2 Asset Management Strategy

An Asset Management strategy is the set of planned actions that will enable the assets to provide the desired levels of service in a sustainable way, while managing risk, at the lowest lifecycle cost. This section of the AMP summarizes planned actions, including non-infrastructure solutions, maintenance activities, renewal/rehabilitation activities, replacement/reconstruction activities, disposal activities, expansion activities, procurement methods and risk. Each of these areas is highlighted in the following sub-sections.

2.1 Non-Infrastructure Solutions

2.1.1 Strategic Plan

The City's 2019-2022 Strategic Plan is both a corporate and community strategic plan. Over the next four years, this plan sets out the strategic direction for the City and is intended to unite and mobilize efforts of volunteers, staff, leadership and Council. The strategic plan includes a corporate mission, visions and guiding principles. There are six strategic pillars, six goals and 19 objectives. A key pillar for asset management is Infrastructure Renewal, which focuses on infrastructure needs through effective planning and engagement.

2.1.2 Official Plan

The Official Plan (OP) states that the City will be planned to include interconnected networks that support the community. The networks serve a range of functions, including facilitating movement of people and goods, facilitating the distribution of water and collection of stormwater and sanitary or other waste, facilitating communication, accommodating social, cultural, recreational and leisure activities and supporting conservation and protection of environmental resources.

Chapter 5 of the OP is titled "Networks" and includes objectives and policies that speak to planning for the provision, maintenance and efficient use of networks, including: Servicing and Utilities Network; Trails and Open Space Network; Road Network; and, Rail Network. The OP provides the foundation upon which the more detailed plans are built.

2.1.3 Master Plans

Master plans are long range documents used to guide the introduction, expansion or elimination of infrastructure assets and the services they provide. Master plans are used by the City as they provide a comprehensive approach for identifying project needs. While master plans generally have a planning horizon of 20-30 years, the documents are typically updated every 10-15 years. This is because expansion and densification does not always occur at the rates used within the master plans or change is so rapid that an update may be needed earlier than originally planned. In addition, an asset may no longer provide acceptable levels of service (LOS) as a result of its condition. Implementation and operationalization of the Waterloo DSS will facilitate the ongoing monitoring of the City's assets and their ability to provide acceptable LOS.

Examples of master plans utilized by the City of Waterloo include but are not limited to:

- Sanitary Master Plan;
- Water Distribution Master Plan;
- Stormwater Master Plan;
- Cemetery Services Master Plan;
- Waterloo Park Master Plan;
- Community, Culture and Recreation Master Plan;
- Corporate Climate Adaptation Plan;
- Energy Conservation and Demand Management Plan.

2.1.4 Technology Implementation

The City of Waterloo has been using software technology to help with informed asset management decisions for decades. Examples include, but are not limited to:

- Pavement Management Analysis (PMA)
    - This system is used to gather, store, and analyze data about the City's streets and help provide a strategized program for implementing preventive maintenance and rehabilitation projects citywide.
- Work Order Management System
    - The City uses Maximo to define and control the various activities associated with the maintenance of our assets. It allows staff to measure and analyze the execution of processes so that continuous improvements can be made.
- Geographical Information System (GIS)
    - This system is used to capture, store, manipulate, analyze, manage, and present all types of spatial or geographical data. The locations of the City's physical assets are inventoried within this system.
- Financial Management System
    - The City uses PeopleSoft Financials to exercise financial control and accountability. Reporting from this system is used to track costs related to the City's assets.
- Fleet Management System
    - The City uses two systems for Fleet assets. The first system is EMDECS, a fleet maintenance software used to manage preventative maintenance. The second system is a custom built Microsoft Access program used to inventory vehicles and equipment.

2.2 Maintenance Activities

The City has created or follows established maintenance standards for many asset groups. These standards are used to guide maintenance and operations activities to ensure the assets can be relied on to provide the service for which they are intended.

Examples of asset maintenance activities for which the City has created or follows Maintenance Standards include:

- Tree Planting
- Fence Maintenance
- Spills Response
- Hydrant Replacement
- Vehicle Maintenance and Periodic Inspection Standards
- Elevator Maintenance
- Sidewalk Maintenance (Ontario Regulation 239/02)
- Roads Winter Operation (Ontario Regulation 239/02)
- Road Patrol (Ontario Regulation 239/02)

2.3 Renewal/Rehabilitation or Replacement Activities

The City's asset groups utilize various type of performance information to inform the recommendations for treatment activities.

Examples of approaches used by the City for determining the appropriate activities to undertake are:

- Facilities:
    - Facility Design & Management uses facility performance information to recommend projects and, where possible, coordinate the timing for projects to align with the needs of all assets within a specific facility.
- Fleet and Equipment:
    - Fleet and Procurement uses vehicle and equipment performance information to determine individual rehabilitation strategies throughout a vehicle's life and to determine replacement needs on an individual basis.
- Linear Assets:
    - Engineering Services uses performance information for all assets located within the municipal right-of-way to recommend projects that align together. In some cases, all assets may benefit from replacement, while in other cases, only one asset may exhibit the need for rehabilitation.
- Parks:
    - Environment & Parks Services uses performance information to recommend projects and, where possible, coordinate the timing for projects to align with the needs of all assets within a park.

2.4 Disposal Activities

Disposal activities are those associated with decommissioning an asset once it has reached the end of its useful life, or is otherwise no longer needed by the municipality. Disposal activities are typically limited to equipment and vehicles under the Water Distribution, Facilities, Fleet, Fire, and Information Technology asset classes, which make up less than 5% of the infrastructure portfolio. Civil engineering infrastructure composes the remainder of the portfolio, and these assets are typically treated rather than disposed of.

2.5 Procurement Methods

The City is committed to ensuring its procurement decisions are fair, open, transparent and non-discriminatory. Purchases made by City staff must comply with the City's Purchasing By-law. This by-law provides standard rules that govern the procurement of goods and services that reflect best value for the City, protect the City's financial interests and encourage competitive bidding.

2.6 Risk

O. Reg. 588/7 includes a component requiring municipalities to identify the risks associated to lifecycle options that could be undertaken to maintain current levels of service. Risk is also used for project prioritization which can be attributed to the risk the project represents if it does not move forward. With respect to capital projects, a good quantification of risk can be developed by considering two factors associated with the asset: the probability of underperformance and the consequence of underperformance. For example, a malfunctioning air conditioning system at a small recreation center may lead to program and service disruptions for a small number of residents and clients (low consequence). However, the same situation at a large recreation center may lead to program and service disruptions for a large number of residents and clients (high consequence). Asset class specific information is contained in **Appendix B: Core Assets** and **Appendix C: Non-Core Assets**.

Another risk component is the set of revenue assumptions included in the LTFP and the Approved 2020-2022 Capital Budget and 2023-2029 Capital Forecast. Both documents include revenue assumptions (e.g. inflation adjustments to tax rates, user rate increases, gas tax transfer grant revenue and development charge revenue) that allow projects to be planned for. If these revenue assumptions do not come to fruition, different choices may need to be made. Examples include postponing or cancelling projects or reducing service levels.

Subject matter experts are able to use the Waterloo DSS to communicate various risks. This will assist in prioritizing a range of items from large lump sum budget allocations and capital projects to maintenance activities.