

## ADMINISTRATIVE RESPONSE TO CAPITAL ASSET MANAGEMENT AUDIT

### Recommendation

That the September 22, 2023, Integrated Infrastructure Services report IIS02011, be received for information.

<b>Requested Action</b>	Information only		
<b>ConnectEdmonton's Guiding Principle</b>	<b>ConnectEdmonton Strategic Goals</b>		
<b>CONNECTED</b> This unifies our work to achieve our strategic goals.	<b>Healthy City</b>		
<b>City Plan Values</b>	PRESERVE		
<b>City Plan Big City Move(s)</b>	A rebuildable city	<b>Relationship to Council's Strategic Priorities</b>	Conditions for service success
<b>Corporate Business Plan</b>	Managing the Corporation		
<b>Council Policy, Program or Project Relationships</b>	<ul style="list-style-type: none"> <li>• C598 - Infrastructure Asset Management Policy</li> <li>• 1998 Infrastructure Strategy</li> <li>• 2006 Edmonton City Council's Infrastructure Strategy</li> <li>• 2018 Infrastructure Strategy</li> </ul>		
<b>Related Council Discussions</b>	<ul style="list-style-type: none"> <li>• October 12, 2022, Executive Committee report IIS01349, Rationalizing and Right Sizing Municipal Assets</li> <li>• October 30, 2022, City Council, IIS01338 Options for a New Dedicated Tax Levy</li> <li>• November 30, 2020, City Council, IIS00101 2020 Infrastructure State and Condition</li> </ul>		

## ADMINISTRATIVE RESPONSE TO CAPITAL ASSET MANAGEMENT AUDIT

### Executive Summary

- The Office of the City Auditor conducted an audit of Capital Asset Management across the corporation.
- The objective of the audit was to determine whether the City manages its capital assets to optimize investments in existing infrastructure. The audit was focused on the City's processes for funding capital renewal.
- Administration accepts the recommendations in the City Auditor's Capital Asset Management audit report.
- The recommendations within the Office of the City Auditor's report are addressed in Administration's existing work plans for asset management and the recommendations align with the continuous improvement principle outlined in the City's Infrastructure Asset Management Policy.

### REPORT

At the end of 2022, the City of Edmonton had an inventory of infrastructure assets with an estimated replacement cost of \$34.7 billion. These assets include roads, bridges, facilities, parks and open spaces, buses, equipment and numerous other physical assets needed to deliver and support the many services provided by the City.

Various business areas within the City are involved in, and are responsible for, performing the asset lifecycle activities of acquiring, operating, maintaining, renewing and disposing of assets. These areas work very closely together to maximize the value provided by municipal assets. The asset management activities within the City are guided by Policy C598 Infrastructure Asset Management Policy and its related Infrastructure Strategy, as well as by asset management practices and the supporting systems and processes.

Administration's capital asset management processes are strongly embedded in budget decisions to ensure that corporate priorities are addressed. The 2023-2026 Capital Budget along with the Capital Investment Outcome was focused on renewal of existing infrastructure informed by the findings and analysis of the asset management practices of the City.

### Edmonton as a Leader of Asset Management

The City of Edmonton was one of the first Canadian cities to recognize the need for a strategic plan to manage infrastructure<sup>1</sup>, and created its first Infrastructure Strategy in 1998. This first strategy consisted of 15 guiding principles and supporting strategies with a focus on the need to manage municipal assets cohesively.

Edmonton has historically been at the forefront of asset management practice development. Cities and large institutions have emulated the work done by Administration, at times, seeking to use Edmonton as a benchmark. For example, Administration has shared the asset management experiences and learnings with the City of Calgary, City of Leduc, Federation of Canadian Municipalities (FCM), Alberta Municipalities, as well as other jurisdictions across Canada and the

---

<sup>1</sup> Edmonton's Approach.

[https://www.edmonton.ca/city\\_government/initiatives\\_innovation/a-strategic-approach](https://www.edmonton.ca/city_government/initiatives_innovation/a-strategic-approach)

## ADMINISTRATIVE RESPONSE TO CAPITAL ASSET MANAGEMENT AUDIT

world<sup>2</sup>. Edmonton has also been featured in the International Infrastructure Management Manual and the book published by the American Society of Civil Engineers. Following the creation of the 1998 Infrastructure Strategy, Administration has worked purposefully to address the infrastructure challenge by creating the following:

- Annual Infrastructure State and Condition report;
- Standardized rating system to compare the condition of disparate assets;
- Risk-Based Infrastructure Management System (RIMS);
- Neighbourhood Infrastructure Renewal Program;
- Infrastructure Management Team and Infrastructure Working Team;
- Advisory group composed of academia, industry partners and asset management experts;
- Inclusion of capital renewal funding requirements, blended with the 10-year Capital Investment Outlook;
- Asset Accounting Standards required by the Public Sector Accounting Board; and
- Lifecycle Management section within the Integrated Infrastructure Services department.

Administration is active in the asset management community, providing input and influence over the development of asset management practices both nationally and internationally. Edmonton has worked closely with the Federation of Canadian Municipalities (FCM)<sup>3</sup> and Institute of Public Works Engineering Australasia (IPWEA) to support the International Infrastructure Management Manual (IIMM) and is a founding member of the Canadian Network of Asset Managers (CNAM)<sup>4</sup>. Administration is aware of, and incorporates learnings from all available guides, resources and learning materials to enhance Administration's knowledge of asset management.

The City of Edmonton has been recognized for its efforts in improving asset management practices receiving a silver award in the municipal category from the inaugural Institute of Public Administration of Canada (IPAC) Public Sector Leadership Awards. Edmonton also received the 2012 and 2016 Canadian Society of Civil Engineers (CSCE) Award for Governmental Leadership in Sustainable Infrastructure<sup>5</sup>. In addition to awards, Edmonton has been featured in a variety of print publications such as the American Society of Civil Engineers (ASCE) Journal<sup>6</sup>, RENEW Canada magazine<sup>7</sup>, Summit Magazine and as a case study in the International Infrastructure Management Manual<sup>8</sup>.

---

<sup>2</sup> Examples include: Region of Durham, City of Hamilton, Service Alberta, Jilin Province (China), Guangxi Province (China), and Dubai.

<sup>3</sup> Federation of Canadian Municipalities (FCM), the City of Edmonton contributed to many of the reports linked, including *Dedicated Funding* and *Managing Risk*.

<https://fcm.ca/en/resources/mamp/infraguide-national-guide-sustainable-municipal-infrastructure>

<sup>4</sup> Canadian Network of Asset Managers (CNAM). <https://cnam.ca/about-cnam/>

<sup>5</sup> Canadian Society of Civil Engineers (CSCE) Award for Governmental Leadership in Sustainable Infrastructure. <https://csce.ca/en/sustainable-infrastructure/>

<sup>6</sup> American Society of Civil Engineers (ASCE) Journal, Infrastructure Reporting and Asset Management: Best Practices and Opportunities, pages: 47–55. <https://ascelibrary.org/doi/book/10.1061/9780784409589>

<sup>7</sup> RENEW Canada. <https://www.renewcanada.net/feature/the-long-view/>

<sup>8</sup> International Infrastructure Management Manual (page 100). <https://www.ipwea.org/resourcesnew/bookshop/iimm>

## **ADMINISTRATIVE RESPONSE TO CAPITAL ASSET MANAGEMENT AUDIT**

### **Infrastructure Asset Management Policy and the Infrastructure Strategy**

The City of Edmonton's Infrastructure Asset Management Policy C598, adopted by Council on March 20, 2018, formalized Council's and Administration's intentions and direction related to asset management activities that were already being performed by Administration on the City's physical assets.

The Policy outlines the principles by which the City intends to apply asset management to maximize value from assets, manage risk and provide appropriate levels of services in a sustainable manner.

The related Infrastructure Strategy<sup>9</sup> helps activate the Policy by documenting the approach the City will take to implement the principles outlined in the Policy. The Infrastructure Strategy has guided decision making since 1998 with new, updated versions in 2006 and 2018. The 2006 update highlighted the need to balance the renewal needs of existing infrastructure and the growth and expansion pressures faced by the City. This strategy continued to support the development of effective infrastructure management tools, as well as collaboration with external partners, stakeholders and other orders of government.

The 2018 update was undertaken with support from the Federation of Canadian Municipalities (FCM) under the Leadership in Asset Management Program (LAMP). This version of the strategy more clearly connected the strategy to Council's vision for the City and corporate strategic plans and provided detailed guidance on the approach to asset management.

The 2018 Infrastructure Strategy was developed with the intent that it would be updated within five years to continue to remain relevant, and the fourth iteration of Edmonton's Infrastructure Strategy is currently under development.

### **Asset Management Plans**

Asset Management Plans (AMPs) are tactical plans that apply the principles outlined in the Asset Management Policy, follow the approach in the Infrastructure Strategy and define the asset management activities that will be taken on specific assets.

To achieve the level of detailed required to garner value from the AMPs and to work within resource constraints, Administration applied a risk based approach starting in 2018 to develop the first iteration of formal AMPs for the majority of the City's significant infrastructure assets, which include buildings, bridges, paved roads, sidewalks, pathways, trails and stairs, unpaved roads and urban forest. Each of these AMPs included improvement plans, as they were developed with the intention that they would be continuously improved upon as more data and resources became available.

### **Enterprise Asset Management Initiatives & Asset Rationalization Framework**

In 2020 and 2021, supporting the work of the Infrastructure Strategy, and in conjunction with the work of Enterprise Commons, Administration conducted reviews of the City's asset management practices. The review included aspects such as long-term asset management data strategies, and

---

<sup>9</sup> 2018 Infrastructure Strategy.

<https://drive.google.com/file/d/1fodUuez9mykVyeRWpjr0dkSGXW93-ZfW/view?usp=sharing>

## ADMINISTRATIVE RESPONSE TO CAPITAL ASSET MANAGEMENT AUDIT

alignment of asset management practices within the Enterprise Commons environment. These reviews resulted in the development of the Enterprise Asset Management Business Case, prepared for internal circulation in March 2021.

Key recommendations from this business case included:

- Establishing a corporate Enterprise Asset Management (EAM) Team. This team resides within the Infrastructure Planning and Design, Lifecycle Management section, and was established and resourced in March 2022;
- Forming an EAM governance body. The Corporate Asset Management Steering Committee was established in December 2022, bringing together Branch Managers across the corporation with asset management responsibilities; and
- Investing in consolidation and improvement of data and technologies. Activities are underway and include identifying current data sources, data responsibilities and data types. Efforts are in progress to establish commonalities of data and ensure data is defensible and repeatable. Following the implementation of these activities, the various systems and data sources holding this information will be consolidated and unified, capitalizing on the technology investments already made by the City, such as Enterprise Commons.

The work of the EAM team focuses on continuous improvements on five pillars that support overall asset management: governance, people, process, data and tools. It also includes the development of an Asset Rationalization Framework to provide a consistent methodology for determining to support end of life decision making for assets. The application of this framework will help right size the assets within the corporate inventory, reduce the risks and impacts of unplanned asset failures, and reduce the maintenance and renewal financial burden, allowing more of the limited funding to be made available to the remaining asset base.

### Audit Findings and Recommendations

The objective of the Capital Asset Management audit was to determine if Edmonton manages its capital assets to optimize investments in existing infrastructure. This includes:

- Developing and maintaining a policy, strategy and plans to guide, integrate and direct asset management throughout the City; and
- Evaluating asset management practices to improve and align practices across the City.
- Implementing asset management practices that align with asset management policy, strategy and plans.

This audit focused on the City's processes for funding capital asset renewal and did not include acquisitions or new construction, operations, maintenance of capital assets or IT assets, which have been audited separately.

The Office of the City Auditor's audit resulted in five recommendations for Administration:

- Recommendation 1: We recommend the Integrated Infrastructure Services Department update the Infrastructure Asset Management Policy and the Infrastructure Strategy to better align with best practices and City objectives.

## ADMINISTRATIVE RESPONSE TO CAPITAL ASSET MANAGEMENT AUDIT

- Recommendation 2: We recommend the Integrated Infrastructure Services Department guide the development, approval and regular updates of Asset Management Plans for significant asset categories.
- Recommendation 3: We recommend the Integrated Infrastructure Services Department develop guidance on asset disposition including regular asset portfolio reviews to make better use of budgets.
- Recommendation 4: We recommend the Integrated Infrastructure Services Department, as part of improving asset management governance, develop and communicate guidance for asset managers on the requirements of accurate and complete data.
- Recommendation 5: We recommend the Integrated Infrastructure Services Department improve the City's capital asset management performance measurement by developing a level of service framework to support asset managers and clearly defining strategic performance measures.

Administration accepts the Office of the City Auditor's recommendations. Administration will begin implementing the recommendations in 2023 with the following actions, with an anticipated completion date of 2027.

### Infrastructure Asset Management Policy and the Infrastructure Strategy

The 2018 Infrastructure Strategy expires in 2023. Administration started updating the Strategy to better reflect the current needs of the City. The focus is on moving forward with better integration of asset management and sustainability efforts, improving the connection between investment decisions and asset needs, level of service commitments to Edmontonians and sustainable outcomes for communities. This work will also encompass a review of Policy C598.

Updates to both the Infrastructure Strategy and Policy are underway, as planned, with expected completion in mid-2024. Updates to the Policy and Infrastructure Strategy will reflect thoughtful consideration of the best practices that support the goals of the City and bring value to the efforts of Administration.

### Asset Management Plans

Asset Management Plans (AMPs) are a costly and resource intensive exercise involving multiple business areas across the corporation. As such, the current selection of asset classes having AMPs are those that have high value or high impact of failure. The first generation of AMPs will be prioritized for review and approval by the Corporate Asset Management Steering Committee in 2023.

The balance of assets not currently covered by existing AMPs will be advanced when resources permit. Because of the significant number of resources required to provide input into these plans, their development is intentionally incremental and will be scheduled to align with the business area's priorities.

In advance of the first generation AMPs approvals, Administration is currently reviewing and addressing the improvements plans built into the AMPs for application into the next generation of AMPs to be developed between 2023-2026. The learnings from the first generation AMPs will

## **ADMINISTRATIVE RESPONSE TO CAPITAL ASSET MANAGEMENT AUDIT**

be incorporated into the remaining AMPs to be developed for critical assets, and to the next generation AMPs.

### Asset Disposition

The need to improve the City's disposition process has previously been noted by Administration in response to the aging of the corporation's assets and the financial burden it represents. Work is underway on this initiative and was presented to Council in the October 12, 2022, Executive Committee report IIS01349, Rationalizing and Right Sizing Municipal Assets. Administration is developing an Asset Rationalization Framework and pilot which will be presented to Executive Committee on October 13, 2023. As part of this framework, a disposition procedure will be developed in alignment with the audit recommendation. The disposition of assets will be included as part of the updated Policy and Strategy, with the full lifecycle cost included as part of decision making.

### Data Governance and Enterprise Asset Management (EAM)

The work plan for the EAM team aims to address the outcomes from the 2021 Enterprise Asset Management Business Case which align with the findings and recommendations made in the audit related to data governance and the need for procedure related to data quality assurance.

### Capital Asset Management Performance Measurement

Informed by the updated Infrastructure Strategy, a level of service framework will be developed using learnings from the development of the first generation AMPs, introductory levels of service identification work previously conducted with leisure centre assets in the 2019-2022 budget cycle, and activities from piloting asset rationalization. The framework will be provided to service leaders to assist with the identification of level of service measures which align with technical levels of service used by asset managers to understand asset performance.

Improving on the performance measures currently in place, new strategic performance measures for asset management will be developed in alignment with the City's Enterprise Performance Management process with regular reviews and recalibration to ensure reporting is aligned with planned deliverables.

## **Conclusion**

The recommendations within the Office of the City Auditor's report are addressed in Administration's existing work plan for asset management. Tools such as Levels of Service Framework, Asset Rationalization Framework, Data Governance and Asset Management Plans are already in development or identified as initiatives to be undertaken in the upcoming revised Infrastructure Strategy.

Administration has and will continue to use a combination of perspectives including various sources of data, operational context and professional judgement to analyze the City's assets to make decisions. Asset data is used as the first layer in the decision making process, overlaid with the operational context provided by the staff that interact with the assets to form a more informed understanding of the state and condition of the assets. Administration applies

## **ADMINISTRATIVE RESPONSE TO CAPITAL ASSET MANAGEMENT AUDIT**

professional judgement to the contextualized data to complete the analysis and form the appropriate decision.

The audit found some data or process discrepancies. While accuracy is important, Administration believes these discrepancies had no impact on the analysis of the City's inventory of assets or the decisions made guiding the renewal investments.

The tools and processes identified in the audit report, and incorporated in Administration's work plan, will enable Administration to be more effective and efficient in analysis, and streamline asset lifecycle decision-making.

### **Community Insight**

This report is a response to an internal audit and Administration has not conducted community engagement that is specific to this report topic. Once infrastructure assets are assessed and Administration determines that investment is required, public engagement is undertaken on a project-by-project basis using a variety of mediums to ensure that all who want to contribute or provide input have an opportunity to do so.

Within the asset management industry, there are many formal and informal engagement opportunities that Administration fully takes advantage of to ensure relationships are maintained, lessons learned and new technologies are shared along with opportunities to engage in asset management research.

Overall, the asset management community is quite small and close-knit allowing for open engagement opportunities across jurisdictions. The City of Edmonton has dedicated web pages to share Administration's methodologies and practices related to asset management.

### **GBA+**

A comprehensive gender-based analysis plus (GBA+) perspective is consistently applied to all infrastructure projects at various stages throughout the lifespan of assets. Asset management provides the criteria for decision-making processes, determining which assets merit investment in terms of their physical condition and the maintenance of their expected lifecycle. The Infrastructure Policy not only ensures compatibility with the organization's vision, goals and objectives, but also aligns seamlessly with current and future asset management procedures. This entails adhering to service delivery policies and considering how Edmontonians and communities interact with assets when making decisions. Thus, the focus is on understanding the interconnectedness and intersectionality of asset investments rather than viewing individual assets in isolation.

Asset investment is based on data, and projects incorporate policy reviews like Policy C602 - Accessibility for People with Disabilities to meet modern standards and diverse user needs.