

## 2020 Infrastructure State and Condition

### Recommendation

That the November 30, 2020, Integrated Infrastructure Services report IIS00101, be received for information.

### Executive Summary

This report provides an update on the current state and condition of Edmonton's municipal infrastructure, marking 20 years since the first report. To ensure that residents receive the cost effective services they value, the City regularly reviews and assesses the condition of Edmonton's infrastructure inventory as part of its routine asset management practices.

Asset inventory and assessments are integral parts of the City of Edmonton's asset management practice. At its foundation, asset management is about realizing value from assets. As Edmonton strives to become more adaptable and rebuildable while operating in an economically constrained environment, existing infrastructure assets will play a large role in supporting all residents and form the backbone of future investments in new infrastructure.

The vast majority of the City's assets are in good and fair condition. Over the past 10 years, the physical condition of city-wide assets in Good and Very Good condition has seen a slight downward trend. At the same time, the percentage of assets in Poor and Very Poor condition has also decreased from 16 percent in 2007 to 8.6 percent in 2019. This positive trend coincides with an investment of \$6.2 billion in renewal over the same time period.

The current renewal strategy is focused on the renewal of asset components and fewer major overhauls of assets. It enables the City to address a larger cross section of assets that could be slipping into Poor and Very Poor condition.

### Report

The City of Edmonton has collected and reported on its inventory of assets since 2000. This inventory has been refined over the years, with a view of continuous improvement in the types of assets collected, data collection methods and technologies to capture and store the data. Provided as Attachment 1 is the 2020 Infrastructure Inventory State and Condition report.

Asset inventory information provides the foundation for effective asset management. This information is the base input for prioritization and decisions, and determining funding requirements, informing both the asset renewal plans and the scope of renewal projects. By historically tracking the changes in the City's asset inventory on a regular basis, the City of Edmonton can assess the effectiveness of capital investments and provide a rationale for business decisions. This collection is traditionally conducted annually and was paused in 2018 and 2019 while the City developed its revised asset hierarchy structure.

### **Value and Age of Edmonton's Infrastructure**

The City reports the value of its inventory as a measure of replacement cost, which is the cost to replicate what is in existence with a similar asset providing an equivalent level of service. The total replacement value for the City's assets as of the end of 2019 is \$29.9 billion. This is an increase from the last reported number of \$29.2 billion as shared with City Council on April 24, 2018, in Financial and Corporate Services report CR\_5668 2019-2028 Capital Investment Outlook, and can be attributed to the growth of the City's portfolio of assets, improvement in asset data collection and market escalation rates. Even for a city that is not growing at a similar rate as Edmonton, an increase in total replacement value is typical and can be expected in future years.

The comparison of an asset's current age versus its expected life provides various indicators to help understand costs and risks. As an asset reaches the end of life, the asset will have a higher cost of maintenance, an increased risk of failure and will likely not support all the expected requirements of modern service delivery. The average age of the City's assets is approximately 31 years, with the average expected life being 37 years. An asset may not become obsolete beyond expected life depending on how well the asset has been maintained, subject to available funding; many of the City's assets have remained viable long after their expected life such as the High Level Bridge.

### **State and Condition**

The physical condition of an asset is an assessment made at a specific moment in time. Over the past 10 years, the physical condition of city-wide assets in Good and Very Good condition has seen a slight downward trend. Some assets may have slipped into Fair Condition, but many city-wide assets are still functioning for their intended uses. This slight decline of assets in Good and Very Good condition can be attributed to conducting focused renewal of asset components and conducting fewer major asset overhauls. This approach has allowed the City to address a larger cross section of assets that could be slipping into Poor and Very Poor condition, but would not result in the asset's condition being raised necessarily to Good and Very Good condition.

The City measures the effectiveness of its renewal programs with the percentage of assets in Poor and Very Poor condition. This result has ranged from 16 percent in 2007 to 8.6 percent in 2019. The combined percentages of assets in Good and Poor condition suggests that a majority of the City's assets are currently in an acceptable condition, and that continuing to conduct focused renewal on asset components instead of whole assets renewal can reduce the numbers of assets in Poor condition. Ensuring the timely and appropriate care of assets is a responsible way of maximizing funding, assets and tax dollars.

The average condition of the City's assets is as follows:

- 55.7 percent of the City's assets are in good or very good physical condition,
- 35.7 percent in fair condition
- 8.6 percent in poor or very poor condition

These numbers reflect a weighted average of all asset conditions and are influenced by the larger value asset categories, such as Goods and People Movement. Each asset class has its own management strategy and, depending on the type of asset, it may be acceptable to have more assets in poor or very poor condition provided the asset is still meeting expected service levels and is safe for residents and staff to use.

### **Influences on Asset Needs**

Infrastructure supports the services the City of Edmonton provides to its residents. As the demand for services intensifies or changes, so too may the infrastructure that supports the service. There are many reasons for the changing demand for municipal infrastructure.

- **Changing Service Delivery** — A review of policies, standards and services for relevancy and effectiveness to best support residents. These changes can have an impact on the assessed functionality of existing assets supporting the City's services. Over time, as more service changes are made, some assets become functionally obsolete and impact the City's ability to effectively provide the service as intended.
- **Growing City** — As Edmonton grows, new assets are being created through either developer contributions or the City's own capital investment. This continued growth creates new requirements for operations, maintenance and capital renewal throughout the life of these new assets. It is important that the City analyzes the requirements and accepts impacts for the whole lifecycle costs of the new assets before considering the acquisition of any new assets through investment, donation or developer contribution.
- **Funding Uncertainty** — The management of assets requires a significant long term commitment in both operational and capital funding to ensure the assets operate safely and effectively and support City services. Current fiscal challenges will require the City to make adjustments in how it funds asset

maintenance, operations and renewal, and short-term fiscal decisions can have long term impacts on Edmonton's assets. To mitigate these concerns, the City needs to coordinate and prioritize operations, maintenance and capital renewal activities to address the most critical or impactful assets, while actively adjusting service level expectations for assets with lower maintenance and renewal requirements.

### **Implementation of the Infrastructure Strategy**

In 2018, Council approved the Infrastructure Asset Management Policy C598. Attached to the policy was the Infrastructure Strategy, the City's strategic asset management strategy, which outlines 10 activities to be implemented to help increase the City's asset management maturity.

1. Asset Management Plans
2. Levels of Service
3. Investment Planning
4. Triple Bottom Line
5. Operational Maintenance Strategy
6. Asset Accountability
7. Asset Management Training
8. Risk Management
9. Asset Health Monitoring
10. Life Cycle Planning and Optimization

Asset Management Plans describe the City's assets and how they are managed from a strategic and tactical perspective. They provide an overview of the outcomes the City's assets contribute to, how these outcomes are measured, how service delivery performance is measured and the forecasted investment required to deliver appropriate levels of service to asset users and wider stakeholders. They also provide a snapshot on the current state of Edmonton's assets and how the City manages them to achieve the required level of service for least overall cost and within acceptable risk boundaries.

The structure of the City's Asset Management Plans includes many of the other implementation items within its design. As these Asset Management Plans are developed, progress is made in each of the other activities, and progress is made in increasing the City's asset management maturity. Currently, the City has four Asset Management Plans under development that will be completed in late 2020 / early 2021. An additional four Plans are scheduled for development in 2021. The information identified in these Asset Management Plans will support continuous improvement of the information provided in future Infrastructure Reports.

### 2019 Canadian Infrastructure Report Card Comparison

In October 2019, the Federation of Canadian Municipalities released the 2019 Canadian Infrastructure Report Card, which is a compilation of infrastructure data submitted by municipalities across the country, including Edmonton. The report card provides a national picture of the state of municipal infrastructure. The data collected included information on some but not all municipally-owned infrastructure assets.

Compared to national averages in the 2019 Canadian Infrastructure Report Card, the City of Edmonton generally has fewer assets in good and very good physical condition and fewer assets in poor and very poor condition in all categories except Fixed Transit Assets and Solid Waste Assets. As the focus of the City's renewal program is based on reducing the number of Poor and Very Poor assets, the result of the comparison is expected.

### Corporate Outcomes and Performance Management

Corporate Outcome(s): The City of Edmonton has sustainable and accessible infrastructure			
Outcome(s)	Measure(s)	Result(s)	Target(s)
The City of Edmonton has sustainable and accessible infrastructure	Edmontonians' Assessment: Access to infrastructure, amenities and services that improve quality of life (% of survey respondents who agree/strongly agree)	68% (2017)	70% (2018)

### Attachment

1. 2020 Infrastructure Inventory State and Condition

### Others Reviewing this Report

- G. Cebryk, Deputy City Manager, City Operations
- M. Persson, Chief Financial Officer and Deputy City Manager, Financial and Corporate Services
- S. McCabe, Deputy City Manager, Urban Form and Corporate Strategic Development
- C. Owen, Deputy City Manager, Communications and Engagement
- R. Smyth, Deputy City Manager, Citizen Services
- B. Andriachuk, City Solicitor