Integrated Infrastructure
Services

Edmonton

2023 Infratructure State
and Condition

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BACKGROUND

Regardless of where we live, the infrastructure in our surroundings has a significant impact on our daily lives. It is how we get from home to the workplace, where we go for recreation and fun, how we dispose of waste and how we position police and fire around the City.

The Edmonton City Plan was brought in to replace "The Ways." It comprehensively replaces The Ways documents by setting strategic direction for the way Edmonton grows, its mobility systems, open spaces, employment and social networks, generally touching on most aspects of life in Edmonton.

City Hall

The City of Edmonton's Infrastructure Asset Management Policy - C598 defines infrastructure assets as *"The physical assets that support social, cultural and economic outcomes and deliverables (services), and also includes Natural Assets and software, but not data and information. Infrastructure assets are intended to be maintained indefinitely at a particular level of service potential by the continuing replacement and rehabilitation of their components."*. As per the definition above, it is clear that infrastructure is at the core of the strategic direction outlined in the City Plan.

The new City plan has both a direct and indirect impact on the reporting of inventory. For example, the new City plan features an increased focus on active modes such as bike lanes. Bike lanes are a newer asset type that was not previously included in City inventory. However, shifts in strategic direction such as this one notably impact the assets that are tracked.

Asset Inventory has been collected annually in the City of Edmonton (The City) since 2000. Inventory of assets has been refined over the years, with a view of continuous improvement in data collection methods and ensuring the inventory is as inclusive as possible, capturing the assets we own and manage.

Asset inventory information provides the foundation for effective Asset Management. Asset Inventory information is the base input into decision models to substantiate asset investment requirements, identifying the asset areas with the greatest needs. By historically tracking the changes in the City's asset inventory, the City can assess the effectiveness of capital investments

and provide a rationale for business decisions. Not only is an inventory or quantity of our assets collected, but we also collect the replacement value, average age, expected asset life, and assessment classification of all assets.

The importance of sound asset data cannot be stressed enough. Knowing what we own and manage is integral to providing service to our citizens and supporting the quality of life expected by Edmontonians.

This particular inventory report will be comprised of 2022 and 2023 information (as at December 31, 2021 and as at December 31, 2022). It was decided that instead of producing an annual report, as was previously done, producing a report every two years would be more beneficial in terms of identifying significant changes from prior years, ease of data collection and a more efficient use of resources.

INFRASTRUCTURE STRATEGY
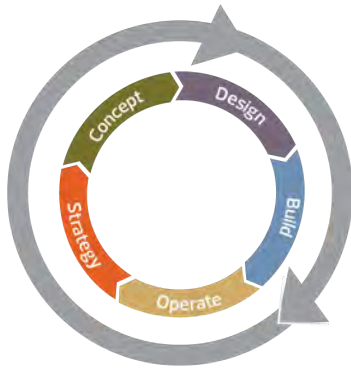
Edmonton's Sustainability Lens

The City of Edmonton was one of the first Canadian cities to recognize the need for a strategic plan to manage assets and has worked aggressively to overcome its infrastructure challenges.

The City revamped the Infrastructure Strategy once again in 2018. The purpose of the updated Infrastructure Strategy was to set out an agreed path forward for infrastructure asset management that is aligned with Council's vision for the City and corporate strategic plans and to set out the mandate for asset management processes in the City. The City has undergone dramatic changes in its organizational approach to the integrated delivery of infrastructure services. Through this version of the Infrastructure Strategy, the City is moving forward in better integrating asset management and sustainability efforts, to improve the connection between investment decisions, level of service commitments to citizens, and sustainable outcomes for communities.

In all iterations of the Infrastructure Strategy, the City's goal for Asset Management has always been to build an effective, transparent, data-driven asset management system that connects asset investment with progress towards strategic goals and service level outcomes.

ASSET HIERARCHY

The hierarchy of Edmonton's municipal assets, or how assets are viewed or classified, has been adjusted and refined in the last 20 years. Edmonton's first Asset Inventory in 2000, simply contained the major assets that the City was confident at the time could be reported on in any significant detail. The City has taken a new approach to how service is provided to Edmontonians. With the new lens on a service-based approach, it was prudent to consider how municipal assets are managed as well. To that end, a significant update of the asset hierarchy was required, which grouped infrastructure assets together based on the services they collectively worked to provide instead of the type of asset.

Continued improvements in data collection generate a more consistent analysis that will enable the City to make more informed decisions regarding the need for asset renewal, upgrading or expansion, and provide a useful perspective on the overall state and condition of our assets. The new asset hierarchy consists of seven portfolios and 26 asset classes. This new breakdown of Edmonton's municipal assets is more detailed and comprehensive than in the past 20 years. However, there is always room for improvement, and as assets change, the City will adjust its measurement and reporting to accommodate and improve.

Asset Inventory is an iterative process with the expectation that data refinements will continue year over year until such time as a fully comprehensive inventory is tracked for everything owned and managed by the City. The majority of the assets listed within the following table are included with the analysis.

Infrastructure Asset Hierarchy and Description			
Portfolio	**Description**	**Asset Class**	**Description**
Ancillary Infrastructure	Assets which are part of an overall system and/or support in the delivery of service for which other asset types rely on.	Barrier / Separation Infrastructure	Assets which separate two modes of traffic provide a safety function or are supporting the function of another asset.
		Engineered Drainage	Built assets whose primary function is to mitigate the flow of water on to, or away from other built assets
		Fleet	Rolling stock assets, supporting services offered by the city; includes all heavy equipment, municipal fleet vehicles, fire trucks and associated equipment to maintain the assets.
		Research and Testing	Labs and equipment intended to collect and analyze information in support of maintaining municipal assets.
		Signs and Signals	Performs the function of traffic control and roadway safety for users, including signs, traffic signals, street lighting and traffic control.
		Technology Equipment	Assets that support the communication and information collection and dissemination to internal and external partners; excludes technology assets from Library and Police.
Culture and Heritage Assets	Assets intended to preserve the city's heritage.	City's Heritage Collection	Man-made items of cultural or historical significance, preserved to maintain our history
		Public Art	All forms of artistic expression owned by the City and installed for the enjoyment of all citizens, includes monuments, statues, murals, and memorials.
Facilities	Vertical structures are comprised of several systems and house programs delivered by the City.	Affordable Housing	Housing facilities which are in support of not-for-profit and community housing and provide affordable options for Edmontonians
		Buildings	All structures that are owned by the City of Edmonton, housing programs, service, or operations run by the City in support of citizen needs. Examples include City Hall, recreation centres, fire halls, and office buildings.

Infrastructure Asset Hierarchy and Description			
Portfolio	**Description**	**Asset Class**	**Description**
Goods and People Movement	Supports the movement of vehicle, pedestrian and intermodal travel options.	Active Mode	Mainly pedestrian traffic promotes health and wellness, includes bike paths, sidewalks, shared-use paths and trails.
		Bridges	Allows transition of vehicles and pedestrians to traverse over or under other assets, includes all manner of structure that supports a traffic load either under or over another mode of transportation.
		Light Rail Transit	LRT related assets and systems to support the travel of trains and movement of passengers; excludes transit stations
		Roads	The primary function of the assets is the movement of vehicle traffic.
		Transit Bus System	Supports the bus systems and connection to other mass transit options, excludes major bus stations
Open Space	Open-air assets with a predominance of green space, minimal hard surface and supports a sustainable natural environment.	Green Infrastructure	Naturally occurring or human developed natural assets that support ecological functions and processes, such as trees and wetlands.
		Park Space	Assets intended to maintain a connection to the natural environment and promote outdoor play and activities
		Play Space	Programmable spaces and assets dedicated to sports and play in an outdoor setting

| Infrastructure Asset Hierarchy and Description			
Portfolio	**Description**	**Asset Class**	**Description**
Service Delivery	Assets which provide direct service to citizens in support of quality of life.	Attractions	Assets having multiple components and asset types which function as a whole facility. These assets have paying customers and generally are open to the public such as Fort Edmonton Park or the Valley Zoo.
		Cemeteries	Assets which support the memorialization of individuals in perpetuity.
		Fire Rescue	Assets that are for use only by Fire Rescue in performing a specialized function, not found in other areas of the city, excluding rolling stock and buildings which are captured in the Ancillary Infrastructure and Facilities portfolios respectively.
		Library	Materials and equipment supporting programs and services which are open to the public, excluding buildings which are captured in the Facilities portfolio.
		Police	Assets that are for use only by Edmonton Police Service, specialized in nature, not found in other areas of the city, including Police rolling stock and specialized IT equipment, but excluding buildings which are captured in the Facilities portfolio.
		Recreation	All assets which support the programming of a recreation facility, excluding the buildings which are captured in the Facilities portfolio.
Utilities	Assets which provide service to citizens and are regulated by an external body.	Renewable Energy	Technology and assets supporting the development of renewable energy generation and delivery; excludes buildings which are captured in the Facilities portfolio.
		Waste Services	Assets that support the collection and management of waste produced within the city.

USE OF INVENTORY DATA

Robust and accurate data is the foundation for effective asset management at the City of Edmonton. The actual amount of Assets investment required is substantiated by inputting asset data into decision models or management tools which then analyze what areas have the greatest needs. Based on these outcomes, renewal priorities and budget allocations can then be determined.

Consistent data collection ensures that all aspects of municipal assets are collected regularly and consistently across the corporation. Regular exercises in data collection not only ensure that the data is collected, it allows the opportunity to continually refine data collection activities and potentially improve the accuracy. Over the years, data collection has improved as evidenced through a comparison of the first asset Inventory report in 2000 to this most recent report.. Through consistency, Edmonton has enabled the opportunity to continually add to the inventory as assets not previously considered are now added to the reporting. The more assets captured through this exercise provides a better opportunity to better manage municipal assets.

The base data collected through the annual Asset Inventory is used to support decisions related to asset management. This information is input into the Risk-based Infrastructure Management System (RIMS) which supports decisions on the renewal needs of municipal assets.

RISK ASSESSMENT
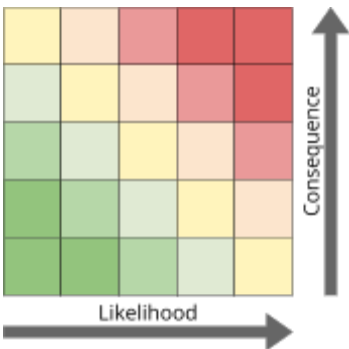
Risk is defined as the product of the likelihood of suffering loss and the consequence that loss would have on the affected party. With Risk Assessment Methodology it is possible to determine the level of risk to an asset associated with its failure. A risk approach is a balanced approach that integrates the municipality's social (e.g. health and safety of citizens), environmental (e.g. impact on the environment) and economic (e.g. cost of failure) objectives into the decision-making process. Edmonton's current risk methodology addresses controllable factors only - those closely related to the funding of asset rehabilitation projects. With the RIMS model, the physical condition of an asset is projected over time, yielding a picture of the

controllable (via investments and maintenance) deterioration of each asset type. Within the limited financial resources available, Administration can assist decision-makers in determining where the available funding can limit risk exposure to the City.

Climate change has brought on potential risks that were not given the same amount of consideration historically. The City of Edmonton has subsequently approved a Council Policy 627 related to Climate resilience. It includes points such as the following:

The City of Edmonton, through its planning, services, decision-making processes and leadership ensures, promotes and supports a climate resilient community with clean air and water; and natural and built environments that sustain long-term health and prosperity.

The City of Edmonton commits to immediately and urgently:

1. Act to reduce emissions by 35% by 2025, 50% by 2030 and be a carbon neutral community by 2050 through Energy Transition to help limit global warming to 1.5 degrees Celsius;

2. Act to adapt, prepare for and respond to a changing climate; and 3. Lead climate solutions in service delivery and corporate management.

RISK-BASED INFRASTRUCTURE MANAGEMENT SYSTEM (RIMS)

RIMS is a made-for-Edmonton solution to help determine, justify and rank the rehabilitation needs of the City, as well as optimize the allocation of funds to ensure long-term value. The model can run a variety of scenarios to assist decision-makers on investments that would provide the most benefit, including a "Do Nothing" simulation that gives asset managers an idea of how quickly assets will deteriorate without the necessary intervention. The "Budget Allocation" function allocates a set dollar amount to those assets that will require the most re-investment. The "Cost Minimization" simulation provides the optimum renewal strategy to achieve or maintain certain performance levels of assets, and has been the basis of the City's renewal

program since 2012. The model can also recommend asset reinvestment given a certain level of funding.

It is noteworthy that budget constraints will likely make it implausible to spend the recommended amounts suggested by RIMS to maintain assets in optimal condition, as alluded to above. This inability to spend will likely result in more assets falling in poor and very poor condition (D and F condition, discussed below) over time as long as these budget limitations continue.

DEMANDS ON INFRASTRUCTURE ASSETS

Assets support the services the City of Edmonton provides to its citizens. Without the service there is no need for the asset. As the demand for services intensifies or changes, so too must the assets that support the service. There are many reasons for the changing demand for municipal assets. Population growth, demographic shifts, technological advancements, policy shifts, and the wants and needs of citizens change over time.

Our existing assets, which were built, in some cases, several decades ago, were designed for a lower level of use. Over time, the use of the assets has increased significantly, which places more pressure on the asset than originally planned. For instance, youth and adult sports participation has significantly increased in the past few decades, as such skating rinks and premium sports fields are operated at or beyond planned capacity, putting added strain on the assets to maintain the expected level of service.

In addition to the pressures on the existing assets, the City of Edmonton is expecting to double in population to 2 million residents. As such, the City will continue to build and acquire assets to accommodate the increase in population over time. New assets built today will need to be renewed sometime in the future. As a result, the need for investment in renewal to support existing and future assets will continue to grow. Not only to address the backlog of assets but to ensure the ongoing support is available for anything we build today.

Not only is Edmonton extending into greenfield areas, but we are also actively promoting infill in mature neighbourhoods. Both of these actions have an

impact on the demand for assets. As Edmonton continues towards a population of two million, it will be required to provide more services such as transit, recreation, fire services, police and waste collection. These additional services will require new and upgraded assets to support the required services. In addition to buildings and equipment, the City needs to ensure associated operations and maintenance are supported along with required staff to provide the service. Construction of new assets reflects only initial costs. Funding is also required to eventually rehabilitate or replace the asset in the future. Therefore the cost for assets is not a 'one and done' situation, assets require sustained, long-term investment to ensure that we provide safe and effective services to Edmontonians in support of future growth within our existing municipal boundary.

ASSET RATIONALIZATION

As the City's infrastructure asset management capabilities advance, the need to establish more effective processes by which to evaluate and rationalize end-of-life investment/divestment decisions for its facilities has been identified. As such, the City is in the process of developing and implementing anAsset Rationalization Program

The intent of the Asset Rationalization Program is to analyze the assets owned by the City and determine if these assets effectively and efficiently meet the needs of the services they support. Assets that do not meet this requirement are then considered for divestment, which could include repurposing, replacement or disposal of the asset. If the divestment option is determined to be disposal, this will result in a reduction of the number of non-productive assets owned by the City. This will help offset the cost of asset ownership with the funding available to invest in the maintenance, operations, renewal and upgrading of assets.

CRITERIA TO EVALUATE THE STATE AND CONDITION

Edmonton uses a standardized rating system to evaluate the state and condition of existing infrastructure assets. A standardized 5-point rating system on a scale of A to F (Very Good to Very Poor) is used to identify asset condition. The rating system enables a comparison of disparate asset types regardless of their complexity. Complex assets, such as facilities and roads which use very detailed evaluation methods to determine their condition are translated to this 5-point system.

The ranking system helps City Council and Administration compare the condition of all its assets and improves the quality of information used to make more informed decisions and establish priority projects. For the renewal program, all of the City's assets are assessed under the Physical Condition criterion and this information is used as an input into RIMS, which determines a recommended budget allocation based on the Physical Condition and other asset characteristics.

CITY OF EDMONTON STATE OF INFRASTRUCTURE

Condition Rating

For the 2023 reporting year, the City's existing assets remain in good to very good condition in the vast majority of asset classes, with 56.6% in Good and Very Good condition, 32.9% in Fair condition and 10.5% in Poor or Very Poor condition. The City of Edmonton uses the percentage of assets in Poor and Very Poor condition as its measure of performance for asset condition, as assets in poor condition are at a higher risk of failure, which in turn, negatively impacts the service that can be provided to citizens by those assets.

The following chart illustrates the City of Edmonton condition rating overall, as well as breaks down the conditions per portfolio. Additional detail is provided for each portfolio later in the report.

City of Edmonton Asset Condition by Portfolio

Legend: Very Good [A], Good [B], Fair [C], Poor [D], Very Poor [F]

Portfolio	Very Good [A]	Good [B]	Fair [C]	Poor [D]	Very Poor [F]
City of Edmonton Total	28.5%	28.1%	32.9%	7.0%	3.5%
Ancillary Infrastructure	38.5%	26.2%	18.9%	10.3%	6.1%
Culture and Heritage Assets	45.8%	47.0%	6.2%	0.7%	0.3%
Facilities	16.8%	20.9%	58.8%	2.7%	0.8%
Goods and People Movement	38.4%	22.8%	25.3%	9.2%	4.3%
Open Space	10.9%	58.5%	24.7%	3.5%	2.4%
Service Delivery	19.9%	32.5%	27.0%	12.1%	8.5%
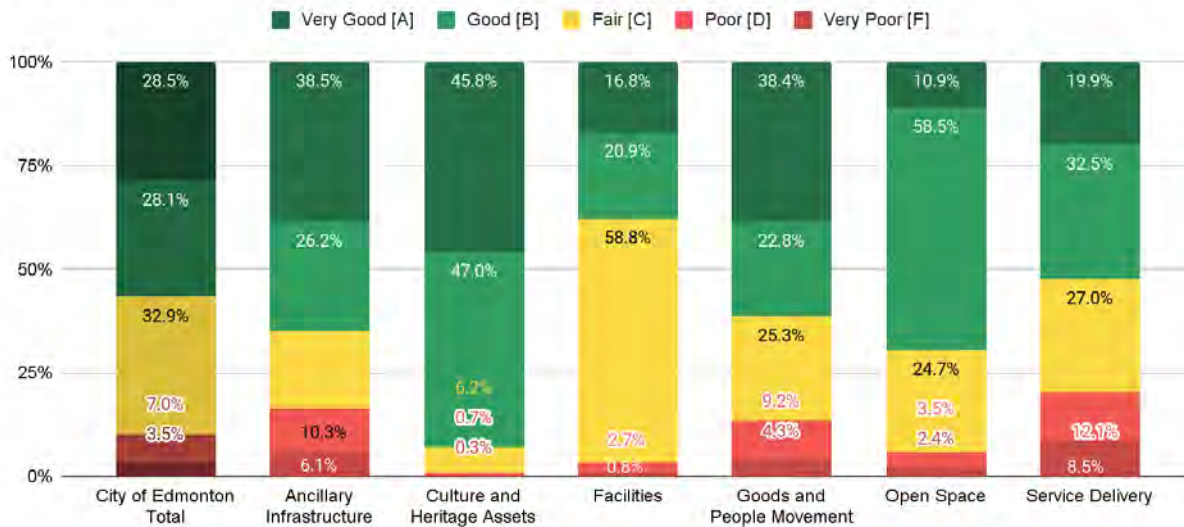
In the following chart, we see the progression of asset condition ratings over a period of 20 years. By 2011, there was a swell of assets in Good and Very Good condition, directly correlating to a swell in assets in Poor and Very Poor Condition in later years. In the years previous to this, during the Province's last big financial boom, more focus was directed toward growth projects than renewal projects. As a result, the City had many new assets, but its existing assets did not get the required attention and fell to disrepair. Since this time, the City has strategically moved from rapid growth and upgrade to a more balanced approach, with measured growth, and focused renewal, which has resulted in a significant reduction of assets in Poor and Very Poor condition.

City of Edmonton Historical Asset Condition Distribution
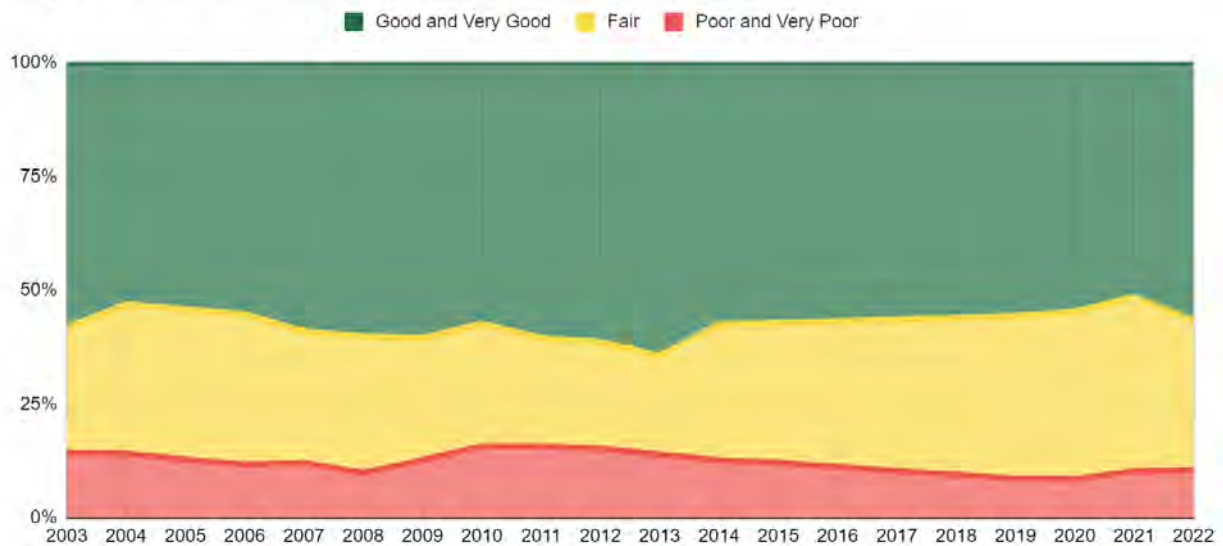
The level of capital renewal investment in the City's assets has generally increased over the years, with a higher priority being placed on the renewal of assets that have fallen into Poor condition. The following chart overlays the levels of renewal investment with the overall condition of the City's assets. The City's Capital Investment Outlook (CIO) document has identified a significant funding gap related to identified renewal and growth projects. This gap, if unaddressed, would result over time in a higher percentage of assets ending up in poor and very poor condition. As such, the City is exploring opportunities to make rational decisions to reduce the level of inventory via the Asset Rationalization discussed above. There are subsequently also efforts being made to seek out methods to provide consistent levels of renewal funding.

City of Edmonton Historical Asset Condition vs Renewal Investment

Renewal Investment (Millions)   % in D & F Condition
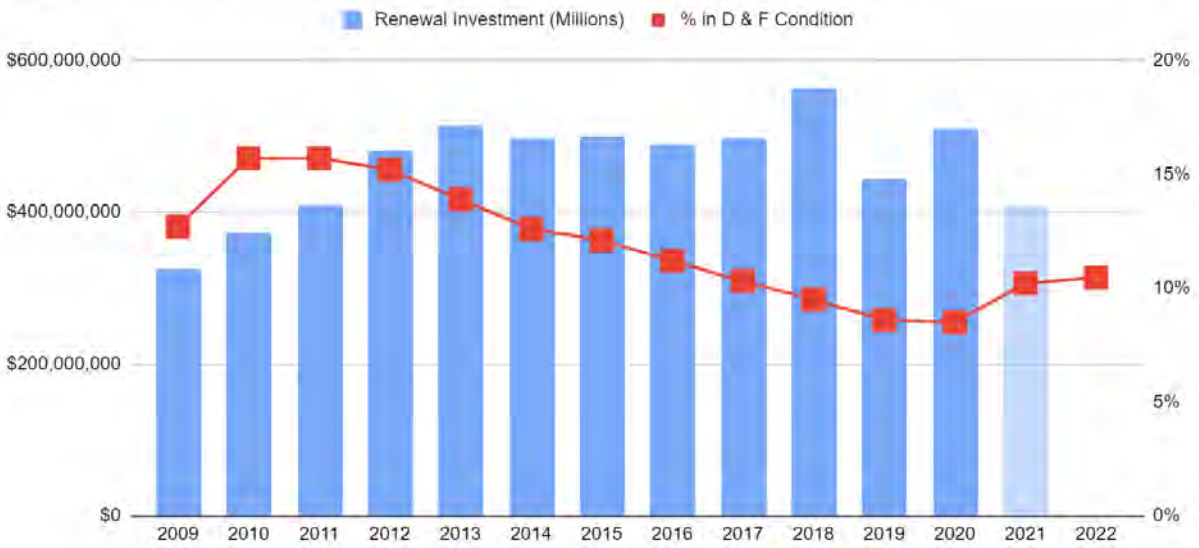
Replacement Value

The 2023 total replacement value of the City's assets is $34.7 billion, an increase from the previous report, which can be attributed to slight growth in the City, increased market costs, and improved data collection procedures.

The following pie chart illustrates the breakdown of the total 2023 replacement value by Portfolio.

City of Edmonton Distribution of Replacement Value
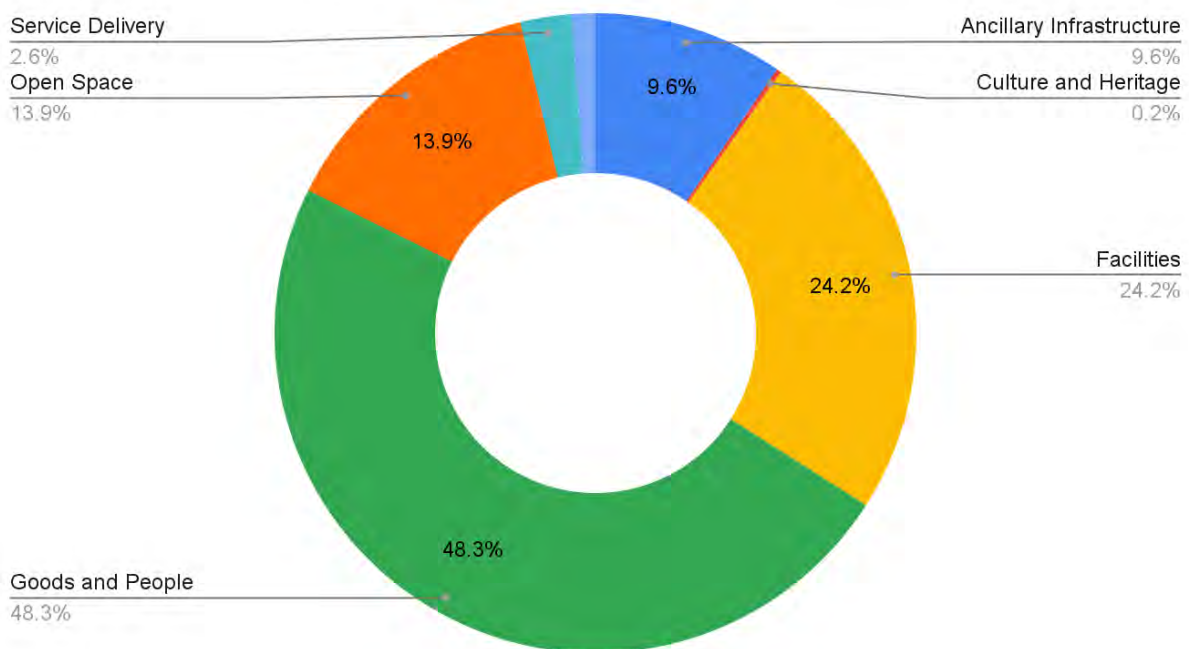
The Goods and People Movement Portfolio, which includes roadways, bridges, and LRT, equates to nearly half of the City's replacement value. Facilities assets, which include all City buildings and City-owned Affordable Housing units, equate to approximately one quarter of the City's replacement value. The remaining quarter of the replacement value is made up from Open Spaces, Ancillary Infrastructure, and Service Delivery assets.

In addition to the assets noted above, the City owns a portfolio of over 9000 land holdings, with a combined area of over 8,900 hectares. As land assets are not replaced in the same manner as physical infrastructure assets, a replacement value is not recorded.

The following chart shows the breakdown of replacement values for all Asset Classes in the City.

City of Edmonton Replacement Value by Asset Class
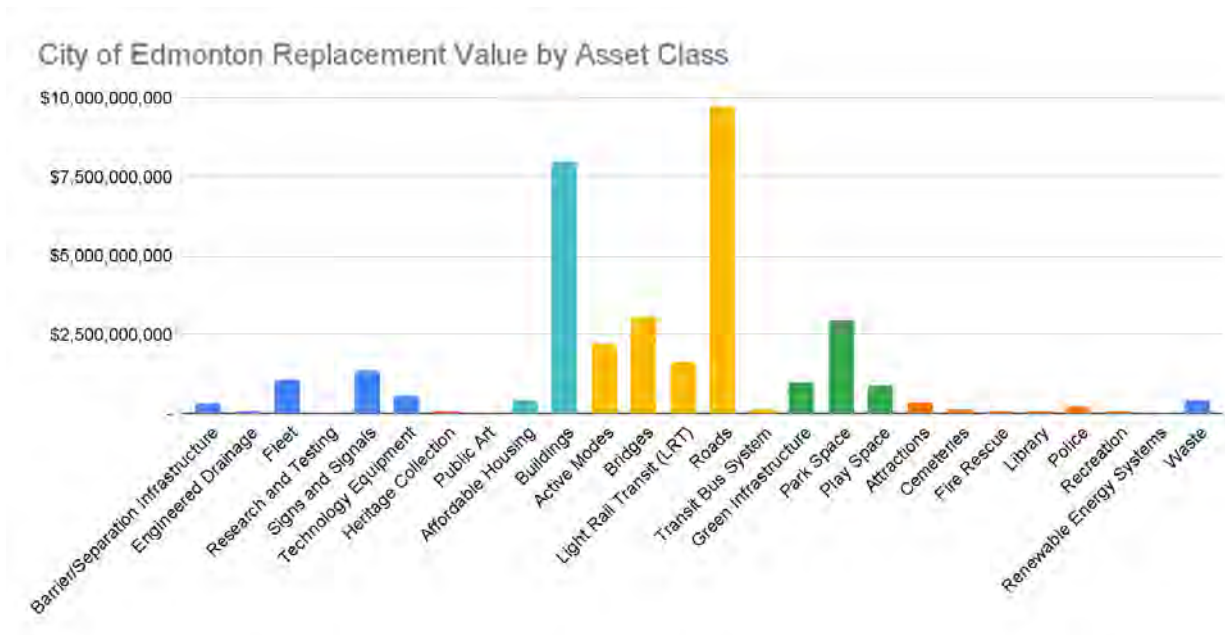
BREAKDOWN OF ASSET PORTFOLIOS

Ancillary Infrastructure

Technology Equipment Assets

This portfolio is composed of assets that are part of an overall system and/or support the delivery of service for which other asset types rely on. This Portfolio includes Barrier / Separation Infrastructure; Engineered Drainage; Fleet Assets; Research and Testing Assets; Signs and Signals; and Technology Equipment.

The total Replacement Value of this portfolio is $3.32 billion, with the Signs and Signals Class making up approximately 40% of the Portfolio, and the Fleet Class making up almost a third.

Overall, the condition of the assets in this portfolio is excellent, with three quarters of the Portfolio rated in Very Good (A) or Good (B) condition and only 8.6 percent of the portfolio in Poor (D) or Very Poor (F) condition. Barrier / Separation Infrastructure is rated well below the Portfolio average and will require some attention in the next fiscal cycle to bring these numbers in line with the other Classes.

This portfolio has a higher than average expected life, primarily due to the signs and signals assets. The majority of the assets in this Class have been replaced with galvanized poles and have a long life expectancy.

Ancillary Infrastructure Data and Charts

Asset Class	Replacement Value	Average Age	Expected Life	Condition Rating Distribution				
				A	B	C	D	F
Ancillary Infrastructure Total	**$3,319,772,343**	**17**	**43**	**38.5%**	**26.2%**	**18.8%**	**10.3%**	**6.1%**
Barrier/Separation Infrastructure	$300,215,000	32	48	2.7%	48.8%	36.5%	8.0%	4.1%
Engineered Drainage	$60,000,000	18	45	0.0%	20.0%	40.0%	20.0%	20.0%
Fleet	$1,068,942,218	9	16	24.0%	26.8%	15.9%	20.8%	12.6%
Research and Testing	$9,412,988	9	14	17.5%	41.5%	16.8%	21.3%	2.8%
Signs and Signals	$1,355,641,399	21	75	62.5%	17.5%	15.1%	2.8%	2.0%
Technology Equipment	$525,560,739	16	11	31.4%	34.8%	22.0%	8.7%	3.2%

Asset Condition by Class
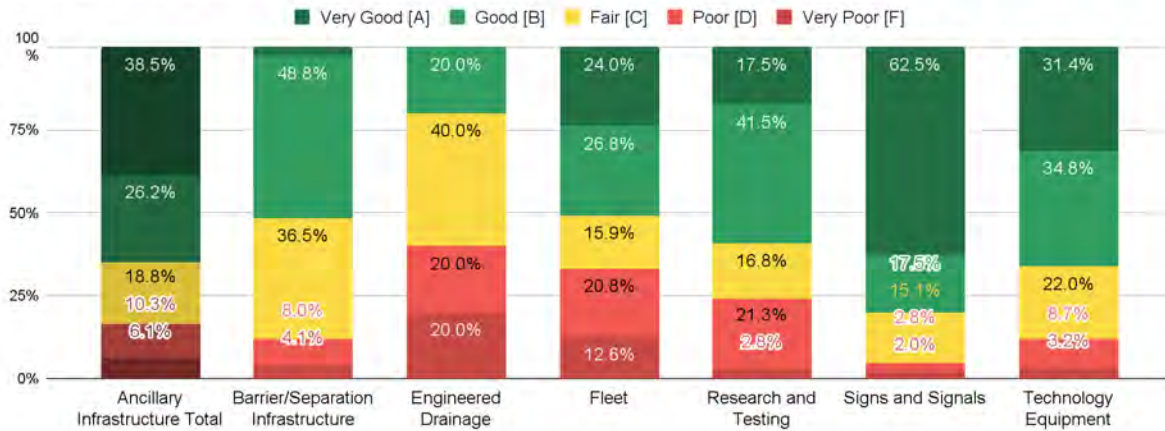
Distribution of Replacement Value
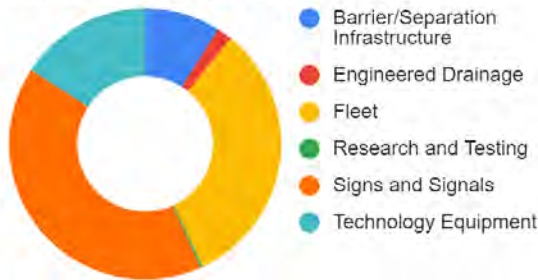
Culture and Heritage Assets

Public Art on Location

This portfolio is composed of two asset classes intended to preserve the City's Heritage: City's Heritage Assets, and Public Art. While these assets have been owned or managed by the City for many years, this is the first time they have been identified and tracked in this report.

The total Replacement Value of this portfolio is $81.2 million, with the City's Heritage Assets making up nearly three quarters of the Portfolio.

Overall, the condition of the assets in this portfolio is good to very good, with only 1.0 percent of the portfolio in Poor (D) or Very Poor (F) condition.

Culture and Heritage Assets Data and Charts

Asset Class	Replacement Value	Average Age	Expected Life	Condition Rating Distribution				
				A	B	C	D	F
Culture and Heritage Assets Total	**$81,219,705**	**41**	**719**	**45.8%**	**47.0%**	**6.2%**	**0.7%**	**0.3%**
Heritage Collection	$60,400,325	50	957	59.9%	32.1%	7.4%	0.3%	0.3%
Public Art	$20,819,380	16	28	4.8%	90.3%	2.7%	2.0%	0.3%
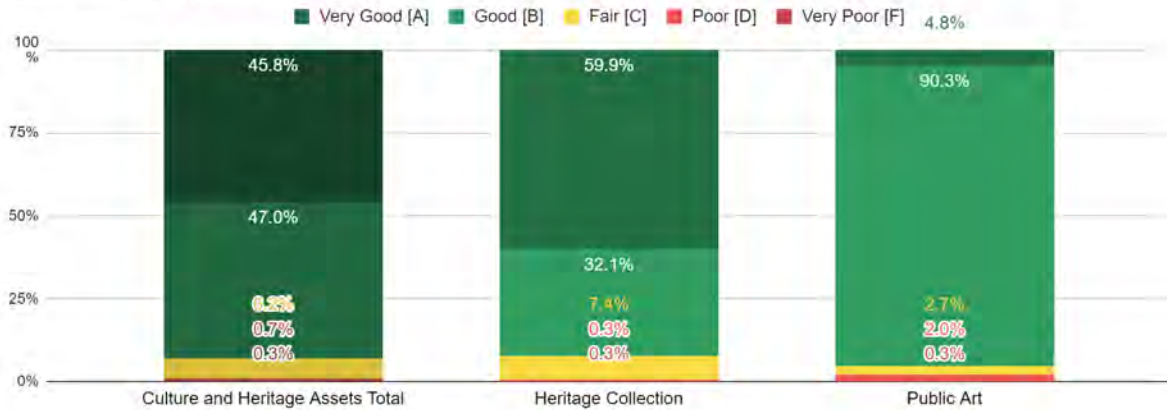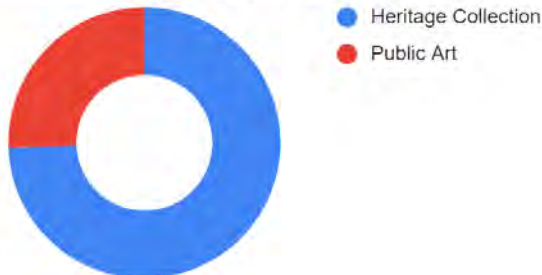
Facilities

Meadows Recreation Centre

This portfolio is composed of two asset classes, Affordable Housing, and Buildings. The facilities identified in this portfolio are owned by the City. Facilities that are leased, or in the case of Affordable Housing, are owned by other orders of government or corporations are not included.

The total Replacement Value of this portfolio is $8.397 billion, with the Buildings class making up the vast majority (94%) of the Portfolio.

Overall, the condition of the assets in this portfolio is good to fair, with only 3.5 percent of the portfolio in Poor (D) or Very Poor (F) condition. Affordable Housing is rated well below the Portfolio average and will require some attention in the next fiscal cycle to bring these numbers in line with the other Classes.

See the following page for data and charts for the Facilities Portfolio.

Facilities Data and Charts

Asset Class	Replacement Value	Average Age	Expected Life	Condition Rating Distribution				
				A	B	C	D	F
Facilities Total	**$8,397,259,404**	**37**	**49**	**16.8%**	**20.9%**	**58.8%**	**2.7%**	**0.8%**
Affordable Housing	$397,849,313	46	27	7.5%	46.6%	29.2%	10.9%	5.7%
Buildings	$7,999,410,092	37	50	17.3%	19.6%	60.3%	2.3%	0.5%

Asset Condition by Class
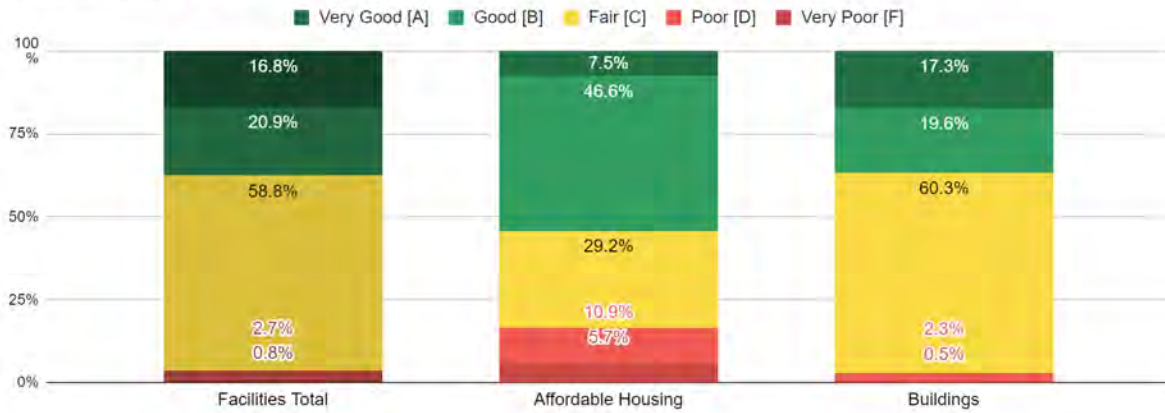
Distribution of Replacement Value
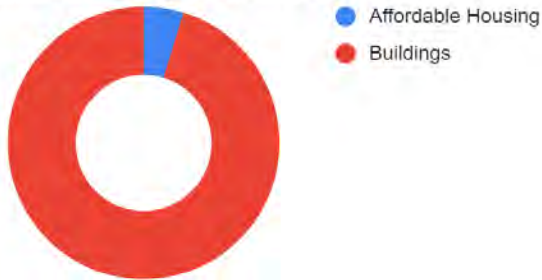
Goods and People Movement

ETS Bus

This portfolio is composed of assets that support the movement of vehicle, pedestrian and intermodal travel options. This Portfolio includes Active Modes; Bridges; Light Rail Transit; Roads; and Transit Bus Systems (Buses are included in Fleet).

The total Replacement Value of this portfolio is $16,750 billion, with the Roads Class making up nearly two thirds of the Portfolio. There is a significant increase in replacement value from the previous report, which can be attributed to a greater quantity of assets and inflation impacting the unit price for these assets.

Overall, the condition of the assets in this portfolio is good, with more than half of the Portfolio rated in Very Good (A) or Good (B) condition and 13.5 percent of the portfolio in Poor (D) or Very Poor (F) condition. The Bridges portfolio has a smaller portion of its Class in Very Good (A) or Good (B) condition and no assets in Very Poor (F) condition. These values are influenced by the Roadway bridges which typically have long lives and are in the middle or end of life, rated in Fair (C) condition. The lack of assets in Very Poor (F) condition is a result of the City's asset management strategies to prioritize the renewal of these assets to prevent them from falling into Very Poor condition.

This portfolio has an average expected life, with a broad range of assets such as bridges having very long lives and bus and LRT assets having shorter lives.

See the following page for data and charts for the Goods and People Movement Portfolio.

Goods and People Movement Data and Charts

Asset Class	Replacement Value	Average Age	Expected Life	Condition Rating Distribution				
				A	B	C	D	F
Goods and People Movement Total	**$16,749,740,227**	**39**	**39**	**38.4%**	**22.8%**	**25.3%**	**9.2%**	**4.3%**
Active Modes	$2,216,890,510	41	61	56.2%	14.4%	18.8%	10.1%	0.5%
Bridges	$3,072,819,216	38	49	1.7%	16.0%	68.4%	13.8%	0.0%
Light Rail Transit (LRT)	$1,616,695,184	20	26	13.1%	33.5%	25.2%	14.2%	13.9%
Roads	$9,747,485,291	43	33	48.6%	24.7%	15.3%	6.9%	4.6%
Transit Bus System	$95,850,026	5	19	34.5%	37.3%	6.7%	10.7%	10.8%

Asset Condition by Class
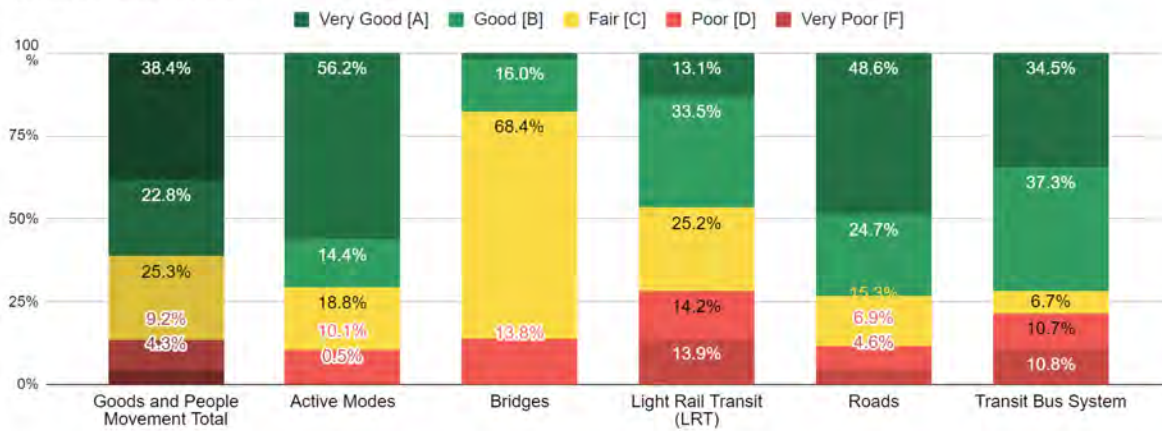
Distribution of Replacement Value
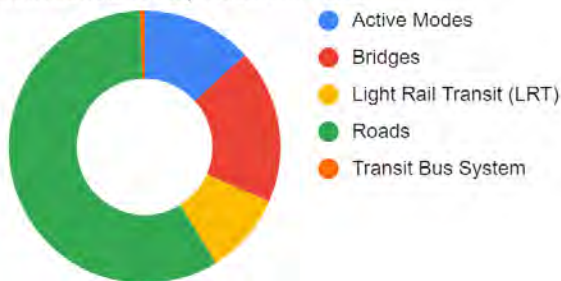
Open Spaces

Louise McKinney Park

This portfolio is composed of open-air assets with a predominance of green space, minimal hard surface and supports a sustainable natural environment. This Portfolio includes Green Infrastructure; Park Space; and Play Space.

The total Replacement Value of this portfolio is $4.805 billion, with the Park Space Class making nearly two thirds of the Portfolio. This is a significant increase from the previous year, mostly due to an increase in inventory resulting from new investment, and continual improvement of asset data collection, coupled with inflation impacting the unit costs for these assets.

Overall, the condition of the assets in this portfolio is good, with more than two thirds of the Portfolio rated in Very Good (A) or Good (B) condition and only 5.9 percent of the portfolio in Poor (D) or Very Poor (F) condition. Green Infrastructure, which consists mostly of living assets, is rated at 91.5 percent in Good (B) condition.

This portfolio has an average expected life, with Green Infrastructure having a longer than average expected life. Within this Class are wetlands and wooded areas which can last for centuries.

See the following page for data and charts for the Open Space Portfolio.

Open Spaces Data and Charts

Asset Class	Replacement Value	Average Age	Expected Life	Condition Rating Distribution				
				A	B	C	D	F
Open Space Total	**$4,805,071,448**	**12**	**44**	**10.9%**	**58.5%**	**24.7%**	**3.5%**	**2.4%**
Green Infrastructure	$958,741,956	16	60	0.1%	91.5%	1.5%	0.4%	6.5%
Park Space	$2,960,371,697	10	41	16.0%	50.7%	26.6%	4.9%	1.8%
Play Space	$885,957,795	16	36	5.5%	48.8%	43.6%	2.0%	0.1%

Asset Condition by Class
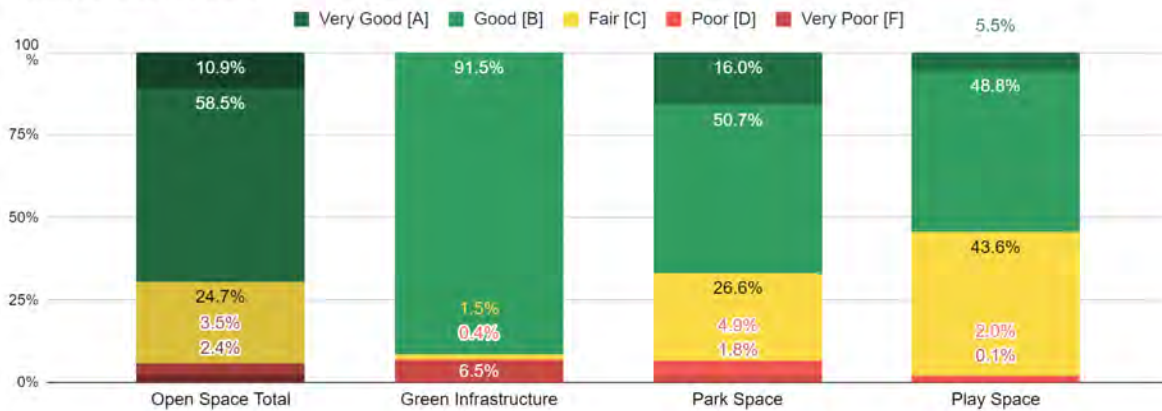
Distribution of Replacement Value
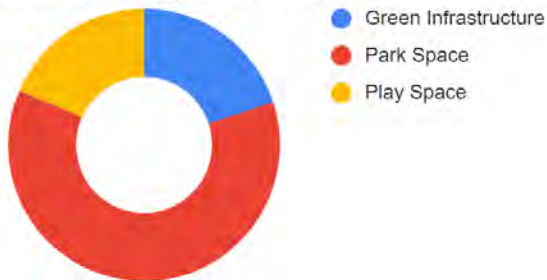
Service Delivery

John Janzen Nature Centre

This portfolio is composed of assets which provide direct service to citizens in support of quality of life. This Portfolio includes Attractions; Cemeteries; Fire Rescue; Library; Police; and Recreation.

The total Replacement Value of this portfolio is $894 million, with the Attractions Class making up more than one third of the Portfolio, and the Police Class making up just over a quarter.

Overall, the condition of the assets in this portfolio is good to fair, with half of the Portfolio rated in Very Good (A) or Good (B) condition and 20.6 percent of the portfolio in Poor (D) or Very Poor (F) condition. This Portfolio has a greater number of assets in Poor (D) and Very Poor (F) condition than the City average. Much of this can be attributed to the short expected life of the assets. With a short life span, the cost to rehabilitate an asset mid life becomes less cost effective than to replace it at the end of life, so these types of assets are typically managed using "Run-To-Fail" strategies.

As noted above, this portfolio has a lower than average expected life, primarily due to the prevalence of smaller, high use items such as radios and exercise equipment.

See the following page for data and charts for the Service Delivery Portfolio.

Service Delivery Data and Charts

Asset Class	Replacement Value	Average Age	Expected Life	Condition Rating Distribution				
				A	B	C	D	F
Service Delivery Total	**$893,971,747**	**12**	**40**	**19.9%**	**32.5%**	**27.0%**	**12.1%**	**8.5%**
Attractions	$349,342,050	19	81	10.4%	36.6%	29.0%	14.7%	9.3%
Cemeteries	$103,336,549	9	31	2.9%	23.8%	66.0%	5.8%	1.6%
Fire Rescue	$68,713,629	5	12	24.2%	36.1%	27.3%	6.4%	6.0%
Library	$73,669,016	6	7	44.0%	16.2%	8.8%	6.7%	24.3%
Police	$236,153,671	7	9	31.5%	27.3%	16.0%	16.8%	8.3%
Recreation	$62,756,832	9	16	23.7%	54.5%	16.4%	4.1%	1.2%

Asset Condition by Class
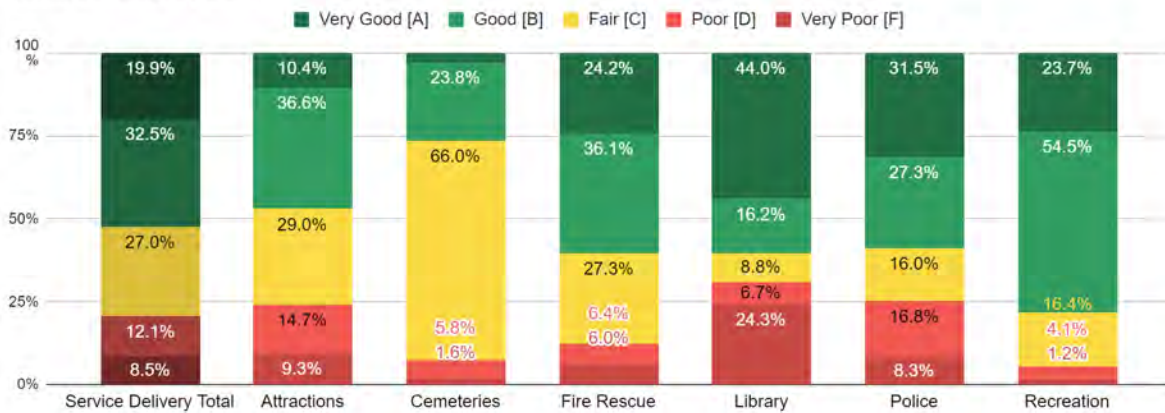
Distribution of Replacement Value

Utilities

This portfolio is composed of assets supporting the provision of regulated services. This Portfolio includes Renewable Energy and Waste assets.

Energy Centre One (Blatchford)

The total Replacement Value of this portfolio is $316 million, with the Waste Class making up more than 96 percent of the Portfolio.

Overall, the condition of the assets in this portfolio is good, with half of the Portfolio rated in Very Good (A) or Good (B) condition and only 14.1 percent of the portfolio in Poor (D) or Very Poor (F) condition. The entirety of the Renewable Energy Class is in Very Good (A) condition as these assets are brand new, having been installed in support of the Blatchford neighbourhood.

This portfolio has an average expected life based primarily on the weighting of the assets in the Waste Class. The assets in the Renewable Energy Class have a longer than average expected life, which is expected as these assets are used for power generation and distribution.

See the following page for data and charts for the Utilities Portfolio.

Utilities Data and Charts

Asset Class	Replacement Value	Average Age	Expected Life	Condition Rating Distribution				
				A	B	C	D	F
Utilities Total	**$415,322,708**	**12**	**28**	**13.7%**	**33.9%**	**33.0%**	**12.0%**	**7.4%**
Renewable Energy Systems	$11,922,273	4	42	100%	0.0%	0.0%	0.0%	0.0%
Waste	$403,400,435	12	28	11.1%	34.9%	34.0%	12.4%	7.6%

Asset Condition by Class
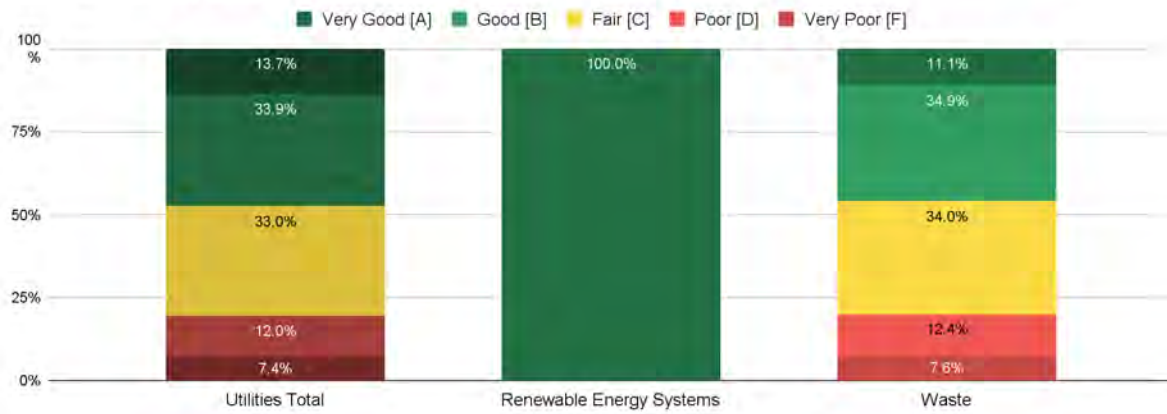
Distribution of Replacement Value
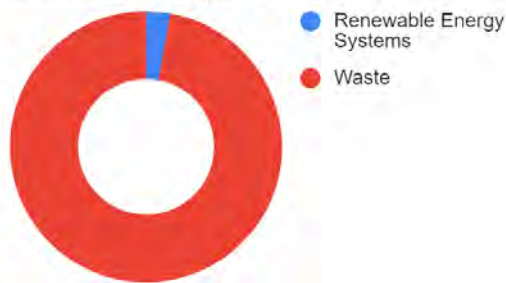
APPENDIX 1: CONSOLIDATED CITY ASSET TABLE

Assets	Replacement Value	Condition		
		Good (A & B)	Fair (C)	Poor (D & F)
Ancillary Infrastructure	**$3,319,772,343**	**64.68%**	**18.82%**	**16.44%**
Barrier/Separation Infrastructure	**$300,215,000**	**51.12%**	**36.24%**	**11.99%**
Roadside Barrier	$97,915,000	70.21%	24.08%	3.72%
Roadside structures	$202,300,000	41.88%	42.13%	15.99%
Engineered Drainage	**$60,000,000**	**20.00%**	**40.00%**	**40.00%**
Snow Storage Sites	$60,000,000	20.00%	40.00%	40.00%
Fleet	**$1,068,942,218**	**50.77%**	**15.87%**	**33.36%**
Emergency Response Vehicles	$109,294,570	68.50%	26.30%	5.20%
Municipal Department Vehicles	$183,286,261	55.66%	16.74%	27.61%
Shop Equipment	$98,212,221	77.19%	13.00%	9.81%
Transit Buses	$678,149,165	42.76%	14.37%	42.87%
Research and Testing	**$9,412,988**	**59.08%**	**16.83%**	**24.10%**
All labs	$4,521,133	63.85%	22.65%	13.50%
Asphalt Lab	$698,057	84.27%	14.04%	1.69%
Binder Lab	$617,293	84.62%	9.62%	5.77%
Concrete Lab	$521,026	84.15%	14.63%	1.22%
Density Lab	$268,800	82.05%	10.26%	7.69%
Environmental Lab	$478,579	45.45%	45.45%	9.09%
Field Testing Equipment	$1,883,000	20.18%	0.00%	79.82%
Geotechnical Lab	$425,100	72.25%	19.13%	8.62%
Survey Equipment	$2,247,000	50.74%	29.53%	19.74%
Traffic Monitoring	$1,932,069	76.84%	15.20%	7.96%
Signs and Signals	**$1,355,641,399**	**80.09%**	**15.14%**	**4.77%**
Parking	$3,937,799	36.57%	17.94%	45.49%
Street Lighting	$1,005,984,400	82.52%	14.43%	3.05%
Desktops & Mobile Equipment	$11,454,646	57.46%	23.74%	18.81%
IT Equipment	$198,682	100.00%	0.00%	0.00%
Network & Communication	$101,148,410	53.71%	22.41%	23.88%
Servers	$9,547,000	50.52%	29.52%	19.96%
Software & Applications	$394,427,000	$1	$0	$0
Storage	$8,400,000	$1	$0	$0

Assets	Replacement Value	Condition		
		Good (A & B)	Fair (C)	Poor (D & F)
Culture and Heritage Assets	**$81,219,705**	**92.83%**	**6.16%**	**1.01%**
Heritage Collection	**$60,400,325**	**92.05%**	**7.36%**	**0.59%**
Archival Documents	$1,375,325	50.00%	30.00%	20.00%
Display Items (Tier 2)	$5,750,000	50.00%	50.00%	0.00%
Gifts to the City	$500,000	70.00%	30.00%	0.00%
High Value Artifacts (Tier 1)	$50,000,000	100.00%	0.00%	0.00%
Plaques	$1,125,000	95.00%	5.00%	0.00%
Program Artifacts (Tier 3)	$400,000	30.00%	50.00%	20.00%
Rolling Stock	$1,250,000	40.00%	60.00%	0.00%
Public Art	**$20,819,380**	**95.08%**	**2.70%**	**2.22%**
Public Art	$17,668,180	100.00%	0.00%	0.00%
Murals	$475,700	53.85%	23.08%	23.08%
Commemorative Monuments and Memorials	$488,000	77.78%	11.11%	11.11%
Statuary	$2,187,500	68.18%	18.18%	13.64%

Assets	Replacement Value	Condition		
		Good (A & B)	Fair (C)	Poor (D & F)
Facilities	**$8,397,259,404**	**37.70%**	**58.80%**	**3.50%**
Affordable Housing	**$397,849,313**	**54.15%**	**29.24%**	**16.61%**
Partnership Housing	$397,849,313	54.15%	29.24%	16.61%
Buildings	**$7,999,410,092**	**36.88%**	**60.27%**	**2.85%**
Ambulance	$2,746,807,678	38.93%	58.24%	2.83%
Assembly/Gallery/Museum/Theatre	$2,275,904,830	39.13%	56.81%	4.06%
Clubhouse/Senior Centre	$111,778,090	17.39%	82.61%	0.00%
Commercial	$479,432,400	13.33%	80.00%	6.67%
Fire Station	$189,115,221	46.43%	53.57%	0.00%
Fitness Facility	$1,086,915,097	54.55%	45.45%	0.00%
Fort Edmonton	$66,771,440	23.28%	75.00%	1.72%
Historic	$221,709,887	29.63%	59.26%	11.11%
Ice Arena	$820,975,448	17.65%	82.35%	0.00%
Library	$216,636,866	71.43%	28.57%	0.00%
LRT Stations	$651,317,074	51.52%	48.48%	0.00%
Mechanical/Electrical	$7,821,865	36.67%	53.33%	10.00%
Office Buildings	$394,022,740	12.68%	87.25%	0.08%
Parkade	$315,011,866	16.67%	83.33%	0.00%
Police	$334,281,014	52.63%	42.11%	5.26%
Residential	$25,287,323	0.00%	100.00%	0.00%
Restroom	$18,245,831	22.22%	64.44%	13.33%
Service and Operations	$747,267,776	36.25%	56.25%	7.50%
Shelter	$16,937,554	67.57%	29.73%	2.70%
Stadium	$225,135,904	50.00%	50.00%	0.00%
Storage	$106,140,925	29.91%	62.62%	7.48%
Structures	$69,293,884	18.18%	75.00%	6.82%
Swimming Pool	$77,708,630	27.27%	72.73%	0.00%
Training Centre	$34,973,263	50.00%	50.00%	0.00%
Transit Bus Facility	$20,972,837	94.74%	5.26%	0.00%
Vehicle Repair/Vehicle Storage	$834,759,005	40.00%	60.00%	0.00%
Visitor Centre	$44,678,318	55.00%	40.00%	5.00%
Wash/Fuel Facility	$7,858,745	36.36%	54.55%	9.09%
Zoo	$33,742,355	45.83%	47.92%	6.25%

Assets	Replacement Value	Condition		
		Good (A & B)	Fair (C)	Poor (D & F)
Goods and People Movement	**$16,749,740,227**	**59.48%**	**24.58%**	**13.06%**
Active Modes	**$2,216,890,510**	**70.63%**	**18.75%**	**10.62%**
Arterial Sidewalks	$266,645,331	78.32%	18.21%	3.47%
Neighborhood Sidewalks	$1,950,245,179	69.58%	18.83%	11.60%
Bridges	**$3,072,819,216**	**15.20%**	**58.60%**	**11.85%**
Below Grade Structure	$440,936,627	0.00%	0.00%	0.00%
Culvert	$45,391,697	26.21%	67.43%	6.36%
Pedestrian Bridges	$242,871,808	38.48%	39.72%	21.80%
Rail Bridges	$129,700,000	1.40%	87.65%	10.95%
Roadway Bridge	$2,213,919,084	16.26%	70.46%	13.28%
Light Rail Transit (LRT)	**$1,616,695,184**	**46.63%**	**25.22%**	**28.15%**
Communications	$177,796,805	48.66%	6.47%	44.87%
Fare Collection	$8,172,000	0.00%	11.21%	88.79%
Light Rail Vehicles	$564,000,000	23.17%	27.41%	49.41%
LRT Line	$839,265,286	62.10%	27.75%	10.15%
LRT Specialized Equipment	$27,461,093	56.57%	28.45%	14.98%
Roads	**$9,747,485,291**	**72.91%**	**15.25%**	**11.40%**
Paved Roads	$9,704,516,452	73.23%	15.32%	11.46%
Unpaved Roads	$42,968,839	0.00%	0.00%	0.00%
Transit Bus System	**$95,850,026**	**71.74%**	**6.71%**	**21.55%**
Bus on-board Equipment	$40,913,026	39.50%	12.04%	48.46%
Bus Stops	$54,937,000	95.74%	2.74%	1.52%

Assets	Replacement Value	Condition		
		Good (A & B)	Fair (C)	Poor (D & F)
Open Space	**$4,805,071,448**	**69.39%**	**24.72%**	**5.89%**
Green Infrastructure	**$958,741,956**	**91.58%**	**1.49%**	**6.94%**
Enhanced Assets	$958,741,956	91.58%	1.49%	6.94%
Park Space	**$2,960,371,697**	**66.71%**	**26.60%**	**6.69%**
Bioretention and/or Hydro Feature	$22,974,761	32.45%	59.65%	7.91%
Horticulture	$919,463,020	82.80%	16.22%	0.98%
Parks Access and Circulation	$1,164,132,828	53.73%	32.36%	13.91%
Play Areas	$403,793,915	82.98%	16.27%	0.76%
Sports Fields / Fixtures	$482,163,881	30.36%	66.48%	3.16%

Assets	Replacement Value	Condition		
		Good (A & B)	Fair (C)	Poor (D & F)
Service Delivery	**$893,971,747**	**52.96%**	**27.33%**	**20.78%**
Attractions	**$349,342,050**	**46.99%**	**29.01%**	**23.98%**
Fort Edmonton Park	$51,104,193	65.32%	33.68%	0.85%
Golf Courses	$102,818,255	37.78%	35.50%	26.72%
John Janzen Nature Centre	$4,468,514	22.33%	72.67%	5.00%
Muttart Conservatory	$474,084	90.66%	2.56%	6.78%
Valley Zoo	$190,477,004	47.52%	23.29%	29.19%
Fire Rescue	**$68,713,629**	**59.37%**	**26.80%**	**12.14%**
Communication Equipment	$9,636,067	100.00%	0.00%	0.00%
Fitness / Wellness Equipment	$1,695,266	83.78%	10.81%	5.41%
On-board Equipment	$11,564,850	47.61%	17.46%	34.93%
Personal Fire Specialized Equipment	$41,288,188	50.90%	39.03%	10.07%
Specialized Traffic Equipment	$2,587,258	100.00%	0.00%	0.00%
Specialty Team Equipment	$1,942,000	32.60%	5.15%	2.88%
Library	**$73,669,016**	**60.16%**	**8.85%**	**30.99%**
Library Contents	$10,134,999	97.00%	3.00%	0.00%
Library Information Technology	$11,877,917	74.49%	12.76%	12.75%
Library Materials	$50,881,100	50.05%	8.73%	41.22%
Library Vehicles	$775,000	22.22%	33.33%	44.44%
Police	**$236,153,671**	**58.88%**	**16.03%**	**25.09%**
Communications	$38,355,538	42.28%	9.07%	48.65%
Police Equipment	$38,240,646	46.35%	37.68%	15.97%
Police Technology Equipment	$86,919,427	62.60%	12.57%	24.82%
Police Vehicles	$72,638,060	69.79%	12.45%	17.76%
Recreation	**$62,756,832**	**91.66%**	**19.21%**	**6.24%**
General Equipment	$10,428,357	168.63%	21.73%	12.67%
Fitness Equipment	$8,150,103	92.89%	6.59%	0.53%
Program Equipment	$10,061,867	72.65%	20.55%	6.80%
Fixed Equipment	$34,116,505	73.45%	21.07%	5.48%

Assets	Replacement Value	Condition		
		Good (A & B)	Fair (C)	Poor (D & F)
Service Delivery (Continued)	**$893,971,747**	**52.96%**	**27.33%**	**20.78%**
Cemeteries	**$103,336,549**	**26.68%**	**65.95%**	**7.37%**
Columbarium niches	$1,956,920	95.16%	4.84%	0.00%
Protection Elements	$445,683	74.35%	25.55%	0.10%
Grade Beam and Monument Bases	$16,689,252	24.98%	49.86%	25.16%
Green Space / Horticulture	$5,524,762	65.56%	34.44%	0.00%
Monuments	$5,132,740	96.77%	3.23%	0.00%
Structures	$701,890	72.26%	2.58%	25.16%
Access and Circulation	$56,544,067	2.49%	97.51%	0.00%
Utilities	$16,207,361	65.20%	14.80%	20.00%
Scattering Markers	$133,874	100.00%	0.00%	0.00%
Furniture	$875,262	89.19%	10.81%	0.00%

Assets	Replacement Value	Condition		
		Good (A & B)	Fair (C)	Poor (D & F)
Utilities	**$415,322,708**	**47.53%**	**33.05%**	**19.42%**
Renewable Energy Systems	**$11,922,273**	**100.00%**	**0.00%**	**0.00%**
Distribution lines (Distribution Piping System)	$1,788,786	100.00%	0.00%	0.00%
Energy Centres	$2,310,000	100.00%	0.00%	0.00%
Fee-Simple Townhouse	$143,000	100.00%	0.00%	0.00%
Geoexchange Field	$7,680,487	100.00%	0.00%	0.00%
Waste	**$403,400,435**	**45.98%**	**34.02%**	**19.99%**
Environmental Facilities	$26,304,000	90.00%	8.08%	1.92%
EWMC Site Common	$26,076,701	95.32%	4.68%	0.00%
Vehicles & Equipment	$109,739,734	41.93%	11.83%	46.24%
Waste Processing	$230,280,000	34.72%	52.51%	12.77%
Research and Development	$11,000,000	100.00%	0.00%	0.00%