA CONFIDENCE LEVELS

Some data sources are more reliable than others. Data Confidence is referenced throughout the report and dictates how confident the City is in the data source. If the data was obtained using reliable methodology and/or reference documentation then the data has higher confidence than if it was estimated. Data Confidence levels are described in more detail in **Table 4**.

Table 4: Data Confidence Levels and Descriptions

Data Confidence Level	Description	Examples
High	Inventory or condition data is accurate and complete with few, if any, unknowns, a formal condition assessment or inspection program is available for the asset. Replacement cost data is based on reputable data sources.	Consultant completed; As-Built drawings input into GIS; Field inventory or condition confirmations; and LiDAR data (inventory).
Medium	Inventory or condition data is mostly complete with some unknowns. The condition information is estimated based on available asset specific information. Replacement cost data is based on internal estimated unit costs.	Historically input GIS data; and Sketches and service sheets created by operators.
Low	Inventory or condition data is incomplete and there are many unknowns, the condition information is difficult to estimate due to missing asset specific information. Replacement costs are high level or may be based on internal estimated unit costs, but due to missing information cannot be confirmed.	Data contains many assumptions

4.2. KEY DATABASES AND APPLICATIONS

The City maintains several databases and applications to track asset data and support asset management strategies for core assets, a list of these applications is shown and described in **Table 5**.

Table 5: Key Databases and Applications

Database or Application	Description
ArcGIS System (Esri Canada)	ArcGIS is a geographic information system (GIS) consisting of desktop, server and mobile applications used for storing, mapping and analyzing the City's infrastructure and geographic data. ArcGIS is developed and maintained by the Environmental Systems Research Institute (ESRI). GIS spatially stores the location of assets as well as relevant asset information in an asset's attribute table. The City provides most internal staff with access to GIS information through web based mapping. Various map views have been established to allow the end user to select the type of mapping / query. A similar portal and web map have been established for select external users (utility locaters and contractors carrying out City projects). For ongoing internal inspections programs, where live updates to the geodatabase are required (e.g. fire hydrants inspections), GIS Services staff has allowed users to modify fields within select layers using the web based mapping application. This process is carried out in the field using laptop computers, which use hotspot connections on cellular devices for data connection. These platforms derive their information from a centralized enterprise geodatabase that is administered by GIS Services and Planning staff. This geodatabase serves as the authoritative source for not only Public Works assets, but also parcel fabric, addressing and several other municipal datasets.
ArcGIS Collector	ArcGIS Collector is a mobile GIS data collection app available on Apple or Android devices, and is part of the ArcGIS platform. This app can be customized by GIS Services staff to collect spatial and attribute asset data from the field during inventory and condition assessment projects. This information is uploaded into the enterprise geodatabase after the field data has been reviewed and confirmed.
JD Edwards	This application, based on an Oracle database, is the City's core financial system, which stores all project-related financial information as well as the Tangible Capital Asset register.
Linear Asset Data Repository (LADR)	This is the current repository for most linear infrastructure assets cared for by the Environmental Services Department within Public Works. The City plans to phase out this program over the next 1-2 years with the implementation of the new work order system, AIM.
Manifold Corridor Rating Tool	The Manifold Corridor Rating Tool is used to facilitate the optimization of individual asset intervention and the timing of intervention between the underground utilities and roadway. Developed within a GIS environment to assist with the development of the City's capital program, the corridor tool allows users to assign weights to individual asset groups based on defined criteria for an asset's likelihood and consequence of failure. The geographical location of assets is also incorporated into the final risk/corridor score. This tool is used as a starting point by staff for further review for planning corridor replacements.
Questica Budgeting Software	Questica is a formalized budgeting tool that is used for both operating and capital budget preparation and analysis.
Supervisory Control and Data Acquisition (SCADA)	SCADA systems are used for Water & Wastewater operations and planning. In early 2016 the City completed its first SCADA Master Plan, which addressed the following key objectives: - Supports the vision for integrating other business applications with SCADA - Provides the City with a plan for immediate deliverables - Builds a foundation for growth - Provides a roadmap on effectively utilizing additional resources - Addresses required infrastructure upgrades & technology enhancements - 10 year plan for Capital and Operating Requirements Staff has incorporated the recommendations from the SCADA Master Plan into both operating and capital forecasts to ensure that the City is able to keep the SCADA systems functional, and current and compatible with other software platforms for future integration requirements.
Traffic Engineering Software	Utilized in Transportation and Parking Services for the storage of traffic volumes, count data, accident statistics, and collision information. Currently, some of the GIS layers being utilized by Traffic Engineering Software (TES) are edited directly within the TES environment.

4.3. CONDITION ASSESSMENT AND INSPECTION SUMMARY

A summary of the condition assessments for core assets that have been completed, are currently being completed, or are proposed to be completed in future are found in **Table 6** below.

Table 6: Condition Assessment and Inspection Summary for core assets

Condition Assessment or Inspection	Status	Completed By:	Completion Year	Frequency
Water				
Water Treatment Plant Condition Assessment, Inventory Verification and Capital Plan	Complete	Infrastructure Planning	2018	One time
Water Pump and Booster Station Condition Assessments	Complete	Infrastructure Planning	2016	One time
Fire Hydrant Inspection and Preventative Maintenance Program	Ongoing	Operational Services	Annual Program	Annual Inspection Program
Water Valves Inspection and Preventative Maintenance Program	Ongoing	Operational Services	Annual Program	Annual Inspection Program
Reservoir Inspections	Complete	Environmental Services	2015 - 2020	Every 5 years
Wastewater				
Wastewater Treatment Plant Strategic Plan	Complete	Environmental Services	2016	One time
Wastewater Pump Station Condition Assessment	Complete	Infrastructure Planning	2015	One time
Wastewater Collection System Flow Monitoring	Ongoing	Infrastructure Planning	2020	Reoccurring Program
Wastewater Collection System Trunkline Condition Assessment	On hold	Infrastructure Planning	Estimated 2022	One time
Wastewater Pumping Station Wetwell Inspection Program	On hold	Infrastructure Planning	Estimated 2022	One time
Inflow and Infiltration Source Investigation	On hold	Infrastructure Planning	2022	Reoccurring Program
Wastewater Pumping Station Flow Monitoring	Ongoing	Infrastructure Planning	2020	Reoccurring Program
Wastewater Forcemain Assessment Program	In progress	Infrastructure Planning	Estimated 2022	One time
Manhole Condition Assessment Program	Ongoing	Infrastructure Planning	2020	Reoccurring Program
Gilkison Siphon Inspection	Complete	Environmental Services	2019	One time
Siphon Inspection	Ongoing	Environmental Services	2021	Reoccurring Program
Stormwater Pond Maintenance Inspections	Ongoing	Operational Services	2020	Reoccurring Program
Stormwater				
Stormwater Flow Monitoring Program	Ongoing	Infrastructure Planning	2020	Reoccurring Program
Stormwater Retention Pond Condition Assessment	Complete	Infrastructure Planning	2021	One time
Storm Pond Safety Assessment	Complete	Infrastructure Planning	2021	One time

City Wide LiDAR Asset Management Survey	In progress	Infrastructure Planning	2021	One time
Storm Collection Network - Ditch and Overland Flow Assessment	Complete	Infrastructure Planning	2017	One time
Manhole Condition Inspection Program	Ongoing	Infrastructure Planning	2020	Reoccurring Program
Flood Control Gate Condition Assessment	Complete	Infrastructure Planning	2021	One time
Roads				
Detailed Roadway Surface Condition Assessment	Complete	Infrastructure Planning	2020	Every 3 years
Streetlight and Pole Condition Assessment	Ongoing	Infrastructure Planning	2020	Reoccurring Program
Sidewalk Condition Assessment	Ongoing	Infrastructure Planning	2020	Reoccurring Program
Transit Stop Survey and Condition Assessment Study	Complete	Infrastructure Planning	2017	One time
Guide Rail Inventory and Condition Assessment	Complete	Infrastructure Planning	2020	One time
Traffic Sign Inventory and Condition Assessment	Complete	Infrastructure Planning	2019	Retroreflectivity every 16 months
Pavement Marking Inventory and Assessment	Not Approved	Operational Services	2023	One time
Information Sign Inventory and Assessment	Not Approved	Operational Services	N/A	One time
Signalized Intersection Assessment	Not Approved	Infrastructure Planning	2022	Reoccurring Program
Bridges & Culverts				
Bridge and Culvert Structural Condition Assessment (OSIM)	Complete	Infrastructure Planning	2020/2021	Every 2 years
Inventory and Condition Assessment of Bridges and Culverts under 3m	On hold	Infrastructure Planning	Estimated 2022	One time
Retaining Wall Inventory and Condition Assessment	In progress	Infrastructure Planning	2021	Reoccurring Program

4.3.1.   CONDITION SCORING

For the purposes of the AMP reports, assets were scored from 1 (Good) to 3 (Poor) as indicated in **Table 7** below. This differs from previous AMP scoring which was scored from 1 (Very Good) to 5 (Very Poor). The scores were simplified because it was recognized that often a score of Very Good to Good or Very Poor to Poor were not always distinguishably different especially when considering the purpose of this report which is to present an overall summary of the condition of a number of assets. For assets where a 1 to 5 scale of condition was reported or if there was a unique condition index used (i.e. Bridge Condition Index, Pavement Condition Index), they were modified to fit this 1 to 3 scale.

It is important to note that each individual AMP section has a modified Description to fit the asset class being presented. This is because assets may have different timelines for repairs for different asset classes which dictates the score, and so the table below is modified to be general to all core assets. The timelines for repair associated with the condition score are presented in the individual AMPs.

Table 7: Condition Scoring Summary

Condition Score	Condition Rating	Description
1 – 1.4	Good	Assets in the system or network are in working order, have no or minor deficiencies. Where condition data is not available, this category applies to assets which are within the first 40% of their estimated service life.
1.5 – 2.4	Fair	Assets in the system or network show general signs of deterioration, some elements may have significant deficiencies. Where condition data is not available, this category applies to assets which are within 41% - 80% of their estimated service life.
2.5 - 3	Poor	Asset is below standard showing signs of significant deterioration, are in danger of imminent failure, and will require repair or replacement. Where condition data is not available, this category applies to assets which have exceeded 80% of their estimated service life.

4.4. OVERALL SUMMARY OF CORE ASSETS

An overall summary of the core assets identified in each AMP can be found below in **Table 8.** The total replacement cost for all core assets is approximately $2.6B. Overall core asset classes are an average of Fair condition, and have expended an average of 55% of their estimated service lives. For a detailed summary of each asset class, please refer to the summary section in the associated AMP. In addition, summary sheets for each asset class have been provided in Appendix B.

Table 8: Overall Asset Summary of core assets

Asset Class	Replacement Cost	Average Age (years)	Average Estimated Service Life	Average % Estimated Service Life	Average Condition Score	Average Condition Description
TOTAL	**$2.57B**	**31**	**60**	**55%**	**1.5**	**FAIR**
Bridges & Culverts	$157.6M	34	68	50%	1.7*	FAIR
Roads	$592.6M	28	33	86%	1.7*	FAIR
Water	$697.0M	28	58	49%	1.4*	GOOD
Wastewater	$643.1M	36	70	51%	1.4*	GOOD
Stormwater	$480.7M	28	71	40%	1.5*	FAIR

*Denotes Weighted Average

5. LIFECYCLE APPROACH

The lifecycle of an asset refers to the following stages: Planning, Creation/Acquisition, Operations and Maintenance, Renewal/Disposal, which is shown in **Figure 3** and defined in the following sections. For individual assets, please refer to each Asset Management Plan.

Figure 3: Life Cycle Approach

5.1. PLANNING

For the state of good repair planning for core assets, the assets have been separated into linear (i.e. collection, distribution, and road assets) and vertical (i.e. treatment and storage facilities assets). For planning related to growth, please refer to **Section 8.3**.

5.1.1. LINEAR CORE ASSET CORRIDOR PLANNING FOR STATE OF GOOD REPAIR

In general, linear core assets are contained within the right of way (ROW) of a road segment. A typical road segment ROW contains: roadway, roads assets (incl. sidewalks, streetlights, retaining walls, guide rails, traffic signs, intersections etc.), water distribution assets, wastewater and stormwater collection assets, culverts, ditching, and may contain bridge assets. A ROW containing multiple assets is commonly referred to as a "corridor". With assets grouped into corridors based on location, each asset can be assessed alongside each other to diagnose the optimal treatment method. Typically a corridor will range along a road from one intersection to the next, and also in easements from one end to the next.

The project planning process identifies which individual assets may be required to be replaced or rehabilitated. In any given ROW, there may be multiple assets of varying asset types that have been identified as replacement or rehabilitation candidates. Moreover, there may be assets within that same right of way that have recently been repaired, are in excellent condition, and may last for a number of years. Where an individual asset is in poor condition and a full corridor replacement is not necessary, individual assets may be replaced or rehabilitated on a case by case basis (e.g. hydrants, guide rails, culverts etc.). Therefore, the process of corridor planning aims to identify and evaluate these scenarios, and develop the appropriate strategy that will both extend the life of the corridor and harmonize the replacement of all assets within the corridor, while maintaining the required levels of service and minimizing risk exposure.

In order to ensure that these decisions are being made consistently across the entire infrastructure network, the City has developed a formalized decision making process for the selection of the project type. Mapping decision criteria in this way helps ensure a consistent, defensible and transparent approach to decision making. In addition, it allows the visualization of areas for improvement from previous stakeholder input and peer review. This allows the City to prioritize corridor projects internally to be included as the department priority score in the Prioritization Matrix described in **Section 9**. The Infrastructure Planning business process is comprised of three (3) core steps which are founded on data analytics and collaboration of previous capital budget stakeholder working groups. The three steps are as shown in **Figure 4**.

Identify and Select Project Candidates	Corridor Planning Process - Establish Project Type	Prioritize the Program
• Watermain • Wastewater and Stormwater sewers • Roads • Sidewalks	• Spot Repair • Rehabilitation • Stand-alone Replacement • Full Corridor Reconstruction	• Rank the Assets • Group or phase the projects • Evaluate resourcing and funding scenarios • Finalize the work plan and budget

Figure 4: Linear Core Asset Project Selection Process
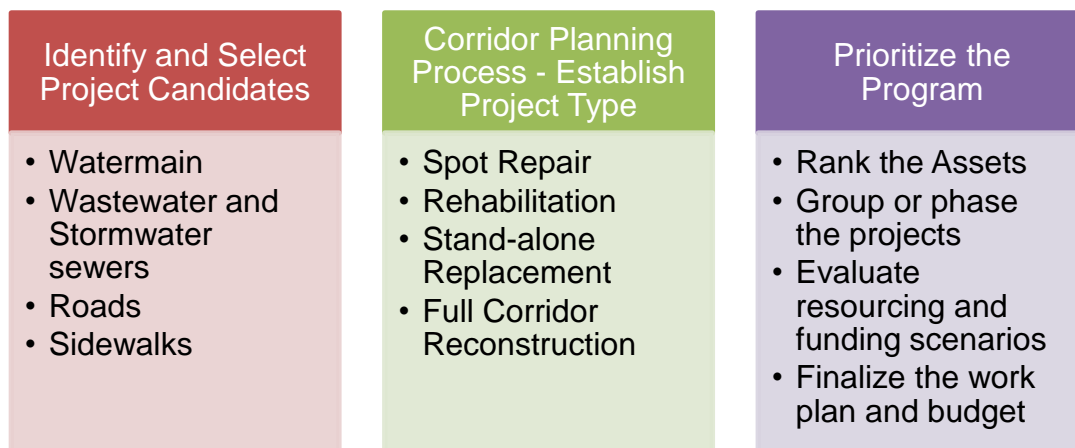
Figure 5 depicts the decision criteria that are used for selecting the project type of a corridor. Following the corridor coordination process, corridors are grouped together and phased through consultation with each of the stakeholder working groups with the goal of achieving efficiencies in economies of scale.
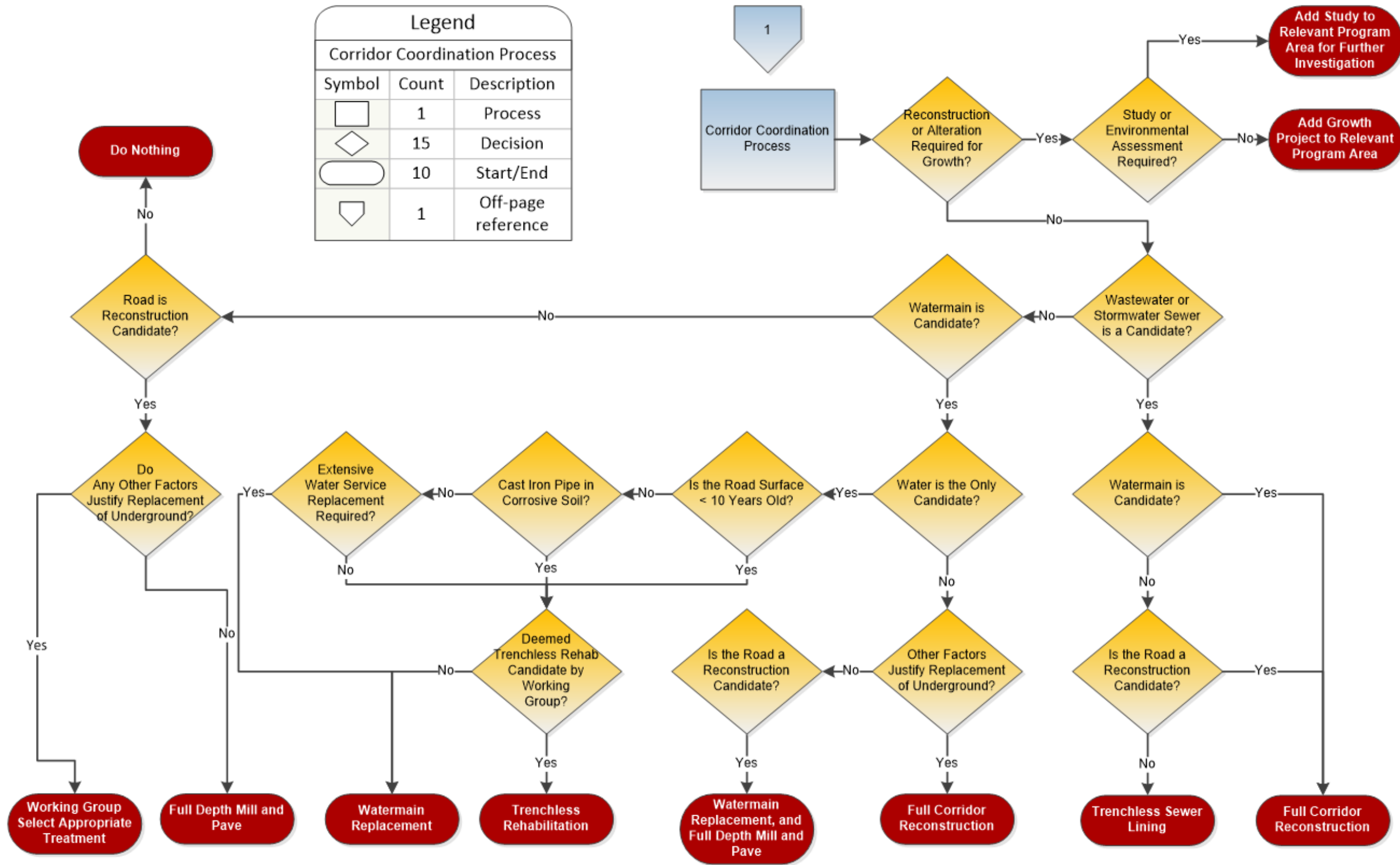
Figure 5: Corridor Planning Process Flow Chart

5.1.2. VERTICAL CORE ASSET PLANNING FOR STATE OF GOOD REPAIR

For vertical assets, work is typically planned within each department based on a series of criteria including risk, critical asset identification, condition, regulatory compliance, health and safety, operational impacts, and return on investment. This allows each department to prioritize their projects internally to be included as the department priority score in the Prioritization Matrix described in **Section 9.1**. Work is also assessed based on industry best practices and condition assessment results or forecasts.

For bridge assets, work is typically planned based on the results and provided forecast from the most recent OSIM condition assessments.

5.2. CREATION AND ACQUISITION

The cost and requirements for the new or replacement asset are defined at a Class D level through internal estimates, the project will be assigned a priority number through the Prioritization Matrix described in **Section 9**, and is presented during the City budget process. If approved, the City allocates funds from the appropriate reserve and initiates the design phase of the project using appropriate design standards and guidelines, and continues to refine costs to a Class C and then B level. At that time, the City also looks for opportunities to improve the level of service requirements for that asset (e.g. upsizing a pipe, increasing number of driving lanes, traffic calming techniques etc.). Cost Estimate Class definitions are shown in **Table 9**.

Table 9: Construction Cost Estimate Classes

Cost Estimate Class	Definition
Class D	Costs prepared at the conceptual design phase. This pricing is based on conceptual design specifications and/or drawings, and typically takes place at 30% design completion.
Class C	Costs prepared at the preliminary design phase. This pricing is based on preliminary design drawings, and typically takes place at 70% design completion.
Class B	Costs prepared during the detailed design phase. This pricing is based on detailed drawings and specifications before the project has been Issued for Tender.
Class A	Costs attained when the bids for a project have been received, verified, and awarded by the contractor.

For larger projects, the project is sent out for tender to be bid on by contractors to construct the asset, and once awarded, represents a Class A estimate level. For smaller projects on individual assets, the City may only require a Request for Quotation or may complete the work internally. The asset is then purchased, constructed and/or installed to specification with a warranty period to follow.

The City has inspectors on site to ensure the asset is constructed to City standards. Extra care is taken at this stage to ensure the asset is constructed properly to avoid any premature repairs or replacements due to installation errors.

5.3. OPERATION & MAINTENANCE

The asset is operating and delivering services to customers. Throughout the life of an asset, corrective and preventative maintenance may be performed on each asset. These lifecycle activities are described in each AMP. For vertical assets, operational activities are recorded in the Avantis Computerized Maintenance Management System (CMMS), and for linear assets, activities are typically recorded in ArcGIS, Excel, or on paper. Core assets will be transitioning to the AIM system described in **Section 7** from 2021 to 2022. As well as undertaking regular maintenance studies to identify and implement best management practices for multiple asset classes, the City benchmarks operations and maintenance activities and costs on an ongoing basis through the National Water and Wastewater Benchmarking initiative (NWWBI) metrics presented in the Environmental Services AMP. Additional monitoring and potential improvements are evaluated during this process.

5.4. RENEWAL/DISPOSAL

When the benefits of rehabilitating and replacing the asset exceed the operational costs of maintaining the asset, typically the City investigates disposing or replacing that asset.

The asset has reached the end of its useful life, is in poor condition, and/or is underperforming, and requires disposal. The disposal considers the effect on customers such as required detouring or service disruptions which are taken into account in the Planning stage thereby restarting the cycle. The City follows industry standards when disposing of these assets which may involve capping pipes or demolishing facilities.

6. LEVEL OF SERVICE & PERFORMANCE APPROACH

When considering the level of service of an asset, the City is looking at how well the asset is performing to meet the needs of our customers.

6.1. PUBLIC ENGAGEMENT

To ensure feedback from the public was incorporated into the AMP, information from two (2) public surveys were incorporated into the report and used to develop the customer levels of service for core assets. The first survey was created specifically for the AMP and was related to the public's opinion on the current levels of service for core assets, and the second was a 2021 budget priorities survey for the public's opinion on how to best allocate City budget.

6.1.1. LEVEL OF SERVICE SURVEY

The Core Assets' Level of Service survey was released using the Let's Talk Brantford platform on January 13th, 2021, and was available for a total of three (3) weeks before closing on February 4th, 2021.

The survey received a total of 109 responses and included questions related to the service delivery of our core assets, and also allowed opportunities for customers to comment and inform the City of any improvements that could be made. The survey questions and available responses are included in **Appendix C**.

Overall, based on the survey results, most customers were generally satisfied with the current level of service provided for our core assets, but some suggestions for improvements to the current level of service included:

- Improve/Inform on protections that are in place for flooding;
- Improve/Inform customers on climate change goals/targets;
- Improve state of our infrastructure related to water/wastewater/stormwater to reduce service disruptions;
- Improve response times for clearing any road hazards;
- Increase cycling lanes connectivity and improve safety amenities for cyclists; and
- Allocate more tax dollars to storm/flooding protection.

The information from this survey has been used to establish the current levels of service for the 2021 AMP.

6.1.2. 2021 BUDGET PRIORITIES SURVEY

The Budget Priorities survey was released on January 12th, 2021 also using the Let's Talk Brantford platform for a total of eight (8) weeks before closing on March 8th, 2021. This survey was not released as part of the Asset Management Plan, however, results

of the survey were used to inform components of the AMP. The highlights of the survey results related to core assets are below:

- Over half the respondents rated their satisfaction with all City programs and services as 6 or higher out of 10.
- Over half the respondents thought that they got fairly good value for programs and services for the taxes they paid.
- For Public Works and Stormwater Management budgets, the majority thought that the service levels should be maintained.
- To come up with costs to maintain service levels, the majority (70%) was split between: introducing cost recovery through user paid fees, cutting additional programs and services to reduce taxes, and cutting services to maintain current tax level. Only 30% of respondents were in favour of raising property taxes to maintain or increase service levels.
- To increase revenue to maintain levels of service, the most popular methods were to increase development application fees and to increase fees for the use of City roads.

Therefore, based on this information, it is important to customers at the City of Brantford that services are delivered with particular attention to cost efficiency so as to avoid raising taxes in the City as much as possible while maintaining desired service levels.

6.2. CUSTOMER LEVELS OF SERVICE (QUALITATIVE)

Based on the results of the survey, when looking at levels of service for core assets, the City needs to ensure that quality services are delivered affordably, and are both accessible and reliable, while also emphasizing public safety and environmental sustainability. In addition, the City needs to ensure there are proper resources to respond to any unpredicted events.

Therefore, the qualitative criteria that will be used to evaluate City of Brantford's customer levels of service and to formulate technical levels of service are listed and interpreted below in **Table 10**.

Table 10: Customer Level of Service Descriptions

Customer Level of Service	Interpretation
Safety	Customers must feel safe when using these assets, workers must feel safe performing work on these assets, and customers must believe the product of these services is safe to use or consume.
Accessibility	Customers must have unrestricted access to these services without barriers in place.
Reliability	Customers must be able to use these services whenever they require them.
Quality	The services provided must be of a certain quality as defined by regulations and legislations as well as customers.
Responsiveness	The City must be reasonably responsive if any service disruptions occur to restore the service.
Environmental Sustainability	The services must consider environmental impact and sustainability when being implemented as well as support sustainable lifestyles.
Cost Efficiency	The services provided should demonstrate value for tax payer money and be as cost effective as possible while supporting the expected level of service.

6.3. TECHNICAL LEVELS OF SERVICE (QUANTITATIVE) & ASSET PERFORMANCE

The technical level of service for an asset is typically defined using the customer levels of service combined with measurable Key Performance Indicators (KPIs). KPIs are defined as objective, quantifiable evidence to the degree of which a performance result is occurring over time (Barr, 2013). In simpler terms, the City uses KPIs to measure the current performance, and to set measurable goals and targets for how services can be improved or maintained for our customers. Measuring KPIs also supports the department by providing metrics for how effectively the City is achieving our vision for the Asset Class.

For the AMP, the City has used the customer levels of service to inform the technical levels of service to ensure the City is providing the required level of service to meet the needs of our community.

The five (5) measuring methods to measure performance include:

1. Counts   Can be used when population size does not change;
2. Percentages   Can be used to measure a dynamic population;
3. Sums & Totals   Can be used for continuous measures;
4. Averages   Can be used to understand to what degree a result is occurring; and
5. Ratios   Measures rate of productivity (Barr, 2013).

When developing KPIs it is important to consider if the measurement is:

- Practical and functional for the asset group so that information can be collected and maintained;
- Using the measuring method best suited to the asset to ensure the measurement is measuring the attribute in a useful way; and
- Effectively quantifying the measures that the asset group needs to evaluate.

The KPIs for each core asset group are provided in each respective AMP Volume.

It is important to note that since the City is in the process of implementing a new work order system (i.e. AIM), there are KPIs for Asset Classes that are proposed to be tracked in this iteration of the AMP, but currently there is no system to track them. In some cases, these KPIs have been estimated based on available information and do not necessarily have a high confidence level. Therefore, the various AMPs include a proposed levels of service section for KPIs that will be tracked once the new work order system (AIM) has been implemented. Information related to AIM can be found in **Section 7**.

7. WORK ORDER MANAGEMENT APPROACH

The City currently has an inconsistent approach to how work orders are tracked. However, a centralized work order computer maintenance management system (CMMS) is currently being implemented.

7.1. CURRENT APPROACH

Historically, processes and information systems were implemented on an as-needed basis to address specific department requirements. The work order information system related to our core assets currently includes:

- **Avantis Computerized Maintenance Management System (CMMS):** Utilized for maintenance management and work order purposes to varying extents within the Public Works Department usually related to vertical assets.
- **ArcGIS System:** Explained in **KEY DATABASES** AND APPLICATIONS

The City maintains several databases and applications to track asset data and support asset management strategies for core assets, a list of these applications is shown and described in **Table 5.**

- Table 5**;**
- **Paper records:** Which are internally filed activity notes and either not digitized or scanned into a database;
- **Excel records:** Which are saved in independent folders for group reference, but may not be easily found for all who may require that data.

7.2. PROPOSED ASSET INFORMATION MANAGEMENT (AIM) PROJECT

In 2015, the City of Brantford identified a need for improvements to its work order management system. Several technologies were identified that could improve the City's operation and information efficiencies. These identified efficiencies included: improved information flow, improved capital and maintenance planning, and reduced time and difficulties associated with extracting information from various data locations.

Since these efficiencies would have great benefit to the organization, the City decided to move forward with the Asset Information Management (AIM) project, with the goal of achieving the following:

- Centralized access to core asset inventory, location, and work information for all levels within Public Works;
- Development and monitoring of Levels of Service and Key Performance Indicators;
- Tracking of asset, activity, and cost centre costs;

- Development of optimized maintenance programs and budgets through cost benefit analyses;
- Recognizing balance between reactive and planned maintenance;
- Documentation of asset failure and development of inspection and monitoring programs to prevent failures;
- Documentation of the City's Corporate Maintenance Memory; and
- Permit and issue tracking and management.

At the time of writing this report, the AIM project is in the early stages of implementation. Integration with other City systems such as JD Edwards and ArcGIS are underway and implementation of the Water Distribution and Wastewater Collection group has begun. Therefore, data from AIM is not yet available for this report. It can be seen per the list above that this project will greatly influence the other sections in this report especially as related to the Levels of Service metrics and Lifecycle (O&M) Costs and Activities, and so it is anticipated that in future iterations of the AMP, more Level of Service metrics and KPIs will be available to present as well as improved accuracy related to the Lifecycle Activities and Costing.

8. CITY BUDGET FORECASTING

In order to spend taxpayer money efficiently, the City has both a capital and operating budget. This section outlines the budget process for capital and operating, proposed and actual costs for 10-year capital spending, and estimated 10-year operating costs for core assets.

8.1. BUDGET PROCESS

The budget process consists of two (2) separate budget processes: capital and operating.

8.1.1. CAPITAL PROCESS

Capital items are considered to be infrastructure, and items having a useful life exceeding one year. For core assets, this can include treatment, pumping or storage facility improvements, bridges, culverts, storm ponds, road, water and sewer construction and improvements, and results in the acquisition of, or extends the life of a fixed asset. Capital budget requests are also submitted for projects requiring one-time funding, for example technical studies and building condition assessments that do not require annual funding.

The City's capital program is funded from various sources such as reserves and reserve funds, gas tax funding, infrastructure grants from other levels of government, debt, development charges (for growth projects specifically), and grants/donations provided from the private sector.

Typically capital projects are categorized as State of Good Repair, Growth, or Other as defined below:

- State of Good Repair Projects – capital work that relates to repairs/ maintenance of existing facilities, annual road resurfacing/ reconstruction work;
- Growth Related Projects – significant capital projects that are new, such as a new recreation facility, new elevated water tank and major renovations/reconstruction projects that have been identified in a growth related study;
- Other/New/Studies Projects – all technical studies, inspection programs, any new items that do not fit in the growth or state of good repair category.

The capital budget process occurs on an annual basis and typically includes the following steps:

1. Departments identify capital needs for the next 10 years as well as the funding source (e.g. reserve), and enter these projects into the Questica budgeting software which is defined in **KEY DATABASES** AND APPLICATIONS

The City maintains several databases and applications to track asset data and support asset management strategies for core assets, a list of these applications is shown and described in **Table 5.**

2. Table 5.
3. In future, departments will also enter projects into the Prioritization Matrix explained in **Section 9** which will assign projects a priority score and will assist with developing the capital plans in the following steps.
4. Finance reviews submitted projects including their reserve funding amounts, and develop a preliminary capital plan for review by the Senior Leadership Team (SLT). SLT is a team which includes senior and top management, as well as quality management system representatives. SLT reviews and provides feedback to Finance.
5. Finance prepares a fully funded 10-year capital plan with SLT feedback, and presents the revised capital plan to the Estimates committee.
6. The first year of the budget is then reviewed in detail by the Estimates committee followed by the remaining 9 years of the capital plan.
7. Capital budget is approved by the Estimates committee and presented to and approved by Council.
8. Projects are entered into JD Edwards defined in **KEY DATABASES** AND APPLICATIONS

The City maintains several databases and applications to track asset data and support asset management strategies for core assets, a list of these applications is shown and described in **Table 5.**

9. Table 5.
10. Departments initiate projects.

8.1.2. OPERATING PROCESS

Operating items are considered to be reoccurring costs that occur annually which are related to the required operations and maintenance necessary to keep the organization functioning, match inflation, and maintain assets. For core assets, operating costs typically refers to the operating costs associated with keeping core assets in service as well as to mitigate risk, maintain levels of service, and to achieve regulatory requirements.

The City's operating program is funded through individual department's business units.

The operating budget process occurs on an annual basis and includes the following steps:

1. Operating budget from previous year is used as a starting point.
2. Staff review the previous year's operating budget and evaluates unavoidable budget increases as well as allowable budget decreases, and submits proposed budget into Questica.
3. Senior staff review proposed operating budget with Finance and provide feedback.
4. Finance incorporates feedback into operating budget.
5. Operating budget is reviewed and approved by Estimates committee and presented to and approved by Council.
6. Projects are entered into JD Edwards defined in **KEY DATABASES** AND APPLICATIONS

The City maintains several databases and applications to track asset data and support asset management strategies for core assets, a list of these applications is shown and described in **Table 5.**

7. Table 5**.**
8. Departments move forward with lifecycle activities using approved operating budget.

8.2. STATE OF GOOD REPAIR PROJECTS

The City requires funding to maintain the current state of good repair (SOGR) for core assets in existing areas. Currently, this report outlines the costs required for the next ten (10) years, but future iterations of the AMP may extend to more years (e.g. 25 years, 50 years) as the City continues to identify its needs and gaps.

8.2.1. ESTIMATED 10 YEAR CAPITAL EXPENDITURE FOR STATE OF GOOD REPAIR

Per **Figure 6** below, after compiling all costs from the Transportation and Environmental Services Asset Management Plans, it is evident that the City would need to spend an average of approximately $54.9M annually to maintain the state of good repair with regards to the City's existing core assets. As shown in the figure and each section, there is typically a spike in the first year (2022) of estimated costing to accommodate assets whose replacement year has been estimated based on service life. The largest spikes in expenditure are for water and wastewater assets in 2022 due to a significant amount of watermain and wastewater gravity main being past its service life, and roads assets in 2027 due to roads considered in Fair condition requiring resurfacing. It is anticipated with the effects of climate change and the LIDAR project explained in **Section 3.6.2** of the Environmental Services AMP, that the capital budget dedicated to stormwater may need to be increased for the next iteration of the plan. It is important to note that this graphic was assembled considering assets individually and not combining them into projects such as Full Corridor Projects which is a process outlined in **Figure 5**.
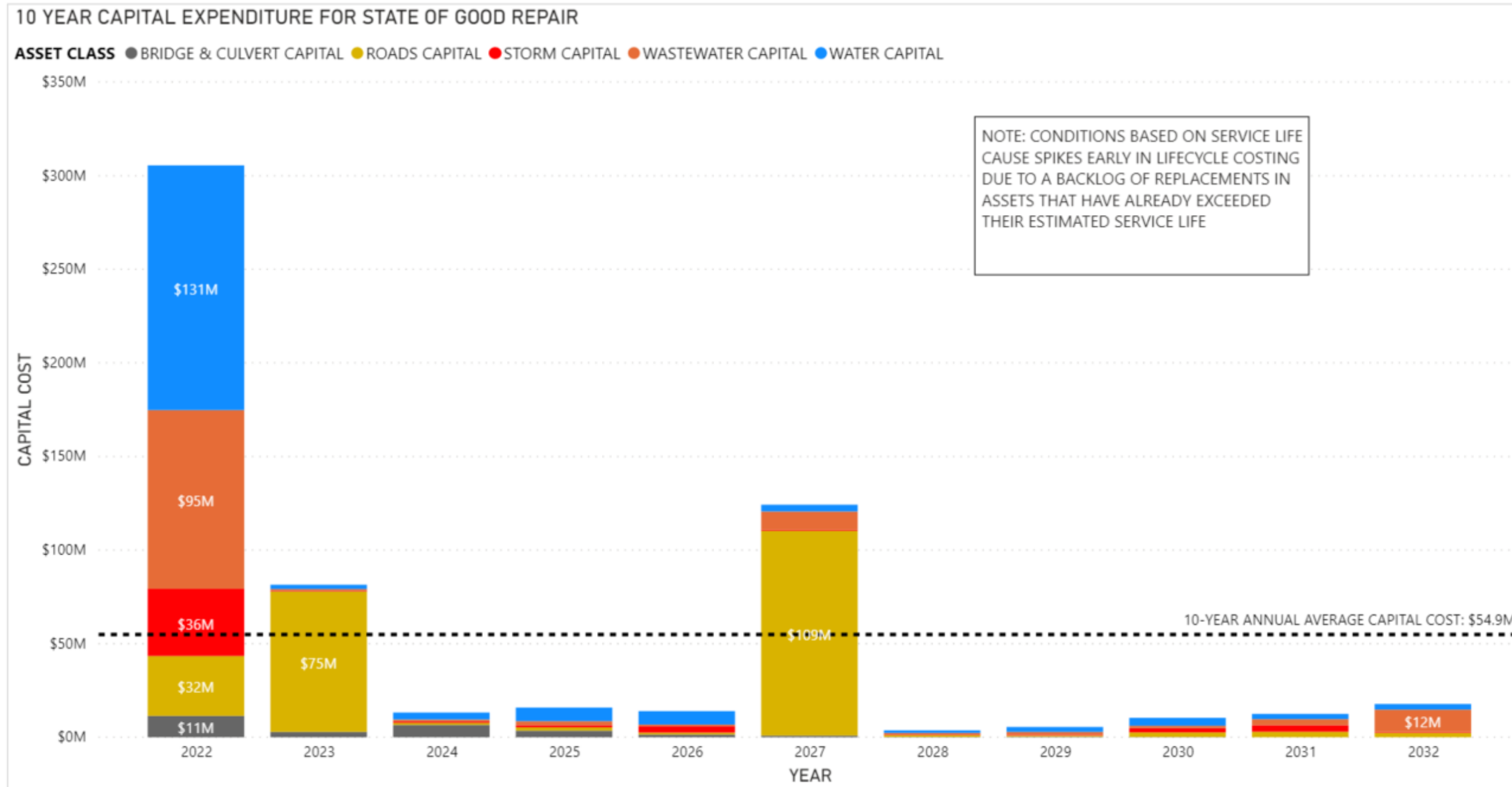
Figure 6: Estimated 10-year capital costing to maintain State of Good Repair

8.2.2. CURRENT 10 YEAR CAPITAL BUDGET FOR STATE OF GOOD REPAIR

Although there are spikes and dips in **Figure 6** above, the budget created by the City distributes these costs to ensure affordability by creating annual budgets as shown in **Figure 7** below and allocating funding using reserve funds. The average amount the City is planning to expend to maintain the state of good repair (SOGR) as well as Other projects for core assets in the planned 10-year capital budget from 2021 – 2030 (including 2021) is approximately $33.9M. It is important to note that project types were approximately broken out into individual asset groups from full corridor and water & road project types in the City budget. Therefore, comparing **Figure 6** to **Figure 7**, the City has a SOGR 10-year funding gap of approximately $21.0M annually to adequately maintain the state of good repair for the City's core asset groups. The impacts resulting from these funding gaps will be monitored and reported as appropriate. Although this funding gap exists, it can be seen that in 2022 and 2023, the City is proposing to spend over the required average. It is also evident that as the forecast continues moving forward to the end of the 10-year forecast, less budget is expected to be expended on SOGR for core assets, which may indicate that funding should be reallocated from outside of the 10-year forecast. Since the budget is revised annually, and the Prioritization Matrix is currently in its implementation phase as explained in **Section 9**, it is anticipated that this forecast will change as City priorities shift. In addition, the 2020 budget cycle only included one (1) budget year, and so the forecast beyond 2021 below was not Council endorsed, however, staff created the budget below within the identified budget parameters.
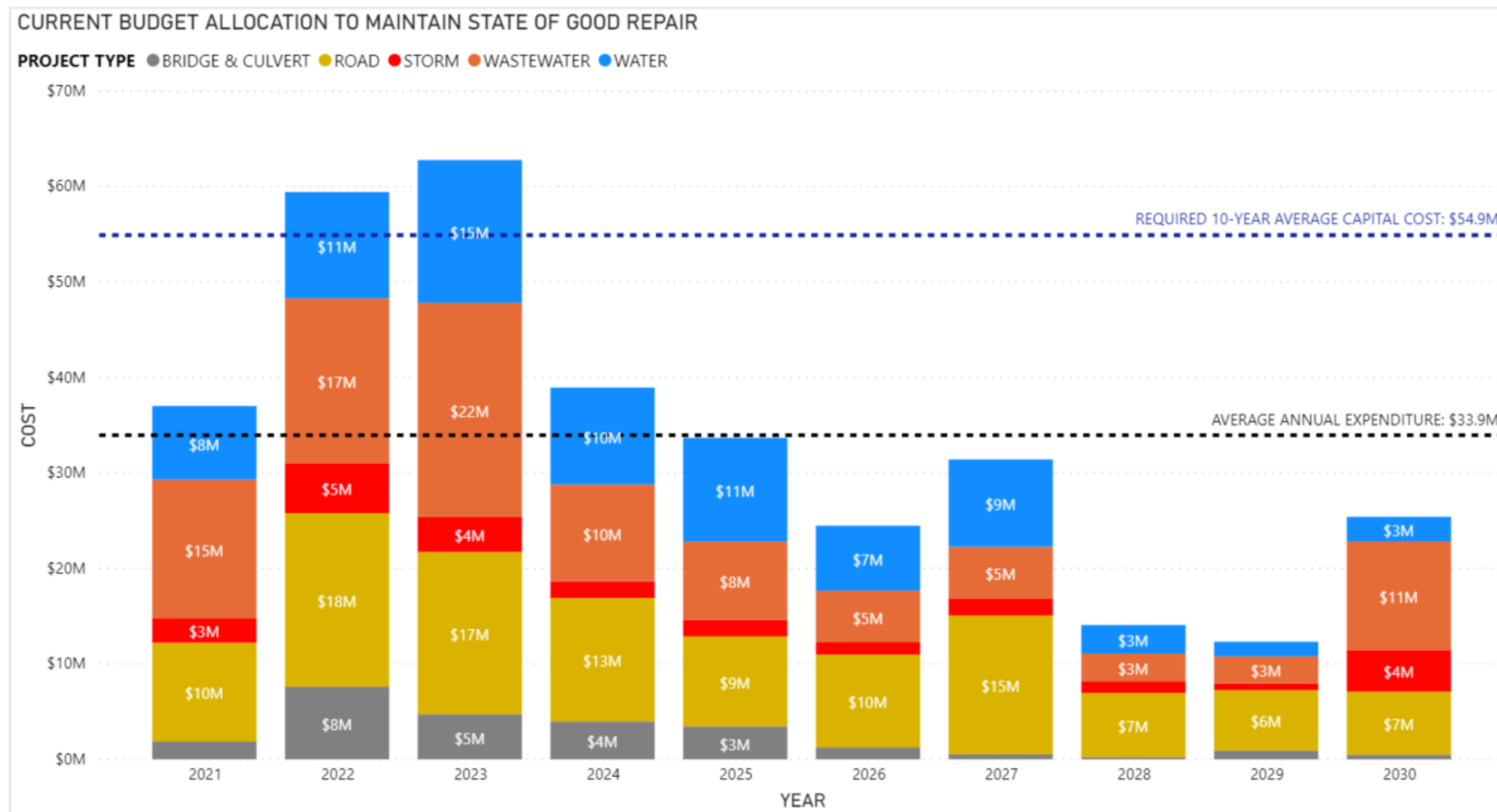
Figure 7: Existing Capital Budget Forecast from 2021 – 2030 for Core Assets

When comparing the 10-year total percentage amounts required for each core asset class versus the 10-year total percentage amount proposed to be expended by core asset class in **Figure 8**, and separating combined projects (e.g. water & road, full corridor), it is evident that the percentage of budget funds currently allocated to assets closely matches the percentage of required expenditure, however, the total budget amount would need to be significantly increased in order to complete all identified SOGR work. It is important to note that the required expenditure for bridges & culverts is presented based on the OSIM financial plan which was developed working within the City budget, and so it is recommended that the City increase the proposed amount dedicated to bridges & culverts to match the required expenditure indicated in the OSIM (e.g. increase bridges & culvert budget by a 10-year average of $120K annually).

TOTAL PROPOSED 10-YEAR EXPENDITURE BY PROJECT TYPE FOR STATE OF GOOD REPAIR

$24.8M (7.32%)
$77.7M (22.94%)
$112.2M (33.14%)
$99.7M (29.45%)
$24.2M (7.16%)

PROJECT TYPE ● WATER ● WASTEWATER ● STORM ● ROAD ● BRIDGES & CULVERTS

TOTAL REQUIRED 10-YEAR EXPENDITURE BY CORE ASSET FOR STATE OF GOOD REPAIR

$27.4M (4.54%)
$168.7M (27.93%)
$229.6M (38.02%)
$129.2M (21.39%)
$49.0M (8.12%)

ASSET CLASS ● WATER ● WASTEWATER ● STORM ● ROADS ● BRIDGE & CULVERT

Figure 8: Total Proposed versus Required Expenditure by Core Asset for State of Good Repair

Since it is unrealistic to immediately increase the budget by $21.0M annually, but the City also needs to maintain the state of good repair, it is recommended that moving forward the City undertake the following:

- o Council continue to endorse the annual increase to the Capital Levy which was approved to address the SOGR infrastructure gap for SOGR projects;

- o Increase the Capital Levy to 1.5% from 0.75% for 2023;

- o Steadily increase the other capital funding envelopes allocated annually for core assets beginning in 2024 until the SOGR funding gap is significantly minimized;

- o Increase the bridges & culverts capital funding program; and

- o Provide adequate staff resourcing to address data gaps in the City's GIS database so that these estimates can be further refined.

In addition, to continue to evaluate and maintain the state of good repair for core assets, staff should continue to:

- o Continue funding condition assessment projects and monitoring studies as well as investigate new inspection methodologies to accurately prioritize asset replacements; and

- o Initiate and continue preventative maintenance measures and internal inspections to extend the life of core assets.

8.3. GROWTH PROJECTS

The City also requires budget to plan for new growth for core assets in development areas. As explained below, the City is anticipating substantial growth over the next 30 years.

This report outlines growth and budget forecasts up to 2051, where data is available, but it is important to note that it is an estimate and is subject to change over time.

8.3.1. CITY OF BRANTFORD GREATER GOLDEN HORSESHOE GROWTH FORECAST

The Greater Golden Horseshoe (GGH) is one of the fastest growing regions in North America. The GGH generates upwards of 25% of Canada's Gross Domestic Product and is considered the economic engine of Ontario. The City of Brantford is located in the Outer Ring of the GGH Growth Plan Area as shown in **Figure 9** below.
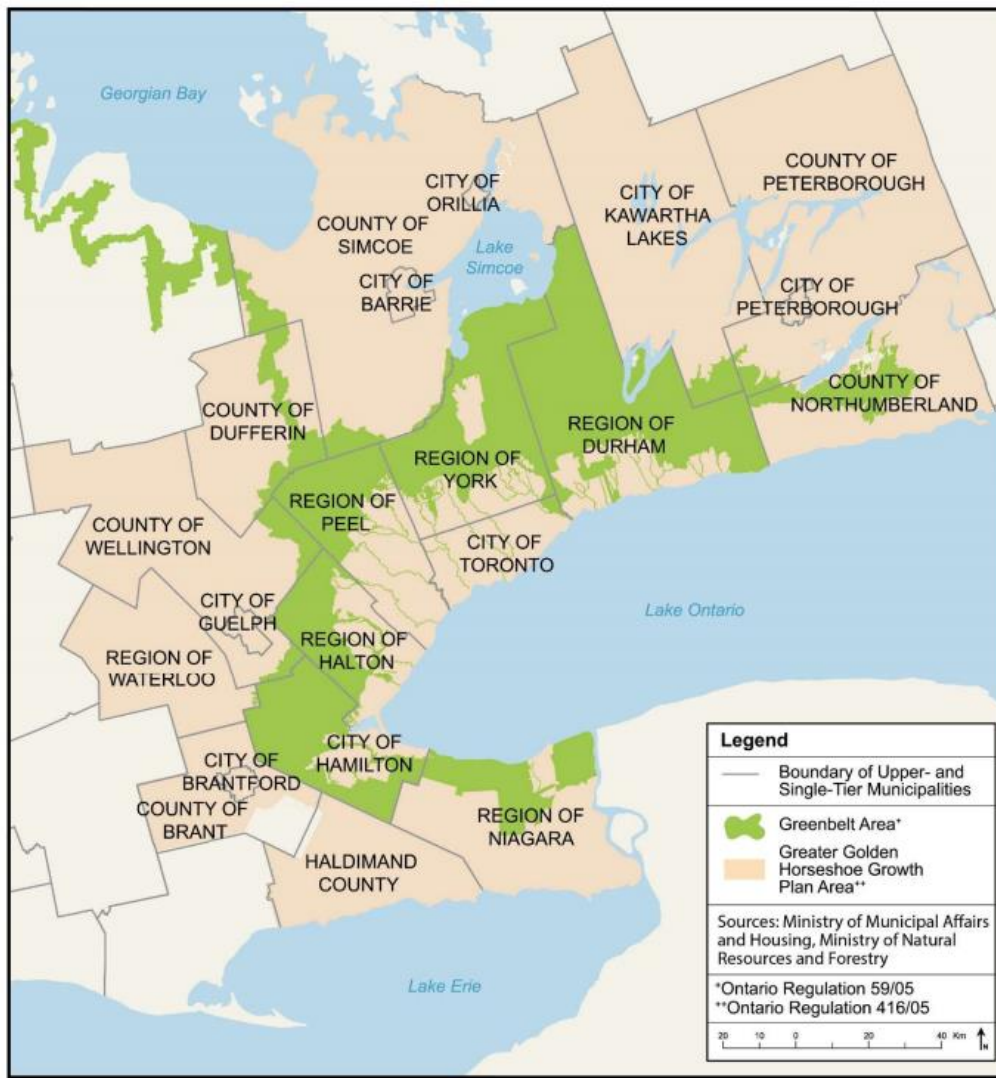
Figure 9: Greater Golden Horesehoe Area (Province of Ontario, 2019)

The GGH Growth Plan indicates that it is anticipated that the City is primed for growth in both residential and non-residential development. Therefore, the 2020 forecasts presented in **Figure 10** below assumed more rapid growth for the City moving forward. Population growth will be fueled by in-migration from the GTAH (Greater Toronto and Hamilton Area) including those intending to commute to the City of Hamilton and the Region of Waterloo.
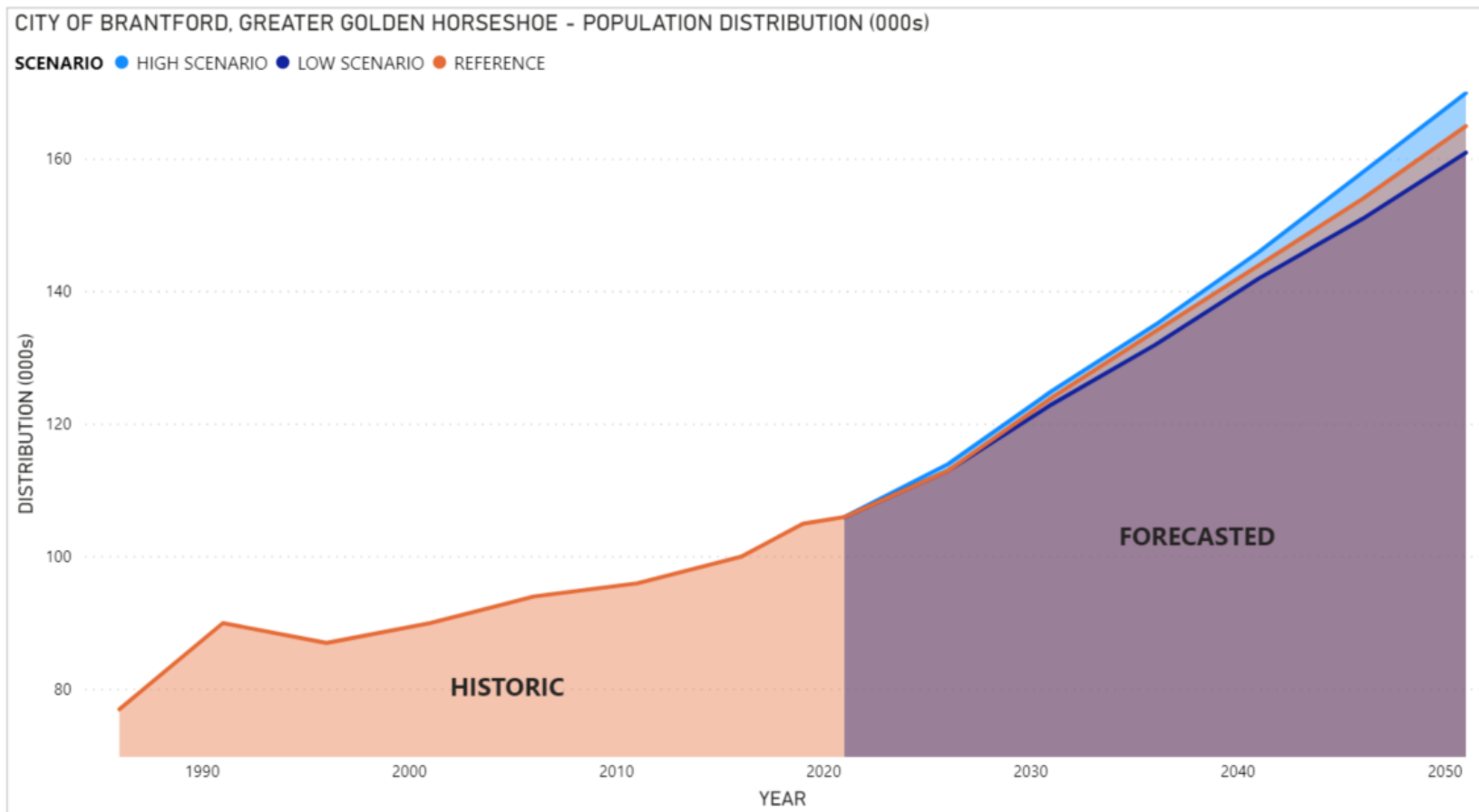
Figure 10: City of Brantford, Greater Golden Horseshoe Population Distribution (Hemson Consulting Ltd., 2020)

The GGH Growth Plan also forecasts that since the City is positioned along Highway 403, which is connected to the City of Hamilton and the GTAH, this will result in employment population growth from commuters as shown in **Figure 11** below.
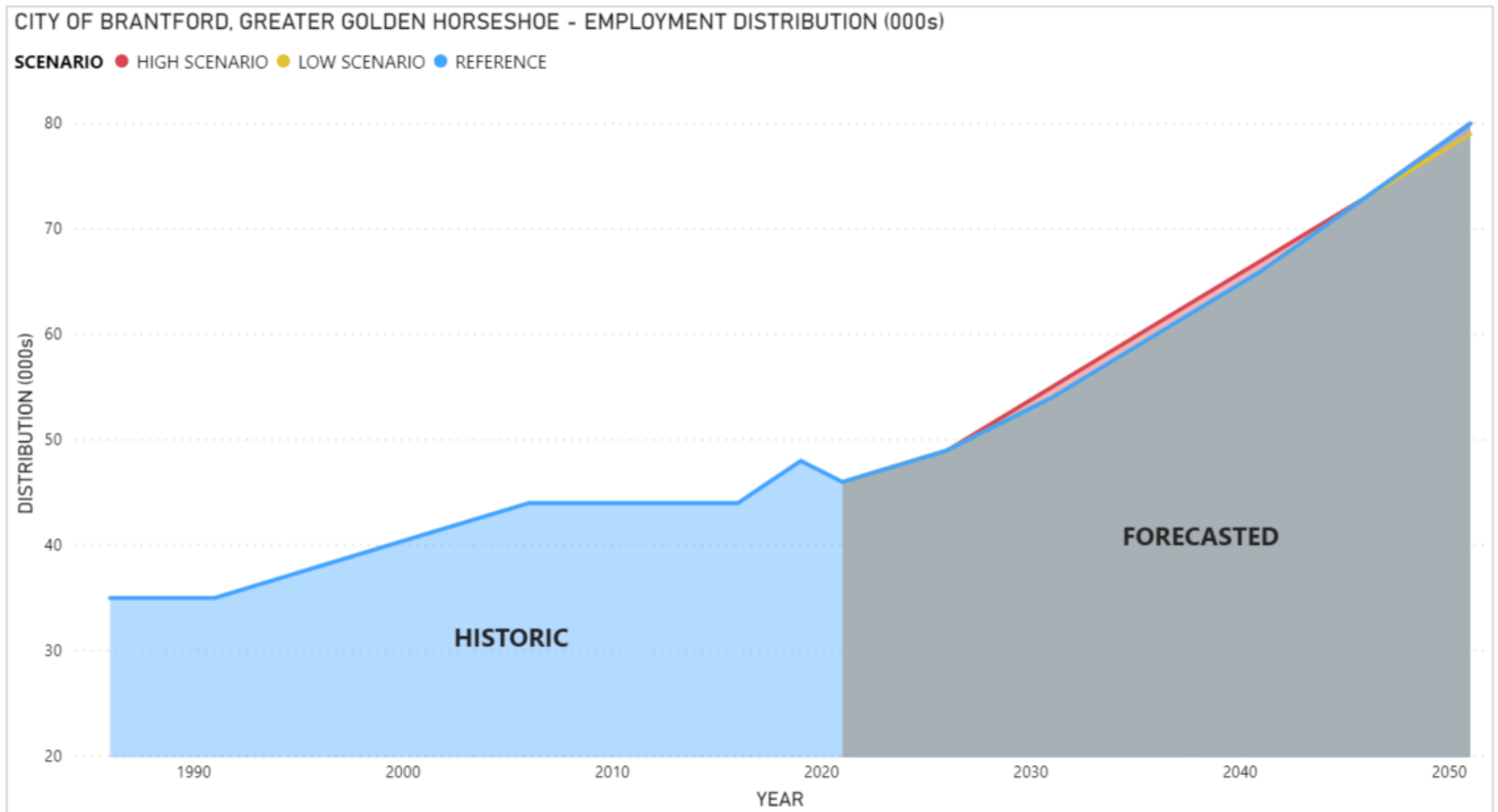
Figure 11: City of Brantford, Greater Golden Horseshoe Employment Distribution (Hemson Consulting Ltd., 2020)

It is important to note that both figures show significant growth projections for the City of Brantford . This growth will be accomodated by the development projects identified in the City's Official and Master Plans and are explained in **Section 8.3.2**.

It is important to note that O.Reg 588/17 stated the 2021 AMP must include forecasted numbers included in the 2017 GGH Growth plan, but the most recent GGH Growth Plan was published in May 2019 and amended in August 2020. Therefore, the forecast numbers for City of Brantford are from the August 2020 amendment and are included for both population and employment in **Figure 10** and **Figure 11**.

8.3.2.   STRATEGIC PLANNING DOCUMENTS

The following documents in **Table 11** were developed by the City to plan projects in anticipation of the future growth. These documents were used to develop the projected 10 year cost increases for growth presented in **Section 8.3.1**.

Table 11: Strategic Planning Documents

Document Name	Description	Year Completed
Official Plan	Contains policies about how land within the municipality may develop and be used in the future.	2021
Transportation Master Plan	Contains strategies for the management of transportation demand, truck route management, transit improvements and the active transportation network, including walking and cycling networks, up to 2051. The Study also identifies the individual projects required to complement these strategies, and prioritize these projects based on need and required timing.	2021
Master Servicing Plan	Contains a comprehensive plan to incorporate all facets of management, expansion and funding of the water, wastewater and stormwater systems for the entire City, including the Boundary Expansion Lands. The study reviews in detail plans to 2051 and more broad implications beyond 2051	2021
Capital Forecast	A planning document developed internally by the City which forecasts projects to be completed and identifies the cost and timeline for when they should be completed.	2021
Preliminary Operating Budget	A document developed internally by the City which includes actual costs associated with operating assets and the budget allocated for 2021.	2021

8.3.3. GROWTH PROJECT EXPENDITURES

To accommodate the increased population resulting from the GGH Growth Plan forecast, which is explained in **Section 8.3.1,**, the City is expected to need to invest a significant proportion of budget over the next thirty (30) years to accommodate the expected growth presented in the strategic planning documents identified in **Table 11**. It is evident in **Figure 12** that from 2021 – 2025 the City has identified that approximately $589M will need to be spent on capital for core assets; from 2026 - 2031, $526M will be required; from 2032 – 2041, $143M will be required; and from 2042 – 2051, $47M will be required. From 2021 – 2025, assets costs are closely distributed among core asset groups, but from 2026 – 2031 it is evident that a significant expenditure will be required for road and water projects.

COST TO SERVICE GROWTH BY CORE ASSET

Asset Class ● ACTIVE TRANSPORT ● FULL CORRIDOR ● ROADS ● STORMWATER ● WASTEWATER ● WATER
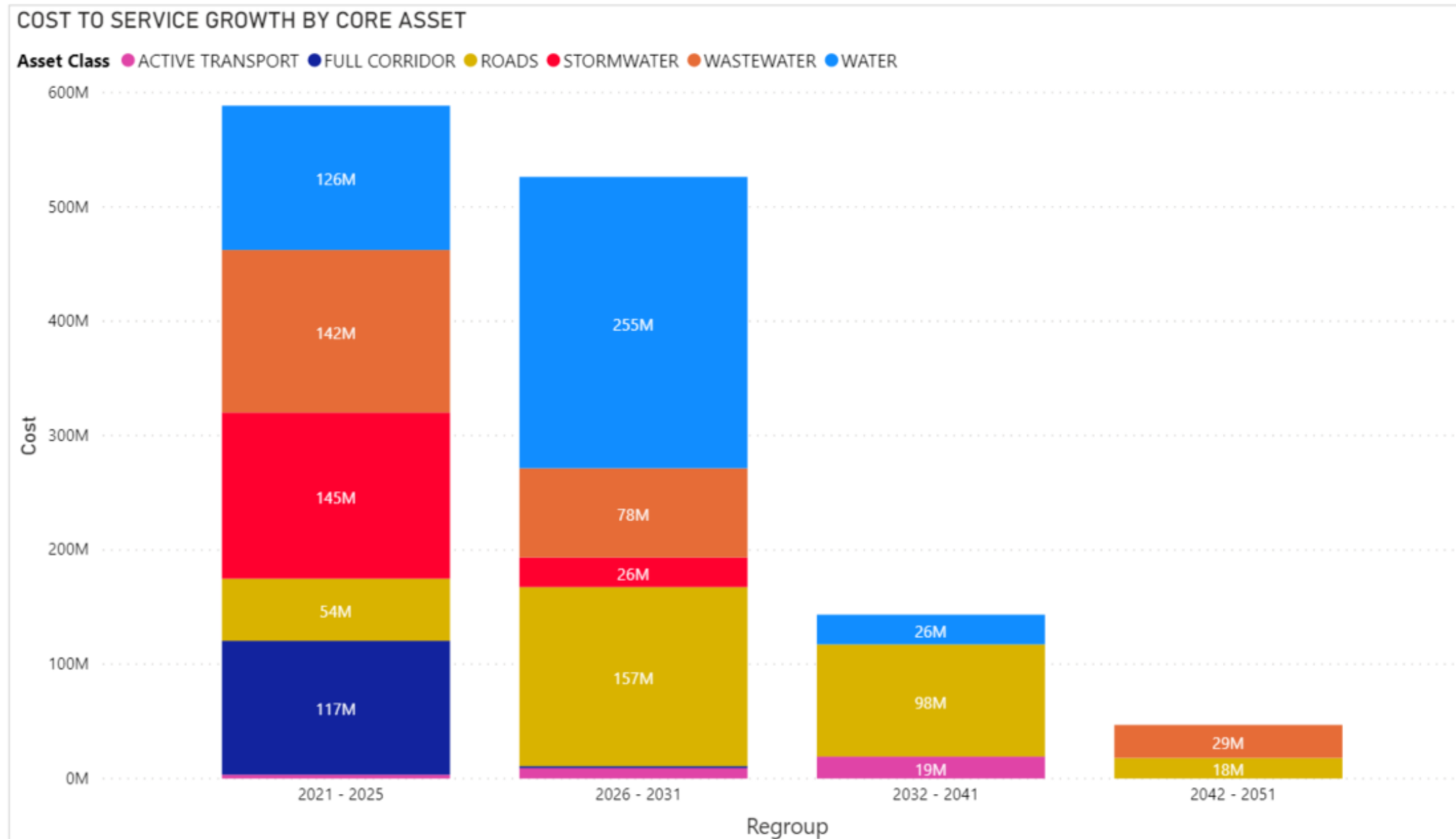
Figure 12: Growth Project Expenditure based on Strategic Planning Documents

The identified Roads growth projects are typically road extension, widening, urbanization, or intersection improvement projects. These projects also include bridge or culvert widening projects when necessary which encompasses another core asset class. Active transportation projects have also been identified which typically pertain to improving or adding cycling infrastructure.

Identified Water growth projects are typically constructing new elevated storage tanks, pump stations and watermains to accommodate the increased population, as well as upgrades related to watermains, the water treatment plant, and pump stations.

Wastewater growth projects are typically constructing new pump stations, forcemains and gravity sewers, reducing inflow & infiltration and flow monitoring, and upgrades related to pump stations, sewers, and the wastewater treatment plant.

Stormwater growth projects are typically related to upgrading pipes for catchments, constructing and expanding stormwater management ponds, and flow monitoring and modeling.

8.3.4. DEVELOPMENT CHARGES TO ACCOMMODATE GROWTH

Development charges (DCs) are fees collected from developers at the time of building permit approval to assist the municipality with covering the initial capital costs of new infrastructure to accommodate the proposed development. A Development Charge By-law is legislated to be in effect for no more than five (5) years, and although the last completed study for the entire City occurred in 2018-2019, the City-wide Development Charge Background Study is being updated with an anticipated completion date of October 2021. The 2019 City-wide development charges recover costs related to Fire, Police, Public Library, Parks and Recreation, Public Transit,, Housing, Land Ambulance, Public Works, General Government, Roads and Related, Water, Wastewater, and Stormwater services, and so they encompass more than just core assets. The 2019 study was intended to be an interim solution to recoup current costs city-wide while investigating future costs needed to accommodate projects identified in the upcoming strategic planning documents in a future study. Per **Figure 13** below, the current amount expected to be collected by city-wide development charges from 2021 – 2025 is approximately $72.0M, and from 2026 – 2031 approximately $29.3M. Since development charges are expected to change over time, the current city-wide DCs are only presented below to 2031. It is anticipated these city-wide development charges will be increased in the coming years to accommodate additional growth.

GROWTH BUDGET BY DEVELOPMENT CHARGE (DC)

DC ● OFFICIAL PLAN REVIEW ● CAPITAL GROWTH STUDIES DC ● DC STUDY ● INTENSIFICATION STORMWATER DC ● PUBLIC WORKS DC ● SANITARY SEWERS DC ● STORMWATER DC ● TRANSPORTATION DC ● WATER DC
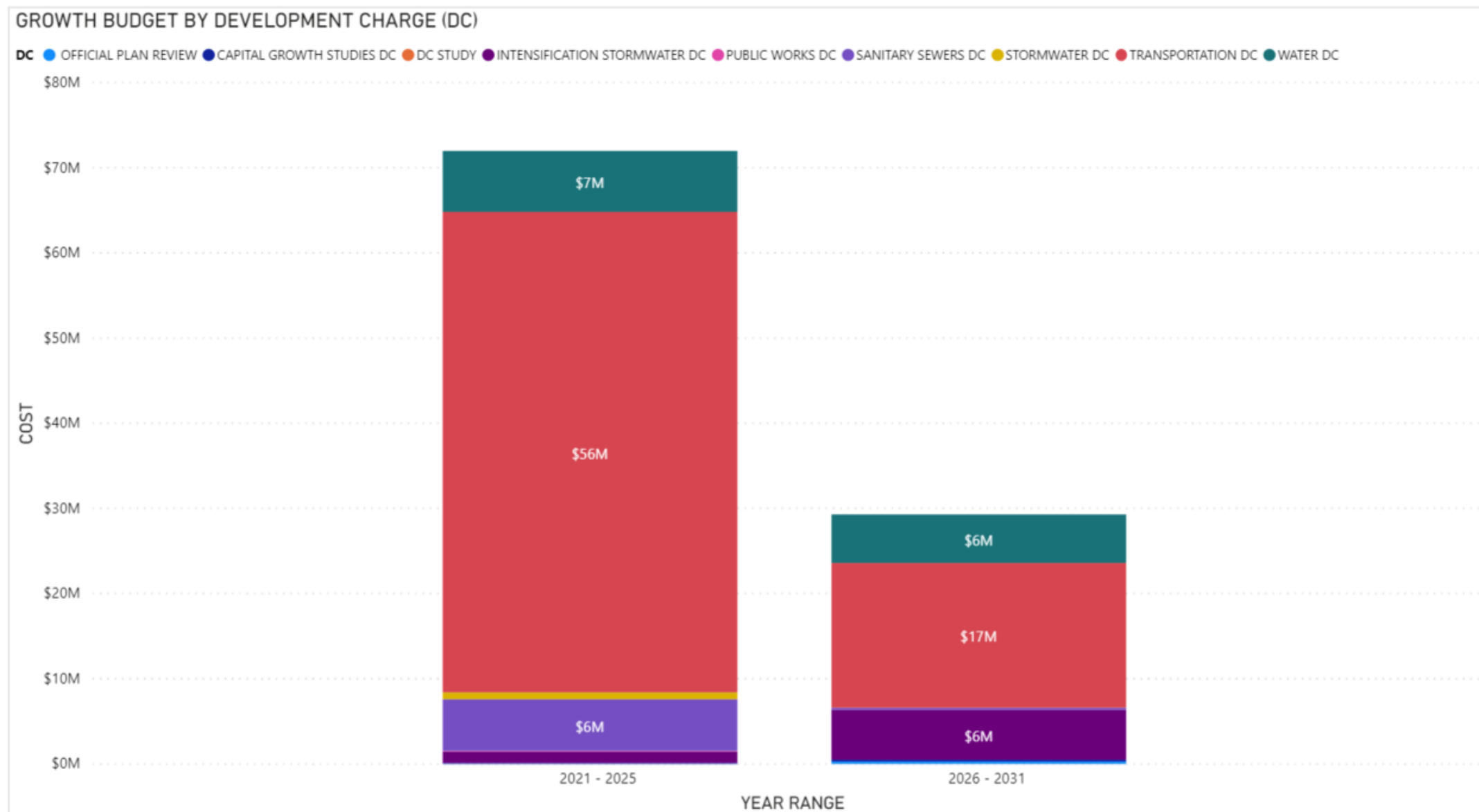
Figure 13: Anticipated amount of City-wide Development Charges collected by year range based on 2019 By-Law

It is evident when comparing the current city-wide development charges to the required budget for core asset growth projects from 2021 - 2032, that there is a significant infrastructure funding gap. Therefore, the City completed a 2021 Area Specific Development Charges (ASDC) Background Study for the boundary lands to accommodate the costs associated with the proposed growth projects shown in **Figure 14**. This study includes calculated area-specific residential and non-residential development charges related to the provision of Roads and Related, Water, Wastewater and Stormwater services within the Northern Boundary Expansion Lands and Tutela Heights, which are all core assets. The ASDCs were proposed because the servicing needs in these areas require independent projects in order to provide for the anticipated growth. This area-specific approach is applied to more closely assign the capital costs for these services with the particular areas that are serviced by the required infrastructure, and so it differs from the city-wide approach. The approved numbers at the time of writing this report are presented in **Figure 14**
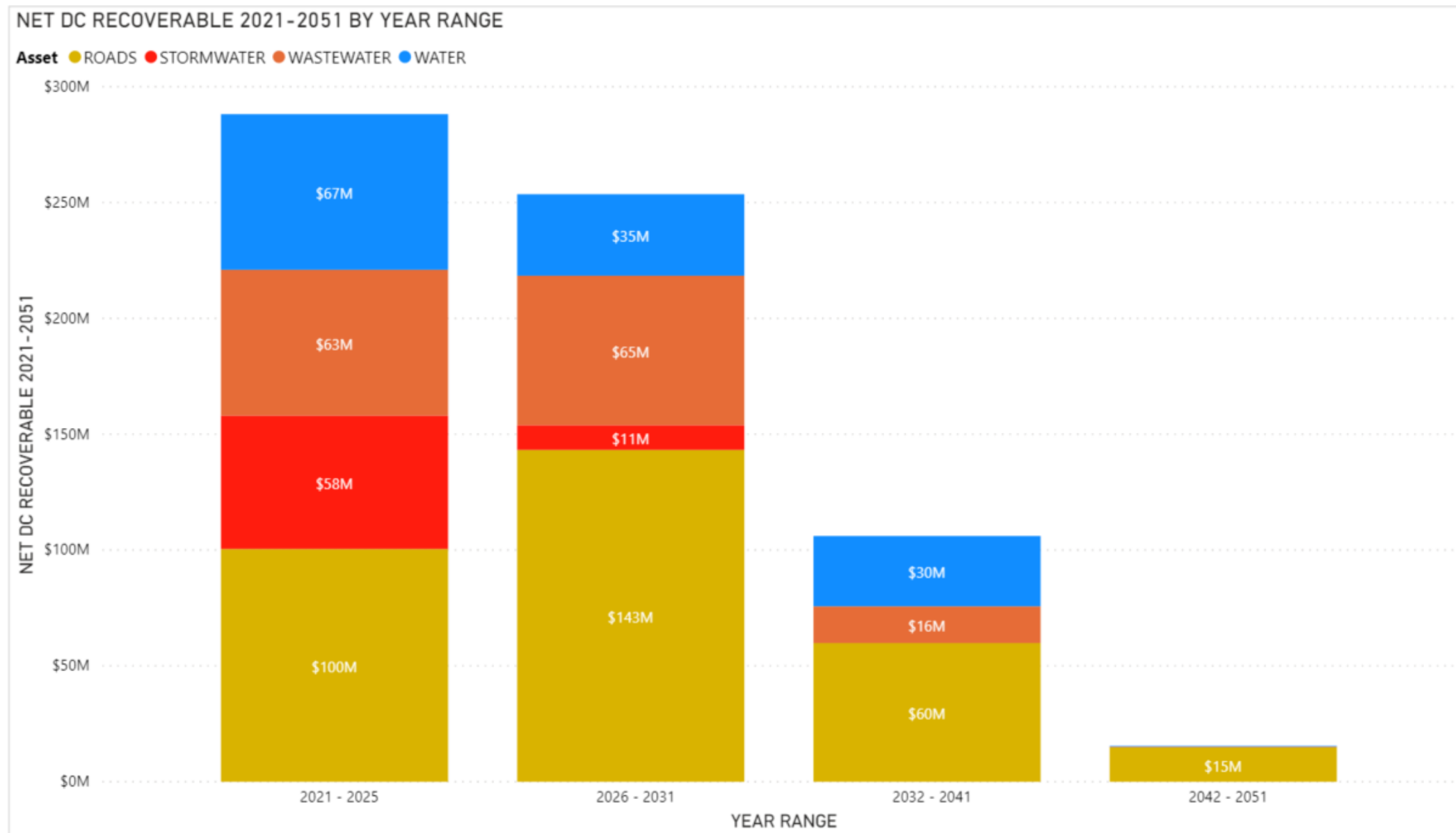
Figure 14: Proposed development charges identified in the draft Area Specific Development Charges Background Study

8.3.5. GROWTH INFRASTRUCTURE FUNDING GAP

When combining the 2019 City-Wide DCs with the ASDCs ("Total Expected Development Charges" in **Figure 13** and **Figure 14**), and comparing these numbers to the total required capital for growth projects ("Total Capital Growth Projects" in **Figure 12)**, it can be seen in **Figure 15**, that currently the City has an infrastructure funding gap of approximately $228.5M from 2021 – 2025; $243.4M from 2026 – 2031; $37.2M from 2032 – 2041; and $31.4M from 2042 – 2051. While this gap seems large, as stated above, the City is currently undertaking an update to the city-wide development charges with a report anticipated to come to Council for approval in October 2021, and it is anticipated this gap will be significantly reduced as a result.
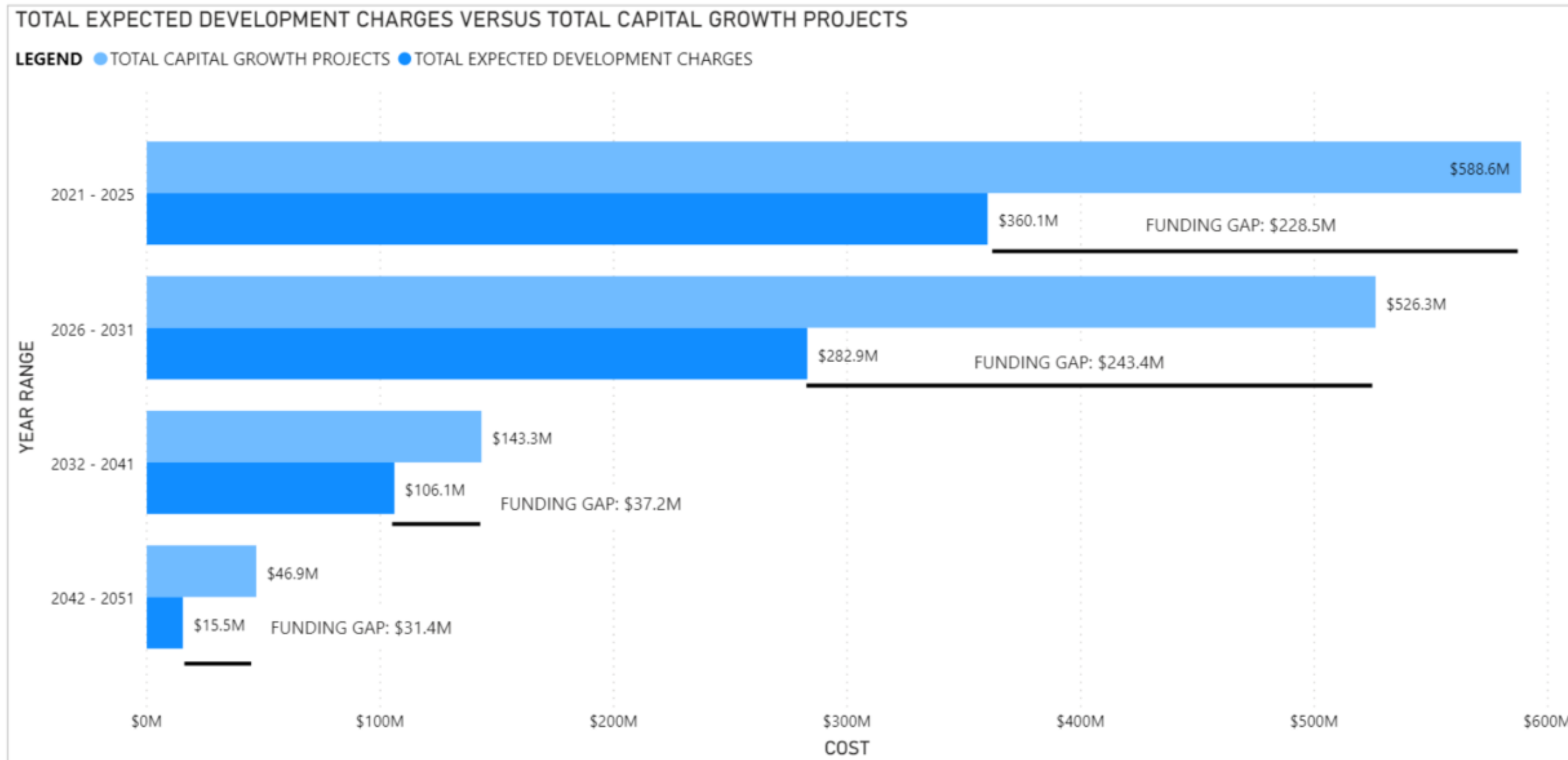
Figure 15: Growth projects infrastructure funding gap

To ensure growth is properly accommodated in the City, it is recommended that the City undertake the following:

- o Follow recommendations on land use and supporting policies as outlined in the Official Plan and infrastructure recommendation in Master Plans for services and transportation; and

      o Ensure that current City-wide development charges are investigated and increased in the planned update scheduled to be completed in October 2021 to accommodate the cost associated with this growth.

8.4. OPERATING PROJECTS BUDGET

The City also requires budget for maintaining assets through the lifecycle activities broken down in the Lifecycle Activities sections of each AMP.

8.4.1. ESTIMATED 10 YEAR O&M EXPENDITURE FOR STATE OF GOOD REPAIR

Per **Figure 16** below, it is estimated that the City will be spending an average of approximately $85.8M on O&M. With the absence of activity specific O&M costs normally obtained through a centralized work order system, this figure was assembled using the 2021 Preliminary Operating Budget which was created based on actual total O&M expenditures for core assets inflated forward to 2032. It can be seen that the lowest O&M expenditure allocated to core assets are bridges & culverts, and stormwater. It is important to note that in the operating budget, long span culverts are encompassed under bridges, and short span culverts would be encompassed under storm assets. It is anticipated with the effects of climate change and the LIDAR project explained in **Section 3.6.2** of the **Environmental Services AMP**, that the O&M budget dedicated to stormwater may need to be increased. In addition, when the AIM project, explained in **Section 7**, has been implemented, the City will be able to compare estimated operating budgets to actual activity specific operating expenditures.
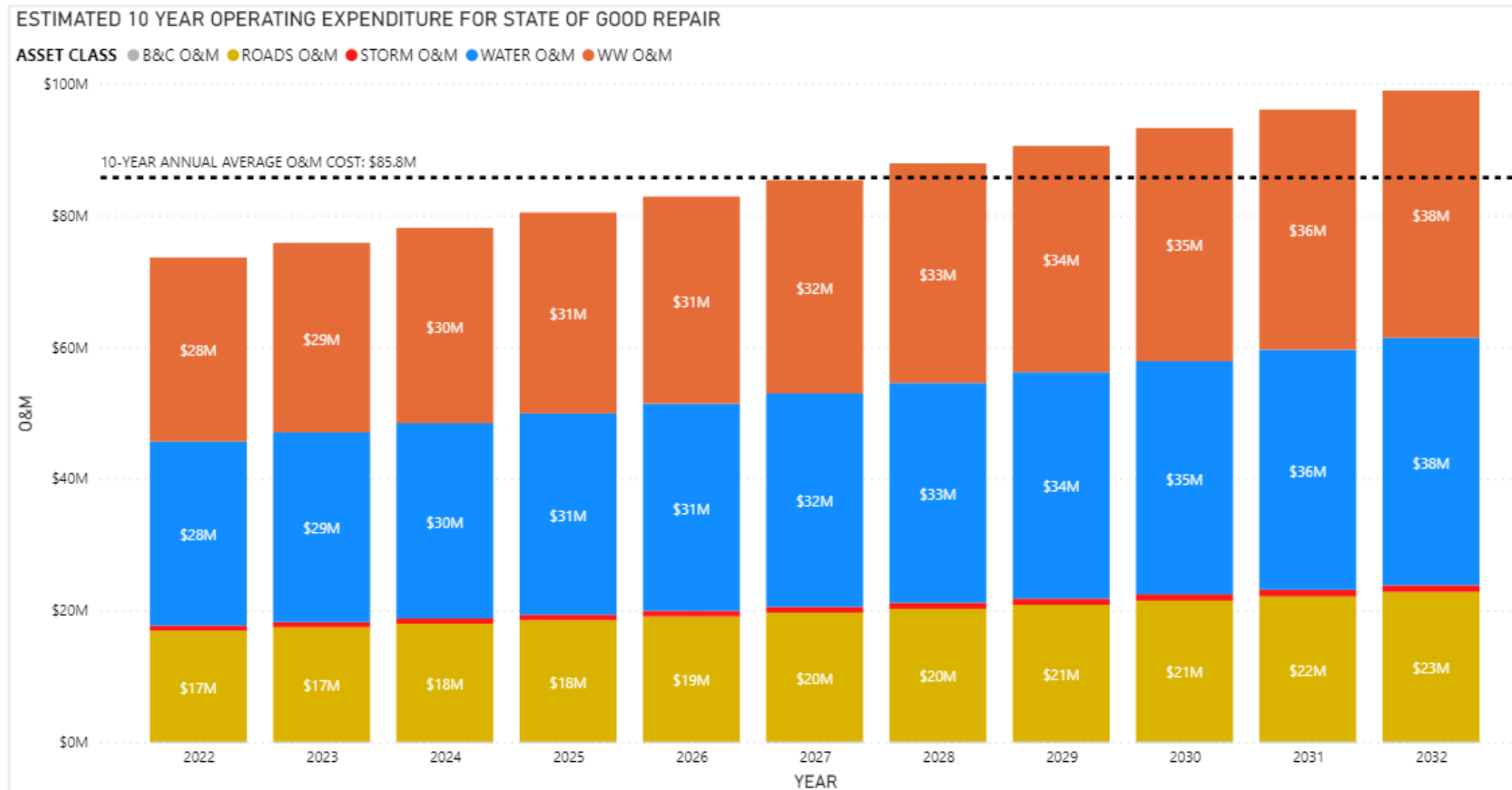
Figure 16: Estimated 10-Year O&M Expenditure for State of Good Repair
Note: B&C stands for Bridge & Culvert. O&M stands for Operations & Maintenance.

8.4.2.   ADDITIONAL ESTIMATED O&M EXPENDITURE FOR GROWTH

For high-level estimated operating costs associated with core assets, from 2021 – 2025 is has been estimated that an additional $1.9M will be required, for 2026-2031 $3.8M, for 2031-2041 $5.8M, and for 2042 – 2051 an additional $6.6M will be required. At this time, the O&M unit costing information is at a low confidence level, and based on estimated unit costing per the length of corridor project (where available), and does not include O&M estimates for vertical growth projects. Since not all project details are available or included, the O&M cost estimation below includes a 20% contingency on known projects, and also includes an assumed 3% inflation rate per year. When the AIM project, explained in **Section 7**, has been implemented, the City will be able to improve the unit data associated with the lifecycle activities to better estimate and project O&M expenditures related to growth projects

ESTIMATED ADDITIONAL OPERATING EXPENDITURE FOR GROWTH

LEGEND ● FULL CORRIDOR ● ROADS ● STORMWATER ● WASTEWATER ● WATER
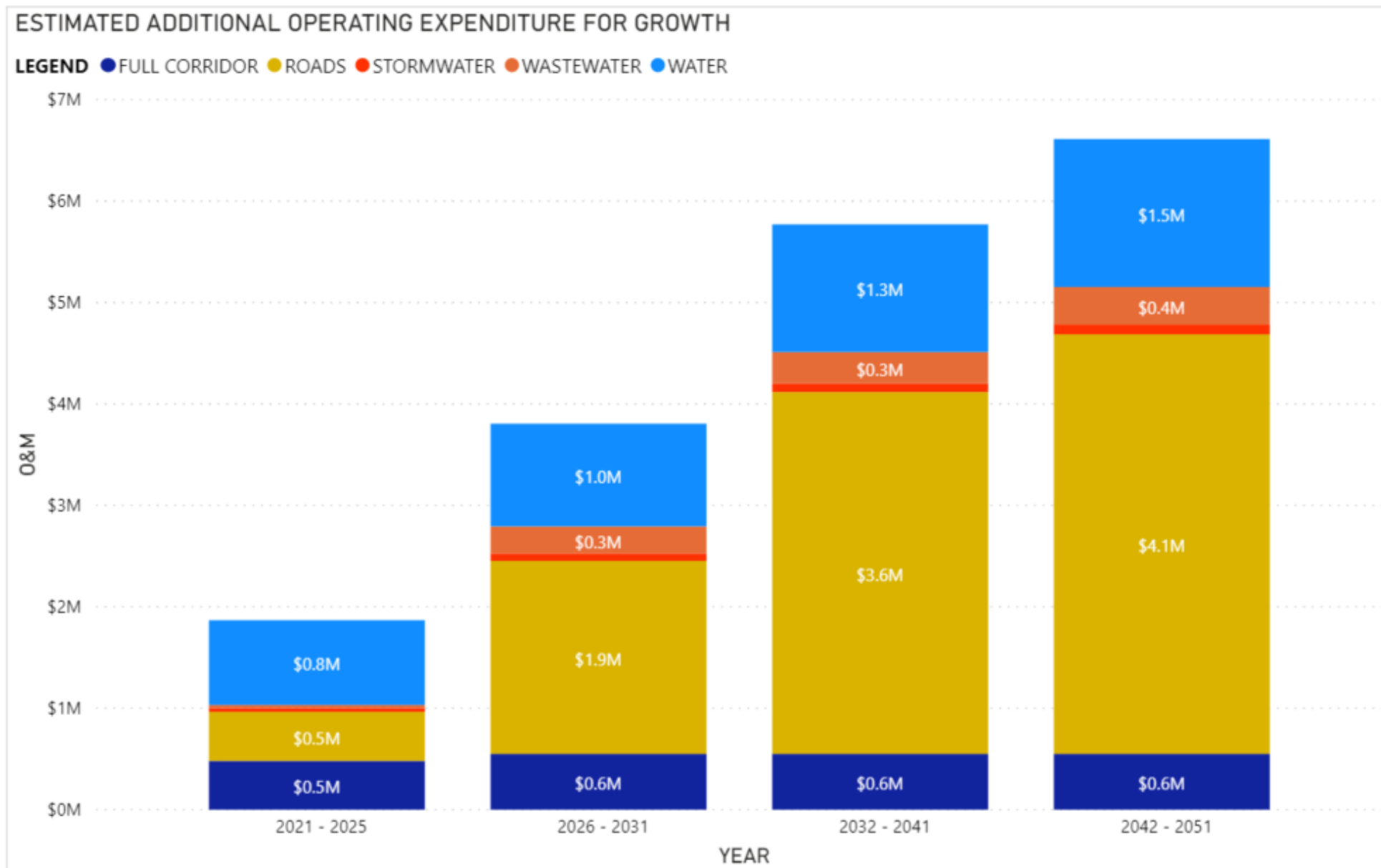
Figure 17: Estimated additional O&M Expenditure for Growth

To ensure the City allocates enough budget for operating costs in future, it is recommended that the City undertake the following:

- o Clearly define all lifecycle activities occurring in each group during the AIM implementation in order to adequately track work orders including resources, time, and material cost;
- o Ensure defined KPIs attributes are tracked within AIM where possible for easy extraction to evaluate asset performance and identify operating inefficiencies;
- o Instruct staff to use AIM whenever possible after implementation.

9. PROJECT PRIORITIZATION APPROACH

Per the 2019 Strategic Asset Management Policy, it was identified that the City's Asset Management Plans must include sufficient information to allow for the prioritization of capital needs as well as operating budgets across the organization.

Corporately, before the proposed implementation of the Prioritization Matrix the City did not have a formal system for prioritizing projects. Typically projects were prioritized based on information provided by individual groups.

Prioritization is important because reactive work often costs three (3) times the amount of planned work due to the emergency ordering of equipment, parts, and labour (including potential overtime) (Reyes-Picknell, 2018). This prioritization is necessary because it will allow the City to do the **right work, at the right time, so that it can be done for the right cost,** which is at the core of good asset management planning.

Therefore, the organization set out to design a decision matrix, which would assist the process for prioritizing projects by standardizing what criteria and weighting the City uses corporate-wide to prioritize the importance and urgency of projects. This decision matrix has been called the **Prioritization Matrix** and has been approved by Council to be test implemented corporate wide as part of the 2022 budget process for a full implementation as part of the 2023 budget process.

It is important to note that the Matrix is intended to supplement the existing budget process by providing a prioritized list of capital projects as a starting point to best assist staff and Council with decision making, however, it is not intended to completely replace the existing budget process. It is anticipated that the current budget reserves and approval process will remain unchanged at this time, but reserves may be adjusted in future.

9.1. PROPOSED PRIORITIZATION MATRIX CRITERIA AND WEIGHTING

The final criteria and weightings shown in **Table 12** were used in the finalized Prioritization Matrix presented in **Appendix D**, and will be used for the first phase of implementation. Each criteria in the finalized matrix has a descriptive urgency score typically from 0 to 3 (some can have a -1 score), and all criteria require referenced background documentation or informed assumptions for why that project was given a particular score.

It is important to note that these weightings, urgency scores & descriptions, definitions, and criteria are subject to change and revisions if it is found that the output priority list does not adequately reflect City priorities or if other criteria are found to better represent a currently missing need.

To mitigate urgent projects receiving a low score a "Flagged" list has been created. If projects receive a high score in Risk Mitigation, Regulatory Requirement, or the Availability of External Funding criteria, and fall to the bottom of the priority list, they will be put on a Flagged list for a second review. Additionally, if a project continues to fall to the bottom of the list, it may require a Service Review to determine if the project should continue to be considered.

Table 12: Prioritization Matrix Criteria and Weightings

Criteria	Definition	Weighting
Risk Mitigation	The project is being completed to avoid or minimize risk to the public, environment, or organization. Risk may refer to: Health and Safety, Financial, Environmental, Service Disruption, or Reputation. Score based on probability of failure (condition) and consequence of failure (extent).	20%
Regulatory Requirement	The project is driven by legal or legislative requirements dictated by federal, provincial, or other governing jurisdiction.	15%
Department Priority	The identified priority the department has place on the project with respect to its other projects, taking into account timing and coordination of other projects.	8%
Availability of External Funding	External Funding (e.g. grants, dedicated funding source) is available for this project.	5%
Level of Service / Fit for Purpose	The project is driven by service requirements the public expects from the asset, including the effectiveness of the asset's performance, and also considers the extent of the service.	10%
Operations Cost Efficiency	Refers to if the project will affect existing operations' budget.	5%
Operations Resource Efficiency	Refers to if the project will affect existing operations' staff and time.	5%
Political Interest	Council or Local Board has clearly identified this project as a priority in a Council or Local Board report (separate from Master Plan and Corporate Climate Change Action Plan).	6%
Other Supporting Documentation	The project and timeline are supported by referable documentation (e.g. Condition Assessment, Feasibility Study), which has not been encompassed in other sections. This section excludes Council or Local Board Reports, Corporate Climate Change Action Plan and Master Plans.	2%
Environmental Initiative	Project has been identified in the Corporate Climate Change Action Plan.	4%
Community Need	Community need identified by the public and supported by evidence.	6%
Value of Built Heritage	Preservation of a heritage building or asset has been identified.	2%
Project Simplicity	Refers to whether the project can be completed internally with few resources and small budget and the extent of the benefit.	2%
Strategic Plan	This project is a strategic objective identified in a Master Planning document or in the Official Plan.	10%
Total		**100%**

For the initial implementation of the Prioritization Matrix, Asset Management has proposed to consider exclusively capital projects. The intent of this was to prioritize higher cost projects first in order to best utilize the City budget. However, future implementations of the matrix will be extended to include the prioritization of Operations & Maintenance (O&M) projects, which may include modifications or additions to the criteria and weightings in order to best prioritize O&M projects.

Since this matrix considers all City assets, it will be included in the 2023 and 2024 AMPs with any modifications completed to the matrix prior to the submission of these reports. The prioritized list of projects output by the matrix can be found in **Appendix E**, and will be updated on an annual basis.

10. CLIMATE CHANGE MITIGATION

In December 2019, the City of Brantford Council declared a Climate Emergency. They acknowledged that urgent action is required to reduce carbon emissions produced within the City. Furthermore, the City agreed, in principle, to becoming a net-zero carbon community by 2050.

Climate change is an important, often overlooked, component of asset management. Since asset management is about making the best possible decisions about our assets, climate change is an important factor to consider as our historic conditions may change and new hazards may arise. Some examples of these changes include: higher water levels, extreme temperatures, high winds etc. These new conditions may increase the rate at which our assets degrade and may also put some of our assets into new design categories (e.g. if 100 year storm frequencies change due to climate change, our bridge infrastructure may not be designed for it), and so these changes are looked at through the lenses of Risk Management and Changing Levels of Service.

10.1. CLIMATE LENS ASSESSMENT TOOL

As part of the Climate Emergency Declaration, a process to evaluate the climate impacts from all City decisions is currently being developed by the City's Climate Change Officer. The strategy involves an internal online tool that will guide staff through the considerations and calculations to add a climate change lens in reports to Council. This will provide quantitative and qualitative information to Council to aid the decision making process with regard to the impacts of their decisions on the climate and the environment.

The tool is anticipated to be in implemented in November 1, 2021. This component of the staff report will be completed by staff from Public Works and Housing for the first year and optional for the rest of staff at this time. After one year of use, an evaluation process will be undertaken to determine if the tool is providing the appropriate data and how it can be improved. At that time a discussion on expanding the requirements for the Climate Lens Assessment Tool to other departments will be undertaken. When this tool is completed, including it as part of the scoring description for the "Environmental Initiative" criteria of the Prioritization Matrix will be investigated.

10.2. CLIMATE CHANGE FRAMEWORK

The City of Brantford is working on our resiliency to climate change by following the Federation of Canadian Municipalities (FCM) four (4) step framework, which includes the following:

IDENTIFICATION

Risk: Gather local climate data, and identify hazards.

Level of Service: Document existing services and assets that enable service delivery.

ASSESSMENT

Risk: Determine where the City is vulnerable.

Level of Service: identify current level of service, explore gaps, and assess how climate change will affect ability to provide services.

PRIORITIZATION

Risk: Explore potential strategies to mitigate or adapt to climate change risks.

Level of Service: Address gaps as a result of climate change.

MANAGEMENT

Risk and Level of Service: Incorporate strategies in infrastructure plans, programs, budget, and monitor progress.

Figure 18: Climate Change Framework (Federation of Canadian Municipalities, 2020)

10.2.1. IDENTIFICATION AND ASSESSMENT

These two (2) steps have been combined because typically these activities are done in tandem at the City. Asset Management and Emergency Planning staff identify hazards and assess vulnerabilities through the following:

- **Hazard Identification and Risk Assessment Ranking** - This ranking identifies: potential hazards (e.g. critical infrastructure failure, tornado, blizzard, extreme temperatures etc.), the likelihood of those hazards occurring, the consequence if those hazards occurred, and the changing risk, which may occur as a result of Climate Change, so that risks associated with each hazard can be identified and a plan devised to deliver critical services during these emergencies;
- **Completing Inventory and Condition Assessments** – Complete inventory and assess condition of infrastructure assets so that the City knows what assets are owned and the condition of those assets, while also considering the likelihood and consequence of failure (risk) to identify which areas of the City are the most vulnerable and require work to continue to provide services;
- **Proactive Maintenance and Replacements** – Complete preventative maintenance activities and proactively replace high risk assets that are identified as poor condition

infrastructure to reduce the likelihood of failure of infrastructure assets to prevent service disruptions; and

- **Monitoring Projects** – Conducting wastewater and stormwater flow monitoring programs and rain monitoring projects so that the City can monitor any changing conditions within the City to include in our future planning.

10.2.2.   PRIORITIZATION

The City also considers climate change effects and reduction strategies during prioritization through:

- **Climate Change Action Plan** - Outlines the City's baseline greenhouse gas (GHG) emissions and targets, action items described as Short (1-5 years), Medium (6-10 years), and Long Term (10+ years) that will be completed to reduce emissions, and implementation strategies for these Action Items;
- **Completing Master Planning** – Master Planning includes projected capacity reviews based on monitoring projects and modeling, which considers future growth and climate conditions so that the City can identify any gaps in our network and necessary infrastructure upgrades; and
- **Prioritization Matrix** – Explained in **Section 9**. Includes weights for projects, which are identified as high risk considering the likelihood and consequence of failure, and projects that are in the City's Climate Change Action Plan based on when project is identified to occur.

10.2.3.   MANAGEMENT

Finally, City Staff incorporates climate change strategies during the following activities:

- **10-Year Capital Budget** – The 10-Year Capital budget contains projects that have been identified through Master Plans, Condition Assessments, and Climate Change Action Plans to reduce risk and maintain levels of service. The budget is created using the Prioritization Matrix, which includes criteria such as Risk Mitigation, Level of Service, Master Planning, and Environmental Initiatives to ensure all of the above are included in its creation;
- **Climate Change Impact Reporting** – In future, all staff reports to Council must include identified qualitative and quantitative metrics related to the environmental effects of a project or initiative, which will assist us in considering climate change effects when completing a project.

11. CONCLUSIONS & NEXT STEPS

In conclusion, this iteration of the AMP Overview presents overall information about the City of Brantford's asset management approach as related to the City's core assets which include: bridges & culverts, roads, water, wastewater, and stormwater assets. In separate AMPs, the City has presented detailed information related to these asset groups in accordance with O.Reg 588/17.

This iteration of the AMP addresses four (4) action items from the 2019 Strategic Asset Management Policy, which is in line with the City's asset management goals. In addition, per the FCM readiness scale, Brantford is generally a Level 2 or 3 and this level is expected to increase as the City moves through creating the subsequent iterations of the Asset Management Plan.

The City collects inventories and conducts condition assessments, inspection programs, and condition desktop analyses on core assets, and is continuously investigating ways to improve inventories and conditions that have low data confidence.

This document also outlines the City's general lifecycle approach with respect to linear and vertical core assets and includes the following stages: Planning, Creation/Acquisition, Operations and Maintenance, Renewal/Disposal.

Furthermore, the City has refined its Level of Service and Performance Approach by conducting multiple surveys with the public to establish Customer Levels of Service which were formulated into Technical Levels of Service which are described in each AMP asset group section.

The City currently documents work orders using Avantis CMMS, ArcGIS, and paper management systems. However, it is important to note that the City is currently working on a centralized CMMS project which has been referred to as the Asset Information Management (AIM) project. At this time, the AIM project is in the implementation phase, and so it is anticipated that O&M cost breakdowns will improve and become more asset and activity specific, and so O&M costs related to core assets in the next Overview document may change significantly.

In terms of budget forecasting, to fund core asset growth projects identified in strategic planning documents (e.g. Master Servicing Plan) to accommodate the acquired boundary lands, the City is investigating implementing area-specific development charges (ASDC) in the boundary lands and Tutela Heights to cover the infrastructure funding gap associated with these growth projects. However, even with this ASDC, there will still be a significant funding gap until the City wide Development Charges are adjusted and approved by Council. In addition, to maintain the state of good repair for core assets, the City is currently spending $33.9M per year on average over the next

ten (10) years, but based on calculated information in this report, the City should be raising this cost to a 10-year average of $54.9M per year, which is a difference of $21.0M annually.

In addition, the City is introducing a new method for capital projects prioritization by introducing a Prioritization Matrix tool, which has not yet been implemented, and so the next iteration of this document may include changes to the criteria, definitions, or weightings. The next iteration of this matrix will also encompass operation and maintenance projects.

Finally, the City has been investigating ways to mitigate climate change effects. Currently, documentation and tools are being created to address this global issue at the City in the form of the Climate Lens Tool and Climate Change Action Plan.

The next iteration of this AMP Overview document, due July 1st, 2024, will be revised to include information related to non-core assets. Separate AMPs will also be developed for non-core asset groups and will include the following information in accordance with O.Reg 588/17:

- Summary of Assets (incl. total number, replacement costs, age, and condition);
- Lifecycle Activities for Assets;
- Current Levels of Service (municipally defined);
- Current Performance (incl. energy and operating performance); and
- 10 Year Capital & Operating Expenditure related to lifecycle.

12. WORKS CITED

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APPENDIX A:
FCM READINESS SCALE

Asset Management Readiness Scale Assessment Tool

Introduction and Instructions

FCM's Asset Management Readiness Scale (AMRS) helps municipalities measure progress on asset management in five competency areas. It can also be used to identify priority areas for a community when it comes to its asset management practices. Each of the five competencies is a building block, composed of three outcome areas. Together, the five building blocks form the practice of asset management. The AMRS is also a key tool that is used to track progress by FCM and is central to demonstrating results and successes of the Municipal Asset Management Program (MAMP).

Please note that the AMRS is meant to measure the readiness of your community by competency across all asset classes (e.g. water, wastewater, buildings, roads, bridges, storm water, etc.). It is possible that your asset management practices are very advanced in one asset class and less so in another. The overall rating should reflect the less advanced asset classes.

These instructions focus on how to use this Excel Asset Management Readiness Assessment Tool (Tool). **We strongly encourage you to read the AMRS (see link below) prior to completing this assessment and keep the document on hand as you work through this Tool, which can be found at the following link.**

Asset Management Readiness Scale

You may also find it helpful to watch the following webinar which provides additional guidance on how to use the AMRS.

Assessing your community using FCM's Asset Management Readiness Scale

The Tool is organized as follows:
1. Introduction and Instructions
2. Organization Information (OrgInfo)
3. Readiness Assessments (1 tab for each of the 5 competencies)
    a. Policy and governance (Policy-gov)
    b. People and leadership (People-lead)
    c. Data and information (Data-info)
    d. Planning and decision-making (Plan-decision)
    e. Contribution to asset management practice (Contrib-AM)

Note that the competency tabs can be completed in any order.

Organization Information

Before starting your assessment, ensure that the Organization Information tab is complete.

Competencies

Note that the following instructions apply to each of the five competency tabs. Each competency is separate from the others and can be completed in any order.

Outcome areas – current level of achievement

Each of the competencies has three outcome areas and each outcome area has five levels. First, select the outcomes your organization has already achieved starting at level 1, by clicking on the checkboxes to the left of each statement. You must meet all the requirements of each outcome area level in order for the Tool to reflect that level of competency. It is possible that you have not met some or any of the outcome area levels - in these cases, do not click on any of the checkboxes.

Once you have completed the checkboxes for an outcome area, use the text box to provide information on current actions your organization is taking or has taken in this specific outcome area to achieve your stated level. Please note that including information in this section is required as it will provide FCM more detail on your organization's current state of asset management maturity, and better understand your project and how it is intended to help you progress along the scale.

Note: To make multiple bullet points or separate paragraphs in an Excel comment box, press Alt+Enter while typing in the comment box to start a new line.

Once you have completed the current state for an outcome area of a competency, the Tool will automatically calculate the readiness level for that outcome. Once the current states for all three outcome areas of a competency are completed, the Tool will automatically calculate an overall readiness level for the competency.

Outcome areas – future level of achievement

After you have completed the current state for all three outcome areas, you can then proceed to the expected future state assessment. For each outcome area, please select the level you expect your organization will achieve at project completion by using the dropdown box. Please only consider the change that would be a direct result of your project at the time the project is completed.

Below the dropdown box is a text box for you to provide information on how your project activities will result in your expected future level. Please note that this section is required - the information you provide is critical for FCM to fully understand your proposed project. Please make a direct link between the project activities to be undertaken and the expected future state. For those outcomes that are not affected by your project activities, please enter: "no anticipated impact".

Once you have completed the expected future state for all three outcome areas, the scale will automatically calculate the future state overall rating for the competency.

This process must be repeated for each competency.

Once you have completed the form, please save and include in your application.

This Excel AMRS Tool was developed with support from the Canadian Network of Asset Managers (CNAM).

Asset Management Readiness Scale Assessment Tool

FEDERATION OF CANADIAN MUNICIPALITIES   FÉDÉRATION CANADIENNE DES MUNICIPALITÉS

Organization Information

Name of Lead Applicant	City of Brantford
Province/Territory (select form dropdown)	Ontario
Project Title	2021 Asset Management Plan

Project Number (for FCM use only)	for FCM use only

Asset Management Readiness Scale Assessment Tool
Policy and governance

FCM FEDERATION OF CANADIAN MUNICIPALITIES | FÉDÉRATION CANADIENNE DES MUNICIPALITÉS

Policy and governance: By developing this competency, your organization is putting in place policies and objectives related to asset management (AM), bringing those policies to life through a strategy and roadmap, and then measuring progress and monitoring implementation over time.

Note: To achieve each level, you must meet every requirement of each level before it.

Current State

Outcome areas	Outcomes: Select the outcomes that your organization has achieved.									
		Level 1		Level 2		Level 3		Level 4		Level 5
A: Policy and Objectives	☑	Senior management is committed to formalizing an **AM program**.	☑ (We have drafted an **AM policy**.) / ☑ (Senior management and council have endorsed the **AM policy**.)	We have drafted an **AM policy**.	☑	We are starting to use our **AM policy** to guide our actions.	☐	We manage assets and services in accordance with our **AM policy** and organizational objectives.	☐	We continue to validate and refine our corporate, service and AM objectives based on the evolving needs of our community.
Please provide notes that describe how you have achieved your current level	Council adopted Corporate Policy 045 - Strategic Asset Management Policy in May 2019. In 2021, the City finalized the 2021 Asset Management Plan for Core Assets which has incorporated information and guiding principles from the 2019 Strategic Asset Management Policy. The City will be moving to establishing this same level of management for non-core assets.									

Expected Future State

Current (from left)	Select the level you expect to achieve at the end of this project	No anticipated change
3		Expected

Please provide information about how your project activities will help you achieve your expected future state

This assessment is being completed at the end of the 2021 Asset Management Plan to update the current state, and so the City is not assessing the expected change. It is anticipated that the City will move to Level 5 after future iterations of the AMP.

Asset Management Readiness Scale Assessment Tool
Policy and governance

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Current State

Outcomes: Select the outcomes that your organization has achieved.									
Outcome areas		**Level 1**		**Level 2**		**Level 3**		**Level 4**	**Level 5**
B: Strategy and Roadmap	☑	We have identified the benefits that we want AM to deliver, and the benefits support organizational objectives.	☑	We have a strategy for our **AM program**.	☑	We have a **roadmap** that details the actions for implementing our **AM strategy** over the next 3 to 5 years.	☐	We are achieving our **AM policy** objectives. The necessary workflows, documents, and reporting tools are in place.	☐ We follow our **roadmap** and continually improve our AM practices.
			☑	We have a draft **roadmap** that outlines our approach for the next 1 to 3 years.			☐	We update our **roadmap** to address evolving needs.	☐ We document improvements to our AM practices.
Please provide notes that describe how you have achieved your current level	As part of the development process for the Strategic Asset Management Policy, Council approved 20 Action Items to be completed over the next four (4) years in order to implement the Strategic Asset Management Policy. The AMP has assisted the City with achieving many of the AMP policy objectives, and we have revisited and updated the status of our roadmap as part of this project. We are still in the process of ensuring the necessary workflows and documents are in place to achieve all AM policy objectives.								

Expected Future State

Current (from left)		**Expected**
3	**Select the level you expect to achieve at the end of this project**	**No anticipated change**
	Please provide information about how your project activities will help you achieve your expected future state	
This assessment is being completed at the end of the 2021 Asset Management Plan to update the current state, and so the City is not assessing the expected change. It is anticipated that the City will move to Level 4 after future iterations of the AMP.		

Asset Management Readiness Scale Assessment Tool
Policy and governance

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Current State

Outcomes: Select the outcomes that your organization has achieved.									
Outcome areas		**Level 1**		**Level 2**		**Level 3**		**Level 4**	**Level 5**
C: Measurement and Monitoring	☑	We have identified short-term actions that will demonstrate early progress on AM.	☑	We are collecting baseline data on our current AM practices.	☑	We have established performance measures to monitor our asset management progress, outcomes, and the benefits to our community.	☐	We use performance measures to monitor AM progress, outcomes, and benefits.	☐ We monitor performance and use the feedback to prioritize and make ongoing refinements and improvements to AM practices.
Please provide notes that describe how you have achieved your current level	The City recently completed the 2021 Asset Management Plan which includes baseline information for the City's core assets. In addition, performance measures have been included for core assets as part of this plan which will be used to monitor progress, outcomes, and benefits to our community. In addition, the City has initiated a number of projects over the past 7 years to improve our data collection to determine the effectiveness of our current AM practices for both core and non-core assets including implementing a new computerized maintenance management system (CMMS) in 2021.								

Expected Future State

Current (from left)		Expected
3	**Select the level you expect to achieve at the end of this project.**	No anticipated change
	Please provide information about how your project activities will help you achieve your expected future state	
This assessment is being completed at the end of the 2021 Asset Management Plan to update the current state, and so the City is not assessing the expected change. It is anticipated that the City will move to Level 4 after future iterations of the AMP.		

Readiness level (automatic)	Working on Level 1	Completed Level 1	Completed Level 2	Completed Level 3	Completed Level 4	Completed Level 5
		☑	☑	☑		

Expected State
Level 3

People and leadership

People and leadership: By developing this competency, your organization is setting up cross-functional teams with clear accountability and ensuring adequate resourcing and commitment from senior management and elected officials to advance asset management.

Note: To achieve each level, you must meet every requirement of each level before it.

Current State

Outcomes: Select the outcomes that your organization has achieved.										
Outcome areas		**Level 1**		**Level 2**		**Level 3**		**Level 4**		**Level 5**
A: Cross-functional Teams	☑	We have identified the representation we need on our cross-functional **AM team.**	☑	We have a cross-functional **AM team*** that guides the planning and implementation of our **AM program.**	☑	Our **AM team*** works within our organization to lead, communicate, and support AM improvements and organizational changes.	☐	Our **AM team*** is permanent and tasked with guiding and supporting AM across the organization on an ongoing basis.	☐	Our **AM team*** guides and supports the ongoing improvement of AM within the organization
Please provide notes that describe how you have achieved your current level	The City assembled a cross-departmental AM team to create and test the Prioritization Matrix which will be used to prioritize projects corporately, and was approved by Council in April 2021. These working group members were also asked to review and comment on the draft AMP Overview Document, and - for non-core asset groups - were advised that they would be contacted for future iterations of the AMP. However, currently the working group is not permanent.									

*Note: Larger organizations may have both an AM team responsible for implementation and an AM steering committee to provide direction and oversee the work. Smaller organizations may group these functions together. This outcome may be better suited to an AM team or an AM steering committee, depending on the organization. In some small communities the AM team may be as few as two people.

Expected Future State

Current (from left)		
3	**Select the level you expect to achieve at the end of this project**	**No anticipated change**

Please provide information about how your project activities will help you achieve your expected future state

This assessment is being completed at the end of the 2021 Asset Management Plan to update the current state, and so the City is not assessing the expected change. It is anticipated that the City will move to Level 4 after future iterations of the AMP where our AM team may become permanent.

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Current State

Outcomes: Select the outcomes that your organization has achieved.

Outcome areas		Level 1		Level 2		Level 3	Level 4		Level 5
B: Accountability	☑	We have a champion who has been tasked with planning for our **AM program.**	☑	Our **AM team*** has a documented mandate to develop our **AM program**, which is outlined in a terms of reference and a one- to three-year **roadmap.**	☑	Our **AM team*** is accountable for implementing our **AM program.**	We have operationalized AM roles and responsibilities across our organization.	☐	We document changes to AM roles and responsibilities as needed to support our evolving requirements.
			☑	Our **AM team** is accountable to senior management and council.	☑	AM roles and responsibilities are included in staff job descriptions.		☐	
Please provide notes that describe how you have achieved your current level	The City hired an Asset Management Specialist in August 2020 to help implement AM as a core business function across all Commissions, and whose job description included completing the City's Asset Management Plans in accordance with O.Reg 588/17 as well as assisting the organization with prioritization. The AM Specialist developed the Prioritization Matrix and 2021 AMP which were both presented to Senior Management, and approved by Council in 2021.								

Expected Future State

Current (from left)		
3	Select the level you expect to achieve at the end of this project	No anticipated change
Please provide information about how your project activities will help you achieve your expected future state		
This assessment is being completed at the end of the 2021 Asset Management Plan to update the current state, and so the City is not assessing the expected change. It is anticipated that the City will move to Level 4 as our Infrastructure Planning team continues to develop.		

Asset Management Readiness Scale Assessment Tool
People and leadership

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Current State

Outcomes: Select the outcomes that your organization has achieved.									
Outcome areas		**Level 1**		**Level 2**		**Level 3**		**Level 4**		**Level 5**

| **C: Resourcing and Commitment** | ☑ | Council knows that resources must be dedicated to exploring the requirements for **AM** and for drafting an **AM roadmap.** | ☑ | Council demonstrates buy-in and support for AM and allocates resources (funding or staff time) to further develop the **AM program.** | ☐ | Council champions AM as a core business function and has approved funding to continue **AM roadmap** activities. | ☐ | Council funds ongoing AM monitoring and enhancement. | ☐ | The **AM team** measures and monitors progress. |
| | | | | | | | | | ☐ | Council demonstrates commitment to ongoing improvement of AM practices. |

Please provide notes that describe how you have achieved your current level	Council approved the Prioritization Matrix in April 2021 which required staff time to implement and will further develop the AM program, which shows a Council commitment for futher development of the AM program. The AM team is currently working to raise Council awareness of Asset Management and how it can be better used to inform the budget process.

Readiness level (automatic)	Working on Level 1	Completed Level 1	Completed Level 2	Completed Level 3	Completed Level 4	Completed Level 5
		☑	☑			

Expected Future State

Current **(from left)**		**Expected**
2	Select the level you expect to achieve at the end of this project	No anticipated change

Please provide information about how your project activities will help you achieve your expected future state
This assessment is being completed at the end of the 2021 Asset Management Plan to update the current state, and so the City is not assessing the expected change. It is anticipated that the City will move to Level 4 as our Infrastructure Planning team continues to develop.

Expected State
Level 2

Data and information: By developing this competency, your organization is collecting and using asset data, performance data and financial information to support effective asset management planning and decision-making.

Note: To achieve each level, you must meet every requirement of each level before it.

Current State

Outcomes: Select the outcomes that your organization has achieved.									
Outcome areas		**Level 1**		**Level 2**		**Level 3**		**Level 4**	**Level 5**
A: Asset Data	☑	We have **asset inventory data,** including approximate quantities of assets within most asset groups.	☑	We have a **basic inventory** of most **critical assets**, including information on general asset properties such as size, material, location and installation date.	☐	We have a consolidated, **basic inventory** of all assets.	☐	We have expanded **inventory** data for some assets.	We have expanded **inventory data** for most assets.
					☑	We have defined life cycle investment requirements for **critical assets**.			
	☑	We have some anecdotal information on asset condition. Some age information exists.	☑	We are moving our data to a centralized location for use by the **AM team** (note: this does not require AM software).	☐	We have standardized condition rating systems defined for most asset groups.	☐	We have evaluated the life cycle investment requirements associated with **critical assets.**	We have evaluated the life cycle investment requirements associated with most assets.
			☑	We have defined **critical assets** and have some information on asset condition for these assets.	☐	We have asset condition information on all **critical assets.**	☐	We update data according to cycles defined in our **AM plans** or **strategy.**	
Please provide notes that describe how you have achieved your current level	The City has been actively obtaining Condition Assessments for various asset groups over the past seven years, or longer, where required by regulation. However some critical asset groups have not traditionally obtained the funding to perform condition assessments. These have historically been in areas which did not have strict regulatory requirements around condition assessment work. The City's Public Works department has been actively working to identify gaps in the inventory information for its asset classes and close the gaps over time. Condition Assessment data has varying levels of completeness depending on the asset group.								

Expected Future State

Current (from left)			**Expected**
2		**Select the level you expect to achieve at the end of this project**	**No anticipated change**

Please provide information about how your project activities will help you achieve your expected future state

This assessment is being completed at the end of the 2021 Asset Management Plan to update the current state, and so the City is not assessing the expected change. It is anticipated that the City will move to Level 3 after future iterations of the AMP.

Asset Management Readiness Scale Assessment Tool
Data and information

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Current State

Outcomes: Select the outcomes that your organization has achieved.									
Outcome areas		**Level 1**		**Level 2**		**Level 3**		**Level 4**	**Level 5**
B: Performance Data	☑	We have informal or anecdotal approaches for measuring asset or service performance.	☑	We have some information on performance of **critical assets**, collected from a variety of sources.	☑	We have defined **level of service** measurements for some service areas.	☐	We have defined **level of service** measurements for critical service areas.	We have defined **level of service** measurements for most or all service areas.
					☑	We have captured data on current **level of service** performance for some service areas.	☐	We communicate the results from our **level of service** measurement program to staff and council regularly.	We continually improve how we collect data on **level of service** performance.
					☑	We have reviewed service levels and asset performance with council.			
Please provide notes that describe how you have achieved your current level	The City has recently completed the 2021 Asset Management Plan which includes level of service measurements and performance for the City's core assets. The overall performance for some non-core asset classes is currently not known, not measured, or difficult to obtain from the data currently at the City's disposal. However, data will be improved for both core and non-core assets in the next iteration of the AMP due to the implementation of a new CMMS.								

Expected Future State

Current (from left)		Expected
3	Select the level you expect to achieve at the end of this project	No anticipated change

Please provide information about how your project activities will help you achieve your expected future state

This assessment is being completed at the end of the 2021 Asset Management Plan to update the current state, and so the City is not assessing the expected change. It is anticipated that the City will move to Level 4 after future iterations of the AMP.

Data and information

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Current State

Outcomes: Select the outcomes that your organization has achieved.										
Outcome areas		**Level 1**		**Level 2**		**Level 3**		**Level 4**		**Level 5**
C: Financial Information	☑	We have **financial information** on our assets, supporting minimum PS-3150 reporting requirements.*	☑	We have major capital renewal and operating & maintenance (O&M) expenditure data for some assets.	☐	We have capital (new and renewal) and O&M expenditure data for most assets.	☐	We understand the cost of sustaining current **levels of service** for all **critical assets**	☐	We understand the trade-offs between investment and the **level of service** we deliver and use this to optimize our financial plans.
					☐	We have linked AM and **financial information** for all **critical assets**.				
			☑	We have a strategy to link AM and **financial information**.	☑	We can demonstrate the gaps between forecasted infrastructure needs and current spending levels.				
Please provide notes that describe how you have achieved your current level	The City has a 10 year capital plan and forecasted renewal needs for most asset classes. While O&M expenditure data is collected on asset groups as a whole, it is difficult to dispurse O&M information down to the individual asset level in some areas. Record keeping remains paper based for many O&M activities. The SAM Action Items 1 through 4, approved by Council, relate to developing stronger links between AM and financial planning. The 2021 AMP identifies gaps between forecasted infrastructure needs and current spending levels for core assets.									

*PS-3150 is the Public Sector Accounting Board's standard guiding the treatment of tangible capital assets.

Expected Future State

Current (from left)		Expected
2	Select the level you expect to achieve at the end of this project	No anticipated change

Please provide information about how your project activities will help you achieve your expected future state

This assessment is being completed at the end of the 2021 Asset Management Plan to update the current state, and so the City is not assessing the expected change. It is anticipated that the City will move to Level 3 after future iterations of the AMP.

Readiness level (automatic)	Working on Level 1	Completed Level 1	Completed Level 2	Completed Level 3	Completed Level 4	Completed Level 5
		☑	☑			

Expected State
Level 2

Planning and decision-making: By developing this competency, your organization is documenting and standardizing how the organization sets asset management priorities, conducts capital and operations and maintenance (O&M) planning, and decides on budgets.

Note: To achieve each level, you must meet every requirement of each level before it.

Current State

Outcome areas		Outcomes: Select the outcomes that your organization has achieved.								
		Level 1		Level 2		Level 3		Level 4		Level 5
A: Documentation and Standardization	☑	Our asset planning approaches vary across the orgnization.	☑	Our departments follow a similar but informal asset planning approach.	☑	We have a structured asset planning approach, but application is inconsistent.	☐	We employ a consistent structured asset planning approach for each of our **critical services.**	☐	We employ a consistent structured asset planning approach for all services.
			☑	We evaluate investment needs and priorities based on a mix of structured and ad-hoc practices and criteria.	☑	We set priorities using criteria based on organizational goals and objectives.	☐	We set priorities using criteria that are fully aligned with our organizational goals and objectives.	☐	We adapt our planning approach and criteria to align with evolving organizational goals and objectives.
Please provide notes that describe how you have achieved your current level	The Prioritization Matrix recently approved by Council as part of the 2021 AMP will allow the City to prioritize capital projects using criteria developed based on organizational goals and objectives. Currently, O&M needs are done based on past performance, with little inclusion of asset performance information. The City will extend the matrix to include O&M projects in future iterations.									

Expected Future State

Current (from left)	Select the level you expect to achieve at the end of this project	No anticipated change
3		

Please provide information about how your project activities will help you achieve your expected future state

This assessment is being completed at the end of the 2021 Asset Management Plan to update the current state, and so the City is not assessing the expected change. It is anticipated that the City will move to Level 4 after future iterations of the AMP.

Current State

Outcomes: Select the outcomes that your organization has achieved.

Outcome areas		Level 1		Level 2		Level 3		Level 4		Level 5
B: Asset Management Plans	☑	Our approach to asset renewal focuses on reacting to basic needs (e.g. growth, regulation and known problems).	☑	We have draft **AM plans** for some asset classes, with forecasted financial needs based on estimated data.	☑	We have **AM plans** for **critical services**, based on a mix of estimated and actual data.	☐	We have **AM plans** for most services based on actual data.	☐	We have **AM plans** for all services based on actual data.
					☑	Our **AM plans** include available information about **level of service** (current and target) and **risk** management.	☐	Our **AM plans** include basic needs forecasting and **risk** management strategies for **critical assets.**	☐	Our individual **AM plans** are integrated across services.
	☑	We evaluate priorities based on available information, staff experience, and input from council and management.			☑	Our **AM plans** identify short-term issues and priorities.	☐	Our **AM plans** are based on both short- and long-term issues and priorities. They balance short-term service objectives with longer-term goals and **risks**.	☐	Our **AM plans** include needs forecasts and **risk** management strategies for most assets. Plans address **risks** to both service and business goals
							☐	We keep our **AM plans** up to date through normal business.		

Please provide notes that describe how you have achieved your current level

The 2021 Asset Management Plan contains information for our core assets including level of service and risk management, as well as identifies 10-year lifecycle costing for these core asset classes. The next iteration of the AMP will include this information as related to our non-core asset groups. The final iteration will include long-term goals. For most critical assets inventory data is substantially complete, however, for some critical assets, inventory data remains unknown. Condition Assessment data has varying levels of completeness depending on the asset group.

Expected Future State

Current (from left)	Select the level you expect to achieve at the end of this project	Expected No anticipated change
3		

Please provide information about how your project activities will help you achieve your expected future state

This assessment is being completed at the end of the 2021 Asset Management Plan to update the current state, and so the City is not assessing the expected change. It is anticipated that the City will move to Level 4 after future iterations of the AMP.

Current State

Expected Future State

Outcomes: Select the outcomes that your organization has achieved.					
Outcome areas	**Level 1**	**Level 2**	**Level 3**	**Level 4**	**Level 5**
C: Budgets and Financial Planning	☑ We prepare annual capital and operating budgets based on historical values	☑ We prepare annual capital and operating budgets based on a mix of historical values and new priorities.	☑ We prepare an annual capital budget based on an annual assessment of current needs.	☐ We prepare annual needs-based capital and operating budgets that are based on an annual assessment of **risks** and current needs.	☐ We prepare multi-year needs-based capital and operating budgets that are based on our short- and mid-term needs.
	☑ We deal with new needs reactively, as they occur.		☑ We have a 3-year **capital plan** that addresses short-term issues and priorities.	☑ We have a 5-year **capital plan*** and update it annually. / ☑ We update our **long-term financial plan** (at least 10-year) annually and understand the risks associated with our investment gap.	We take a structured approach to address in-cycle changes.

	Current (from left)	Select the level you expect to achieve at the end of this project	No anticipated change
	3		

Please provide information about how your project activities will help you achieve your expected future state

This assessment is being completed at the end of the 2021 Asset Management Plan to update the current state, and so the City is not assessing the expected change. It is anticipated that the City will move to Level 5 after future iterations of the AMP.

Please provide notes that describe how you have achieved your current level	The City currently prepares a 10 year capital budget on an annual basis. This budget is prepared based on projects identified in the previous year, historical values for annual programs (adjusted to reflect perceived trends) and new priorities identified in the current year. The Prioritization Matrix recently approved by Council as part of the 2021 AMP will allow the City to prioritize capital projects using criteria (including risk and need) developed based on organizational goals and objectives. The O&M plan is currently an annual plan which is based primarily on historical trends for each budget item, with some requests for new budget items to reflect

*Communities may benefit from long-term capital plans that extend beyond five years to ten years or more.

Readiness level (automatic)	Working on Level 1	Completed Level 1	Completed Level 2	Completed Level 3	Completed Level 4	Completed Level 5
		☑	☑	☑		

Expected State
Level 3

Contribution to asset management practice

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Contribution to asset management practice: By developing this competency, your organization is supporting staff in asset management training, sharing knowledge internally to communicate the benefits of asset management, and participating in external knowledge sharing.

Note: To achieve each level, you must meet every requirement of each level before it.

Current State

Outcome areas		Level 1		Level 2		Level 3		Level 4		Level 5
		Outcomes: Select the outcomes that your organization has achieved.								
A: Training and Development	☑	Our AM training and development approach is informal and largely driven by the personal initiative of staff.	☐	Our AM training and development requirements are defined by management based on short-term needs.	☐	We provide all staff with basic AM awareness training.	☐	We define AM knowledge and skill requirements. A training plan is in place for all positions.	☐	We train select staff members as internal experts to support the ongoing development of organizational capacity.
	☑	Some staff conduct targeted research, seeking out basic information on AM concepts and techniques.	☑	Selected staff are trained on basic AM concepts.	☑	Some staff undergo training on advanced AM concepts specific to their roles and responsibilities.	☐	Council, management and staff receive role-appropriate AM training to establish needed capacity across the organization	☐	Proactive, role-based training serves as a support for career development and succession planning.
			☐	Council has opportunities to increase their understanding of AM concepts.	☐	Staff and council are able to communicate the value of AM in their own words.				
Please provide notes that describe how you have achieved your current level	Advanced knowledge on the management of assets is present throughout the various commissions of the City. Knowledge of Asset Management is more sporadic, there is a basic awareness in most areas however articulation of what the City is actively doing as AM concepts and techniques is not consistent. Advanced knowledge of AM concepts is limited to certain individuals in various Commissions. Council has a basic awareness of Asset Management and is able to identify when lifecycle costing is not being adequately included in decision making.									

Expected Future State

Current (from left)	Select the level you expect to achieve at the end of this project	No anticipated change
1		

Please provide information about how your project activities will help you achieve your expected future state

This assessment is being completed at the end of the 2021 Asset Management Plan to update the current state, and so the City is not assessing the expected change. It is anticipated that the City will move to Level 2 as our Infrastructure Planning team continues to develop.

Contribution to asset management practice

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Current State

Outcome areas	Outcomes: Select the outcomes that your organization has achieved.								
		Level 1		Level 2		Level 3		Level 4		Level 5

Outcome areas	Level 1	Level 2	Level 3	Level 4	Level 5
B: Internal Communication and Knowledge Sharing	☑ We are aware of the need to mitigate the risk of losing information held in the minds of long-term staff.	☑ We mitigate the risk of losing information held in the minds of long-term staff, through improved record keeping.	☐ A culture of knowledge sharing is emerging internally, supported by official initiatives.	☐ A culture of knowledge sharing exists and is supported by a mix of formal and informal initiatives.	☐ We capture AM knowledge and it flows freely throughout the organization.
			☑ We collect and maintain AM knowledge resources.	☐ We disseminate AM knowledge resources within the organization.	☐ Staff leverage internal and industry knowledge and leading practice resources.
			☑ We communicate the benefits of AM internally to staff and council.		
Please provide notes that describe how you have achieved your current level	The City has been working on various initiatives to improve record keeping and the documentation of Standard Operating Procedures. In some areas, information has been lost as long term staff have been retiring at an increasing rate over the past few years and the initiatives are unable to keep up. In some areas increased turn over has resulted in no long term staff remaining in the area and a gap in the organization's knowledge of its assets. During the development of the Prioritization Matrix, AM staff presented on AM and the benefits to staff and Council, which has increased awareness across the organization.				

Expected Future State

Current (from left)	Select the level you expect to achieve at the end of this project	Expected: No anticipated change
2		

Please provide information about how your project activities will help you achieve your expected future state

This assessment is being completed at the end of the 2021 Asset Management Plan to update the current state, and so the City is not assessing the expected change. It is anticipated that the City will move to Level 3 as our Infrastructure Planning team continues to develop.

Contribution to asset management practice

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Current State

Outcomes: Select the outcomes that your organization has achieved.									
Outcome areas		**Level 1**		**Level 2**		**Level 3**		**Level 4**	**Level 5**
C: External Communication and Knowledge Sharing	☑	We are investigating AM-related organizations and resources.	☑	Staff or elected officials attend AM-related events.	☐	We are members of one or more AM organizations and actively share our AM experience.	☐	We are actively involved in AM organizations and present at AM events.	☐ We are a thought leader on AM within the municipal sector.
							☐	We share information with our peers on our experience, innovations and lessons learned.	☐ We are active in coaching other organizations to improve the overall body of AM knowledge.
			☑	We share basic information on current capital projects with the public.	☑	We share basic information on our assets, the services we provide, and future needs with the public.	☐	We rely on the data from our **AM program** to explain decisions to the public.	We communicate the benefits of AM to the public.
Please provide notes that describe how you have achieved your current level	City staff consistently seek out resources from external organizations to help improve decision making. The City publishes its 10 year capital plan and operating budget annually. The Asset Management Plan is made available on the City's website. City staff participate in events put on by AMOntario, CNAM and others as budgets and schedules permit.								

Expected Future State

Current (from left)		**Expected**
2	**Select the level you expect to achieve at the end of this project**	**No anticipated change**
	Please provide information about how your project activities will help you achieve your expected future state	
	This assessment is being completed at the end of the 2021 Asset Management Plan to update the current state, and so the City is not assessing the expected change. It is anticipated that the City will move to Level 3 as our Infrastructure Planning team continues to develop.	

Readiness level (automatic)	**Working on Level 1**	**Completed Level 1**	**Completed Level 2**	**Completed Level 3**	**Completed Level 4**	**Completed Level 5**
		☑				

Expected State
Level 1

APPENDIX B:
ASSET SUMMARY SHEETS

TOTAL CORE ASSET SUMMARY (2021 AMP)

BRANTFORD — THE CORPORATION OF THE CITY OF

TOTAL REPLACEMENT COST

$2.57B

REPLACEMENT COST BY ASSET CLASS

- $158M (6%)
- $697M (27%)
- $593M (23%)
- $481M (19%)
- $643M (25%)

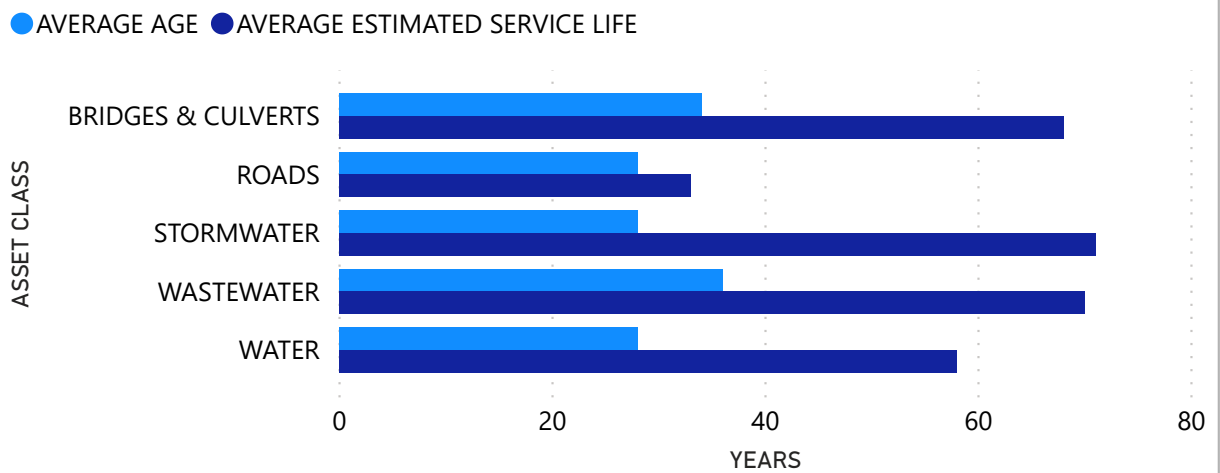**ASSET CLASS**
- BRIDGES & CULVERTS
- ROADS
- STORMWATER
- WASTEWATER
- WATER
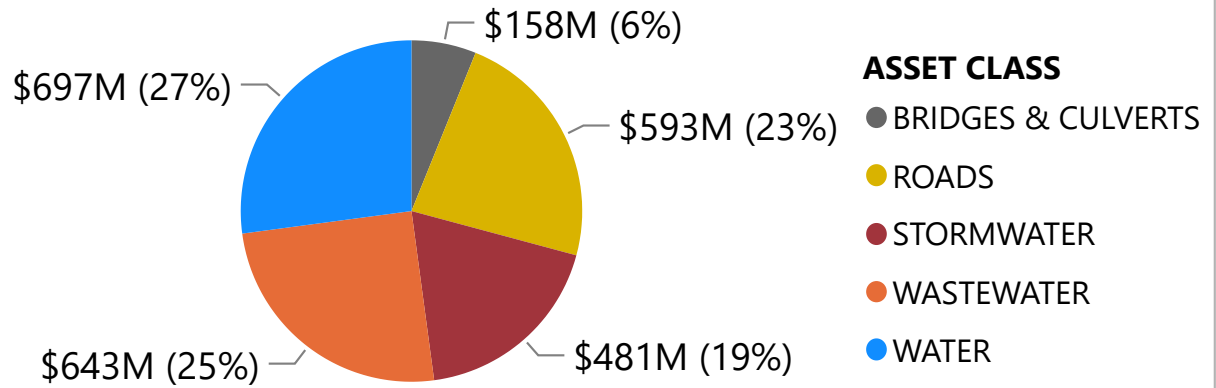
AVERAGE AGE (% OF ESTIMATED SERVICE LIFE EXPENDED)

31 YEARS (55%)

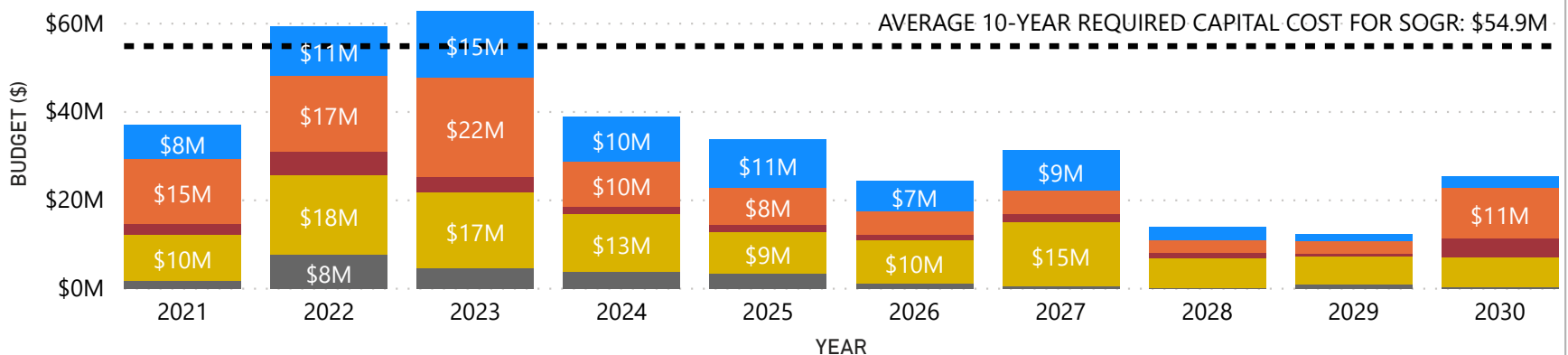## AVERAGE AGE VERSUS AVERAGE ESTIMATED SERVICE LIFE

- AVERAGE AGE
- AVERAGE ESTIMATED SERVICE LIFE

AVERAGE CONDITION

FAIR

ASSET CLASS	AVERAGE CONDITION	DATA CONFIDENCE
BRIDGES & CULVERTS	FAIR	MEDIUM
ROADS	FAIR	HIGH
STORMWATER	FAIR	MEDIUM
WASTEWATER	GOOD	MEDIUM
WATER	GOOD	MEDIUM

TOTAL ASSETS CAPITAL BUDGET FORECAST BY YEAR FOR STATE OF GOOD REPAIR (SOGR)

ASSET CLASS ● BRIDGE & CULVERT ● ROAD ● STORM ● WASTEWATER ● WATER

AVERAGE 10-YEAR REQUIRED CAPITAL COST FOR SOGR: $54.9M

BRIDGE & CULVERT
ASSET SUMMARY (2021 AMP)

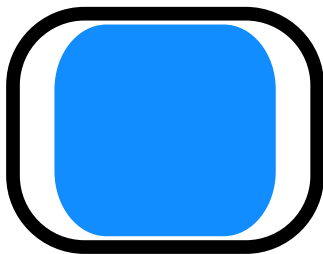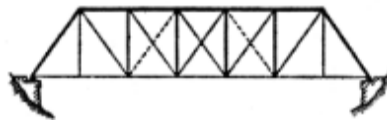| TOTAL REPLACEMENT COST	AVERAGE AGE (% OF ESTIMATED SERVICE LIFE EXPENDED)	AVERAGE WEIGHTED CONDITION
$158M	34 YEARS (50%)	FAIR

BRIDGE & CULVERT
ASSET INVENTORY SUMMARY

NUMBER OF LONG SPAN CULVERTS	NUMBER OF BRIDGES	NUMBER OF SHORT SPAN CULVERTS
45	40	186
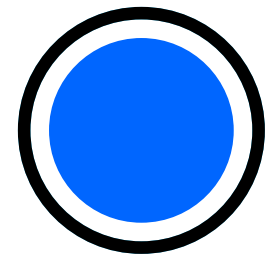
NUMBER OF RETAINING WALLS	NUMBER OF BRIDGE STAIRWAYS
36	6
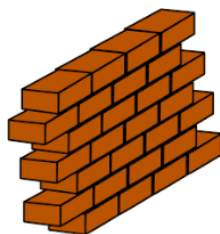
BRIDGE & CULVERT ASSET ANALYSIS

DATA CONFIDENCE LEVEL

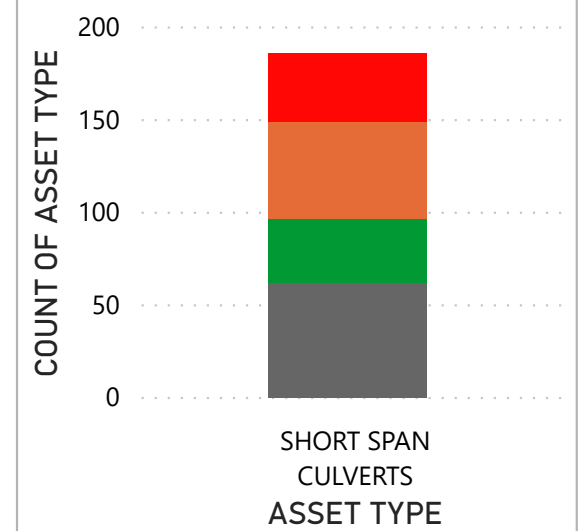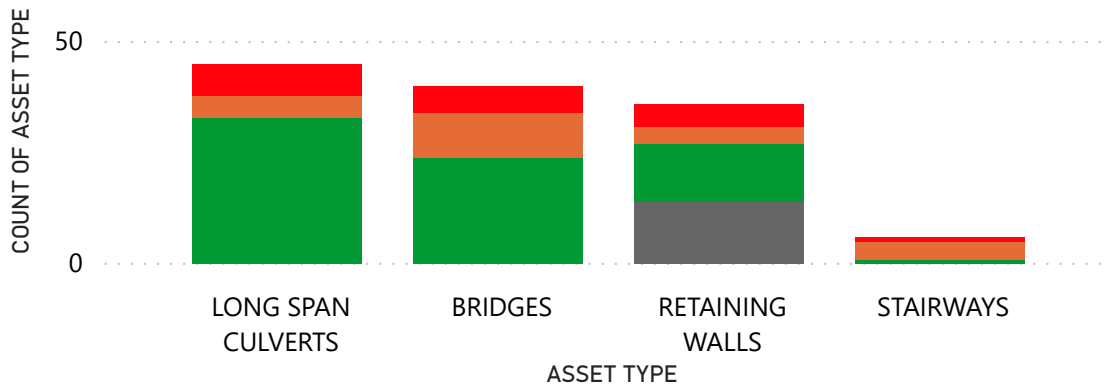| CONDITION	INVENTORY	REPLACEMENT COST
MEDIUM	MEDIUM	MEDIUM

CONDITION DISTRIBUTION-BRIDGE & CULVERT ASSETS

CONDITION: ●0-N/A ●1-GOOD ●2-FAIR ●3-POOR

10 YEAR COST EXPENDITURES

AVERAGE 10-YEAR REQUIRED
CAPITAL COST FOR SOGR: $2.74M

CURRENT AVERAGE 10-YEAR
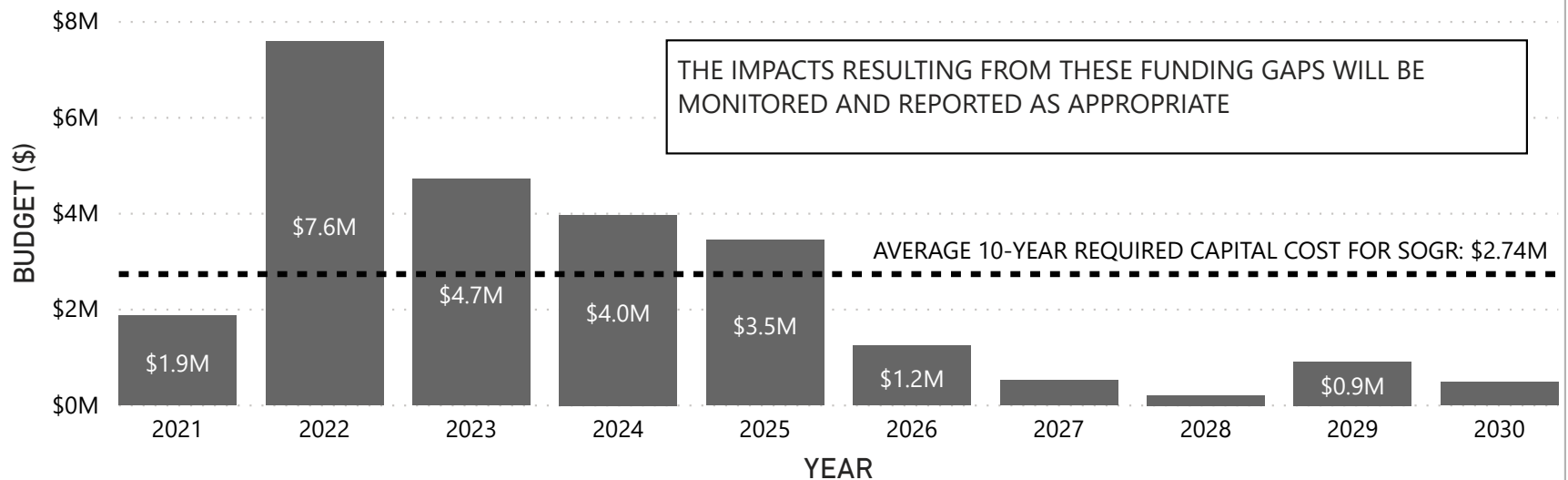SOGR CAPITAL BUDGET AMOUNT: $2.50M

AVERAGE ANTICIPATED ANNUAL
10-YEAR O&M COST: $197.1K

KEY 2020 TECHNICAL LEVELS OF SERVICE

AVERAGE BRIDGE CONDITION INDEX (BCI) FOR BRIDGES:	67.8
AVERAGE BCI FOR LONG SPAN CULVERTS:	68.1
NUMBER OF BRIDGES WITH LOADING RESTRICTIONS	1
NUMBER OF CLOSED PEDESTRIAN BRIDGES:	5
NUMBER OF BRIDGE CONDITION COMPLAINTS:	3

NOTE: TARGETS TO BE COMPLETED IN FUTURE ITERATIONS OF THE AMP

BRIDGE & CULVERT ASSETS CAPITAL BUDGET FORECAST BY YEAR FOR STATE OF GOOD REPAIR (SOGR)

THE IMPACTS RESULTING FROM THESE FUNDING GAPS WILL BE MONITORED AND REPORTED AS APPROPRIATE

AVERAGE 10-YEAR REQUIRED CAPITAL COST FOR SOGR: $2.74M

NOTE: O&M BUDGET GAPS WILL BE INCLUDED IN FUTURE ITERATIONS OF THE AMP FOLLOWING THE IMPLEMENTATION OF AIM

ROAD ASSET SUMMARY (2021 AMP)

TOTAL REPLACEMENT COST	AVERAGE AGE (% OF ESTIMATED SERVICE LIFE EXPENDED)	AVERAGE WEIGHTED CONDITION
$593M	28 YEARS (86%)	FAIR

ROAD ASSET INVENTORY SUMMARY

TOTAL LANE KILOMETERS	NUMBER OF SIGNALED INTERSECTIONS	LENGTH OF ON-ROAD PAINTED BICYCLE LANES (km)
1,067	140	37.7
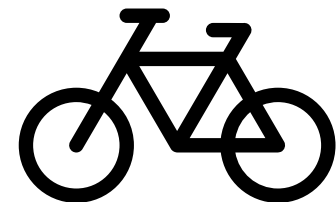
TOTAL LENGTH OF GUIDE RAIL (km)	NUMBER OF REGULATORY/WARNING SIGNS	TOTAL LENGTH OF SIDEWALK (km)
28.68	19,875	587.36
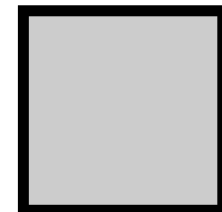
NUMBER OF STREETLIGHTS	NUMBER OF STREETLIGHT POLES
10,378	4,096
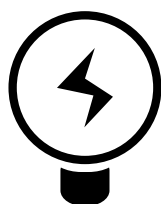
ROAD ASSET ANALYSIS (2021 AMP)

DATA CONFIDENCE LEVEL

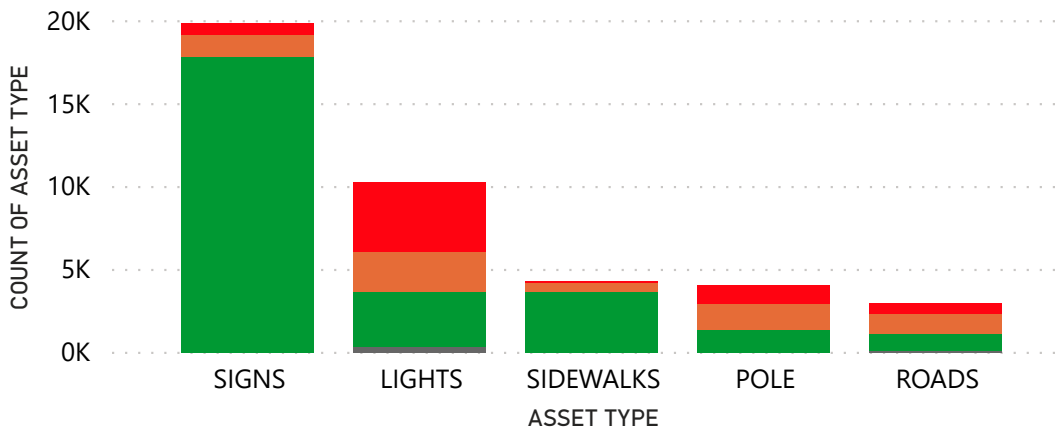| CONDITION	INVENTORY	REPLACEMENT COST
HIGH	HIGH	MEDIUM

CONDITION DISTRIBUTION-ROAD ASSETS

CONDITION ● 0-N/A ● 1-GOOD ● 2-FAIR ● 3-POOR

10 YEAR COST EXPENDITURES

AVERAGE 10-YEAR REQUIRED CAPITAL COST FOR SOGR: $20.9M

CURRENT AVERAGE 10-YEAR SOGR CAPITAL BUDGET AMOUNT: $11.2M

AVERAGE ANTICIPATED ANNUAL 10-YEAR O&M COST*: $19.6M

KEY 2020 TECHNICAL LEVELS OF SERVICE

AVERAGE PAVEMENT CONDITION INDEX (PCI) OF PAVED ROADS:	64
NUMBER OF ROAD CONDITION COMPLAINTS:	275
NUMBER OF UNEXPECTED ROAD CLOSURES:	2
NUMBER OF WEATHER DEPLOYMENT EVENTS:	31
LENGTH OF FULL ROAD RECONSTRUCTION:	2.8 km

NOTE: TARGETS TO BE COMPLETED IN FUTURE ITERATIONS OF THE AMP

ROAD ASSETS CAPITAL BUDGET FORECAST BY YEAR FOR STATE OF GOOD REPAIR (SOGR)

AVERAGE 10-YEAR REQUIRED CAPITAL COST FOR SOGR: $20.9M

THE IMPACTS RESULTING FROM THESE FUNDING GAPS WILL BE MONITORED AND REPORTED AS APPROPRIATE.

*NOTE: O&M BUDGET GAPS WILL BE INCLUDED IN FUTURE ITERATIONS OF THE AMP FOLLOWING THE IMPLEMENTATION OF AIM

WATER ASSET SUMMARY (2021 AMP)

TOTAL REPLACEMENT COST	AVERAGE AGE (% OF ESTIMATED SERVICE LIFE EXPENDED)	AVERAGE WEIGHTED CONDITION
$697M	29 YEARS (49%)	GOOD

LINEAR ASSET INVENTORY SUMMARY

LENGTH OF WATERMAIN (km)	NUMBER OF SERVICES	NUMBER OF HYDRANTS
507.7	32,846	2,795
NUMBER OF CHAMBERS	**NUMBER OF VALVES**	**NUMBER OF METERS**
237	8,673	35,175
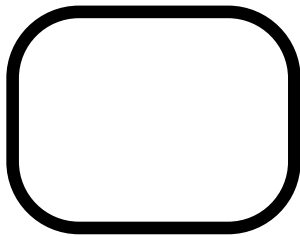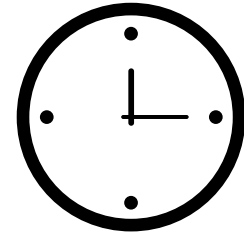
VERTICAL ASSET INVENTORY SUMMARY

NUMBER OF WTP STRUCTURES	NUMBER OF PUMP STATIONS	NUMBER OF ELEVATED STORAGE TANKS
12	4	2

WATER ASSET ANALYSIS (2021 AMP)

DATA CONFIDENCE LEVEL

CONDITION	INVENTORY	REPLACEMENT COST
MEDIUM	MEDIUM	MEDIUM

CONDITION DISTRIBUTION-WATER ASSETS

CONDITION ● 0-N/A ● 1-GOOD ● 2-FAIR ● 3-POOR
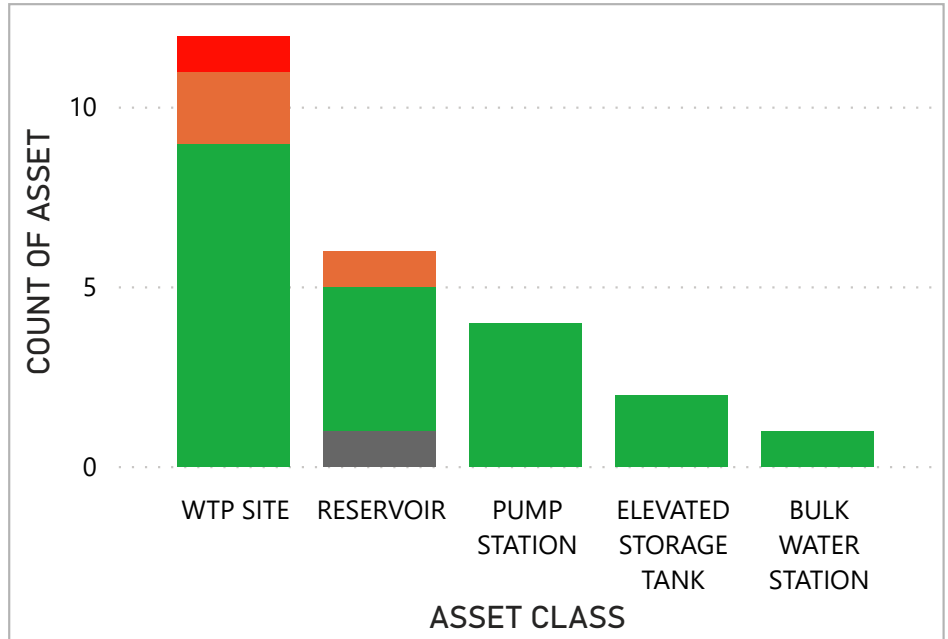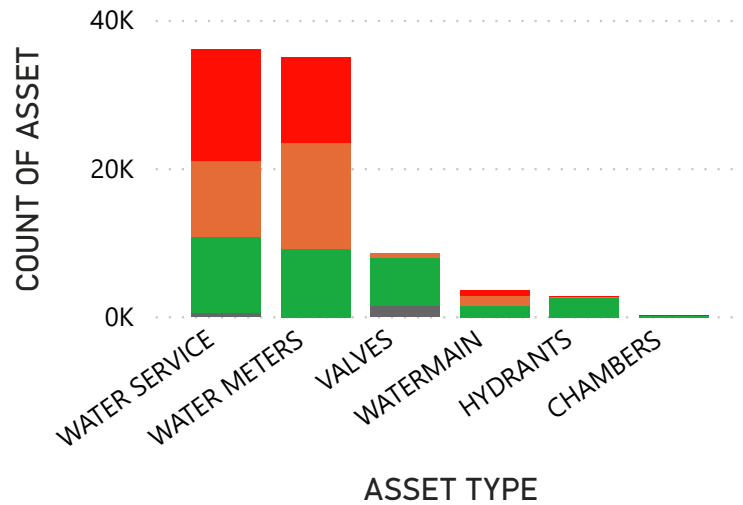
10-YEAR COST EXPENDITURES

AVERAGE 10-YEAR REQUIRED
CAPITAL COST FOR SOGR: $15.3M

CURRENT AVERAGE 10-YEAR
SOGR CAPITAL BUDGET AMOUNT: $7.78M

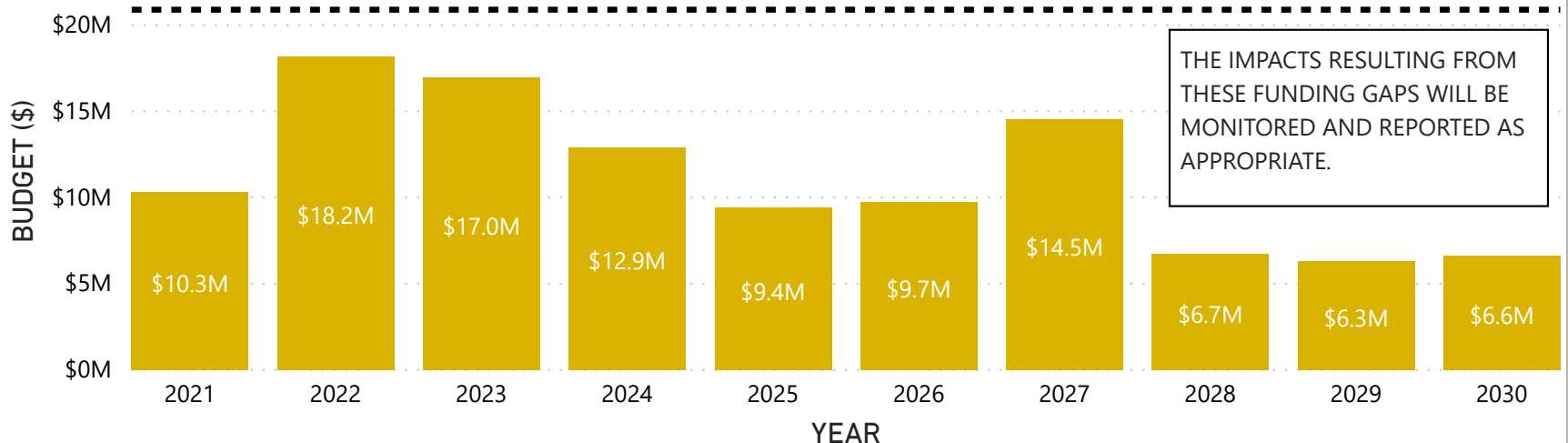AVERAGE ANTICIPATED ANNUAL
10-YEAR O&M COST*: $32.5M

KEY 2019 TECHNICAL LEVELS OF SERVICE

% OF PROPERTIES CONNECTED TO THE WATER SYSTEM:	94.1%
NUMBER OF WATERMAIN BREAKS:	17
NUMBER OF BOIL WATER ADVISORIES:	0
WATER PRESSURE COMPLAINTS:	0.50 / 1000 ppl
LENGTH OF NEWLY INSTALLED WATERMAIN:	7.9 km

NOTE: TARGETS TO BE COMPLETED IN FUTURE ITERATIONS OF THE AMP

WATER ASSETS CAPITAL BUDGET FORECAST BY YEAR FOR STATE OF GOOD REPAIR (SOGR)

AVERAGE 10-YEAR REQUIRED CAPITAL COST FOR SOGR: 15.3M

THE IMPACTS RESULTING FROM THESE FUNDING GAPS WILL BE MONITORED AND REPORTED AS APPROPRIATE.

2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
7.7M	11.1M	15.0M	10.1M	10.9M	6.8M	9.1M	3.0M	1.5M	2.6M

*NOTE: O&M BUDGET GAPS WILL BE INCLUDED IN FUTURE ITERATIONS OF THE AMP FOLLOWING IMPLEMENTATION OF AIM

WASTEWATER ASSET SUMMARY (2021 AMP)

THE CORPORATION OF THE CITY OF BRANTFORD

TOTAL REPLACEMENT COST

$643M

AVERAGE AGE (% OF ESTIMATED SERVICE LIFE EXPENDED)

36 YEARS (51%)

AVERAGE WEIGHTED CONDITION

GOOD

LINEAR ASSET INVENTORY SUMMARY

LENGTH OF GRAVITY MAIN (km)

432.1

NUMBER OF SERVICES

10,233

LENGTH OF SIPHONS (km)

2.8

NUMBER OF MAINTENANCE HOLES

6,148

VERTICAL ASSET INVENTORY SUMMARY

NUMBER OF WASTEWATER TREATMENT PLANT STRUCTURES

20

NUMBER OF PUMP STATIONS

9

LENGTH OF FORCEMAIN (km)

3.7

WASTEWATER ASSET ANALYSIS (2021 AMP)
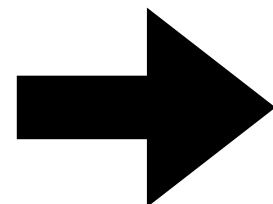
DATA CONFIDENCE

| CONDITION	INVENTORY	REPLACEMENT COST
MEDIUM	MEDIUM	MEDIUM

CONDITION DISTRIBUTION-WASTEWATER ASSETS

CONDITION ● 0-N/A ● 1-GOOD ● 2-FAIR ● 3-POOR
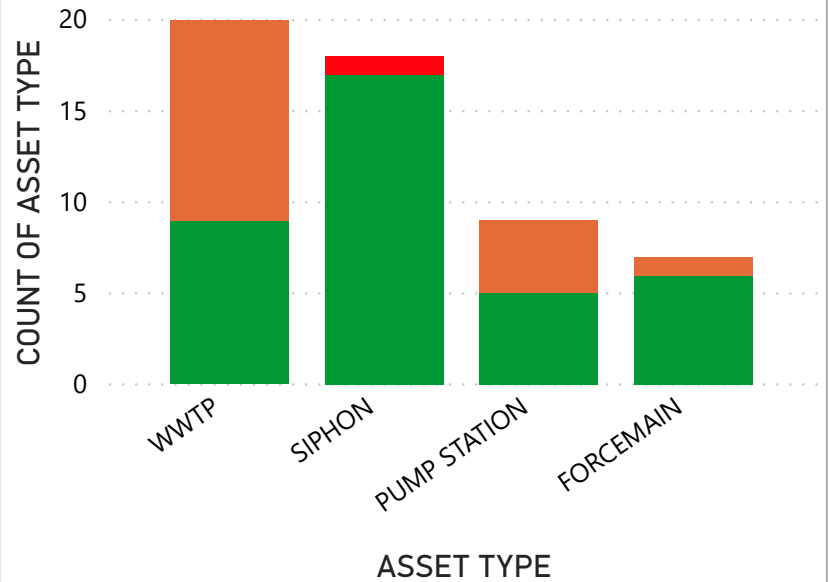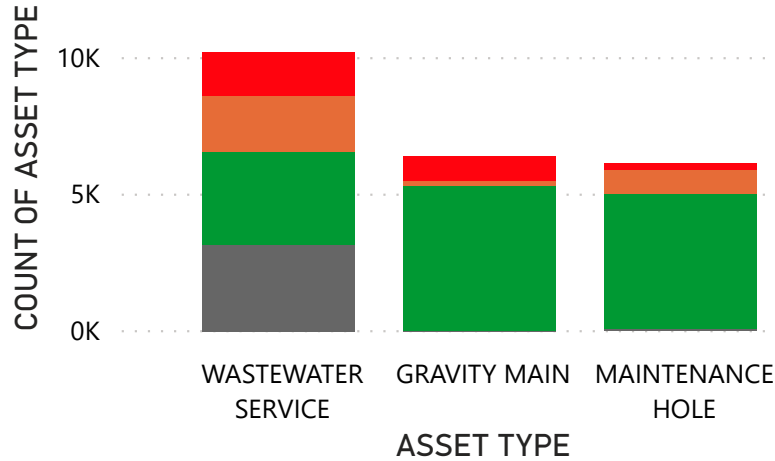
10 YEAR COST EXPENDITURES

AVERAGE 10-YEAR REQUIRED
CAPITAL COST FOR SOGR: $11.7M

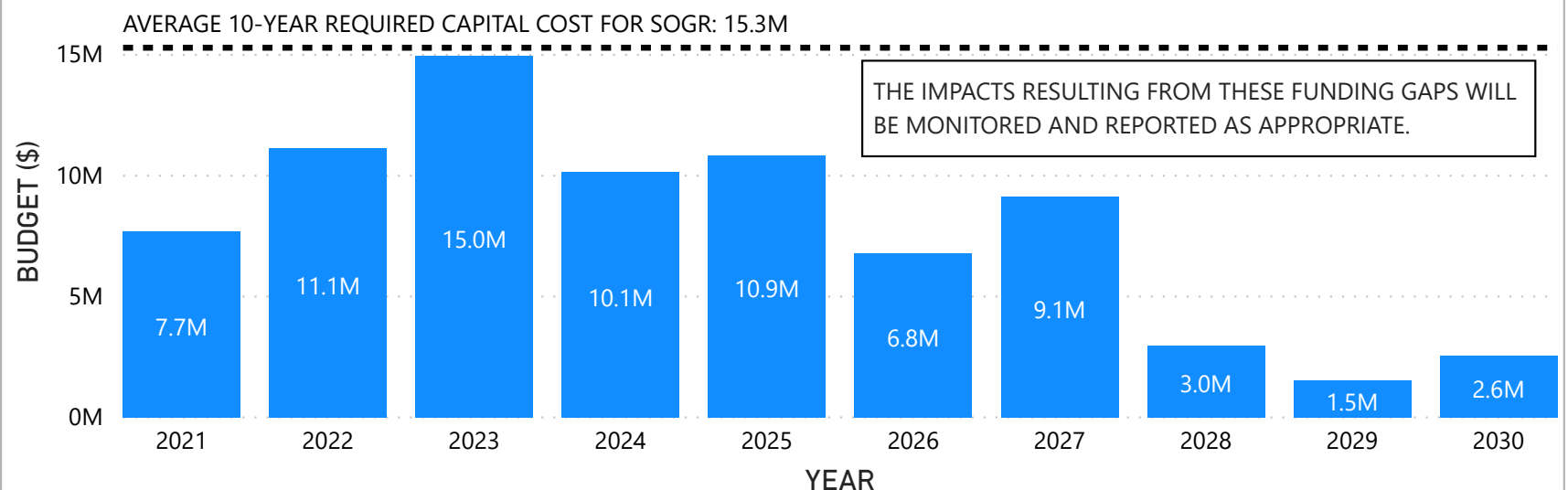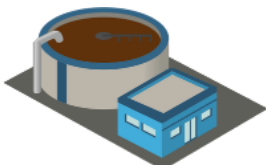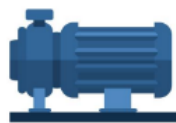CURRENT AVERAGE 10-YEAR
SOGR CAPITAL BUDGET AMOUNT: $10.1M

AVERAGE ANTICIPATED ANNUAL
10-YEAR O&M COST: $32.5M

KEY 2019 TECHNICAL LEVELS OF SERVICE

% OF PROPERTIES CONNECTED TO WASTEWATER SYSTEM: 93.4%
NUMBER OF WASTEWATER SYSTEM BACKUPS: 0
NUMBER OF EFFLUENT VIOLATIONS: 0
NUMBER OF ODOUR COMPLAINTS: 10
LENGTH OF NEWLY INSTALLED GRAVITY MAIN: 5.8 km

NOTE: TARGETS TO BE COMPLETED IN FUTURE ITERATIONS OF THE AMP

WASTEWATER ASSETS CAPITAL BUDGET FORECAST BY YEAR FOR STATE OF GOOD REPAIR (SOGR)

THE IMPACTS RESULTING FROM THESE FUNDING GAPS WILL BE MONITORED AND REPORTED AS APPROPRIATE.

AVERAGE 10-YEAR REQUIRED CAPITAL COST FOR SOGR: $11.7M

Year	Budget
2021	$14.5M
2022	$17.3M
2023	$22.4M
2024	$10.1M
2025	$8.2M
2026	$5.4M
2027	$5.4M
2028	$3.0M
2029	$2.8M
2030	$11.4M

STORMWATER ASSET SUMMARY (2021 AMP)

TOTAL REPLACEMENT COST

$481M

AVERAGE AGE (% OF ESTIMATED SERVICE LIFE EXPENDED)

28 YEARS (40%)

AVERAGE WEIGHTED CONDITION

FAIR

STORMWATER ASSET INVENTORY SUMMARY

NUMBER OF PUMP STATIONS
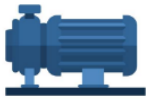
1

LENGTH OF GRAVITY MAIN (km)

413.6

NUMBER OF STORM PONDS

23

NUMBER OF STORM SERVICES

5,010

NUMBER OF MAINTENANCE HOLES

6,222

NUMBER OF INLETS

12,290

NUMBER OF OIL & GRIT SEPARATORS

25

NUMBER OF OUTFALLS
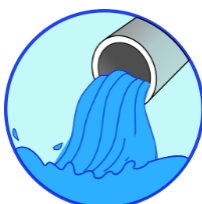
290

LENGTH OF DITCHES (km)
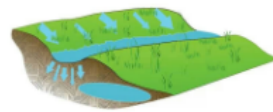
121.3

NUMBER OF FLOOD GATES

39

STORMWATER ASSET ANALYSIS (2021 AMP)

BRANTFORD — THE CORPORATION OF THE CITY OF

DATA CONFIDENCE LEVEL

CONDITION	INVENTORY	REPLACEMENT COST
MEDIUM	MEDIUM	LOW

CONDITION DISTRIBUTION-STORMWATER ASSETS

CONDITION ● 0-N/A ● 1-GOOD ● 2-FAIR ● 3-POOR
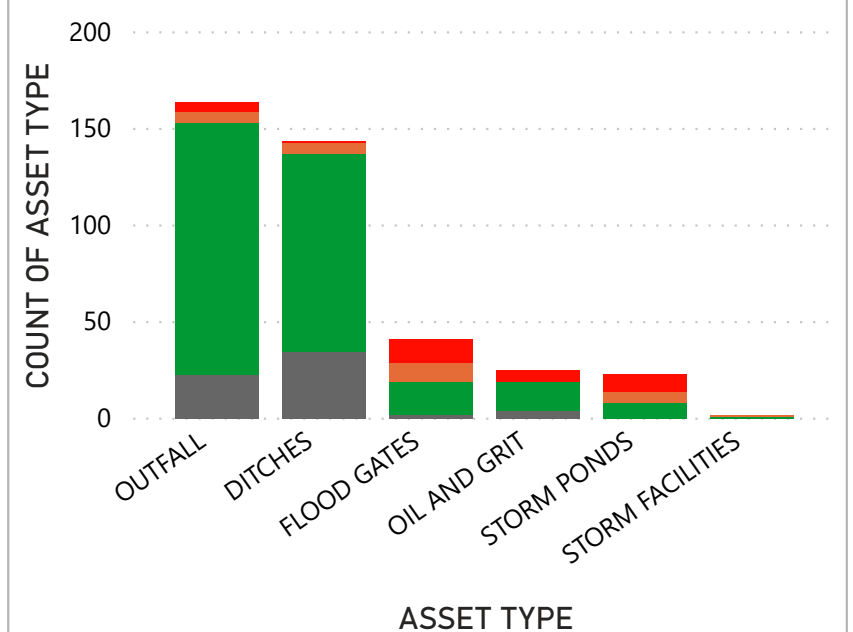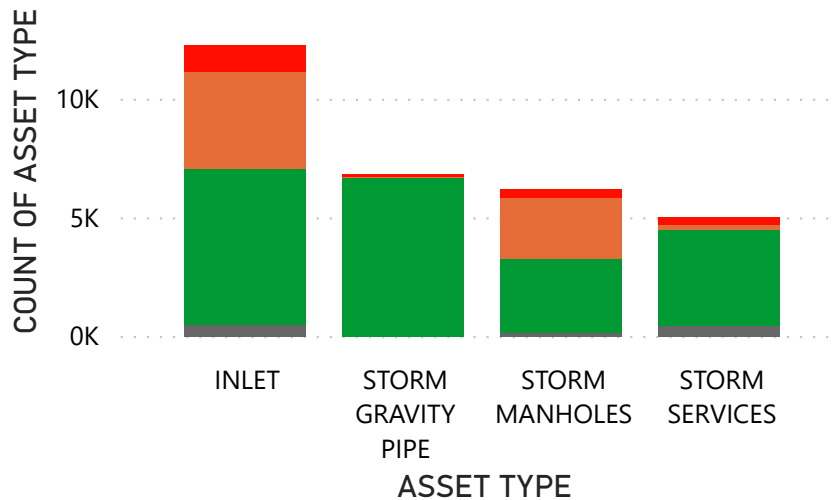
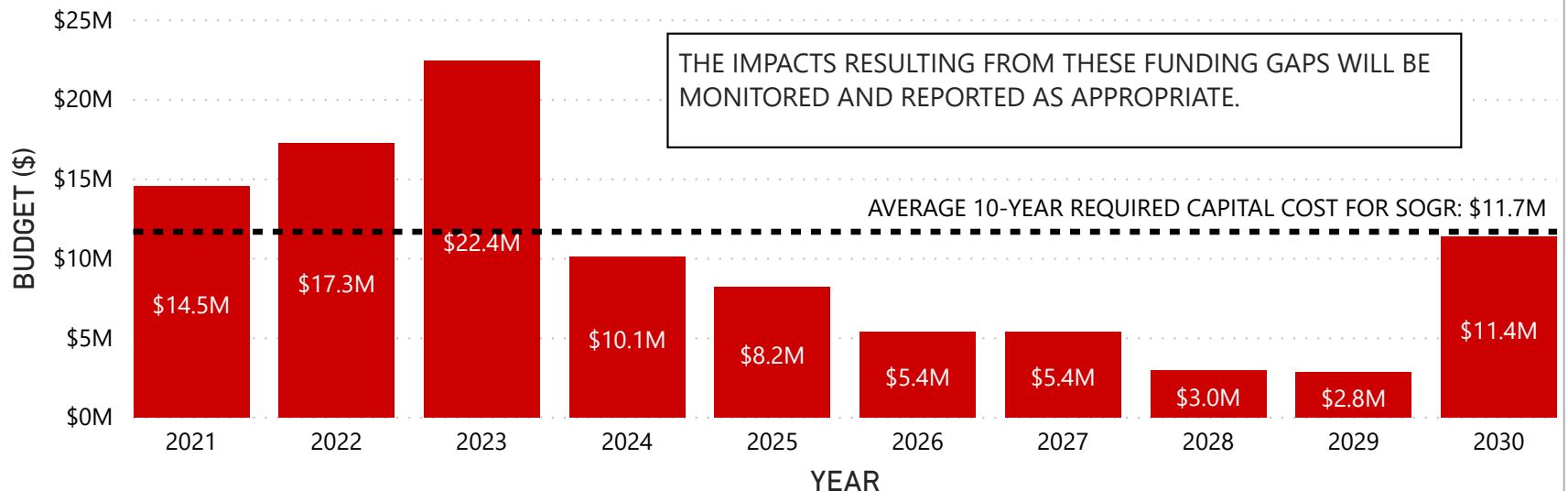

10-YEAR COST EXPENDITURES

AVERAGE 10-YEAR REQUIRED CAPITAL COST FOR SOGR:	$4.4M
CURRENT AVERAGE 10-YEAR SOGR CAPITAL BUDGET AMOUNT:	$2.4M
AVERAGE ANTICIPATED ANNUAL 10-YEAR O&M COST*:	$0.9M

KEY 2020 TECHNICAL LEVELS OF SERVICE

% OF STORMWATER SYSTEM RESILIENT TO A 5-YEAR STORM:	52.3%
FLOODING COMPLAINTS DUE TO SYSTEM ISSUE (2019):	0.21 / 1000 ppl
NUMBER OF STORM EVENTS:	12
LARGEST RETURN YEAR STORM EVENT:	1.8
LENGTH OF NEWLY INSTALLED GRAVITY MAIN:	0.8 km

NOTE: TARGETS TO BE COMPLETED IN FUTURE ITERATIONS OF THE AMP

STORMWATER ASSETS CAPITAL BUDGET FORECAST BY YEAR FOR STATE OF GOOD REPAIR (SOGR)

AVERAGE 10-YEAR REQUIRED CAPITAL COST FOR SOGR: 4.4M

THE IMPACTS RESULTING FROM THESE FUNDING GAPS WILL BE MONITORED AND REPORTED AS APPROPRIATE.

Year	Budget
2021	2.6M
2022	5.2M
2023	3.7M
2024	1.8M
2025	1.8M
2026	1.3M
2027	1.8M
2028	1.2M
2029	0.7M
2030	4.4M
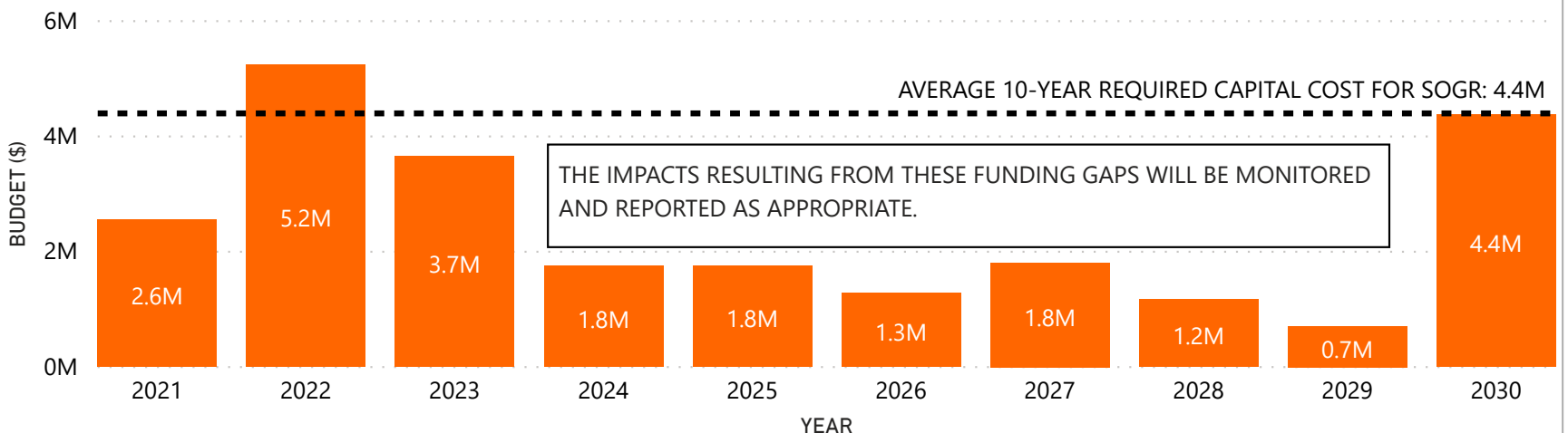
APPENDIX C:
PUBLIC ENGAGEMENT SURVEY

2021 AMP Public Engagement Review Notes - Customer LoS

Principles: Accessibility, Reliability, Quality, Safety, Responsiveness, Environmental, Sustainable, Cost

Water

- Residents agree drinking water is available (100% of those connected)
- Residents generally feel the water is safe to drink (85.2%), but some residents (14.8%) are concerned with the safety and want to feel their water is safe to drink (e.g. fears of contamination, lead services) and residents want their water to be a certain quality (e.g. not over chlorinated, no smell or colour, no fluoride)
- Residents reported service disruptions have either not occurred (75.9%) or are handled promptly if they occur (22.2%).

Conclusions: Residents are happy with the availability of water, but they want to feel their water is both safe and a certain quality. Service disruption within one (1) day is acceptable.

Possible KPIs: Number of water quality complaints, Average hours/days to resolve water service disruption, Number of lead services, Number of lead loans requested

Storm

- Residents generally feel their properties are protected from flooding (74.3%) or do not have an opinion (4.6%). However, a significant number of residents worry about their properties flooding (21.1%) and want to feel that protections are in place
    - Flooding fears are generally due to river floodplain (especially because of ice dam) and limited sewer capacity (i.e. storm surges) – areas of concern are Gilkison Flats and Eagle Place
- Half of respondents (49.5%) were not aware of the City's emergency planning for flooding or how they would help residents, 31.2% of respondents felt the City would work quickly to help residents in the event of a flood event. A small number did not have an opinion (4.6%), and 14.7% were not confident the City would help residents recover.

Conclusions: Residents are concerned with flooding and want to feel that protections are in place.

Possible KPIs: Number of basement flooding complaints, Number of overland flooding complaints, Number of storm events exceeding network capacity, % of 2 year storm capacity pipes

Climate Change

- Only 10.2% of surveyed thought the City was working towards climate change goals and 12% of respondents did not have an opinion. Generally, responders did not know enough about what the City was doing (50.9%), and a significant number (12%) thought the City was not doing enough. Of those who didn't think the City was doing enough they suggested the following:
    - Concerns with infrastructure resiliency to climate change (e.g. might increase flooding)

- o Desire for City to prioritize green space
- o Interest in sustainable development and green initiatives (e.g. solar panels, improved transit, green building envelopes, electric vehicles, water/energy reduction, wetland conservation)

Conclusions: This suggests we need to improve our advertisement of our climate change goals/targets and what we have accomplished or are planning.

Possible KPIs: Total GHG reduction, % of green space in the City

Wastewater

- Over half of residents are not concerned with sewage backups (55%), many residents do not have an opinion (27.5%), and a small number (2.8%) are on a septic system. However, 14.7% of residents are concerned with sewage backups. These concerns were due to:
  - o Aging infrastructure;
  - o Odours from drains; and
  - o Roots.
- The majority of respondents have never had a wastewater service disruption (87.6%), and if a disruption did occur it was resolved within one (1) day (12.4%).

Conclusions: While many respondents were not concerned about back-ups, many respondents were concerned with the state of our infrastructure. Service disruption of within one (1) day is acceptable.

Possible KPIs: Number of wastewater backups due to pipe condition, Number of wastewater backups due to obstructions, Number of odour complaints, Average hours/days to resolve wastewater service disruption

Roads

- Most respondents felt roads were generally satisfactory but thought some roads were needing repairs for years (63.9%). Many respondents had no concerns with the road condition (12%). A small number had no opinion (1%). A significant number of respondents felt the roads were completely unsatisfactory (23.1%). If those that thought the roads were unsatisfactory gave the following reasons:
  - o Too much traffic
  - o Continuous patching instead of full repair
  - o Potholes remaining for too long
  - o Line painting
- Many residents felt road hazards were repaired in a timely manner (37.6%) or didn't have an opinion (12.8%), but half of the respondents (49.5%) felt that hazards stayed on the roads for weeks or were repaired poorly.
- In terms of road closures and detours, over half of residents felt that closures had proper notice and detours and signage were adequate (52.3%). Many residents did not feel strongly on this

issue either they didn't have an opinion (17.4%), or hadn't noticed (22%). However, 8.3% thought the city did not give enough notice or adequate signage for a road closure. For those that thought the City did not give enough notice or adequate signage:
- o   Not enough signage
- o   Concerns with downtown business not being considered
- Most respondents (65.1%) felt that snow and debris were cleared in a timely manner. A small number (3.7%) did not have an opinion, and 31.2% of respondents thought that snow and sweeping were not done in a timely manner.
    - o   Many complaints were due to sweeping
    - o   Local roads not cleared quickly enough
    - o   Enforce no parking after snowfall
    - o   Sidewalk clearing unfriendly
    - o   Complaints about unnecessary bike lanes
- Over half of respondents (51.4%) think that streets, sidewalks, and trails are adequately lit, and 20.6% of people did not have an opinion. However, 28% of people thought the City needed better lighting.
    - o   Complaints about lighting downtown and on trails
- Most respondents (76.1%) thought that sidewalks condition were safe for walking purposes. A small number (1.8%) did not have an opinion. Many respondents felt sidewalks were not in good condition for walking (22%).
    - o   Residents thought some trails should be maintained year round
    - o   Sidewalk connectivity complaints
    - o   Sidewalk condition complaints, repairs taking too long
- Over half of respondents (51.9%) felt road conditions were safe for cycling, and 18.5% did not have an opinion. Many respondents (29.6%) did not think road conditions were safe for cyclists.
    - o   More separation
    - o   Speed concerns
- Many respondents did not have an opinion on the connectivity of cycling routes (38.9%), and 36.1% thought they were connected and easy to navigate. However, 25% of respondents did not think that the cycling routes were connected or easy to navigate.
    - o   Designated bike paths
    - o   More bike lanes
    - o   More signage on trails

Conclusions: Respondents generally thought the current LoS associated with roads was satisfactory. Improvements could be made around:
- o   Response time for clearing road hazards;
- o   Trail lighting and maintenance; and
- o   Cycling lanes connectivity and emphasis on safety.

Possible KPIs: Average time to finish snow clearing the City, Length of on-road bike paths, Length of full bike network, % of roads with cycling lanes (separated vs not), % of lit trails, % of year round maintained

trails, Connectivity?, Average time to fix identified pothole, Average time to fix identified sidewalk defect

Bridges and Culverts

- Many respondents (41.7%) felt that bridges and culverts were safe to cross, and 39.8% did not have an opinion. 18.5% of respondents felt that there were bridges and culverts that were unsafe. Those that had concerns about safety stated:
    - Concerns with closed pedestrian bridges
    - Lorne bridge concerns
- Most respondents didn't notice if there were culverts that were blocked (62.4%), and 25.7% of respondents didn't have an opinion. A small number of people (2.8%) said there were culverts that were not tended to in a timely manner, and 9.2% of respondents felt that culverts were attended to in a timely manner.

General

- Almost half of respondents (46.8%) were generally satisfied with how their tax dollars were spent but thought improvements could be made, and a quarter of respondents (25.7%) were happy with how they were being spent. A small number (4.6%) did not have an opinion, and 22.9% were unhappy with how their tax dollars were being spent. Those that were unsatisfied stated:
    - Concerns with OPRE and Arrowdale
    - Work taking too long
    - More storm emphasis

Asset Management - Level of Service Public Survey

SURVEY RESPONSE REPORT
13 January 2021 - 03 February 2021

PROJECT NAME:
Asset Management Level of Service
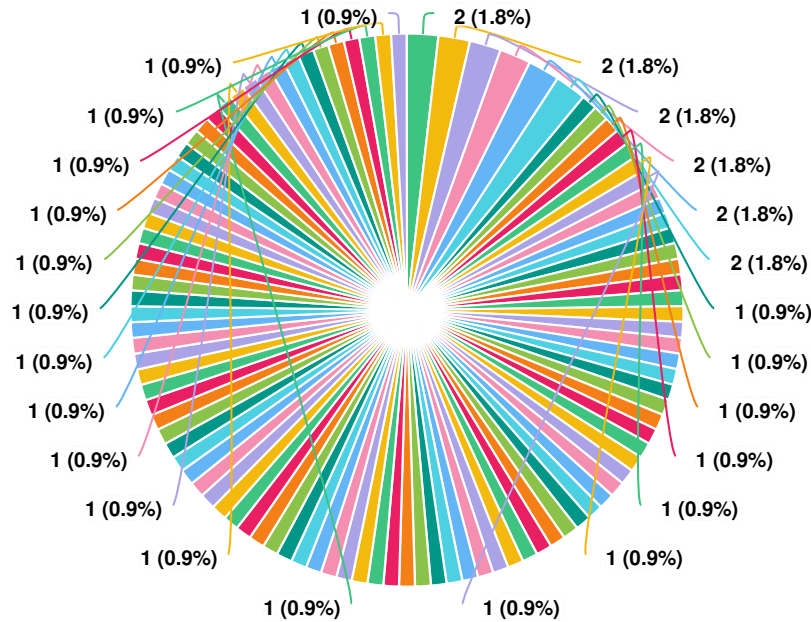
SURVEY QUESTIONS

Q1	Do you live in Brantford?

4 (3.7%)

105 (96.3%)
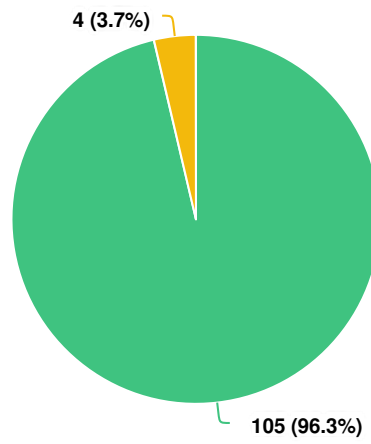
Question options

● Yes ● No

Mandatory Question (109 response(s))
Question type: Radio Button Question

Q1	Do you live in Brantford?

Q2	What is your postal code? For example, N3S 5T6

1 (0.9%)
2 (1.8%)
1 (0.9%)
2 (1.8%)
1 (0.9%)
2 (1.8%)
1 (0.9%)
2 (1.8%)
1 (0.9%)
2 (1.8%)
1 (0.9%)
2 (1.8%)
1 (0.9%)
1 (0.9%)
1 (0.9%)
1 (0.9%)
1 (0.9%)
1 (0.9%)
1 (0.9%)
1 (0.9%)
1 (0.9%)
1 (0.9%)
1 (0.9%)
1 (0.9%)
1 (0.9%)
1 (0.9%)

Question options

- Brantford, ON, N3P1G7
- Brantford, ON, N3S5T6
- Brantford, ON, N3R1W7
- Brantford, ON, N3P1P8
- Brantford, ON, N3S3C8
- Brantford, ON, N3S2V6
- Burford, ON, N0E0A7
- Brantford, ON, N3P1J2
- Brantford, ON, N3P1H8
- Brantford, ON, N3R7R1
- Brantford, ON, N3T5G3
- Brantford, ON, N3R3C8
- Brantford, ON, N3T1R4
- Brantford, ON, N3S3W6
- Brantford, ON, N3R5B6
- Brantford, ON, N3T4B9
- Brantford, ON, N3S5J1
- Brantford, ON, N3T4R8
- Cambridge, ON, N1T1N3
- Brantford, ON, N3S4T9
- Brantford, ON, N3R3W6
- Brantford, ON, N3T2E7
- Brantford, ON, N3T4S8
- Brantford, ON, N3T0L3
- Brantford, ON, N3T6K8
- Brantford, ON, N3P1V4
- Brantford, ON, N3T6H8
- Brantford, ON, N3S3L3
- Brantford, ON, N3S3Y2
- Brantford, ON, N3T2E6
- Brantford, ON, N3R6L6
- Brantford, ON, N3R4V9
- Brantford, ON, N3S4B4
- Brantford, ON, N3T0K5
- Brantford, ON, N3T0A4
- Brantford, ON, N3S3J2
- Brantford, ON, N3P1P6
- Brantford, ON, N3T3H8
- Brantford, ON, N3T0E9
- Brantford, ON, N3S1P2
- Brantford, ON, N3R1S6
- Brantford, ON, N3S1L3
- Brantford, ON, N3S7V3
- Brantford, ON, N3T4M6
- Brantford, ON, N3T1W3
- St George Brant, ON, N0E0A1
- Brantford, ON, N3R4P9
- Brantford, ON, N3P1N5
- Brantford, ON, N3S1T1
- Brantford, ON, N3S1X3
- Brantford, ON, N3T2E4
- Brantford, ON, N3T1A6
- Brantford, ON, N3R7W8
- Brantford, ON, N3T6J1
- Brantford, ON, N3R7Z4
- Brantford, ON, N3P1V8
- Brantford, ON, N3S0E1
- Brantford, ON, N3S5B3
- Brantford, ON, N3R1V4
- Brantford, ON, N3T6H7
- Brantford, ON, N3T0J3
- Brantford, ON, N3T6E9
- Brantford, ON, N3T5A8
- Brantford, ON, N3R1G6
- Brantford, ON, N3S3R9
- Brantford, ON, N3T3L1
- Brantford, ON, N3T0B2
- Brantford, ON, N3S7L4
- Brantford, ON, N3R6C7
- Brantford, ON, N3T6M5
- Brantford, ON, N3T6P1
- Brantford, ON, N3S4N4

▲ 1/2 ▼

Mandatory Question (109 response(s))
Question type: Region Question

Q3	**In your view, is drinking water supplied by the City of Brantford readily available?**

0 (0.0%)

1 (1.0%)

104 (99.0%)
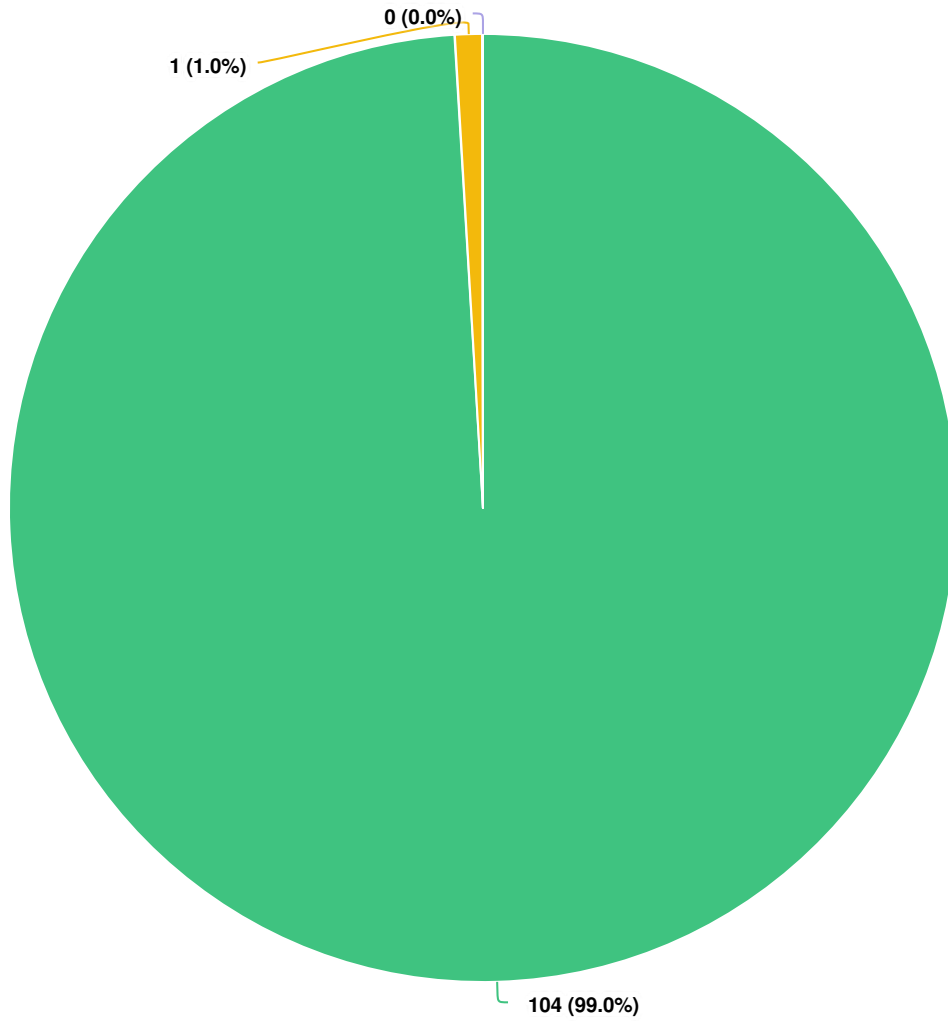
Question options

🟢 Yes, City drinking water is always available when I need it.　🟡 I am not connected to municipal water services.

🟣 No, I have had instances where I have not had access to City drinking water.

Optional question (105 response(s), 4 skipped)
Question type: Radio Button Question

Q4	**Do you think that municipal drinking water in Brantford is safe to drink?**
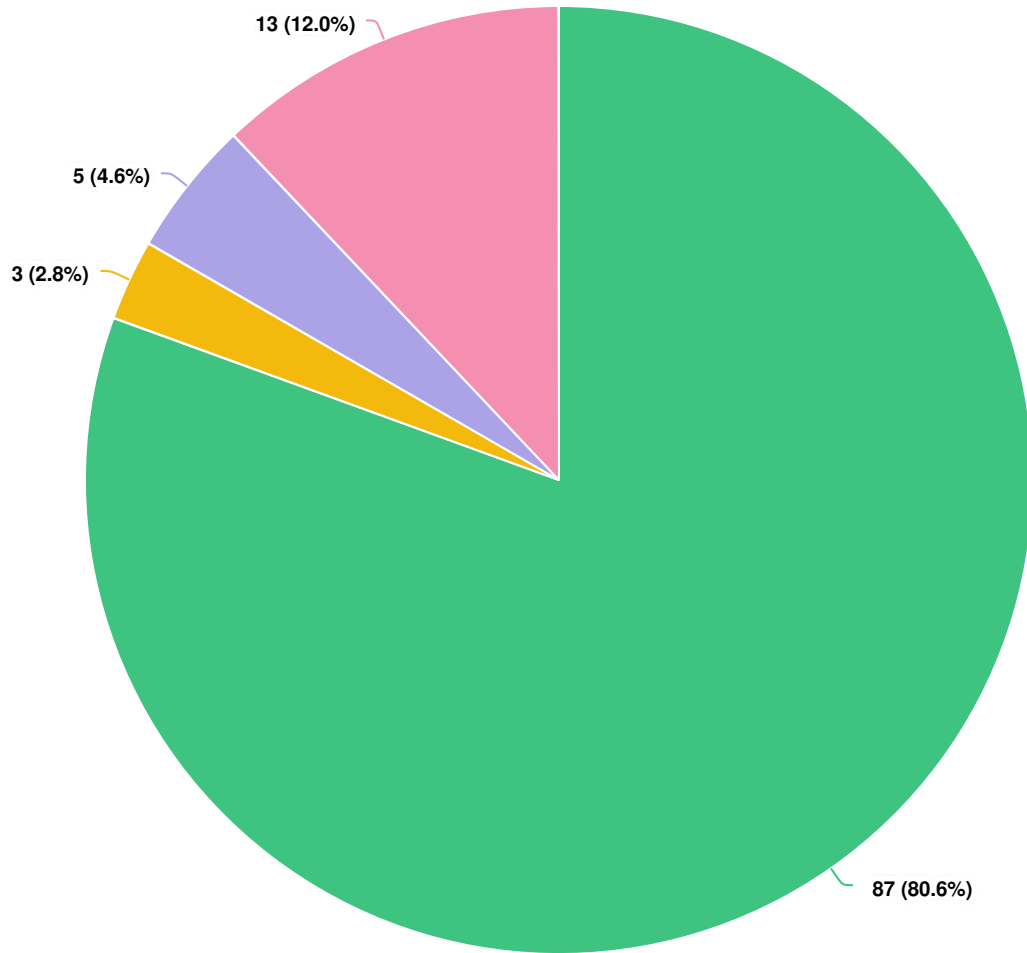
Question options

- 🟢 Yes, I feel safe drinking municipal water in Brantford.
- 🟡 No, I am aware that I have a lead water service that has not been replaced and have safety concerns as a result.
- 🟣 I do not have an opinion about the safety of the City's drinking water.
- 🩷 No, I do not feel the drinking water is safe and have concerns about the safety or quality of the drinking water.

Optional question (108 response(s), 1 skipped)
Question type: Radio Button Question

Q5 **If your household or business has had a water service disruption due to City infrastructure, do you feel that the City responded quickly and the issue was resolved in a timely manner?**
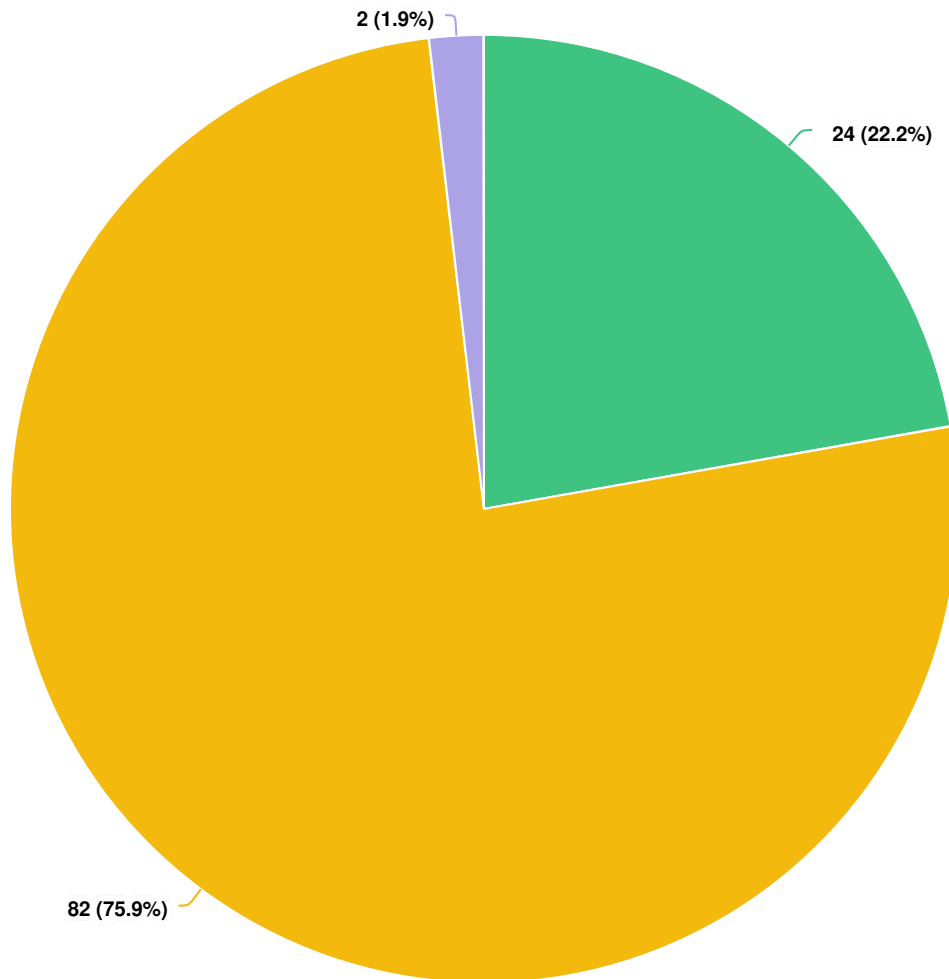
2 (1.9%)

24 (22.2%)

82 (75.9%)

Question options

- ● Yes, the City responded right away and resolved the issue within one (1) day or an interim solution was prepared and enacted.
- ● I have never had a service disruption or I am not connected to municipal water services.
- ● No, the City did not respond quickly and/or the issue took two (2) or more days to resolve without an interim solution.

Optional question (108 response(s), 1 skipped)
Question type: Radio Button Question

Q6	**Are you concerned about your residential property, business, or local road(s) flooding?**

23 (21.1%)

5 (4.6%)

81 (74.3%)
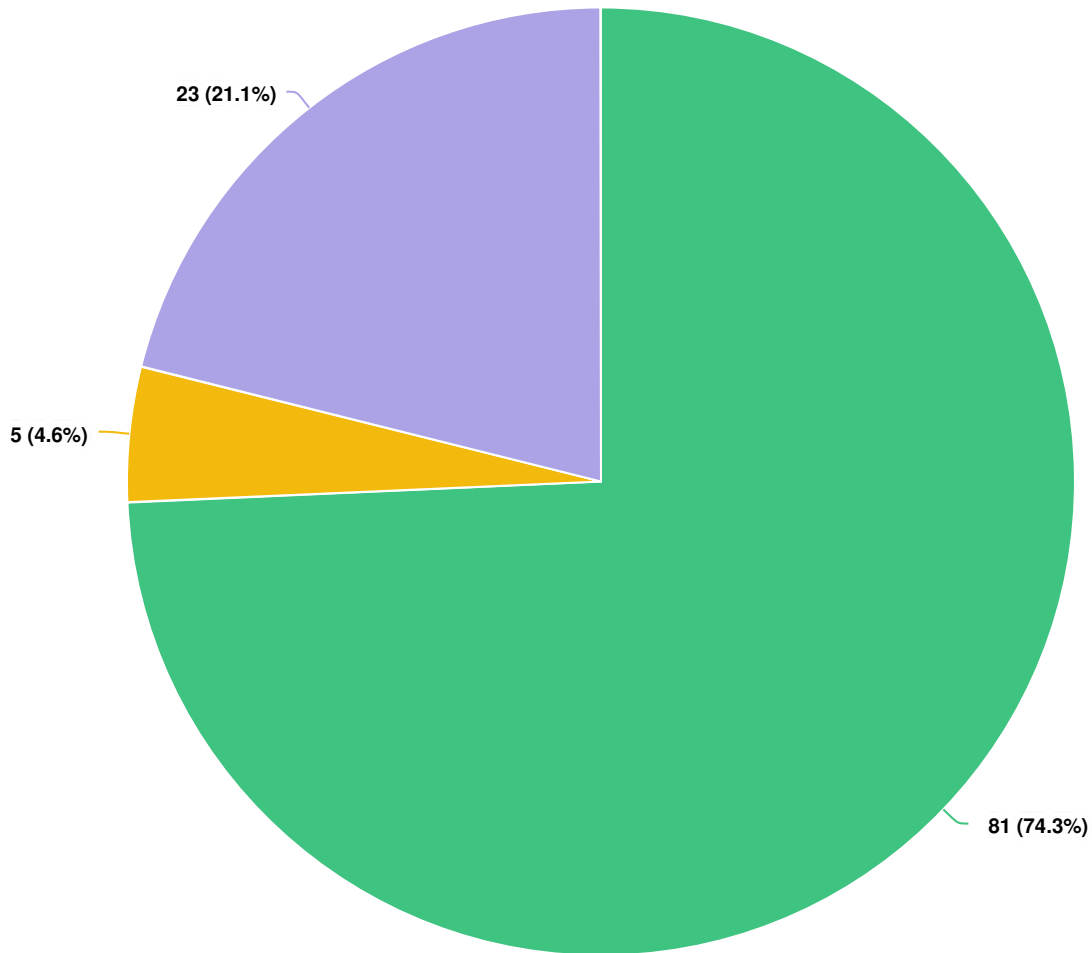
Question options

- ● No, I feel secure that my residential property, business, and local roads will likely not flood.
- ● I do not have an opinion on this topic.
- ● Yes, I am concerned with potential flooding because there has been flooding on my property or on local roads in the past.

Optional question (109 response(s), 0 skipped)
Question type: Radio Button Question

Q7 In general, do you feel that the City is responding as it should be to how climate change can impact the resiliency of its infrastructure/assets?
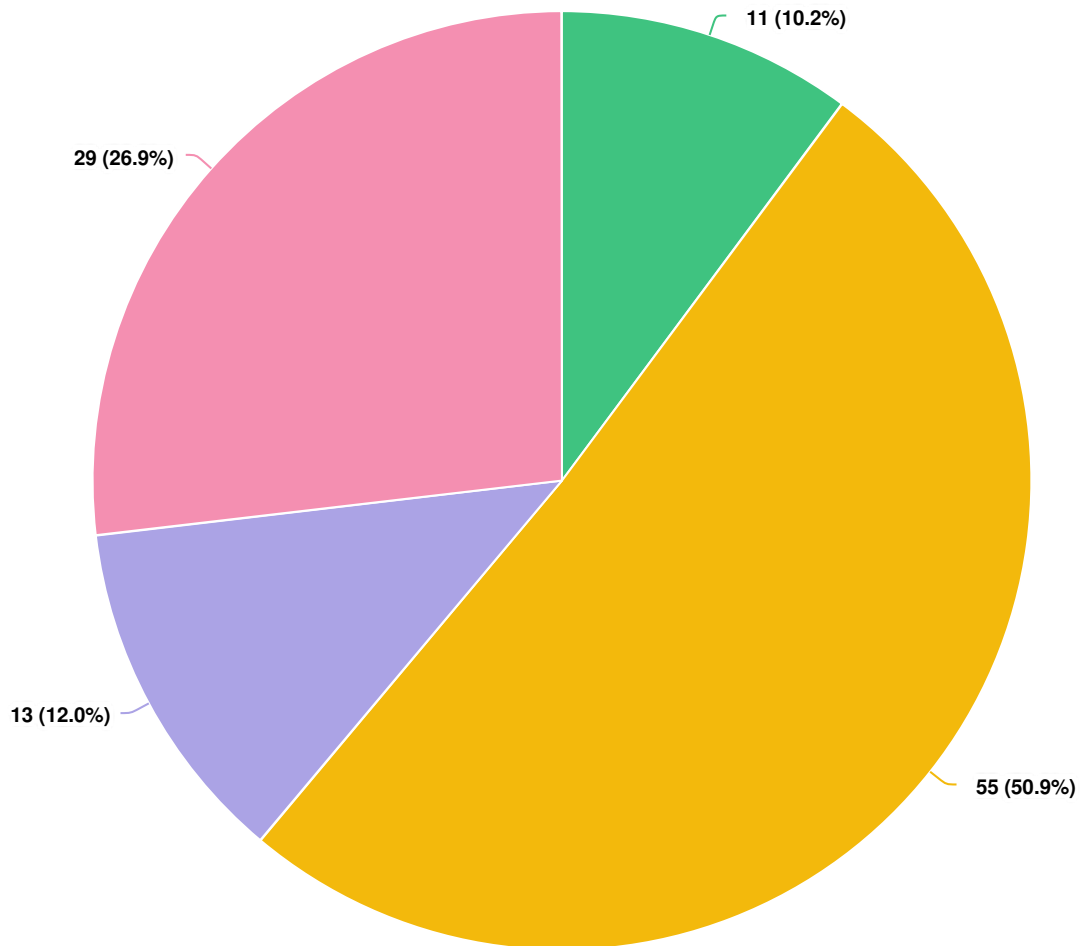
Question options

- ● Yes, from what I understand, the City is working to establish goals and specific targets to reduce the impact that climate change could potentially have on City infrastructure/assets.
- ● Unsure, I do not know enough about what the City climate change plans to form an opinion at this time.
- ● I do not have an opinion on this topic.
- ● No, I do not think the City is not doing enough to reduce the impact that climate change could potentially have on City infrastructure/assets.

Optional question (108 response(s), 1 skipped)
Question type: Radio Button Question

Q8 **Are you concerned about the potential for sewage backups occurring in your household or business due to aging City infrastructure?**

16 (14.7%)

60 (55.0%)

30 (27.5%)

3 (2.8%)
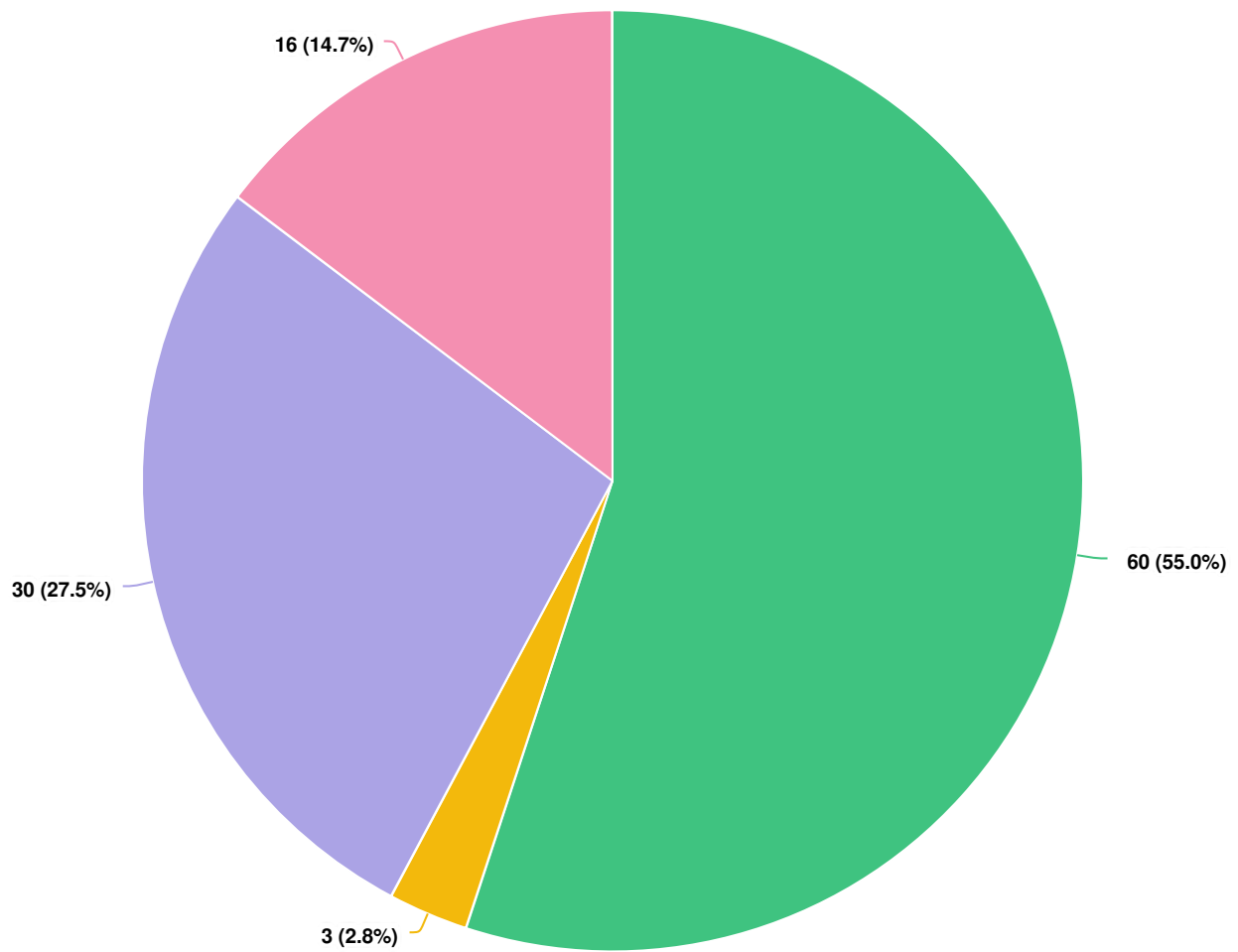
Question options

- No, I am not concerned about the potential of sewage backups in the city.
- I am on a septic system and not connected to the City wastewater system.
- I do not have an opinion about this topic.
- Yes, I am concerned because I have had a sewage backup in my current home and/or have heard of other homes in the city backing up.

Optional question (109 response(s), 0 skipped)
Question type: Radio Button Question

Q9 **If your household or business has had a sanitary sewer service disruption due to City infrastructure, do you feel that the City responded quickly and the problem was resolved in a timely manner?**
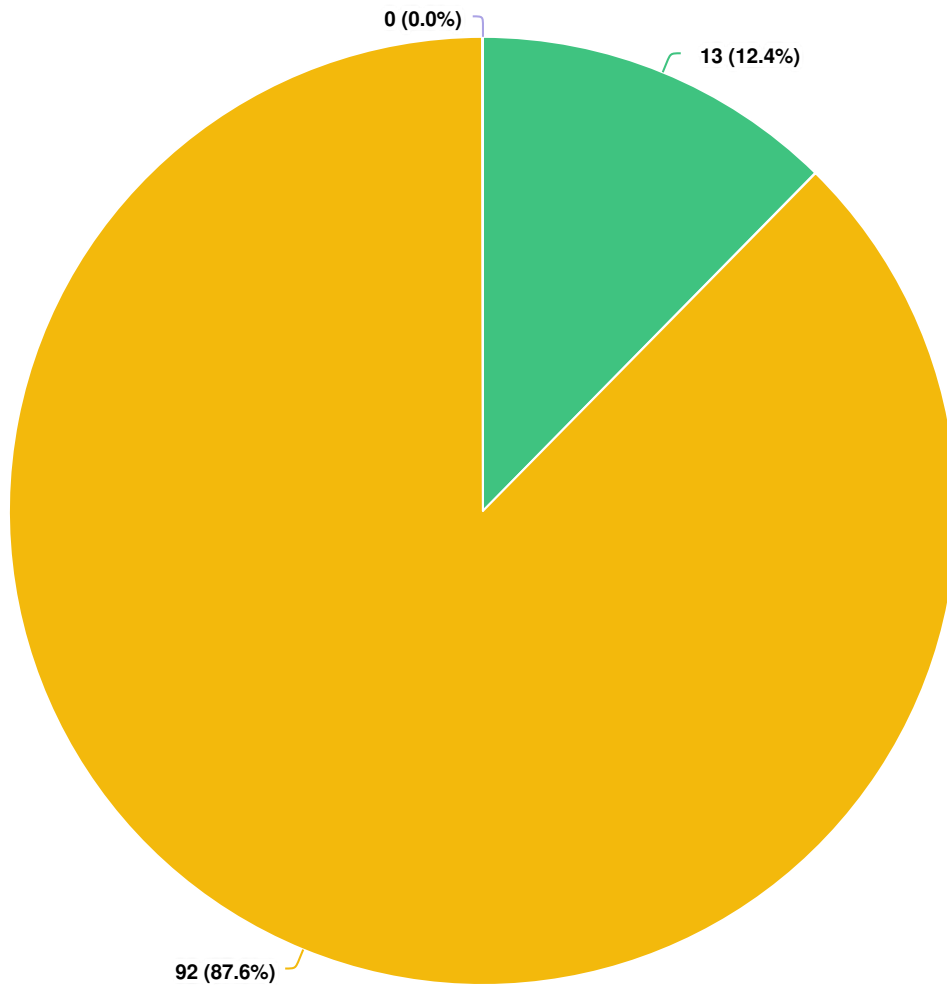
0 (0.0%)

13 (12.4%)

92 (87.6%)

Question options

- Yes, the City responded right away and resolved the issue within one (1) day or an interim solution was prepared and enacted.
- I have never had a service disruption, or I am not connected to municipal sanitary sewer services.
- No, the City did not respond quickly and/or the issue took two (2) or more days to resolve without an interim solution.

Optional question (105 response(s), 4 skipped)
Question type: Radio Button Question

Q10	**Are you satisfied with the condition of the roads in Brantford?**

13 (12.0%)

25 (23.1%)

1 (0.9%)

69 (63.9%)
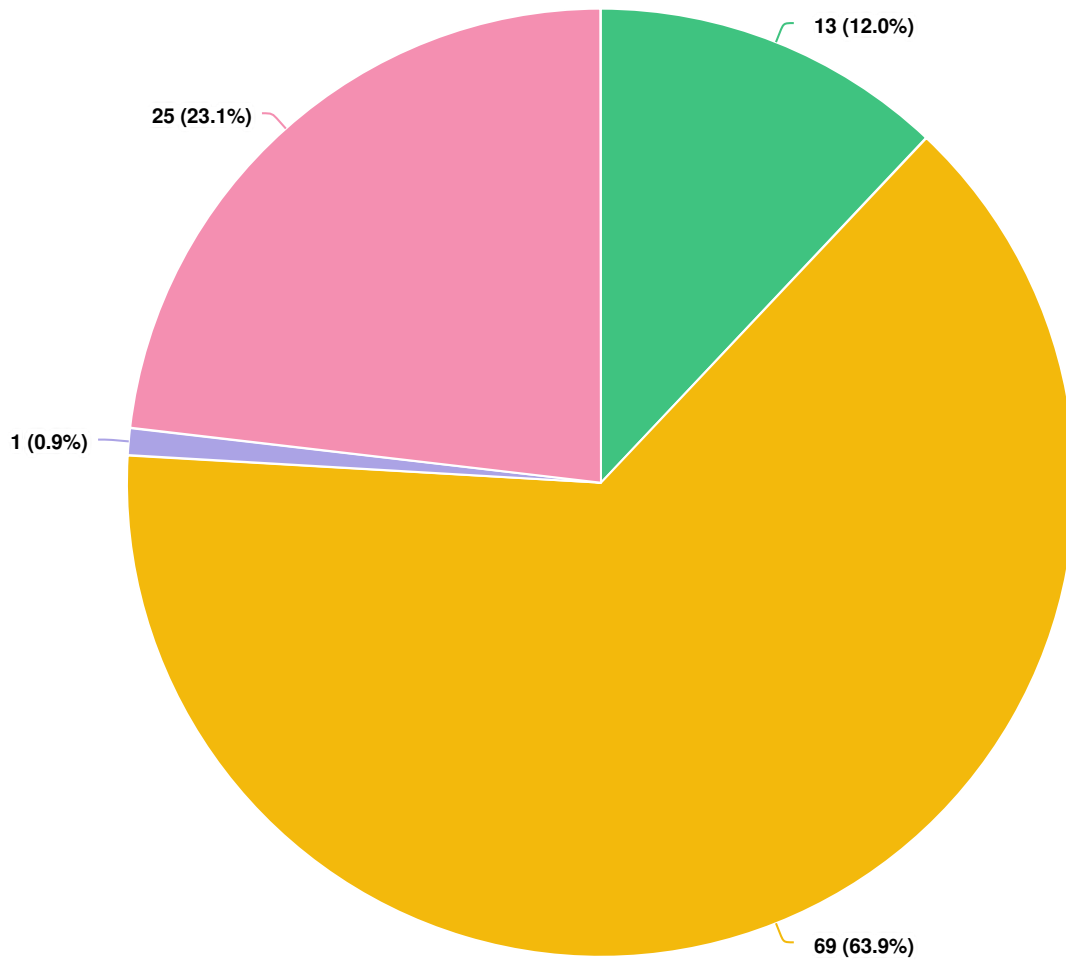
Question options

- 🟢 Yes, I find the condition of Brantford roads to be satisfactory and have no concerns.
- 🟡 Yes, the condition of Brantford roads is generally satisfactory, but there are a few roads I have driven on that I think have needed repairs for a few years.
- 🟣 I do not have an opinion on this topic.
- 🩷 No, most roads are completely unsatisfactory and require immediate attention. Please explain

Optional question (108 response(s), 1 skipped)
Question type: Radio Button Question

Q11 **Do you feel that significant hazards on Brantford roads (e.g. large potholes) are repaired in a timely manner?**
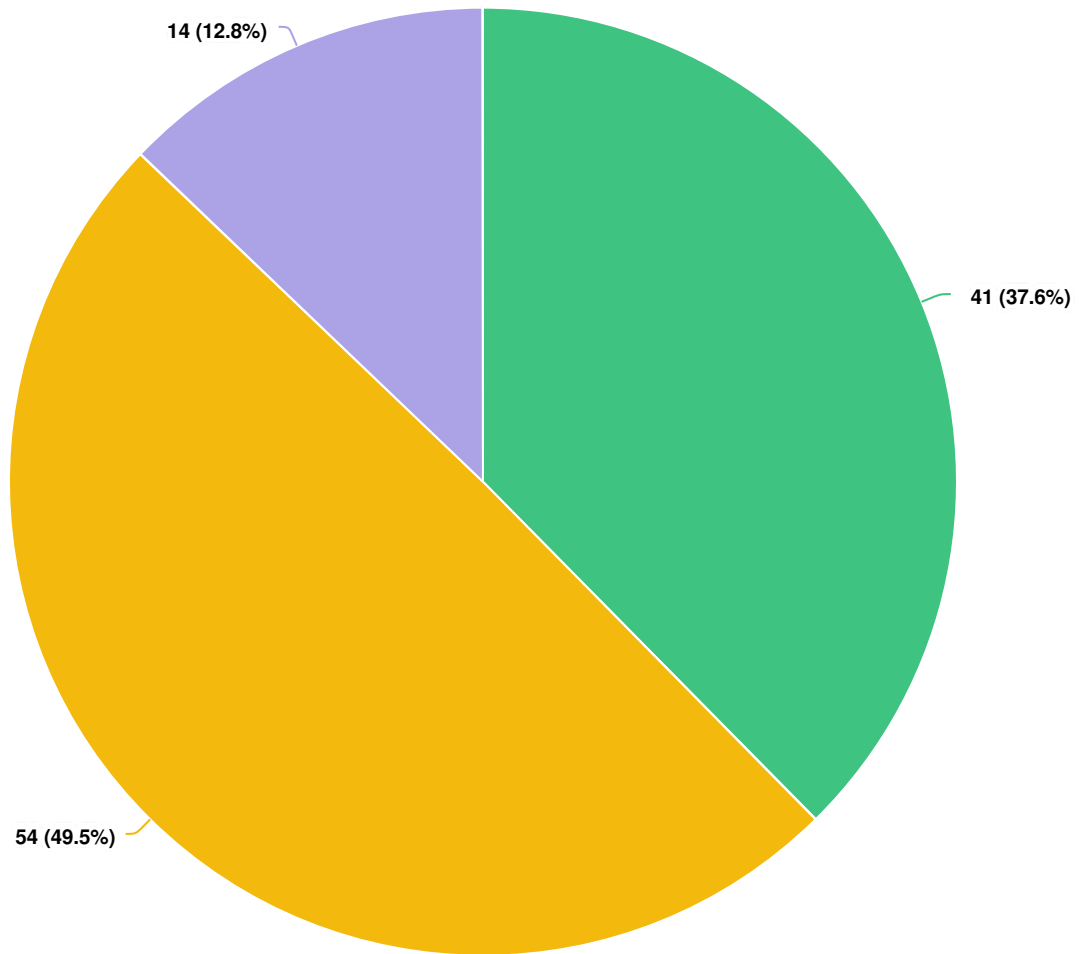
Question options

- ● Yes, significant hazards are repaired quickly in a high- quality manner.
- ● No, significant hazards remain in place for weeks or are repaired poorly without enough attention to quality.
- ● I do not have an opinion on this topic.

Optional question (109 response(s), 0 skipped)
Question type: Radio Button Question

Q12 | **Do you feel the City of Brantford gives enough notice for an anticipated road closure (for example, due to construction) and provides adequate detouring and signage information onsite?**

9 (8.3%)

19 (17.4%)

57 (52.3%)

24 (22.0%)
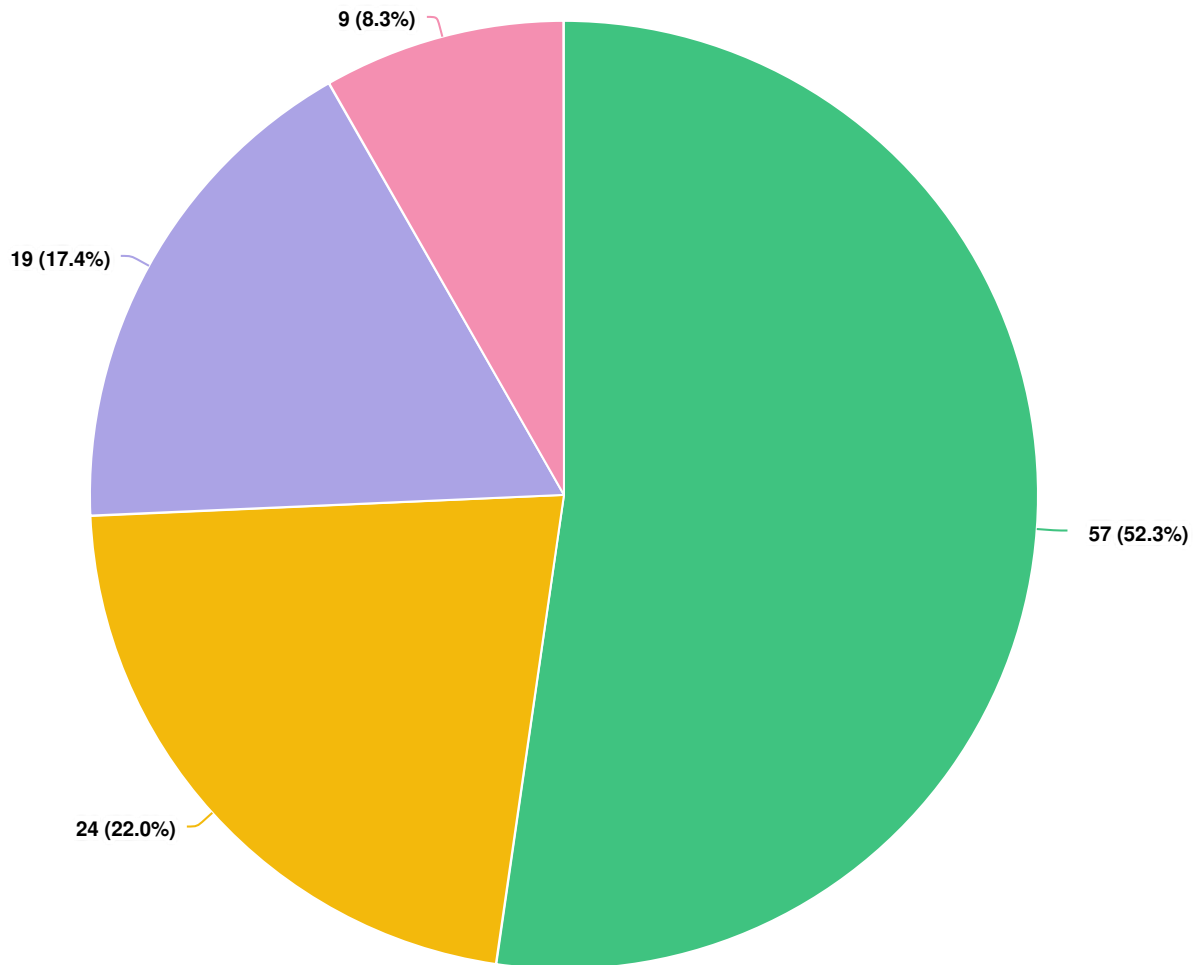
Question options

● Yes, the City gives enough notice for a road closure, adequate detouring and signage. Quickly in a high- quality manner.

● Unsure, I haven't noticed. ● I do not have an opinion on this topic.

● No, the City does not give enough notice for a road closure and/or provide adequate detouring and signage.

Optional question (109 response(s), 0 skipped)
Question type: Radio Button Question

Q13 | **Do you feel that snow and/or other debris (e.g. leaves) are cleared from City roads in a timely manner?**

34 (31.2%)

4 (3.7%)

71 (65.1%)
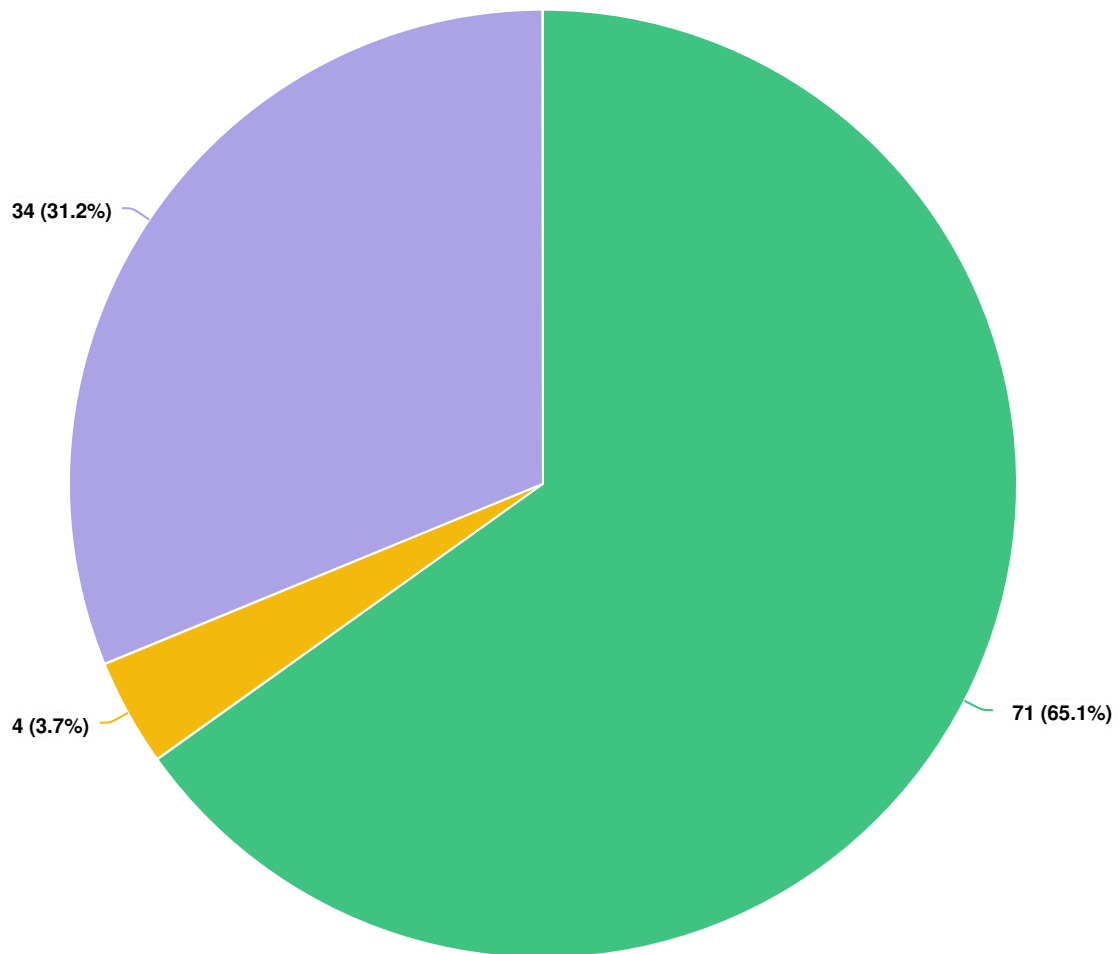
Question options

● Yes, Brantford roads are cleared in a timely manner after a snowfall and roads are swept on a regular enough basis.

● I do not have an opinion on this topic.

● Brantford roads are not cleared in a timely manner after a snowfall, and/or the road sweeping could use some work.

Optional question (109 response(s), 0 skipped)
Question type: Radio Button Question

| **Q14** | **Do you find that Brantford streets, sidewalks, and trails are adequately lit at night?** |

30 (28.0%)

55 (51.4%)

22 (20.6%)
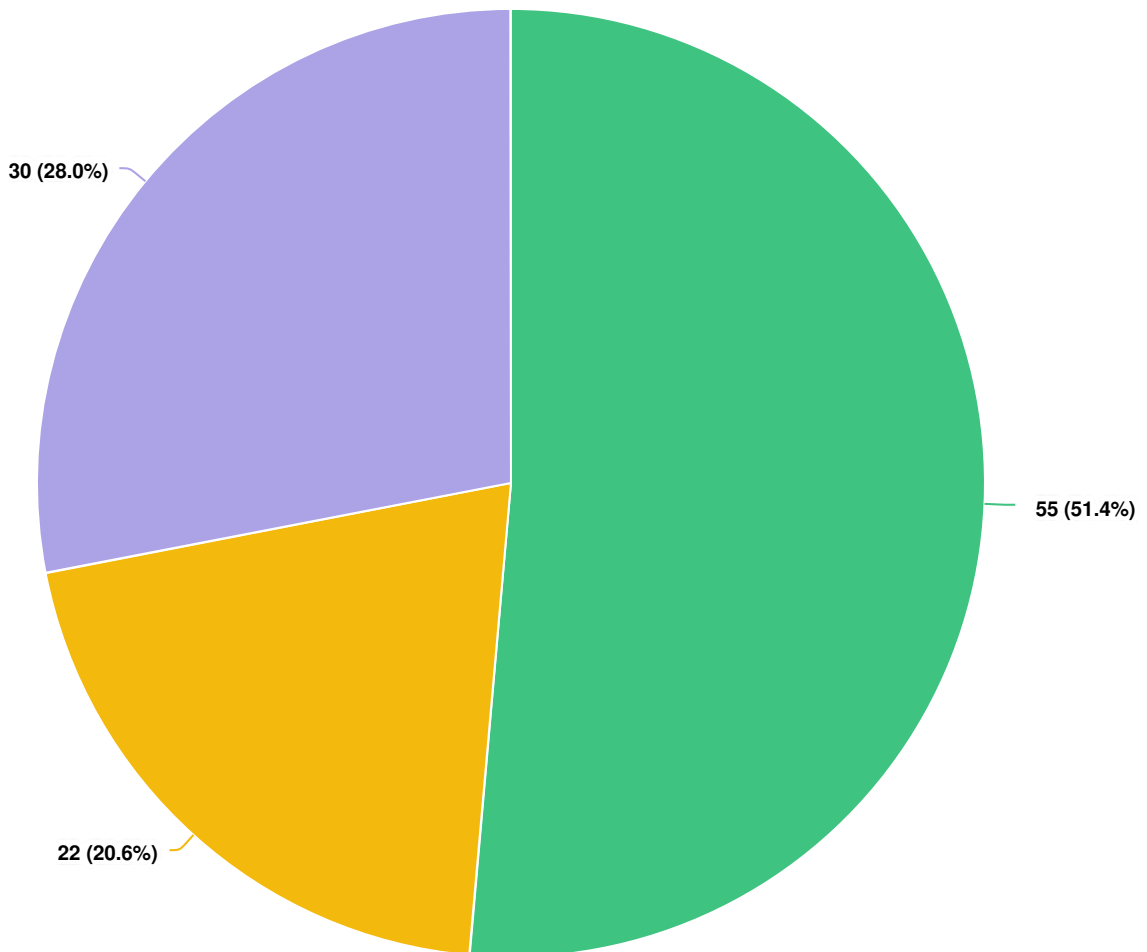
Question options

- Yes, I find City streets, sidewalks, and trails are adequately lit at night.
- I do not have an opinion on this topic.
- No, I think City streets, sidewalks, and trails require better lighting at night.

Optional question (107 response(s), 2 skipped)
Question type: Radio Button Question

Q15 **Do you feel the conditions on City sidewalks and trails make them safe for walking purposes?**

24 (22.0%)

2 (1.8%)

83 (76.1%)
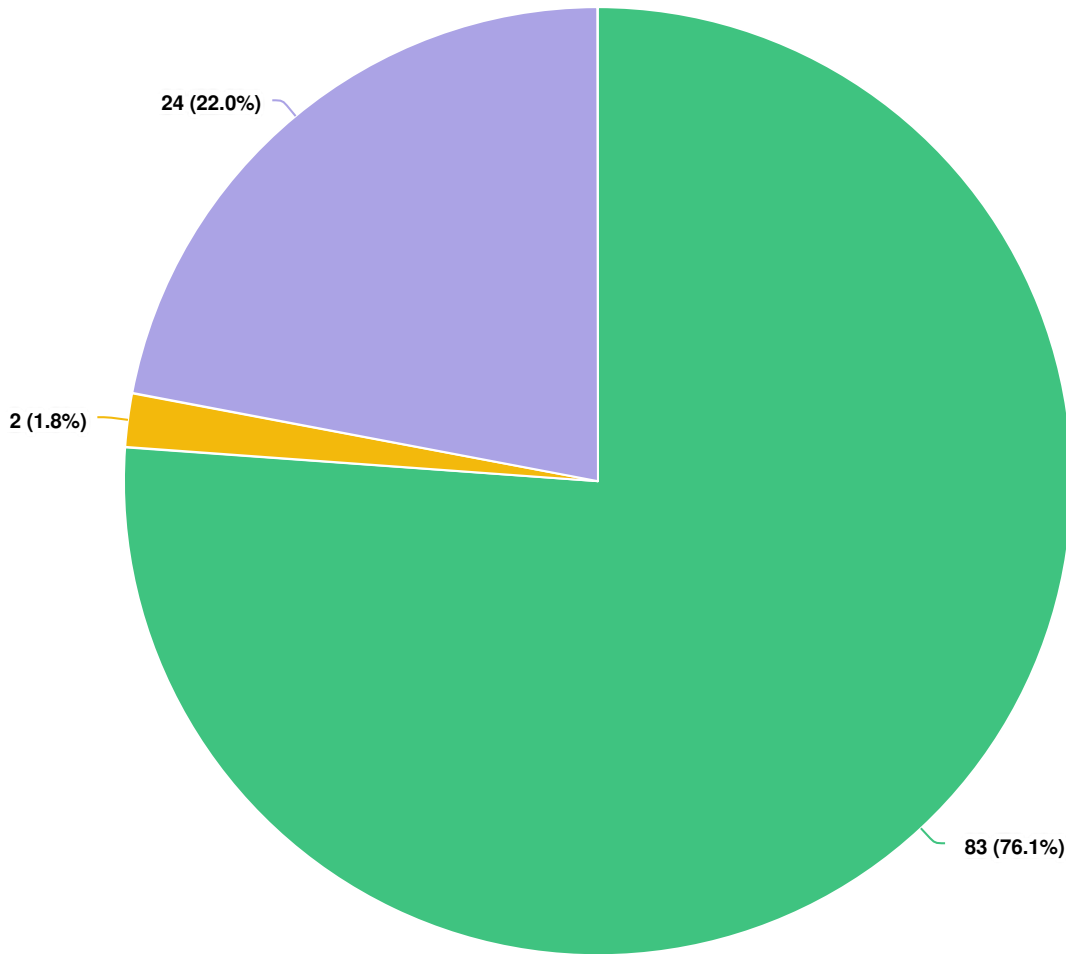
Question options

- Yes, generally the condition of on most City sidewalks and trails make them safe for walking.
- I do not have an opinion on this topic.
- No, generally I think the conditions on City sidewalks and/or trails are poor for walking.

Optional question (109 response(s), 0 skipped)
Question type: Radio Button Question

Q16 **Do you feel the conditions on City roads and trails make them safe for cycling purposes?**

32 (29.6%)

56 (51.9%)

20 (18.5%)
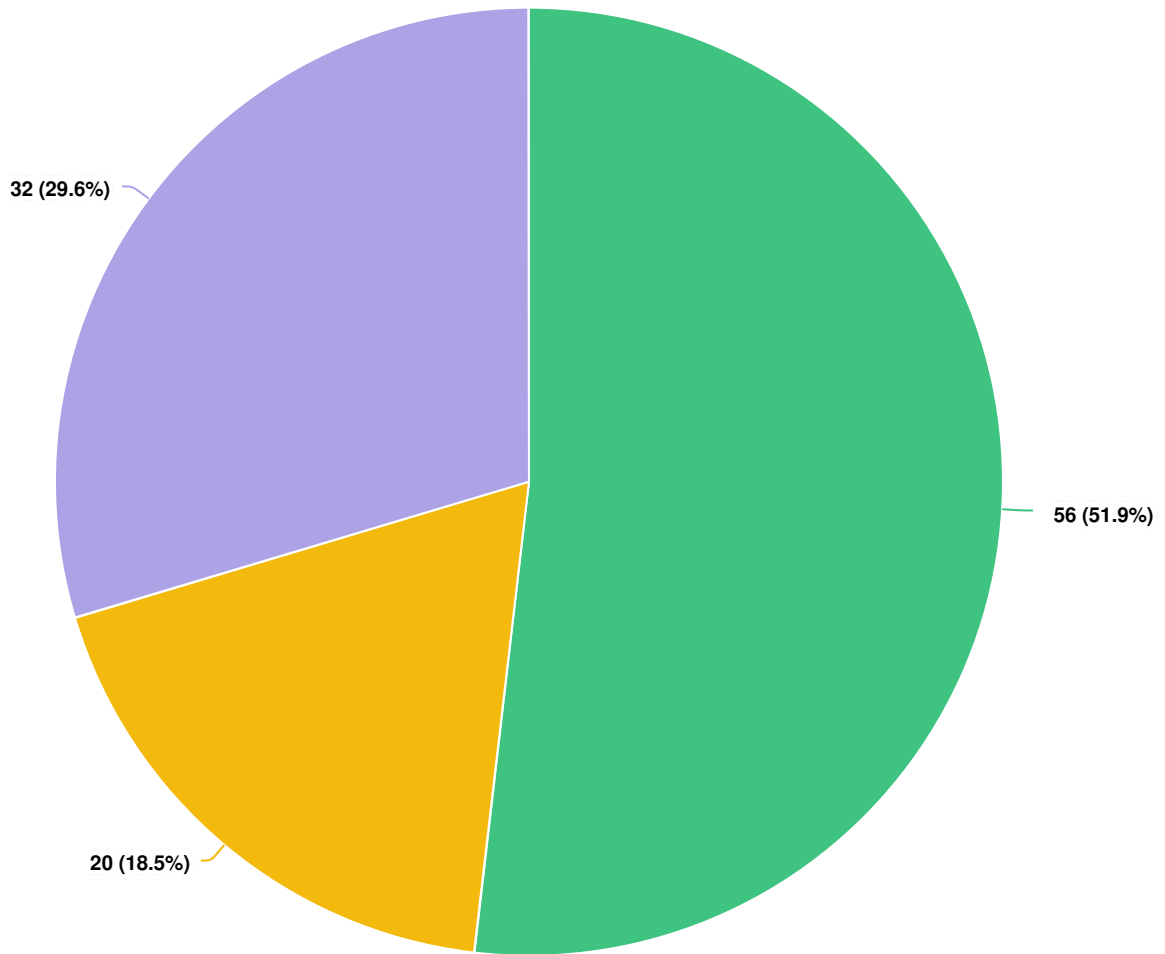
Question options

● Yes, generally the condition of on most City roads and/or trails make them safe for cycling.

● I do not have an opinion on this topic.

● No, generally I think the conditions on most City roads and/or trails in the city are poor for cycling.

Optional question (108 response(s), 1 skipped)
Question type: Radio Button Question

Q17	In your opinion, are cycling routes in Brantford connected and easy to navigate?

27 (25.0%)

39 (36.1%)

42 (38.9%)
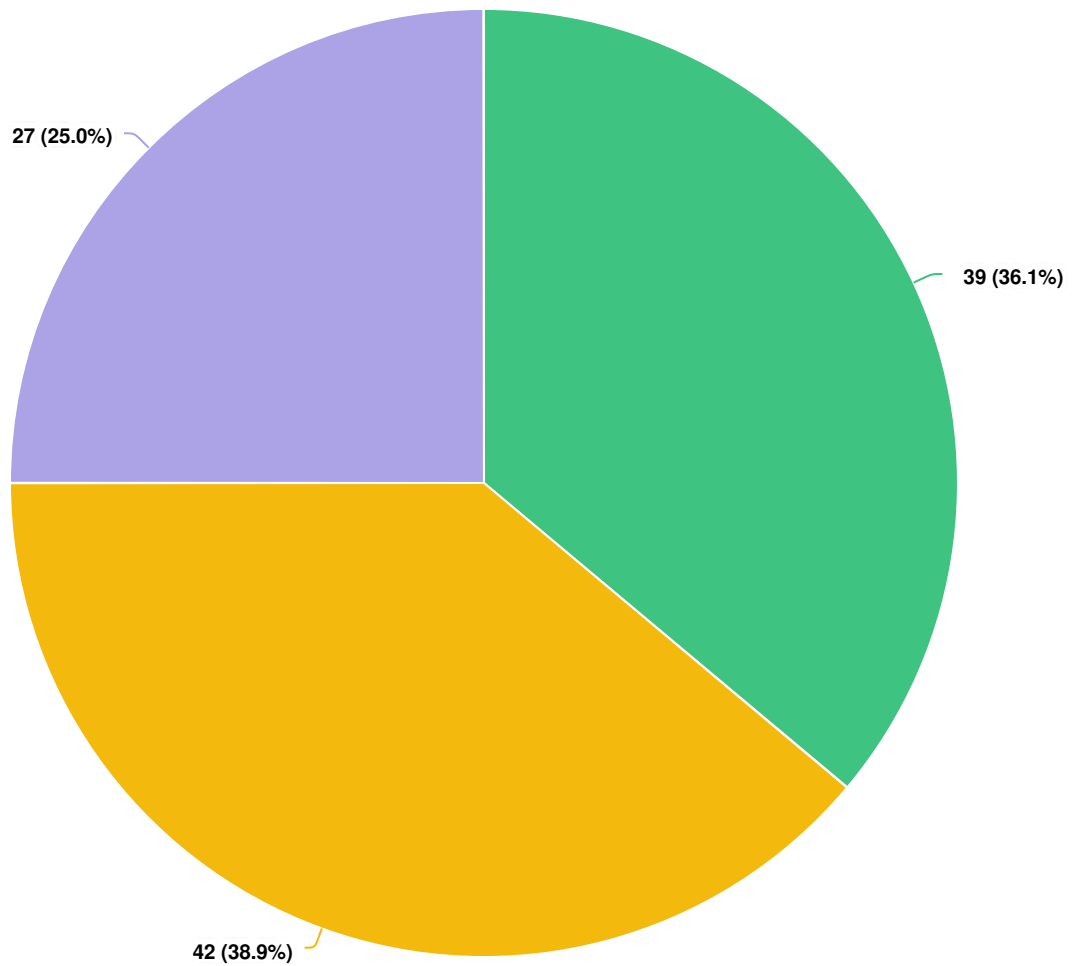
Question options

● Yes, I find cycling routes in Brantford are adequate and easy to navigate.　● I do not have an opinion on this topic.

● No, generally I think the conditions on most City roads and/or trails in the city are poor.

Optional question (108 response(s), 1 skipped)
Question type: Radio Button Question

Q18	**In your opinion, are there any bridges or culverts in Brantford that are unsafe?**

20 (18.5%)

45 (41.7%)

43 (39.8%)
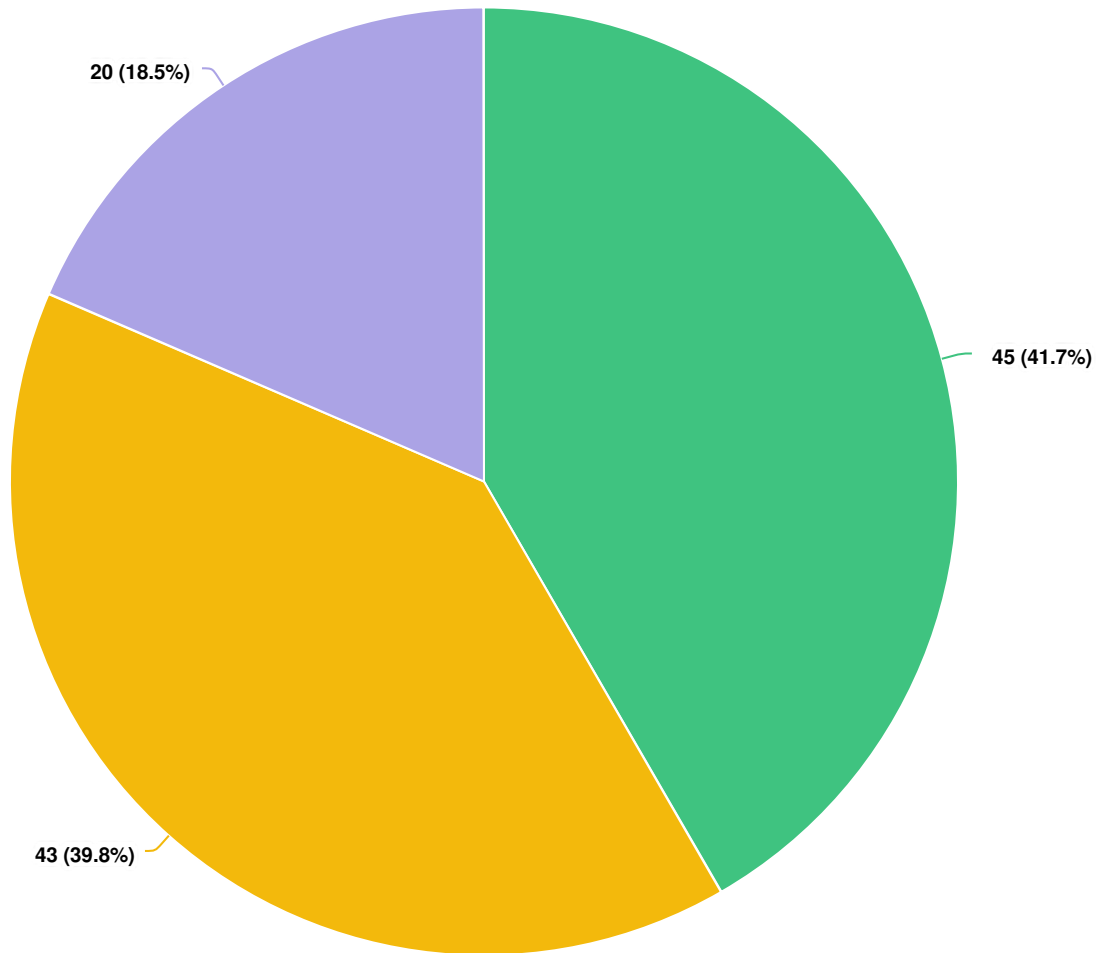
Question options

- ● No, I do not think any bridges or culvert in Brantford are unsafe for people and/or vehicles to travel on.
- ● I do not have an opinion on this topic.
- ● Yes, there are bridges or culverts in the community that I think are unsafe and require attention.

Optional question (108 response(s), 1 skipped)
Question type: Radio Button Question

Q19 | **Are there culverts in Brantford that you feel are frequently completely or partially blocked (for example, flooded on one side)?**

3 (2.8%)

10 (9.2%)

28 (25.7%)

68 (62.4%)
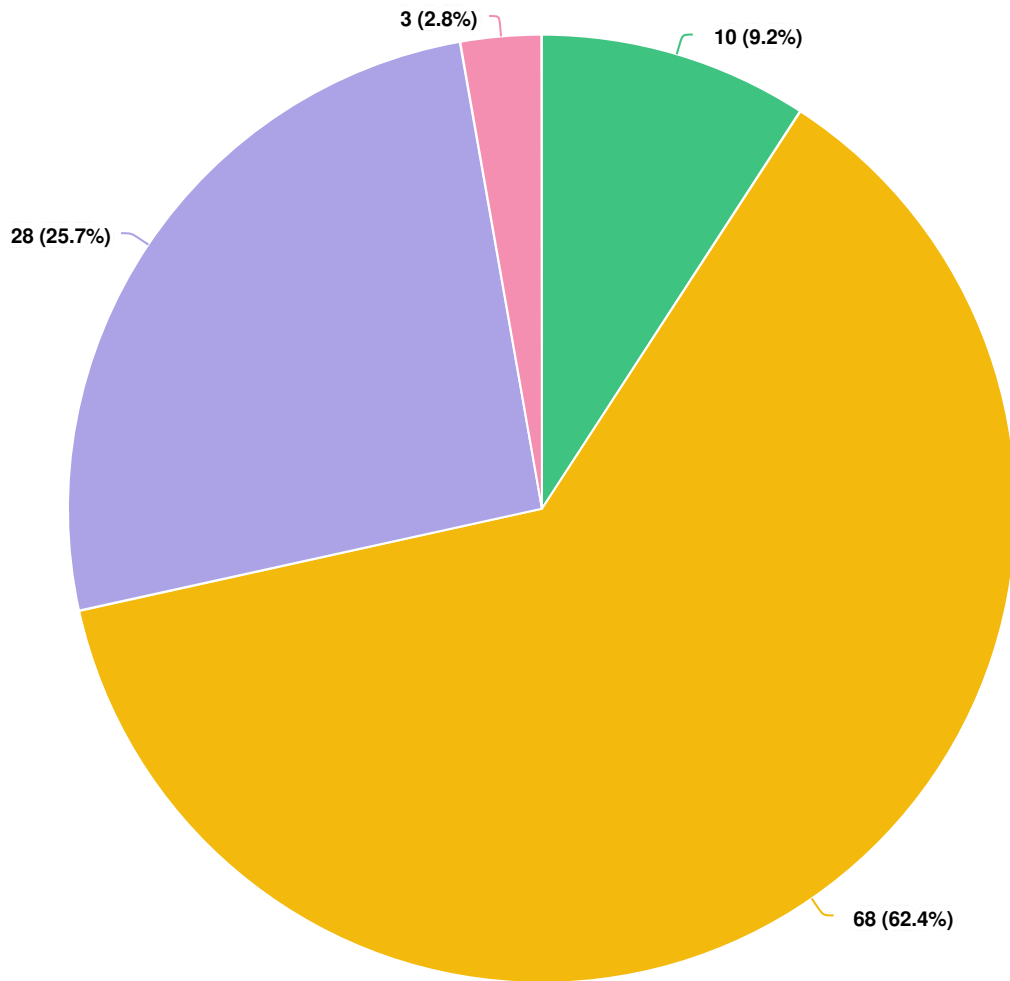
Question options

● If a culvert is blocked or flooded, I have noticed it is attended to in a timely manner.

● I'm unsure; I haven't noticed any blocked culverts. ● I do not have an opinion on this topic.

● There are culverts I have seen that are blocked and have not been attended to in a timely manner (please specify)

Optional question (109 response(s), 0 skipped)
Question type: Radio Button Question

Q20 | **Generally, do you think that your tax dollars are put to good use with respect to access, reliability, and quality of City services related to drinking water, sanitary sewer maintenance, stormwater management, roads, bridges, and culverts?**

25 (22.9%)

28 (25.7%)

5 (4.6%)

51 (46.8%)
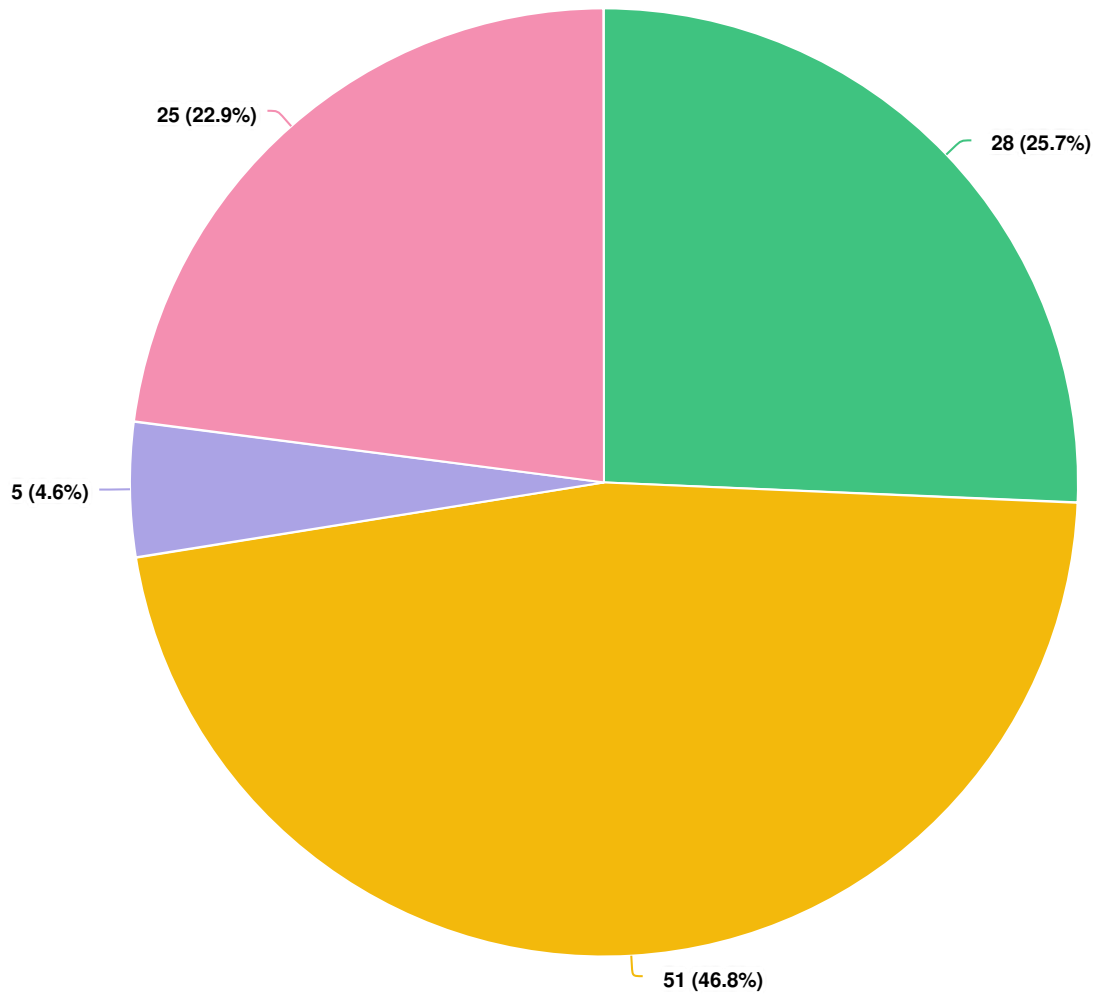
Question options

● Yes, overall, I think the City does a satisfactory job of providing these services to the community, and that my tax dollars go to good use.

● I think improvements should be made, but overall, I am mostly satisfied and think that for the most part, my tax dollars go to good use for these services.

● I do not have an opinion on this topic.   ● No, I am not satisfied with how my tax dollars are used for these services. Please explain.

Mandatory Question (109 response(s))
Question type: Radio Button Question

Q21 | **In the event of citywide flooding due to a significant rain event or other unforeseen emergency, how confident are you that the City will respond quickly and help residents and businesses recover?**

16 (14.7%)

5 (4.6%)

34 (31.2%)

54 (49.5%)
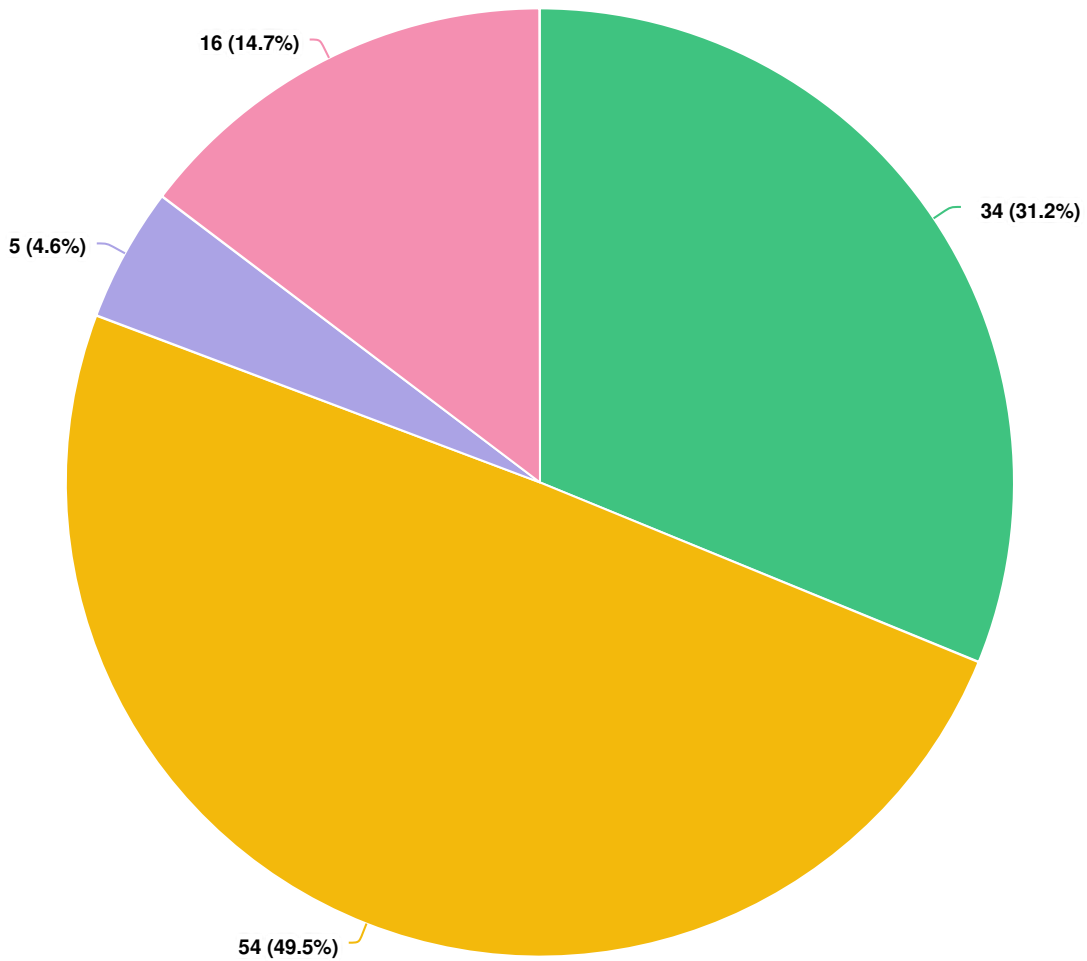
Question options

● I am confident the City will respond quickly and help residents and businesses rebuild.

● Unsure, I don't know enough about the City's emergency planning to form an opinion at this time.

● I do not have an opinion on this service.

● I am not confident the City will respond quickly and/or help residents and business rebuild.

Optional question (109 response(s), 0 skipped)
Question type: Radio Button Question

APPENDIX D:
PRIORITIZATION MATRIX

ORIGINAL COMPILED WORKSHOP RESULTS

WORKSHOP CRITERIA	REGROUPED CRITERIA	Value	% Total
AVAILABLE FUNDING	AVAILABILITY OF EXTERNAL FUNDING	8	0.86%
AVAILABLE RESOURCES	OPERATIONS & RESOURCE EFFICIENCY	6	0.65%
COMMUNITY NEED	COMMUNITY NEED	37	3.99%
COMPLEXITY	PROJECT SIMPLICITY	7	0.75%
COORDINATION OF PROJECTS	DEPARTMENT PRIORITY	1	0.11%
COUNCIL PRIORITIES	POLITICAL INTEREST	14	1.51%
COUNCIL PRIORITY	POLITICAL INTEREST	33	3.56%
DEPARTMENT PRIORITY	DEPARTMENT PRIORITY	13	1.40%
DEPARTMENT RESOURCES	OPERATIONS & RESOURCE EFFICIENCY	2	0.22%
EASILY CONSTRUCTIBLE	PROJECT SIMPLICITY	5	0.54%
ENVIRONMENTAL	ENVIRONMENTAL INITIATIVE	22	2.37%
ENVIRONMENTAL IMPACT	ENVIRONMENTAL INITIATIVE	15	1.62%
ENVIRONMENTAL INITIATIVE	ENVIRONMENTAL INITIATIVE	1	0.11%
EXTERNAL FUNDING	AVAILABILITY OF EXTERNAL FUNDING	11	1.19%
EXTERNAL FUNDING AVAILABILITY	AVAILABILITY OF EXTERNAL FUNDING	17	1.83%
EXTERNAL INFLUENCE	DEPARTMENT PRIORITY	6	0.65%
FINANCIAL	RISK MITIGATION	6	0.65%
FINANCIAL RISK	RISK MITIGATION	7	0.75%
FUNDING	AVAILABILITY OF EXTERNAL FUNDING	6	0.65%
FUNDING AVAILABILITY	AVAILABILITY OF EXTERNAL FUNDING	17	1.83%
GROWTH MANAGEMENT	STRATEGIC PLAN	15	1.62%
HEALTH AND SAFETY	RISK MITIGATION	35	3.77%
HERITAGE	VALUE OF BUILT HERITAGE	12	1.29%
INTERDEPARTMENTAL DEPENDENCIES	DEPARTMENT PRIORITY	8	0.86%
INTERDEPARTMENTAL NEED	DEPARTMENT PRIORITY	7	0.75%
INTERDEPARTMENTAL PRIORITIES	DEPARTMENT PRIORITY	1	0.11%
LEVEL OF SERVICE	LEVEL OF SERVICE	97	10.45%
LOCAL BOARD PRIORITY	POLITICAL INTEREST	8	0.86%
OPERATING COSTS	OPERATIONS & RESOURCE EFFICIENCY	7	0.75%
OPERATING EFFICIENCIES	OPERATIONS & RESOURCE EFFICIENCY	6	0.65%
OPERATING EFFICIENCY	OPERATIONS & RESOURCE EFFICIENCY	14	1.51%
OPERATING IMPACT/RESOURCES	OPERATIONS & RESOURCE EFFICIENCY	2	0.22%
OPERATION EFFICIENCY	OPERATIONS & RESOURCE EFFICIENCY	1	0.11%
OPERATIONAL EFFICIENCIES	OPERATIONS & RESOURCE EFFICIENCY	9	0.97%
OPERATIONAL EFFICIENCY	OPERATIONS & RESOURCE EFFICIENCY	16	1.72%
OPERATIONS EFFICIENCY	OPERATIONS & RESOURCE EFFICIENCY	24	2.59%
PARTNERSHIPS	POLITICAL INTEREST	3	0.32%
POLITICAL INFLUENCE	POLITICAL INTEREST	6	0.65%
POLITICAL INTEREST	DEPARTMENT PRIORITY	13	1.40%
POLITICAL PRESSURE	POLITICAL INTEREST	1	0.11%
PROJECT COMPLEXITY	PROJECT SIMPLICITY	1	0.11%
PROJECT SIMPLICITY	PROJECT SIMPLICITY	14	1.51%
REGULATORY REQUIREMENT	REGULATORY REQUIREMENT	19	2.05%
REGULATORY REQUIREMENTS	REGULATORY REQUIREMENT	77	8.30%
RESOURCE EFFICIENCY	OPERATIONS & RESOURCE EFFICIENCY	4	0.43%
RESOURCES	OPERATIONS & RESOURCE EFFICIENCY	17	1.83%
RESOURCING	OPERATIONS & RESOURCE EFFICIENCY	1	0.11%
RETURN ON INVESTMENT	OPERATIONS & RESOURCE EFFICIENCY	2	0.22%
RISK MITIGATION	RISK MITIGATION	142	15.30%
SOCIAL BENEFIT	COMMUNITY NEED	7	0.75%
SOCIAL NEED	COMMUNITY NEED	18	1.94%
STRATEGIC OBJECTIVE	STRATEGIC PLAN	38	4.09%
STRATEGIC OBJECTIVES	STRATEGIC PLAN	10	1.08%
STRATEGIC PLANNING	STRATEGIC PLAN	7	0.75%
STRATEGIC POLICY	STRATEGIC PLAN	4	0.43%
SUPPORTING DOCS	OTHER SUPPORTING DOCUMENTATION	2	0.22%
SUPPORTING DOCUMENTATION	OTHER SUPPORTING DOCUMENTATION	29	3.13%
SUPPORTING DOCUMENTATION / REGULATORY	REGULATORY REQUIREMENT	9	0.97%
TIMING	DEPARTMENT PRIORITY	6	0.65%
VALUE OF BUILT HERITAGE	VALUE OF BUILT HERITAGE	2	0.22%
		928	100.00%

REGROUPED RESULTS

REGROUPED CRITERIA	Value	% Total	Final
RISK MITIGATION	190	20.47%	20%
OPERATIONS & RESOURCE EFFICIENCY	111	11.96%	10%
REGULATORY REQUIREMENT	105	11.31%	15%
LEVEL OF SERVICE	97	10.45%	10%
STRATEGIC PLAN	74	7.97%	10%
POLITICAL INTEREST	65	7.00%	6%
COMMUNITY NEED	62	6.68%	6%
AVAILABILITY OF EXTERNAL FUNDING	59	6.36%	5%
DEPARTMENT PRIORITY	55	5.93%	8%
ENVIRONMENTAL INITIATIVE	38	4.09%	4%
OTHER SUPPORTING DOCUMENTATION	31	3.34%	2%
PROJECT SIMPLICITY	27	2.91%	2%
VALUE OF BUILT HERITAGE	14	1.51%	2%
	928	100.00%	100%

Regroup Notes:
It is important to note that, aside from being engrained in Risk Mitigation, External Funding Availability, Project Simplicity, and Operations Efficiency, Costing was not considered as a separate criterion. This is because the purpose of the Prioritization Matrix is to figure out how to best use our capital budget and so the budgetary component of the process occurs after the projects are ranked according to the matrix Priority Output.
The criteria that many groups ranked as their top criteria was "Risk Mitigation", especially as related to health and safety or to the condition of assets. However, there were some groups who considered risk as a criteria but were also responsible for predominately new growth projects and whose projects weren't always motivated by risk.
Workshop results were used as a guide. Some % have been modified in final to ensure new development projects aren't unfairly weighted because they aren't risk motivated.
The Criteria is considered "Regrouped" because some criterion meant the same thing but were worded differently in the workshop (e.g. Strategic Objective and Strategic Initiative were included in Strategic Plan category).
Some criteria were also grouped together because of how they are defined in the definitions (e.g. Coordination of Projects and Timing under Department Priority).
Council Priority was originally a criteria but this was shown to be confusing and so this was changed to Political Interest and can refer to Local Board interest for groups that aren't always motivated by Council.
Most groups indicated Growth Management was part of strategic plan and so these were grouped.
Workshop results were used as a guide. Some % have been modified in final to ensure new development projects aren't unfairly weighted because they aren't risk motivated.
Operations and Resource Efficiency were split up in final to improve methodology to calculate urgency.
Groups that depended on other groups often cited "Interdepartmental Priority" as a criteria. This has been included under Department Priority, and it is understood that the group doing the project and filling out the Prioritization Matrix for the project would use the the department prioirty of the group they are working on behalf of as it would influence their priority.

WORKBOOK INSTRUCTIONS

GENERAL

ORANGE WORKSHEETS ARE TO BE COMPLETED BY USER

YELLOW CELLS ARE TO BE FILLED IN BY USER

Step 1:

Fill in Project Details under Project Details Tab

Step 2:

Review Definitions Tab and familiarize yourself with the criteria

Step 3:

Fill in yellow cells on each orange tab worksheet per instructions on worksheet. All worksheets must be completed.

Step 4:

Check red Matrix Tab to ensure all values are entered correctly.

Step 5:

Submit completed workbook.

Project Details	
Project Name:	Sample Project
Department:	Sample Department
Budget:	
Project Description:	
Priority Number:	0
Flagged	N

PROJECT MATRIX
Sample Project
Sample Department

	Risk Mitigation	Regulatory Requirement	Level of Service / Fit for Purpose	Strategic Plan	Department Priority	Community Need	Political Priority	Operations Cost Efficiency	Resource Efficiency	Availability of External Funding	Environmental Initiative	Value of Built Heritage	Project Simplicity	Other Supporting Documentation	Total
Weight	20%	15%	10%	10%	8%	6%	6%	5%	5%	5%	4%	2%	2%	2%	100%
Score		0		0	0	0	0	0	0		0	0		0	
Weighted Score	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Final Score	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Total Possible	60	45	30	30	24	18	18	15	15	15	12	6	6	6	300

Criteria	Definition
Risk Mitigation	The project is being completed to avoid or minimize risk to the public, environment, or organization. Risk may refer to: Health and Safety, Financial, Environmental, Service Disruption, or Reputation. Score based on probability of failure (condition) and consequence of failure (extent).
Regulatory Requirement	The project is driven by legal or legislative requirements dictated by federal, provincial, or other governing jurisdiction.
Level of Service / Fit for Purpose	The project is driven by service requirements the public expects from the asset, including the effectiveness of the asset's performance, and also considers the extent of the service.
Strategic Plan	This project is a stategic objective identified in a Master Planning document or in the Official Plan.
Department Priority	The identified priority the department has place on the project with respect to its other projects, taking into account timing and coordination of other projects.
Community Need	Community need identified by the public and supported by evidence.
Political Priority	Council or Local Board has clearly identified this project as a priority in a Council or Local Board report (separate from Master Plan and Corporate Climate Change Action Plan).
Operations Cost Efficiency	Refers to if the project will affect existing operations' budget.
Operations Resource Efficiency	Refers to if the project will affect existing operations' staff and time.
Availability of External Funding	External Funding (e.g. grants, dedicated funding source) is available for this project.
Environmental Initiative	Project has been identified in the Corporate Climate Change Action Plan.
Value of Built Heritage	Preservation of a heritage building or asset has been identified.
Project Simplicity	Refers to whether the project can be completed internally with few resources and small budget and the extent of the benefit.
Other Supporting Documentation	The project and timeline are supported by referable documentation (e.g. Condition Assessment, Feasibility Study, Operations Records) which has not been encompassed in other sections. This section excludes Council or Local Board Reports, Corporate Climate Change Action Plan and Master Plans.

Risk Mitigation

Probability of Failure - Urgency	Score			
	0	1	2	3
Description	Rare	Unlikely	Possible	Likely
Frequency	Failure will likely not occur or fail in > 20 years based on known condition or service life information.	Failure could occur within 10 - 20 years based on known condition or service life information.	Failure might occur within 3-5 years if work is not done based on known condition or service life information.	Failure might occur within 1-2 years if work is not done based on known condition or service life information.

Consequence of Failure - Importance	Score			
	0	1	2	3
Description	None	Minor	Moderate	Catastrophic
This project is in response to a Health and Safety risk.	This is not a risk for this project	Someone may require First Aid.	Someone may require professional Medical Treatment	Someone may become severly disabled or it could result in a fatality.
This project is in response to a Financial risk.	This is not a risk for this project	<$50K	$50K - $500K	>$500K
This project is in response to a Environmental risk.	This is not a risk for this project	Could cause localized damage, quick clean up possible.	Could cause major, but reversible damage. Full clean up difficult.	Could cause severe and irreversible damage. Full clean up not possible.
This project is in response to a Service Disruption risk.	This is not a risk for this project	Short Term <= 1 day	Medium Term 1 day - 2 weeks	Long Term > 2 weeks
This project is in response to a City Reputation risk.	This is not a risk for this project	Complaints	Local News	National News

Probability of Failure Score	
Frequency	

Consequence of Failure Score	
Health and Safety	
Financial	
Environmental	
Service Disruption	
City Reputation	

Final Risk Mitigation Score	
Description	Score
Probability of Failure Score	
Highest Consequence of Failure Score	
Highest Risk Score	
Final Reported Score	
Output Description	NO RISK MITIGATION

Methodology		
Report Highest Risk Number	Frequency * Consequence	

Consequence of Failure	Probability of Failure		
	1	2	3
1	1	2	3
2	2	4	6
3	3	6	9

Final Score

IF Highest Score =	Report	Description
1 to 2	1	Project is being completed to remedy a low identified risk.
3 to 4	2	Project is being completed to remedy a medium identified risk.
6 to 9	3	Project is being completed to remedy a high identified risk.

Regulatory Requirement

Description	Score
This project is response to a regulatory requirement which must be achieved this coming year.	3
This project is in response to a regulatory requirement which must be achieved in 2-5 years.	2
This project is in response to a regulatory requirement which must be achieved in 6-10 years.	1
There is no regulatory requirement for this project.	0

Regulatory Requirement Score:	

If regulatory requirement exists, please specify the regulation:	

Please provide a short description of the requirement:	

Level of Service / Fit For Purpose

Level of Service Score	
Description	Score
This project is being completed on an asset that has failed, is in imminent danger of failing, or the asset is performing well below the service that is required.	3
This project is necessary to maintain the current level of service and/or asset group performance. Deferring the project would result in unacceptable operating and maintenance expenses / reactive repairs.	2
This project is being completed to improve or prevent a level of service and/or asset group performance issue, and could be deferred with only a minor impact on operating and maintenance expenses / reactive repairs.	1
This project is not related to level of service or asset group performance.	0

Extent Score	
Description	Score
The project benefits > 10% or more of the community based on population.	3
The project directly benefits a neighbourhood or 5-10% of residents including businesses.	2
The project benefits < 5% of residents including businesses.	1
This project does not benefit the community.	0

Level of Service Score	

Extent Score	

If project is motivated by level of service, please explain briefly:	

Calculated Level of Service Score	
Reported Score	NO LOS PRIORITY

Methodology			
Report Highest Number	Level of Service * Extent		
Level of Service	Extent		
	1	**2**	**3**
1	1	2	3
2	2	4	6
3	3	6	9

Final Score		
IF Highest Score =	Report	Description
0	0	Project does not improve the level of service for the community.
1 to 2	1	Level of service slightly improves the level of service for the community
3 to 4	2	Level of service moderately improves the level of service for the community
6 to 9	3	Level of service highly improves the level of service for the community

Strategic Plan

Strategic Plan Score	
Description	**Score**
This project has been identified as a Strategic Objective in an Official Master Plan and is identified to be required in Year 0-5.	3
This project has been identified as a Strategic Objective in an Official Master Plan and is identified to be required in Year 6-10.	2
This project has been identified as a Strategic Objective in an Official Master Plan and is identified to be required in Year 10+.	1
This project has not been identified as a Strategic Objective in an Official Master Plan	0

Strategic Plan Score	

If project is identified as part of a strategic plan, please indicate the action and year it is stated to be initiated and completed:	

Department Priority

Description	Score
Department has indicated this project is in their top 25% of priorities and/or due to project coordination efficiencies or timing, project should occur at the same time as another project that fits this criteria.	3
Department has indicated this project is in their middle 26% - 75% of priorities and/or due to project coordination efficiencies or timing, project should occur at the same time as another project that fits this criteria.	2
Department has indicated this project is in their bottom 25% of priorities and/or and/or due to project coordination efficiencies or timing, project should occur at the same time as another project that fits this criteria.	1
This project is not a departmental priority.	0

Department Priority Score*	

*Please ensure this is in line with your submitted department priority list.

If project is being completed at the same time as another project to improve coordination efficiency, please provide justification for this (i.e. cost savings):	

Community Need

Community Need Score	
Description	**Score**
This project has identified as a community need in an evidence-based way (e.g. public petitions, department head counts, traffic counts, accident reports etc.)	3
This project has not been identified as a social need in an evidence-based way	0

Community Need Score	

If project is identified as a social need, please briefly describe the evidence:	

Political Priority   Council Priority

Political Priority Score	
Description	**Score**
This project is considered a Tier 1 Council Priority for this budget year (or equivalent for Local Board) as identified in a Council (or Local Board) Report.	3
This project is considered a Tier 2 Council Priority for the next budget cycle (or equivalent for Local Board) as identified in a Council (or Local Board) Report.	2
This project is considered a Tier 3 Council Priority for a future budget cycle (or equivalent for Local Board) as identified in a Council (or Local Board) Report.	1
This project is not identified as a Council (or Local Board) Priority at this time.	0

Political Priority Score	

If project is motivated by Council (or Local Board) Priority, please indicate the Report No and date of the Council (or Local Board) Report:	

Operations Cost Efficiency

<table>
<tr><td colspan="2">Cost Efficiency Score*</td></tr>
<tr><td>Description</td><td>Score</td></tr>
<tr><td>This project will significantly reduce operations' cost* (0 - 5 year payback)**</td><td>3</td></tr>
<tr><td>This project moderatly reduces operations' cost* (5 - 10 year payback)**</td><td>2</td></tr>
<tr><td>This project is being completed to maintain existing operations' cost*.</td><td>1</td></tr>
<tr><td>This project will not affect operations' cost.</td><td>0</td></tr>
<tr><td>This project will increase operations' cost.</td><td>-1</td></tr>
</table>

*Does not include staff cost
**If no documents supporting this payback are available, complete Payback Period Calculation

*Payback Period Calculation	
Total Capital Cost of project	
Annual Operating Cost reduction	
Annual Maintenace Cost reduction	
Total Savings	0
Payback Period	#DIV/0!

Operations Cost Efficiency Score	

If project is motivated by operational cost efficiency, please reference the document that supports the annual operating and maintenance cost reduction:	

Operations Resource Efficiency   *Staff time is based on 1820 hours (35 hours a week, 52 weeks a year)

Operations Resource Efficiency Score	
Description	Score
This project significantly improves operations resources efficiency and the improvement is equivalent to a savings of >5% of staff time*.	3
This project moderately improves operations resources efficiency and is equivalent to a savings of 2-5% of staff time*.	2
This project slightly improves operations resources efficiency and the improvement is equivalent to a savings 0-1% of staff time*.	1
This project will not affect existing resources.	0
This project will increase need for resources and is equivalent to an increase of >2% of staff time*.	-1

Operations Resource Efficiency Score	

If project is motivated by resource efficiency, please attach calculation to support % of staff time savings, and explain briefly how it will improve the efficiency:	

Availability of External Funding

Funding Amount Score	
Description	Score
There is approved, dedicated external funding that will cover 50 - 100% of the project.	3
There is approved dedicated external funding that will cover 25 - 49% of the project.	2
There is approved, dedicated external funding that will cover less than 25% of the project.	1
There is no approved, dedicated external funding for this project.	0

Funding Timeline Score	
Description	Score
The approved external funding has a limited time window and will only be available for 0-2 years	3
The approved external funding has a moderate time window and will be available for 3-5 years	2
The approved external funding has a large time window and will be available for at least 10 years	1
There is no external funding for this project.	0

Funding Amount Score	

Funding Timeline Score	

If approved external funding exists, please specify the funding source:	

Please provide a short description of the funding details:	

Calculated Funding Score	
Reported Score	NO FUNDING PRIORITY

Methodology			
Report Highest Number	Amount * Timeline		
Amount	Timeline		
	1	2	3
1	1	2	3
2	2	4	6
3	3	6	9

Final Score		
IF Highest Score =	Report	Description
0	0	There is no external funding available for this project.
1 to 2	1	Project has external funding but is a low priority.
3 to 4	2	Project has external funding and is a medium priority.
6 to 9	3	Project has external funding and is a high priority.

Environmental Initiative

Environmental Initiative Score	
Description	**Score**
This project has been identified as a Corporate Action in the 2020 Corporate Climate Change Action Plan and is considered a Short Term Priority	3
This project has been identified as a Corporate Action in the 2020 Corporate Climate Change Action Plan and is considered to be a Medium Term Priority	2
This project has been identified as a Corporate Action in the 2020 Corporate Climate Change Action Plan and is considered to be a Long Term Priority	1
This project has not been identified as a Corporate Action in the 2020 Corporate Climate Change Action Plan	0

Environmental Initiative Score	

If project is identified as a corporate action, please indicate the action and year it is stated to be initiated and completed (Table 4):	

Value of Built Heritage

Value of Built Heritage Score	
Description	**Score**
This project is being completed on a designated heritage building, site, or Public Art, the intent of this project is to preserve or maintain that heritage, and preservation work is required in the next 0-2 years.	3
This project is being completed on a designated heritage building, site or Public Art, the intent of this project is to preserve or maintain that heritage, and preservation work is required in the next 3 - 5 years.	2
This project is being completed on a designated heritage building, site or Public Art, the intent of this project is to preserve or maintain that heritage, and preservation work is required in the next 6 - 10 years.	1
This project does not involve a designated heritage building, site or Public Art, or heritage preservation is not a driver for the project.	0

Value of Built Heritage Score	

If project is identified as being completed on a designated heritage building, site or Public Art, please reference the report or memo which supports the timeline. Report may be duplicated in Other Supporting Documentation.	

Project Simplicity

Simplicity Score	
Description	Score
This project has been identified as a "quick win" (i.e. simple and very inexpensive compared to other solutions), and would be easy to implement using internal staff resources.	1
The project simplicity or complexity is not a consideration for this project.	0

Extent Score	
Description	Score
The project benefits > 10% or more of the community based on population.	3
The project directly benefits a neighbourhood or 5-10% of residents including businesses.	2
The project benefits < 5% of residents including businesses or just benefits the City organization.	1
This project does not benefit the community or organization.	0

Simplicity Score	

Extent Score	

If project is motivated by project simplicity, please explain briefly:	

Calculated Project Simplicity Score		
Reported Score		NO SIMPLICITY PRIORITY

Methodology			
Report Highest Number	Extent		
Simplicity	Extent		
	1	2	3
1	1	2	3

Final Score		
IF Highest Score =	Report	Description
0	0	Project simplicity is not a consideration for this project.
1	1	Project is a quick win and will benefit a small portion of the population or the City organization.
2	2	Project is a quick win and will benefit a medium portion of the population or the City organization.
3	3	Project is a quick win and will benefit a large portion of the population or the City organization.

Other Supporting Documentation

Other Supporting Documentation Score	
Description	**Score**
This project has been identified as a need through supporting documentation (not including Master Plan, Climate Change Action Plan, or Council Priorities) which states the project is an immediate (Year 0 - 2) priority.	3
This project has been identified as a need through supporting documentation which states the project is a short term (Year 3 - 5) priority.	2
This project has been identified as a need through supporting documentation (not including Master Plan, Climate Change Action Plan, or Council Priorities) which states the project is a medium term (Year 6 - 10) priority.	1
This project has not been identified as a need through supporting documentation (not including Master Plan, Climate Change Action Plan, or Council Priorities), or the project is not yet a priority per the supporting documentation.	0

Other Supporting Documentation Score	

If project is identified as a priority in supporting documentation (not including Master Plan, Climate Change Action Plan, or Council Priorities), please indicate the supporting documentation and year it is stated to be initiated and completed:	

APPENDIX E:
PRIORITIZED LIST OF PROJECTS