



SUBJECT: Asset Management Program

TO: Committee of the Whole

FROM: Capital Works

Report Number: CW-02-19

Wards Affected: All

File Numbers: 701-04

Date to Committee: January 17, 2019

Date to Council: January 28, 2019

Recommendation:

Receive and file capital works department report CW-02-19 regarding the City of Burlington Asset Management Program.

Purpose:

The purpose of this report is to provide Council with an overview of the city's asset management planning program. The program is responsible for corporate oversight of the city's aging infrastructure, which is valued at approximately \$3 billion. Asset Management is an integral component to delivering valued service in the City, through the most efficient use of our resources while managing long-term risk. The asset management program reinforces the provincial wide commitment to continued investment in infrastructure renewal.

Background and Discussion:

Municipalities in Canada are responsible for the construction, operation and maintenance of nearly 60 per cent of all public infrastructure. Yet local governments only receive 8 per cent of every tax dollar collected across Canada. To address this challenge, the City of Burlington employs asset management practices to make informed decisions on infrastructure investment.

Asset Management is the coordinated activity of an organization to realize value from assets. An asset is an item, thing or entity that has potential or actual value to an organization. For municipalities our tangible capital assets include roads, bridges,

sewers, buildings, parks, fleet and equipment. Asset Management is multi-disciplinary and involves many services within the organization. It focuses on the balancing of costs, opportunities and risks against the desired performance of the assets to achieve organizational objectives.

Good Asset Management is:

- Strategic (aligned with organizational goals);
- Enterprise-wide;
- Applicable to asset owners, managers and those with delegated management responsibilities; and
- Aligned with industry standards and best practices (ISO 55000, International Infrastructure Management Manual (IIMM))

The Asset Management program at the City oversees the management of capital infrastructure using proven life-cycle strategies that has evolved over two decades and continues to do so. Throughout this time, the City has built an Asset Management program focused on putting in place the structure, people, systems and decision support processes required to carry out infrastructure planning and identifying emerging infrastructure challenges. This has led to the formalizing of an Asset Management Steering Committee which allows for a holistic view of our assets and facilitates the coordination of activities between services. Furthermore, this approach continues into the budgeting process, where funds are allocated to projects that best align with corporate and program objectives.

Asset Management is an integrated framework that enables organizations like the City of Burlington to achieve our strategic infrastructure goals in a structured and most cost-efficient way. There are broad subject groups that form the basis of Asset Management. City staff across the organization are involved in a wide number of integrated activities that support Asset Management which aim to meet our strategic goals.

Asset Management Policy

On March 2, 2016 Council adopted the city's Asset Management Policy, committing our organization to the management and future planning of our assets. The policy complements and supports the goals of the City's Strategic plan and further aligns and integrates with our organizations' core documents by embedding asset management principles into ongoing capital operations and maintenance activities.

City staff across the organization will continue to be involved in a wide number of integrated activities that support the key principles and objectives of our Asset Management policy.

City of Burlington's Asset Management Plan

In 2017, Council approved the city's Asset Management Plan (AMP) together with a long-term financing strategy to address the city's investment in infrastructure. The development of the AMP as approved was a multi-disciplinary approach in determining our infrastructure needs. These needs guide capital budget priorities for our renewal program. The city's capital budget is predominately composed of renewal projects (approximately 80% of budget). The infrastructure renewal projects put forward and their relative timing are representative of detailed analysis balancing asset condition, risk and resources. The annual capital budget will continue to adhere to the objectives of the AMP and its respective financing plan.

State of Local Infrastructure

Reporting on the overall state of local infrastructure is a key component of any AMP. The 2016 AMP presented inventory, condition, replacement value and long terms needs into six corporate asset categories (roadways, facilities and buildings, parks and land improvements, fleet and equipment, stormwater management, and information technology).

To date, approximately 95 percent of capital assets have been identified and assessed within a corporate **inventory**. Asset inventories are refined on an ongoing basis through on-site inspections by staff.

The **condition** of assets is determined according to standard practices. Some assets (pavements, sewers, bridges, facilities, etc.) rely on commonly accepted condition measures based on formal assessments. For other assets an age-based analysis is undertaken, and the assets are classified based on their remaining useful life, expressed in years or percent of life remaining. To allow for cross-category comparison every asset type was incorporated into a standardized Asset Condition Grade System (represented by Table 1). An asset that is classified as 'Very Good' would be new or recently rehabilitated. A 'Very Poor' asset would be one that is in unacceptable condition with widespread deterioration likely causing an impact to service.

Table 1: Asset Condition Grade System

Condition Grade	Description & Condition Characteristics	% of Estimated Service Life (ESL) Remaining on Asset
Very Good	“Fit for the future” Well maintained, good condition, new or recently rehabilitated	>80%
Good	“Adequate for now” Acceptable, generally approaching mid stage of expected service life	60% to 80%
Fair	“Requires attention” Signs of deterioration, some elements exhibit deficiencies	40% to 60%
Poor	“At risk of affecting service” Approaching end of service life, condition below standard, large portion of system exhibits significant deterioration	20% to 40%
Very Poor	“Unfit for sustained service” Near or beyond expected service life, widespread signs of advanced deterioration, some assets may be unusable	< 20%

Source: Canadian Infrastructure Report Card (CIRC)

The overall **replacement value** of the City’s assets is approximately \$2.94 billion, broken down by asset category (see Table 2 below). Replacement values are based on recent market replacement data and analysis of historical renewal expenditures.

All replacement costs are based on renewing or replacing assets to a similar function and equivalent utility. Replacement values by asset category can be expected to change as the city aims to strike a balance by strategically choosing between investing in what we have, building future expansions, revitalization of current assets or divesting what may no longer be required.

Table 2: Replacement Values by Asset Category (2016)

Asset Category	Replacement Value	Inventory Examples
Facilities & Buildings	\$547.7	<ul style="list-style-type: none"> • 1.5 million square feet of facility/building space
Roadways	\$2,013.3	<ul style="list-style-type: none"> • 1,614 km of paved road • 140 bridge/culvert structures • 512 km of sidewalk and multi-use pathways
Stormwater Management	\$66.6	<ul style="list-style-type: none"> • 759 km of mainline storm sewers (pipes) • 26 stormwater management ponds
Parks & Land Improvements	\$200.3	<ul style="list-style-type: none"> • 128 sports fields • 131 playgrounds
Fleet - Vehicles & Equipment	\$70.6	<ul style="list-style-type: none"> • 60 conventional buses • 13 specialized transit vehicles • 145 corporate fleet vehicles • 44 fire vehicles
Information Technology (IT) Services	\$44.7	<ul style="list-style-type: none"> • 300 servers • 40 major software applications
Total	\$2,943 B	

Renewal Needs Analysis

The city's renewal backlog, termed the Unfunded Renewal Need (URN), is defined as the unfunded value of infrastructure renewal that requires immediate attention. Addressing the URN in a timely manner is critical to managing assets in a cost-effective manner.

The URN has accumulated due to historical under-funding in a period of rapid and extensive growth. Growth in assets contributes to a greater need to re-invest in City assets and that was not occurring. The URN grows each time we do not renew an asset at the right time. This increases the likelihood of increased cost to do the same work or increased costs due to further deterioration. With the approval of the recent financing strategy, staff is correcting for the past and working towards sustainability to achieve timely renewal of assets.

Based on the 2016 AMP, the estimated URN totals \$126.5M, of which roadways represents the largest backlog. Tackling the URN is a short-term objective of the financing strategy. Doing so in a timely manner will minimize total long-term renewal costs by providing the right treatment, to the right asset, at the right time. This is the optimal way of minimizing the escalating deterioration of our assets.

Provincial Asset Management Planning Regulation

On January 1, 2018, Ontario Regulation 588/17: Asset Management Planning for Municipal Infrastructure came into effect. The regulation sets out requirements for municipal asset management planning to help municipalities better understand their infrastructure needs and inform infrastructure planning and investment decisions. The regulation will be phased in over six years. **Appendix A** lists the timelines and requirements for municipalities under the new regulation. The list also contains ongoing legislated requirements that staff have already fulfilled or have committed to fulfilling.

Staff will report back to Council in 2019 with an update to the city's Asset Management Policy to meet the legislated requirement, as well as a detailed work plan to outline the completion of the subsequent major milestones.

Financial Matters:

The Asset Management Financing Plan was officially introduced in 2013 (F-39-13) and updated in 2016 (F-12-17) based on the comprehensive 2016 Asset Management plan (CW-22-17). The financing plan employs a holistic and coordinated approach to address infrastructure renewal needs. Financial variables at that point in time were used to model cash flow over 60 years to provide a predictable and sustainable funding strategy to support infrastructure needs.

The City's financing strategy aligns with the City's long-term financial plan, providing predictable investments in the City's infrastructure which gives staff the flexibility to protect assets by mitigating various pressures that may emerge, such as increasing levels of service, effects from climate change and both expected and unexpected condition deterioration. These factors would have a significant impact on the current, as well as the overall long-term performance of the city's infrastructure. The ability to address these issues at the right time and in the most cost-effective manner is vital to ensure that city assets continue to provide a standard of service that residents expect and to minimize long-term costs. **Appendix B** shows a life-cycle graph that depicts how the renewal of a typical urban local street at the optimum time results in a cost of 1x. Delaying this treatment begins to compromise the base materials, escalating costs to 3x. Further delay results in the street requiring full reconstruction at a cost of 10x.

The asset management financing plan was approved by Council in 2017 (F-12-17) and recommended annual dedicated tax increases to provide sustainable, long term funding. The financial strategy is dependent on the city's dedicated infrastructure renewal levy as it represents a consistent and strategic approach to investment in the city's replacement needs that is both sustainable in the short and long term. It provides the liquidity and flexibility required to finance the needs as dictated by the AMP.

Financing Strategy

Even prior to the official adoption of the AMP, the City over the last decade has been proactive and committed to providing long-term, dedicated infrastructure funding to the renewal program. The dedicated levy was first introduced in 2005 and incremental increases have continued. The following chart highlights the changes to the levy since 2005;

2005	2006	2007	2008	2009	2010	2011	2012*	2013	2014	2015-Present
0.7%	0.7%	1.0%	1.0%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	1.25%

**Additional \$550,000 annually for shave and pave program*

The following details the dedicated infrastructure levy incorporated into the present day financing plan and funding the city's proposed (2019) ten-year capital renewal program;

- Dedicated infrastructure levy of 1.25% (to 2022), reducing to 1.0% (2023-2033) and further reducing to 0.5% (2034 and beyond)
- Phased repurposing of the Hospital Levy in 2019 for \$1.7million, with phases following in 2026 and 2027
- Additional 0.2% levy beginning in 2020 to address the renewal needs of a growing asset inventory

Further to the above commitment of continued investment, the city has also provided a one-time infusion in 2015 of \$20 million to address roadways infrastructure in attempt to mitigate escalating future rehabilitations costs.

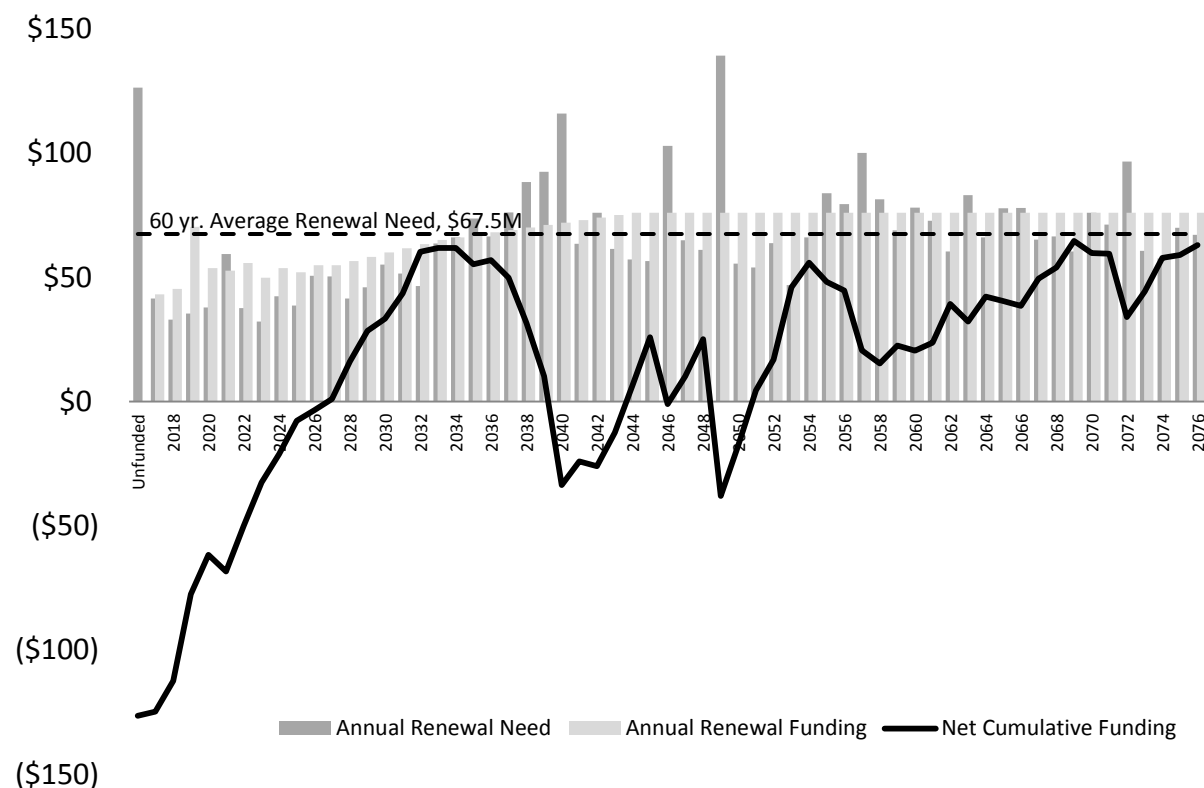
In addition to the dedicated infrastructure levy, reserve and reserve funds are a critical component of the city's long term financial planning. For our infrastructure needs, they represent planned sustainability for today and the future. Examples of reserve funds that are fundamental components of the financing plan include the Burlington Hydro reserve fund, Federal and Provincial Gas Tax and program specific reserve funds. All these funds provide an on-going and steady investment into the infrastructure plan. The asset management financing plan conservatively employs the city's reserve and reserve funds without impacting financial flexibility and overall liquidity.

As per the city's long term financial plan and continued responsible debt management, the city will continue to phase out its reliance on debt as a funding source for ongoing renewal needs. As such, the asset management financing plan does not consider the use of debt beyond the first ten years of the financing plan (starting in 2027) as a sustainable funding source for renewal needs.

Cash Flow Analysis

A cash-flow analysis was completed on a 60-year time horizon to capture the entire lifecycle of assets. However, staff focused the analysis over the next 15-20 years where variables are more predictable, costs are more accurate and external environment assumptions are more realistic. The objective of the model continues to be to effectively diminish the unfunded renewal needs and work towards long term sustainability of existing assets.

The annual average renewal need over this period is estimated to be \$67.5M, which is the amount the City requires to sustain its existing asset inventory. The below graph summarizes the City's funding allotment compared to renewal needs on an annual basis.



As shown above, the City's net cumulative funding begins as a deficit in the first 10 years, which is primarily due to the large URN causing a significant draw on the annual funding provision. This highlights the importance of continuing with the city's current financing strategy as it assists in addressing assets that need immediate attention.

The model projects a breakeven point in 2027, however, as capital needs continue to fluctuate over the 60-year time frame, the net cumulative funding experiences periods of fluctuation in response to meeting the annual renewal needs. Current projections indicate that the City will move towards achieving long term sustainability in the later

years of the time horizon. This is evident where the net cumulative funding line starts trending closer to the average annual need of \$67.5M.

The 60-year financing strategy displayed through the graph above is predicated on the financing strategy as approved by Council and aligns with the city's long term financial plan. Any changes to the financing strategy will have an immediate impact to the city's now-needs and will erode the funding to the city's capital program, and consequently, on the overall sustainability of the strategy. In addition to the financial strain on the program, it may contribute to inefficiencies in managing the optimal timing of renewing assets potentially impacting service value.

Staff Direction

At Committee of the Whole (COW) workshop on December 13th, the following staff direction was approved (portion of the staff direction)

Direct the Director of Finance to report back on the impact of removing the 1.25% infrastructure levy for the 2019 budget.

Staff interpreted the direction to include the impact for the 2019 budget year only with future dedicated levy increases continuing. Due to the timing of the report, Council will be receiving a memo distributed separately that will address the complete staff direction, including the above at the January 17th COW. Included in the memo will be a list of capital projects that will be removed and/or impacted in 2019 because of potential changes to the levy. It is important to note that any changes to the dedicated infrastructure levy impacts both renewal projects as well as new projects in the capital program. The city's asset management plan is about the long-term management of our existing infrastructure. New capital assets add to the city's base inventory and therefore increase our funding requirements for renewal needs. If we are unable to sustain our existing portfolio of assets it is recommended that we limit future expansion and/or new infrastructure. Continued investments in new or expanded assets compounds our inability to financially manage our infrastructure.

At a high level, the impacts associated with any reduction or removal of the dedicated infrastructure levy include:

- Impact on the city's asset management financing plan and the city's ten-year capital program. Removing the 1.25% dedicated infrastructure levy for 2019 removes the equivalent of \$2 million of capital projects (renewal/ new) in the budget year, and \$20 million worth of capital projects over the ten-year capital program as the levy has a cumulative impact;

- Impact to the city's asset management strategy as shown in **Appendix C**. The removal of one year of funding leads to an unsustainable funding plan, as we can expect the net cumulative funding line will not cross the x-axis after 2038.
- An increase to the city's unfunded renewal needs, meaning a backlog of renewal projects beyond the current \$126.5 million that will require immediate attention. It is important to recognize that it is possible for the URN to grow to a point where the possibility of tackling the immediate requirements and continuing to keep pace with current needs will not be possible due to capacity restraints and unreasonably high financing requirements
- Deferred maintenance and deferred renewal is inevitable. The result will be an increase in the total long-term costs to the City of Burlington by way of;
 - increased operating and maintenance costs to prolong the life of the asset from accelerated infrastructure deterioration
 - Increased rehabilitation costs due to deterioration beyond the life of the asset
 - Escalation of capital costs due to required higher cost rehabilitation treatments
 - Emergency, unscheduled maintenance due to system failures impacting service delivery (ie. Appleby Ice Centre, December 2018; Nelson Outdoor Pool Summer 2017)
 - Passing costs to future generations to manage existing assets

Infrastructure renewal investment is crucial to replacing and upgrading assets to better adapt to climate change

Connections:

The City's asset management approach is rooted in the city's Strategic Plan, and the organization corporate directions by ways of good governance and building exceptional quality life. Asset management is wide-reaching and affects other elements in the other strategic directions and in building a 21st century workforce.

Asset management planning ties into the City's strategic planning processes, including the budgeting and the long-term financial planning process, as infrastructure investment decisions impact both operating and capital expenditures.

Public Engagement Matters:

The city's website is updated with the current Asset Management Plan and corresponding financing strategy at <https://www.burlington.ca/en/services-for-you/asset-management-plan.asp>.

At the time of the 2012 Budget, up until the 2014 Budget, the city held annual public open houses to discuss the budget. The format of the public meetings was similar; a staff presentation followed by public discussion and input through a work book. As part of those sessions, staff consulted on the city's infrastructure needs as well as the hospital levy. The questions and the corresponding results can be found in **Appendix D**. The responses show that generally the community was supportive of an infrastructure levy and the repurposing of the hospital levy to infrastructure.

Conclusion:

The city's asset management program represents a steady commitment by staff and Council in managing the city's aging infrastructure for today, and the future. The city's asset management plan evaluates the renewal need of our assets and is complimented with a responsible financing strategy that is predictable and sustainable. Any changes will erode the funding to the city's capital program, and consequently, on the overall sustainability of the strategy and long-term costs. It is important to recognize that reducing renewal funding in a given year does not eliminate the need, but rather results in a deferred and escalated cost in the future.

In response to the forthcoming legislative requirements, the Asset Management Steering committee will report back to Council in 2019 with a work plan and a Strategic Asset Management Policy for Council review.

Respectfully submitted,

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Appendices: (if none delete section)

- A. Asset Management Regulation Requirements
- B. Roadways Life Cycle Graph

C. Net Cumulative Impact: Reduction of 2019 Infrastructure Levy

D. Summary of Public Consultation

Report Approval:

All reports are reviewed and/or approved by Department Director, Director of Finance and Director of Legal. Final approval is by the City Manager.