Risk Analysis and Financial Risk Exposures - Risk Ratings

The following is the risk rating/probability methodology used for the purposes of the Financial Stabilization Reserve risk based review. The methodology used is consistent with the Enterprise Risk Management risk assessment framework.

Likelihood: Given the current state/environment, how likely is this risk to occur over the next 3 years?

#	Likelihood	Description
1	Rare	May only occur in exceptional circumstances; no previous incidence
2	Unlikely	Could occur at some time; less than 25% chance of occurring
3	Possible	Might occur at some time; 25-50% chance of occurring
4	Likely	Will probably occur in most circumstances; 50-75% chance of occurring
5	Almost Certain	Can be expected to occur in most circumstances; more the 75% chance of occurring

Impact: Is this risk being mitigated?

#	Mitigated?
1	Fully mitigated
2	Mostly mitigated
3	Partly mitigated
4	Low mitigating factor
5	Not mitigated

Risk Score: Likelihood x Impact

Score			%	
Min	Max	Rating	Min	Max
1	6	Low	5%	25%
7	12	Medium	25%	50%
13	20	High	50%	75%
21	25	Extreme	75%	100%

Risk Analysis and Financial Risk Exposures - Summary

(in millions of $)

The following table summarizes the risks faced by the City of Edmonton for which there are related financial exposures. Each of the risks identified in the table are discussed further in the more detailed Risk and Financial Exposure table.

	Summary of Risks and Financial Exposure			
Risk	**Financial Exposure**	**Probability Range**	**Minimum Exposure**	**Maximum Exposure**
EXTREME EVENTS				
Natural Disasters / Climate Change	$78.7	Low	$3.9	$19.7
Cybercrime	$5.5	Medium	$1.4	$2.8
REVENUE AND EXPENDITURE VOLATILITY				
Economic Fluctuations/Pandemic	$150.0	Medium	$37.5	$75.0
Franchise Fees	$8.5	Medium	$2.1	$4.3
Snow and Ice Control	$20.0	Medium	$5.0	$10.0
Road Maintenance	$4.5	Medium	$1.1	$2.3
Realty Tax Appeals & Adjustments	$5.0	Medium	$1.3	$2.5
Post-employment Benefit Costs	$4.5	Medium	$1.1	$2.3
Currency Risk	$2.3	Medium	$0.6	$1.2
Fuel Costs	$5.3	Medium	$1.3	$2.7
Legal Claims and Project Risks	$34.0	Low	$1.7	$8.5
Contaminated Sites - Risk Managed	$135.4	Low	$6.8	$33.9
Contaminated Sites - Other	$3.0	Medium	$0.8	$1.5
CAPITAL FUNDING & DELIVERY				
Grants	$100.0	Low	$5.0	$25.0
Investment Earnings	$50.0	Medium	$12.5	$25.0
Infrastructure	$40.0	Medium	$10.0	$20.0
LEVERAGE				
Credit Risk of External Entities	$6.0	Medium	$1.5	$3.0
Deficit Reserves	$29.2	Medium	$7.3	$14.6
Potential Balances:			$100.9	$253.9

2020 Tax-Supported Operating Expenses (excluding non-cash amortization) *	$2,207.3	
Percentage of Tax-Supported Operations Expenses	4.6%	11.5%
Current min and target balances - %	5.0%	8.3%
* Based on 2020 City of Edmonton Consolidated Financial Statements	$110.4	$183.2

Risk Analysis and Financial Risk Exposures - Detailed
(in millions of $)

Risk Description	Current Mitigations	Financial Exposure	Likelihood	Mitigating Impact	Risk Score	*Risk Assessment (Based on Legend Tab Formula)*	Min *(exposure x low %)*	Max *(exposure x high %)*
EXTREME EVENTS								
Natural Disasters / Climate Change								
The impacts of climate change and extremes of weather and climate events have the potential to affect every aspect of life in Edmonton, from compromising the City's core services, to new service demands in areas of emergency response and preparedness. According to the City's Vulnerability and Risk Assessment: Projected Future Climate Hazards and Impacts for the City of Edmonton report (June 2018), "Edmonton's climate is projected to continue to change into the foreseeable future, leading to a wide range of potential impacts, including increased risk of flooding and drought, increased strain on water resources, more frequent and intense heat waves, more frequent wildfires and intense storms." The report indicates that drought and extreme heat are the City's greatest climate change concerns, while freezing rain, high winds, heavy snow and urban flooding are of next greatest concern. Although slow-onset impacts, such as drought, can be very significant, these climate changes do not require disaster prevention approaches, nor emergency funds, as these impacts unfold gradually and build up over longer time frames. Sudden-onset impacts, such as flooding, wildfires and tornadoes, may require access to reserve funds. These extreme weather events are happening with increasing regularity and represent environmental exposures that are not covered by insurance, such as damage to trees, river banks, culverts and roads. Snow storms are discussed further below under Expenditure Volatility. Emergency response and public assistance funding during and after an extreme weather event are often required. As Alberta's second largest city, this assistance may not only be required within the City of Edmonton, but also in assisting other municipalities, as was the case in 2016 when the City spent $11.8 million to assist in the Wood Buffalo wildfire relief efforts. The $11.8 million spent on the emergency response and public assistance by the City of Edmonton were reimbursed by the Province within the following year. The City of Calgary's Flood Recovery Task Force identified a total of $409.0 million in damages to City of Calgary infrastructure alone and another $55 million in emergency response and $323 million in recovery operating costs, representing $787 million in total costs incurred as a result of the 2013 flood. Funding was received from insurance and a number of Provincial grant programs such as the Disaster Recovery Program (DRP) and the Municipal Staffing Capacity Grant (MSCG). The total cost of the 2013 floods across Alberta was $5 billion, leaving a large potential funding gap to cover after any potential insurance support. The City of Edmonton's cost for a major storm event in 2012 was $6.6 million and was covered by the Alberta Disaster Recovery Program (DRP). While the federal and provincial governments have provided funding to municipalities in the past, there is no guarantee that disaster funding will be timely or even available, therefore access to reserve funds may be required.	The City of Edmonton's strategic direction on climate adaptation was first documented in Edmonton's Environmental Strategic Plan, The Way We Green; approved by City Council in July 2011. The Way We Green includes goals, objectives and strategic actions to deal with climate change impacts.Since then a number of reports discussing climate change have been prepared, most recently the Vulnerability and Risk Assessment: Projected Future Climate Hazards and Impacts for the City of Edmonton report. This report provides the City with an analysis of who or what is expected to be impacted by climate change, and to what degree they may be impacted. This information is now being used to establish priorities for adaptation action planning. The City has insurance coverage for extreme weather events such as floods, fires and tornadoes, however some items are subject to exclusions and retention/deductibles such as damage to trees, river banks, culverts and roads. In the past, municipalities that have faced extreme weather events have received reimbursement from the federal and provincial governments through disaster recovery programs, and although it is not guaranteed, it is likely that support from other orders of government will continue. Recently, the Provincial Government announced that the maximum funding for extreme weather events will top out at 90%, requiring property owners to cover at least 10% of the costs. Applied to the financial exposure of the 2013 Calgary flood, that would represent $78.7 million that would not be funded by grants for City infrastructure or operating costs. City Council also may determine to provide some funding relief to residents to assist with the funding gap, however that financial cost is not included in this number.							
Reserve funds will most likely be required for emergency response and public assistance during and after an extreme weather event. One of Edmonton's greatest sudden-onset impacts is flooding. The 2013 flood experienced by the City of Calgary, resulted in $378 million in operating costs and $409 million in capital. It is therefore possible the City of Edmonton could experience the same financial exposure with 10% less grant funding support, representing $78.7 million.		*$78.7*	*3*	*2*	*6*	*Low*	*$3.94*	*$19.68*
Cybercrime								
Cyber crimes are crimes that involve a computer and a network and are used in the commission of a crime. The City of Edmonton's risk register has identified cyber crimes as an extreme risk to the City. Local governments are a target for cyber criminals and extortionists for monetary gain or political reasons. Local governments tend to be subject to greater public scrutiny with respect to cyber security and the use and protection of personal identifiable information. A 2021 Cost of Data Breach Study by Ponemon Institute for IBM determined that the industry average total cost of a breach is $4.24 million USD ($5.5 million CAD). The study also found that 44% of all information breaches included the personally identifiable information of customers; and 26% of all breaches included the personally identifiable information of employees. The likelihood of a breach occurring is fairly high**.**	The City has employed a Chief Information Security Officer for the past three years who ensures the cyber security controls are in place across the city to mitigate the risk of cyber attacks. During that time the cyber security team has grown and implemented technologies and processes to enhance cyber security defenses in the CIty. This includes governance and risk management activities such as: the creation of a Cyber Security Administrative Directive, plus the supporting Standards and Specifications; the development awareness campaigns and quarterly phishing tests with all staff; and the establishment of a Cyber Security Advisory Group which includes representation from all Departments in the City. Cyber Security technology enhancements include: great vulnerability assessment testing throughout the City; the implementation of technologies to detect, assess, mitigate and respond to attacks in real time and on a 24/7 basis; and the development of an Identity and access management program to enhance, simplify and better control the access that all staff have to information resources within the City. The City also has cyber liability insurance of $5.0 million subject to deductibles and exclusions, with the exception of a ransomware attack which would limit our liability insurance to $2.5 million.							
Historical information regarding financial losses as a result of cybercrime is limited. Based on a 2021 industry study estimating the average cost of per breach could be $5.5 million CAD.		*$5.5*	*4*	*3*	*12*	*Medium*	*$1.38*	*$2.75*

Risk Analysis and Financial Risk Exposures - Detailed
(in millions of $)

Risk Description	Current Mitigations	Financial Exposure	Likelihood	Mitigating Impact	Risk Score	*Risk Assessment (Based on Legend Tab Formula)*	Min *(exposure x low %)*	Max *(exposure x high %)*
REVENUE AND EXPENDITURE VOLATILITY								
Pandemic & Economic Fluctuations								
The City's revenues can be severely impacted by a pandemic and restrictions resulting from public health guidance. Pandemics also result in additional costs for municipalities, including enhanced cleaning and personal protective equipment. Further to this, economic downturns negatively impact municipal user fees as a result of less spending per capita and/or decisions by City Council to strategically reduce user fees in order to lessen the impact of the economic downturn on the citizens. The budget shortfall as a result of the pandemic in 2020 was $152.9 million, and in 2021 was $152.0 million. For 2022, it is anticipated to be close to $100 million. The largest impacted areas have been Edmonton Transit Systems and Community & Recreation Facilities. Based on this the City is estimating an estimated exposure as a result of a pandemic and/or economic fluctuations to be $150 million.	In the event of a pandemic or significant event impacting City's revenues streams, Administration would advocate for financial support through other levels of government and implement expense management strategies. Funds would be redirected from capital where possible, without worsening the existing economic situation.							
		$150.0	*3*	*3*	*9*	*Medium*	*$37.50*	*$75.00*
Franchise Fees								
Gas franchise fees are based on a percentage of ATCO Gas delivery revenue. Delivery revenue is historically very volatile, which results in an unpredictable franchise fee for the City. Consumption and weather are large factors in the gas franchise fees received by the City and can significantly fluctuate throughout the year. ATCO implemented a rate relief program in 2021 for customers which causes a temporary reduction in franchise fee revenue in 2021. Furthermore, delivery revenue rates may change quickly giving the City little time to address the revenue decline appropriately through the operating budget. This was seen in 2018, when ATCO Gas updated the delivery revenue rates with little notice resulting in an $8.5 million reduction in 2018 gas franchise fees.	Departments have the ability to control spending to a certain extent and therefore offset the reduced revenues with lower costs. The City is also able to increase the gas franchise fee rate in accordance with the franchise fee agreement. However, the extent of the increase is limited before approval is required from the Alberta Utilities Commission.							
Historically gas franchise fees have varied from budget favourably and unfavourably, in varying magnitude. The largest annual shortfall to date was in 2018, with a $8.5 million reduction to gas franchise fees.		*$8.5*	*3*	*4*	*12*	*Medium*	*$2.13*	*$4.25*
Snow and Ice Control								
The City is also at risk for costs associated with blizzards and other severe winter storms. Snowfalls are highly unpredictable and actual costs can vary substantially from budget. Over the past 10 years (2011 - 2020), the Snow and Ice Control program has an accumulated deficit of $18.5 million with variances ranging from a deficit of $26 million in 2011 to a surplus of $26 million in 2016.	The Snow & Ice Control budget has increased over the years. Departments have the ability to control spending to a certain extent and therefore can partly offset the higher costs.							
Historical deficits in the Snow & Ice Control program are a good indicator of future financial impacts, given the highest deficit of $26 million experienced in the last 10 years, there is a potential financial exposure of up to $26 million in any one year. With the budget increase for this program since 2011, the financial exposure has been adjusted to $20 million.		*$20.0*	*2*	*4*	*8*	*Medium*	*$5.00*	*$10.00*
Road Maintenance								
The City of Edmonton maintains and cleans City roads all year round. City crews sweep sand, dirt and debris from city boulevards, and perform road maintenance work. Due to weather impacts (i.e. heavy snowfall resulting in more sand clearing required in the spring) and unanticipated road maintenance work there historically has been volatility in road maintenance expenses. Over the past eight years, the largest annual unfavourable variance from budget was $4.5 million.	Departments have the ability to control spending to a certain extent and therefore can partly offset the higher costs.							
Over the past 8 years the largest unfavourable budget variance related to road maintenance was $4.5 million, therefore it is estimated that the total financial exposure could be up to $4.5 million.		*$4.5*	*3*	*3*	*9*	*Medium*	*$1.13*	*$2.25*
Realty Tax Appeals & Adjustments								
Realty tax appeals and adjustments are municipal tax adjustments for the current year resulting from court decisions, assessor corrections and exempt status changes. These appeals and adjustments are either unknown or have a large degree of uncertainty as to the future court decision at the time the annual tax rate and budgets are established. Over the past 8 years, the largest annual unfavourable variance from budget was $5.0 million.	The City has a budget set aside for realty tax appeals and adjustments. At this time we believe the recent increase is temporary in nature due to COVID-19. If a trend were to emerge that indicates a more permanent occurrence of higher realty tax appeals and adjustments, the budget could be increased the following year.							
Over the past 8 years the largest unfavourable budget variance related to realty tax appeals and adjustments was $5.0 million, therefore it is estimated that the total financial exposure could be up to $5.0 million.		*$5.0*	*3*	*3*	*9*	*Medium*	*$1.25*	*$2.50*
Post-employment Benefit Costs								
The City has post-employment benefit costs which include the continuation of benefits for employees on long-term disability, and the City's share of pensioners' eligible medical, dental and other obligations. The liability is adjusted annually based on actuarial assumptions and calculations that are received at year-end. There is no set annual budget assigned to post employment benefits. The liability adjustments to post-employment benefits were $2.5 million, $8 million and $2.9 million for the years 2018 to 2020 respectively. The ongoing increase of the liability is due to an increased number of staff on long-term disability leaves across the City departments; the spike in the 2019 liability adjustment was due to a one-time change to the long-term disability plan actuarial assumptions.	The City is active in addressing the health and wellness of employees and is proactive in identifying current or future potential areas of concern to help minimize the risk of illnesses, injuries, and incidents. There are a variety of health and wellness resources available for employees to help promote healthy living, including the mental health aspect.							
The estimated cost to the City for the continuation of benefits for employees on long-term disability, and the City's share of pensioners' eligible medical, dental and other obligations will follow an upward trend because of the inflationary costs on benefits as well as the increasing numbers of staff on disability. The City has a potential average exposure of up to $4.5 million.		*$4.5*	*3*	*3*	*9*	*Medium*	*$1.13*	*$2.25*
Currency Risk								
The City is at risk of losses due to foreign exchange rate volatility, especially in relation to capital and operating purchases that are denominated in foreign currency. Even with mitigating controls in place, such as foreign currency contracts, the City is exposed to financial risks related to fluctuating foreign exchange rates. In 2017, the City realized a foreign currency loss of $2.3 million due to the volatility of the US/CDN foreign exchange rate.	Hedging (foreign currency contracts) is a risk mitigation strategy used to reduce the City's exposure to market price volatility on transactions paid in foreign currencies.							
The City will continue to make purchases denominated in USD. Therefore based on historical information, there is a potential the financial exposure may be $2.3 million.		*$2.3*	*3*	*3*	*9*	*Medium*	*$0.58*	*$1.15*

Risk Analysis and Financial Risk Exposures - Detailed
(in millions of $)

Risk Description	Current Mitigations	Financial Exposure	Likelihood	Mitigating Impact	Risk Score	*Risk Assessment (Based on Legend Tab Formula)*	Min *(exposure x low %)*	Max *(exposure x high %)*
Fuel Costs								
The City purchases fuel that is exposed to market price volatility. This results in fuel budgets that are difficult to predict and actual costs that may vary significantly from budget. Over the past 10 years, the largest annual unfavourable variance from budget was $5.3 million, net of hedging.	The City hedges half of its annual fuel purchases.							
The City hedges half of its annual fuel purchases to mitigate financial impacts of fuel price fluctuations.		*$5.3*	*3*	*3*	*9*	*Medium*	*$1.33*	*$2.65*
Legal Claims and Project Risks								
The City faces litigation cases each year and typically manages the claims paid out within existing budgets. Over the last five years, the City has paid out approximately $11 million in total uninsured claims. In recent years the City has received more significant claims that are still unsettled. Given the uncertainty around the measurement and likelihood of claims against the City it would be prudent for the City to buffer some of the risk associated with legal claims. The City continues to be involved in a number of larger and more complex projects that inherently expose the City to greater financial risks. These risks could come in the form of claims against the City and/or cost implications as a result of project challenges. To measure the City's exposure to potential cost impacts due to project challenges and legal claims, 0.5 percent and 1 percent of the 2021 tax supported operating and capital budgets respectively could be used to quantify the City's financial exposure. The 2021 operating budget is $3,031.1 million and the annual average capital budget is $1,878.2 million, which results in approximately $15.2 million and $18.8 million in potential exposure respectively, or $34 million total potential exposure. Based on existing claims outstanding and the number of large complex projects the City is involved with, $34 million is a reasonable financial exposure for the City.	The City mitigates the financial risk of legal claims and contractor disputes through budgeting for potential losses in the operating budget, including contingencies for unforeseen costs in the capital project budgets, and through risk management strategies implemented in insurance policies and construction contracts.							
Based on existing claims outstanding and the number of large complex projects the City is involved with, $34 million is a reasonable financial exposure for the City.		*$34.0*	*3*	*2*	*6*	*Low*	*$1.70*	*$8.50*
Contaminated Sites								
As at December 31, 2020, the City owns land for future municipal purposes and land for resale recognized at a historical cost of $1.8 billion and $241.2 million respectively. Should the City determine land is contaminated or becomes responsible for any contamination, the financial risk exposure may be significant and the City would need to recognize the estimated cost of the remediation. To date, City sites with the highest risk for contamination have been assessed and a contaminated sites liability for the estimated cost to remediate of $20.9 million has been recognized. There are also a number of City sites that are being risk managed and therefore no liability and related expense to remediate is currently recorded. The City decides to "risk manage" a site when there are contaminates on the site that exceed environmental standards, but they are not exposed to receptors of concern (i.e. water, direct human contact) and the City does not intend to remediate (or in some cases full remediation is not possible). For risk managed sites, a formal risk management plan is registered with Alberta Environmental Protection (AEP). The City is aware that AEP registration provides no guarantee that at some point in the future that organization could change their stance and issue a letter to the City requiring that a site be remediated instead of risk managed. The Contaminated Sites Management Program (CSMP) was formally established to identify and manage the City's contaminated sites exposures. The CSMP has identified 61 sites that are in the risk management category, with an estimated financial cost to remediate all sites of $135.4M.	The City has existing processes that help identify and manage City-owned contaminated sites and remediation activities as appropriate. If contaminated sites are identified early enough and the cost can be estimated with an appropriate level of certainty, the City will attempt to incorporate the cost impacts into the operating and/or capital budget. The likelihood of AEP requiring the City to remediate sites that are registered as risk managed is low, however in some past instances this has occurred. The City's contaminated sites management has more oversight than in the past with the implementation of the CSMP, significantly mitigating the risk of this happening in the future.							
The maximum potential financial exposure for the City, related to contaminated sites that are risked managed, is estimated to be $135.4 million based on current information and records.		$135.4	*3*	*2*	*6*	*Low*	*$6.77*	*$33.85*
Another type of contaminated sites exposure is within the category of "unexpected contamination". At times, environmental legislation changes and practices or applications that were acceptable become unacceptable (i.e. types of fertilizers, insect sprays) and a site suddenly can be considered exceeding a contamination standard. Contractual obligations with the sale of a site can also lead to a liability to remediate the contamination. Finally, an unexpected spill could lead to a contaminated sites event and an unplanned expense. The maximum exposure that the City has experienced regarding these types of circumstances since the implementation of the Contaminated Sites Management Plan is up $3 million.	If an unexpected contamination occurs, , the City will attempt to incorporate the cost impacts into the operating and/or capital budget. Where this is not possible, the added cost will impact the annual financial results and impact the FSR.							
Based on historical experience, the financial exposure related to unexpected site contamination is $3 million.		*$3.0*	*3*	*3*	*9*	*Medium*	*$0.75*	*$1.50*

Risk Analysis and Financial Risk Exposures - Detailed
(in millions of $)

Risk Description	Current Mitigations	Financial Exposure	Likelihood	Mitigating Impact	Risk Score	*Risk Assessment (Based on Legend Tab Formula)*	Min *(exposure x low %)*	Max *(exposure x high %)*
CAPITAL FUNDING & DELIVERY								
Grants								
The City of Edmonton operates in an environment of continual financial uncertainty around the security and stability of provincial and federal grants. Grant funding is an essential component of the City's Budget. In the 2019 - 2022 Capital Budget cycle, approximately 41% of the City's capital projects were dependent upon grants. An unexpected reduction in capital grant funding may result in the City's need to reprioritize or to defer capital projects, and / or to take on additional debt. The primary risks to the City's grant funding are: 1. reductions to capital grants in the annual federal and provincial budgets; 2. changes to grant funding cash flows by the federal or provincial governments, and; 3. late grant payments by the federal or provincial governments on the City's funding claims. Past economic conditions have significantly impacted grant revenue received from the Province. During times of low oil prices, the Province has realized lower non-renewable resource revenue, resulting in a reduced amount of grant funding provided to the City. A reduction in capital funding requires the reprioritization of capital projects, potentially resulting in deferring maintenance and replacement projects, increasing infrastructure deficits. In the recession of 2009-2010, grant funding was reduced by $109 million. During the 2018 and 2021 Provincial Budget announcements, reductions to the Municipal Sustainability Initiative (MSI) funding and deferral of the start of the Local Government Fiscal Framework (LGFF) to 2024 were announced. The City now anticipates receiving $400.2 million less than anticipated from MSI over the program length (2007 to 2024) with $340 million over the next 3 years. Given the current and forecast provincial budget deficits along with the forecast continued low commodity prices into the medium-term, there is the possibility of further reductions in Provincial capital transfers to Edmonton over the next 10 years. Also to note is that, currently, much of the funding over the next ten years (both federal and provincial) is specifically targeted for public transit, green initiatives, social infrastructure and housing. Constraints on grant funding make it challenging for the City to fund renewal and growth infrastructure that often does not fit within the funder's priority areas.	Some risk is mitigated by funding agreements that identify specific dollar amounts, such as Public Transit Infrastructure Fund and many federal grants. When funding is reduced unexpectedly, the City revisits the capital plan to re-prioritize and/or delay projects not yet started, and potentially borrow to complete key projects. As of September 30, 2021 the City has used 58.6% of its debt limit as regulated by the Municipal Government Act. The City works diligently with other order of government to secure funding through grant funding contribution agreements. These documents formalize the requirements of each party and funding amounts. However, other order of governments can make changes to legislation to adjust amounts, as recently occurred with changes in MSI and LGFF.							
Based on the most recent review of the MSI funding and anticipated payment reductions, it is estimated that the total financial exposure to grant revenue could be $100 million per year.		*$100.0*	*3*	*2*	*6*	*Low*	*$5.00*	*$25.00*

Risk Analysis and Financial Risk Exposures - Detailed
(in millions of $)

Risk Description	Current Mitigations	Financial Exposure	Likelihood	Mitigating Impact	Risk Score	*Risk Assessment (Based on Legend Tab Formula)*	Min *(exposure x low %)*	Max *(exposure x high %)*
Investment Earnings								
Historically investment earnings have been significantly impacted by economic conditions. The most important factor of investment risk and return is asset mix; that is, the proportion of fixed income (bonds) to equities (stocks) within a portfolio. The City has established an asset allocation policy for each of its investment funds. The only City funds that have any allocation to equities are the Ed Tel Endowment Fund at 60 percent and the Balanced Fund at 30 percent. Over the last 15 years, the largest negative variance of investment earnings versus budget was $35 million. If a similar event were to occur today, based on higher fund balances due to growth in assets and considering the same mix of assets, the financial impact could be up to $50 million lower than budgeted investment earnings.	The City of Edmonton has rigorous policies and procedures in place to maximize investment returns at a prudent level of overall risk. These policies and procedures guide the City's Investment Committee in managing and building upon the City's financial assets to help sustain Edmontonians' quality of life. As per a budget strategy initiated in 2010, fluctuating revenue streams such as investment earnings have been redirected to fund capital in order to eliminate the impact of the volatility of investment earnings on the operating budget. The risk has shifted to capital where the City has more flexibility to manage the reduced funding by reprioritizing or deferring projects. However, shifting the risk to capital may compound funding challenges for deferred maintenance, infrastructure replacement and infrastructure growth, areas that already deal with other funding constraints. As of September 30, 2021 the City is projected to use 58.6% of its debt limit for 2021 as regulated by the Municipal Government Act, therefore the City could potentially borrow to complete key projects if absolutely necessary.							
Based on historical information, the total financial exposure for investment earnings is estimated to be up to $50 million.		*$50.0*	*4*	*3*	*12*	*Medium*	*$12.50*	*$25.00*
Infrastructure								
As infrastructure ages, more maintenance and rehabilitation is required to ensure that it is performing well and continuing to meet the needs of citizens. The City uses a Risk-based Infrastructure Management System (RIMS) to analyze the current condition of its infrastructure and identifies the level of ongoing investment required to maintain and restore these assets in good working condition. As the owner of a multi-billion dollar inventory of municipal assets, the City must make decisions in terms of when and how to maintain, repair, renew, and replace key assets in a cost-effective manner. The RIMS process is used to assess the rehabilitation needs of the City's assets, allowing for the smartest allocation of renewal funds. The replacement value of infrastructure assets in poor or very poor physical condition is $2.8 billion. The risk of asset failure is difficult to estimate and involves significant judgement, however the risk of this occurring is very low. Therefore, if 1 - 2 per cent of these assets experience failure, that represents a financial exposure of $27.8 - $55.6 million, or an average of approximately $41.7 million Historically the City has not experienced significant critical infrastructure failures. In 2017, the City's Waste Management Utility realized an asset impairment estimated to be $12.3 million related to structural damages for the Edmonton Compost Facility building.	The City closely monitors the condition of its assets, and through the use of the Risk-based Infrastructure Management System (RIMS), determines the long-term investment required to maintain the majority of the City's significant asset base in a state of good repair, reducing the percentage of assets in poor or very poor condition. Capital budgets are then prepared based on these priorities. When unanticipated, emergent needs occur, priorities are shifted within the capital budget to accommodate priority needs. As of September 30, 2021 the City has used 58.6% of its debt limit as regulated by the Municipal Government Act, therefore the City could potentially borrow to complete key projects if absolutely necessary.							
The estimated cost to the City for immediate replacement of critical City infrastructure could be up to $40 million.		*$40.0*	*3*	*3*	*9*	*Medium*	*$10.00*	*$20.00*

Risk Analysis and Financial Risk Exposures - Detailed
(in millions of $)

Risk Description	Current Mitigations	Financial Exposure	Likelihood	Mitigating Impact	Risk Score	*Risk Assessment (Based on Legend Tab Formula)*	Min *(exposure x low %)*	Max *(exposure x high %)*
LEVERAGE								
Credit Risk of External Entities								
Over the years the City has borrowed on behalf of external entities or provided loans directly in order to support initiatives with an overall benefit to the community. Although there are agreements in place with these entities that require repayment in order to fund the related debt servicing payments or repay the loan, the City still bears the credit risk of these entities. For example, in the case where the City has borrowed on behalf of an external entity, if the entity was no longer able to repay the City for use of the debt proceeds, the City would need to repay the annual debt servicing amounts using the City's funds and build the debt servicing payments into its operating budget. The annual amount of loan payments related external entities projected at December 31, 2021 is approximately $2.6 million, excluding debt held by the City for Drainage infrastructure which is recoverable through a promissory note from EPCOR. Once the currently approved loans have been fully drawn the annual loan payments are forecasted to be up to $6.0 million, excluding loans that are approved to be covered by the appropriated FSR in the event of a default.	The City has agreements in place with these organizations that mitigates the risk of the loans to external entities. Longer term financial impacts would be addressed through the operating budget.							
The maximum financial exposure resulting from the inability in external entities to pay the City for debt borrowed on their behalf is estimated to be $2.6 million in one year and as high as $6.0 million when fully drawn.		*$6.0*	*3*	*3*	*9*	*Medium*	*$1.50*	*$3.00*
Deficit Reserves								
The City has leveraged its working capital in order to proceed with priority projects in advance of project funding. Larger projects include the Downtown Arena, Quarters downtown redevelopment, Belvedere and brownfield site redevelopment. The use of working capital for these projects has been segregated and reported within the Downtown, Quarters, and Belvedere Community Revitalization Levy (CRL) Reserves, the Interim Financing Reserve and the Brownfield Redevelopment Reserve. The CRL reserves will be repaid through future incremental property tax revenues within the community revitalization zones. As at December 31, 2020 these reserves had a combined accumulated deficit balance of $37.1 million. The cumulative deficit forecast for these reserves will peak in 2024 at approximately $69.5 million. A prolonged economic slowdown could result in lower than expected development and incremental property taxes in the CRL zones. Ultimately, if future revenue streams are not realized, the City may need to use property taxes or the FSR, or a combination of both, to replenish the draws on working capital to cover debt servicing costs in a year. Assuming that 25% of CRL deficits in the peak year were not able to be offset with CRL revenue, the financial exposure to the City could be $17.4 million. The Interim Financing reserve will be repaid through future contractual non-tax revenues. As at December 31, 2020, the reserve had a deficit balance of $37.8 million mainly related to the use of working capital for the downtown arena on an interim basis. The deficit reserve balance peaked in 2019 at $40.5 million. A prolonged economic slowdown could result in lower than expected contractual non-tax revenues (ticket surcharges, and parking and lease revenues). Assuming that 25% of the reserve balance in the peak year could not be offset with contractual non-tax revenues, the financial exposure to the City could be $11.2 million. The Brownfield reserve will be repaid through future incremental municipal tax uplift from the redevelopment and remediation of Brownfield Phase III sites. As at December 31, 2020 this reserve had a deficit balance of $2.3 million. The deficit forecast for this reserve is dependent on the number and dollar amount of new agreements for Phase III Brownfield sites. The reserve is projecting a deficit balance of $2.4M as at December 31, 2021 as one new Brownfield Phase III is expected to be signed, which will be primarily offset with a final repayment to the reserve from a 2018 agreement. A prolonged economic slowdown could result in lower than expected redevelopment and incremental property taxes from brownfield sites. Ultimately, if future revenue streams are not realized or conditions of the agreement are not met, payments are not made to the developer and hence repayment of the reserve is delayed.	As a risk mitigation strategy in leveraging the City's working capital to advance corporate initiatives, it is Administration's position that negative reserves only be established if future funding to repay the use of City working capital has been identified at the time of creating the reserve. This is reflected in City Policy C217B – Reserve and Equity Accounts. The CRL areas are constantly monitored and with ongoing updates to revenue forecasts based on development activity and market conditions. Long-term CRL project plans are adjusted to ensure sufficient funding is in place to complete projects within the CRL area. The Interim Financing Reserve existing deficit is to be offset with dedicated non-tax revenue sources, some of which are guaranteed through contract. Any shortfall of these revenues sources will be addressed through alternate funding strategies in the long-term. Ultimately, if funding sources for deficit reserves were unable to offset existing deficit balances (i.e. use of City working capital), the City would use alternative long-term funding strategies to offset existing deficits, and would likely not use the FSR in the long-term.							
CRL reserve deficits are expected to peak in 2024 at $69.5 million, the Interim Financing Reserve deficit peaked in 2019 at $40.5 million and the Brownfield reserve is projected to have a deficit balance of $2.4 million at the end of 2021. Assuming that budget funding sources for these reserves (CRL revenues, contractual non-tax revenues, and tax uplift on brownfield redevelopment sites respectively) were not sufficient to fund 25% of these deficit reserves, the financial exposure of the City could be up to $29.2 million.		*$29.2*	*3*	*3*	*9*	*Medium*	*$7.30*	*$14.60*
		$681.9					$100.9	$253.9