

# CAPITAL PROFILE REPORT

PROFILE NAME:	<b>COMMONWEALTH RECREATION CENTRE SOLAR PHOTOVOLTAIC PROJECT</b>	<b>FUNDED</b>
PROFILE NUMBER:	<b>22-10-9312</b>	<b>PROFILE STAGE: Approved</b>
DEPARTMENT:	<b>Integrated Infrastructure Services</b>	<b>PROFILE TYPE: Standalone</b>
LEAD BRANCH:	<b>Infrastructure Delivery</b>	LEAD MANAGER: <b>Jason Meliefste</b>
PROGRAM NAME:		PARTNER MANAGER: <b>Pascale Ladoucer</b>
PARTNER:	<b>Infrastructure Planning &amp; Design</b>	ESTIMATED START: <b>June, 2022</b>
BUDGET CYCLE:	<b>2019-2022</b>	ESTIMATED COMPLETION: <b>April, 2023</b>

<b>Service Category:</b>	<b>Recreation &amp; Culture</b>	<b>Major Initiative:</b>
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<b>GROWTH</b>	<b>RENEWAL</b>	<b>PREVIOUSLY APPROVED:</b>	<b>2,545</b>
<b>100</b>		<b>BUDGET REQUEST:</b>	<b>-</b>
		<b>TOTAL PROFILE BUDGET:</b>	<b>2,545</b>

## PROFILE DESCRIPTION

The City's Corporate Greenhouse Gas Management Plan identifies mitigating strategies for reducing greenhouse gas emissions from City operations. The accelerated deployment of on-site microgeneration solar photovoltaics on City buildings and sites is one of the measures identified by the Plan to reduce greenhouse gas emissions by offsetting the energy used by City buildings. By accelerating the installation of solar photovoltaics from 2019 through 2030, the City will reduce corporate GHG emissions by 10,000 to 15,000 tonnes and are anticipated to have positive financial returns over the lifetime of the assets. The revised Community Energy Transition Strategy sets the path forward for the City with a target for the corporation to be emissions neutral by 2040.

This profile will fund on-site microgeneration solar photovoltaics for the Commonwealth Community Recreation Centre.

## PROFILE BACKGROUND

The acceleration of solar photovoltaic installations on City buildings and sites is one of the tactics recommended as part of the portfolio of options detailed in the City's Corporate GHG Management Plan. The options are supported by best available data and information on capital requirements, life cycle cost benefit analysis, and further informed by extensive input and advice from corporate project planning, design, engineering, and project delivery staff.

The deployment of solar photovoltaic installations could be coordinated with the planned facility rehabilitation schedule that identifies buildings for rehabilitation based on condition needs assessments as well as new building construction designs. The alignment with building rehabilitation and new building constructions schedules will ensure efficient use of time and resources and limit the amount of disruption to service operations and customer impacts.

The Commonwealth Recreation Centre was identified as a potential facility for this program, and work has been done to evaluate the facility's suitability. An assessment has been completed, and the facility identified as a priority for solar panel installation.

## PROFILE JUSTIFICATION

The rigorous analysis and consultation used in developing the Corporate GHG Management Plan found that the business case actions from a Financial Return on Investment (FROI) standpoint, ranging from strongest to weakest, were building energy retrofits, LED street lights, electric buses, large microgeneration solar photovoltaics, and green electricity purchases. All of the options related to investing in City assets, including microgeneration solar photovoltaic systems, have positive net present value benefits over a 20 year period from a FROI standpoint.

Internal discussion has led to the alignment of funds for potential projects on a per-building basis, this alignment is based on the 2019-2022 new construction schedule and on a study to determine which existing facilities could be potential sites for solar installations. Refinement of this allocation will occur as projects are reviewed on a building by building basis for structural and other feasibility. A total of 20MW of solar PV is planned to be installed between 2019-2030 with a total estimated carbon reduction of 10,000 tonnes CO<sub>2</sub>e.

The project has now completed Checkpoint 3 of the Project Development and Delivery Model. The funding for this project is available within the CM-10-1012 On-Site Microgeneration Solar Photovoltaics. As the funding required to complete this growth project is over \$2 million, a stand-alone profile must be created for the project.

## STRATEGIC ALIGNMENT

Solar photovoltaics contribute to the Greenhouse Gas Management Plan. Strategic alignment includes: CONNECTEDMONTON Strategic Goal Climate Resilience: Edmonton is a city transitioning to a low-carbon future, has clean air and water and is adapting to a changing climate. This project contributes to City Plan, Greener as We Grow, and the outcome: 2.4 Edmonton is a leader in efficient, sustainable and resilient community design, development and living; 2.4.2. Ensure public buildings and infrastructure are sustainable and resilient; Enable green energy generation and distribution systems.

## ALTERNATIVES CONSIDERED

This Commonwealth Recreation Centre Solar Photovoltaic Project is part of the larger program for finding suitable facilities for on-site microgeneration through solar photovoltaic systems. Due to the defined scope of the program, alternatives to solar power were not pursued. Alternative facilities were considered, and the Commonwealth was selected to move forward by the program team and project sponsor as the most suitable facility of 9 potential facilities reviewed at the same time.

## **COST BENEFITS**

The project will install an 599kWDC solar array, with an estimated generation of 648.5 MWh in its first year of operation. The avoided energy cost will be \$67,444.00 per year with a simple payback of 18 years, and an expected life expectancy of 25 years. It will achieve an annual Greenhouse Gas reduction of 304.1 tonnes Co2e/yr in the first full year of operation.

## **KEY RISKS & MITIGATING STRATEGY**

Supply chain issues and the availability of solar panels and the associated electrical equipment are the largest risks to this project. The schedule and cost estimate have taken into account the level of unpredictability in the market.

A risk management plan is in place, which follows the steps for risk control, risk register, and assumptions/constraints as outlined in the City's Project Management procedures. The plan outlines the processes used for risk identification, quantitative and qualitative risk analysis. A robust risk register has been created and is monitored during regular project team meetings.

## **RESOURCES**

Resources for this project will be internal and external. External resources will be involved to complete the required design and construction. External resources have been procured within the City's required policies and guidelines.

## **CONCLUSIONS AND RECOMMENDATIONS**

The project has completed Checkpoint 3 of the Project Development and Delivery Model. The recommendation is that a stand-alone profile be created for the Commonwealth Community Recreation Centre Solar Photovoltaic project, in accordance with the requirement that stand-alone profiles for growth projects funded from composites be created for projects over the \$2 million threshold.

# CAPITAL PROFILE REPORT

PROFILE NAME: Commonwealth Recreation Centre Solar Photovoltaic Project

**FUNDED**

PROFILE NUMBER: 22-10-9312

PROFILE TYPE: Standalone

BRANCH: Infrastructure Delivery

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

APPROVED BUDGET		Prior Years	2022	2023	2024	2025	2026	2027	2028	2029	2030	Beyond 2030	Total
	Approved Budget												
	Original Budget Approved	-	-	-	-	-	-	-	-	-	-	-	-
	2022 Cap Council	-	1,040	1,504	1	-	-	-	-	-	-	-	2,545
	<b>Current Approved Budget</b>	-	<b>1,040</b>	<b>1,504</b>	<b>1</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>2,545</b>
Approved Funding Sources													
	Tax-Supported Debt	-	1,040	1,504	1	-	-	-	-	-	-	-	2,545
	<b>Current Approved Funding Sources</b>	-	<b>1,040</b>	<b>1,504</b>	<b>1</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>2,545</b>

BUDGET REQUEST		Prior Years	2022	2023	2024	2025	2026	2027	2028	2029	2030	Beyond 2030	Total
Budget Request		-	-	-	-	-	-	-	-	-	-	-	-

REVISED BUDGET (IF APPROVED)		Prior Years	2022	2023	2024	2025	2026	2027	2028	2029	2030	Beyond 2030	Total
Revised Budget (if Approved)		-	1,040	1,504	1	-	-	-	-	-	-	-	2,545
Requested Funding Source													
	Tax-Supported Debt	-	1,040	1,504	1	-	-	-	-	-	-	-	2,545
	<b>Requested Funding Source</b>	-	<b>1,040</b>	<b>1,504</b>	<b>1</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>2,545</b>

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

REVISED BUDGET (IF APPROVED)	Activity Type	Prior Years	2022	2023	2024	2025	2026	2027	2028	2029	2030	Beyond 2030	Total
	Construction	-	801	1,481	-	-	-	-	-	-	-	-	2,282
	Design	-	238	23	-	-	-	-	-	-	-	-	261
	Follow Up Warranty	-	-	1	1	-	-	-	-	-	-	-	2
	<b>Total</b>	-	<b>1,040</b>	<b>1,504</b>	<b>1</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>2,545</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>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-