

# CAPITAL PROFILE REPORT

PROFILE NAME: **CLIMATE RESILIENT CITY FACILITY UPGRADES**  
 PROFILE NUMBER: **CM-10-0001**  
 DEPARTMENT: **Integrated Infrastructure Services**  
 LEAD BRANCH: **Infrastructure Planning and Design**  
 PROGRAM NAME:  
 PARTNER:  
 BUDGET CYCLE: **2023-2026**

**FUNDED**

PROFILE STAGE:	Approved
PROFILE TYPE:	Composite
LEAD MANAGER:	Pascale Ladouceur
PARTNER MANAGER:	
ESTIMATED START:	January, 2023
ESTIMATED COMPLETION:	December, 2026

Service Category:	Major Initiative:
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<b>GROWTH</b>	<b>RENEWAL</b>	<b>PREVIOUSLY APPROVED:</b>	<b>48,000</b>
100		<b>BUDGET REQUEST:</b>	-
		<b>TOTAL PROFILE BUDGET:</b>	<b>48,000</b>

## PROFILE DESCRIPTION

This profile would provide funding to complete deep energy retrofits to enable emissions neutrality in City owned buildings funding may also be used to support facility specific adaptation renewal work. City buildings and other facilities are the largest source of COE corporate emissions, making up about 46 per cent of corporate GHG emissions. The scope of this profile would include work that is required for the buildings that are undergoing renewal as part of the 2023-2026 budget cycle to be upgraded for energy efficiency as required by C627 Existing Building Procedure. Approval of matching grant funding of up to \$21 million to support this work is currently outstanding.

## PROFILE BACKGROUND

Climate change is changing everything. This is a critical decade requiring rapid and significant scaling up of climate action. Growing climate risks have clear implications for city resources, local economies and the financial well-being of municipal governments. Climate change could cause direct annual costs of approximately \$1.0 billion and GDP losses estimated at \$2.1 billion annually as early as the 2040s in Edmonton. Those costs increase to approximately \$4.2 billion annually for direct costs and \$6.0 billion for GDP losses as early as the 2070s. It is estimated that the City of Edmonton will own 8% of the impact costs. Investment is needed to reduce GHG emissions (which are causing climate change) and to prepare for the impacts of a changing climate. Buildings are critically important to achieving COE's 2040 carbon neutral goal and will need to transition to become emission neutral. Preliminary analysis has identified 59 City facilities that are more than likely to have flood hazard interactions, and that 29 could be impacted by major floods (an estimated \$5 billion in asset value that may be at risk of damage and service impacts).

## PROFILE JUSTIFICATION

City Council approved Edmonton's Community Energy Transition Strategy, Climate Resilient Edmonton Adaptation Strategy, and Climate Resilience Policy (C627) which requires urgent accelerated and ambitious climate action. This Profile provides funding to accelerate COE's efforts to retrofit and upgrade City buildings and facilities to reduce GHG emissions and to improve their resilience to the impacts of a changing climate. This funding will allow asset managers to retrofit and upgrade buildings and facilities so the assets can serve into the low carbon and new climate future. City buildings and facilities were not historically designed to be carbon neutral or to be ready for the risks of a changing climate. Many building standards and systems were based on past climate observations, which are no longer expected in a changing climate. This profile will enable the continuation and required acceleration of deep retrofits and climate resilience upgrades for city buildings and facilities. This capital cost reflects the incremental cost of doing work on buildings that will be undergoing rehabilitation work. Alignment with building rehabilitation schedules limits the amount of disruption to service operations and customer impacts. The specific energy retrofits and climate resilient upgrades will vary depending on the need of the building. This funding will support additional analysis to identify the correct interventions. Investing in climate resilience upgrades helps protect COE buildings from the increasing frequency and intensity of extreme weather events and new temperature highs. Energy efficient improvements are needed to reduce energy usage, GHG emissions and operating costs.

## STRATEGIC ALIGNMENT

City Council approved Edmonton's Community Energy Transition Strategy, Climate Resilient Edmonton Adaptation Strategy, and Climate Resilience Policy (C627) which requires urgent accelerated and ambitious climate action. This Profile provides funding to accelerate the City of Edmonton's efforts to retrofit and upgrade City buildings and facilities to reduce GHG emissions and to improve their resilience to the impacts of a changing climate.

## ALTERNATIVES CONSIDERED

Administration is currently exploring financing options for completing deep retrofits of 30-50 buildings through participation in the Canada Infrastructure Bank's Public Building Retrofit Initiative. While the group of buildings selected for this CIB project are different than the ones intended to be impacted by this composite fund, this option would also support the emissions reduction targets for City owned buildings. However, choosing the CIB project as an alternative to this project would result in renewal work being completed on City owned buildings that would not include deep retrofits or climate resilience work. This could increase risk to infrastructure damage, increase insurance costs, and lock in carbon consuming equipment beyond the City's 2040 emissions neutral corporation target date in the facilities planned for renewal through Lifecycle management.

## COST BENEFITS

Cost benefits associated with this profile include those related to energy savings for these projects. There will also be savings associated with maintenance improvement from older infrastructure. Adaptation measures will help reduce costs associated with damage caused by a changing climate including extreme weather events. This may also reduce insurance claims.

## KEY RISKS & MITIGATING STRATEGY

Risks associated with increasing construction costs have been identified, and these costs will need to be monitored to update cost estimates as applicable.

Hazardous building material abatement and other unforeseen costs. Mitigation includes using the Emissions Neutral Portfolio Plan and Decision Making Framework (which is in development) to help direct decisions around how deep retrofits should be and work with Lifecycle Management to determine which buildings are good candidates for deep retrofits.

Estimated costs in this profile are preliminary estimations. Validation with the key implementers will be required to confirm these estimations.

## RESOURCES

This profile will be delivered using a combination of internal and external resources. Specialized external resources may be required for some aspects and would be procured in accordance with corporate procurement directives and policies. Resources are required to facilitate project management, technical work and design related work both from UPE and IIS. These can likely be capitalized as part of future project work, as with most capital projects.

## CONCLUSIONS AND RECOMMENDATIONS

These funds are required to ensure deep energy retrofits and adaptation measures are considered for existing renewal as presented in (CM-11/12/13-0000). Without these funds traditional renewal in these facilities could lock in carbon consuming equipment beyond the City's 2040 emissions neutral corporation target date in the facilities planned for renewal through Lifecycle management. This profile should be funded in full to support climate resilient renewal of City facilities.

## CHANGES TO APPROVED PROFILE

August 21, 2023 Update: Matching grant funding of up to \$21 million to support this work was unsuccessful.

2023 Fall SCBA (#23-30, 6.2-19): The scope change is required to fund the installation of Phase 2 Solar at the Edmonton EXPO Centre. At the time the standalone profile was created there was not enough funding available in the previous On-Site Microgeneration Solar PV profile to fund the entirety of solar and thus the solar portion of the project was phased. This funding adjustment would add \$5,000,000 from "CM-10-0001 Climate Resilient City Facility Upgrades" to standalone profile "21-12-0350 Edmonton EXPO Centre Rehabilitation".

# CAPITAL PROFILE REPORT

PROFILE NAME: **Climate Resilient City Facility Upgrades**  
 PROFILE NUMBER: **CM-10-0001**  
 BRANCH: **Infrastructure Planning and Design**

**FUNDED**  
 PROFILE TYPE: **Composite**

## CAPITAL BUDGET AND FUNDING SOURCES (000's)

APPROVED BUDGET		Prior Years	2023	2024	2025	2026	2027	2028	2029	2030	2031	Beyond 2031	Total
	Approved Budget												
	Original Budget Approved	-	-	-	-	-	-	-	-	-	-	-	-
	2022 Cap Budget Request for Next Cycle	-	5,000	16,000	22,000	10,000	-	-	-	-	-	-	53,000
	2023 Cap Council	-	-	-5,000	-	-	-	-	-	-	-	-	-5,000
	<b>Current Approved Budget</b>	-	<b>5,000</b>	<b>11,000</b>	<b>22,000</b>	<b>10,000</b>	-	-	-	-	-	-	<b>48,000</b>
Approved Funding Sources													
	Tax-Supported Debt	-	5,000	11,000	22,000	10,000	-	-	-	-	-	-	48,000
	<b>Current Approved Funding Sources</b>	-	<b>5,000</b>	<b>11,000</b>	<b>22,000</b>	<b>10,000</b>	-	-	-	-	-	-	<b>48,000</b>

BUDGET REQUEST		Prior Years	2023	2024	2025	2026	2027	2028	2029	2030	2031	Beyond 2031	Total
Budget Request		-	-	-	-	-	-	-	-	-	-	-	-

REVISED BUDGET (IF APPROVED)		Prior Years	2023	2024	2025	2026	2027	2028	2029	2030	2031	Beyond 2031	Total
Revised Budget (if Approved)		-	5,000	11,000	22,000	10,000	-	-	-	-	-	-	48,000
Requested Funding Source													
	Tax-Supported Debt	-	5,000	11,000	22,000	10,000	-	-	-	-	-	-	48,000
	<b>Requested Funding Source</b>	-	<b>5,000</b>	<b>11,000</b>	<b>22,000</b>	<b>10,000</b>	-	-	-	-	-	-	<b>48,000</b>

## CAPITAL BUDGET BY ACTIVITY TYPE (000's)

REVISED BUDGET (IF APPROVED)	Activity Type	Prior Years	2023	2024	2025	2026	2027	2028	2029	2030	2031	Beyond 2031	Total
	Construction	-	-	11,000	22,000	10,000	-	-	-	-	-	-	43,000
	Design	-	5,000	-	-	-	-	-	-	-	-	-	5,000
	<b>Total</b>	-	<b>5,000</b>	<b>11,000</b>	<b>22,000</b>	<b>10,000</b>	-	-	-	-	-	-	<b>48,000</b>

## OPERATING IMPACT OF CAPITAL

Type of Impact:

Branch:																
	Rev	Exp	Net	FTE	Rev	Exp	Net	FTE	Rev	Exp	Net	FTE	Rev	Exp	Net	FTE
<b>Total Operating Impact</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-