



Committee of the Whole Report

For the Meeting of March 12, 2020

To: Committee of the Whole **Date:** March 6, 2020
From: Jas Paul, Assistant Director of Engineering
Subject: Climate Action Reserve Fund Draw - Corporate Building Energy and GHG Savings

RECOMMENDATION

That Council:

Direct staff to amend the 2020 Financial Plan by adding a \$135,500 budget for facility energy and emission upgrades funded by the Climate Action Reserve Fund.

EXECUTIVE SUMMARY

Staff have completed a round of preliminary energy and emissions assessments of City buildings and recommend a series of improvements that demonstrate the ability for a five-year simple payback on energy savings and subsequent greenhouse gas (GHG) emissions reductions. This type of work is consistent with the directions and priorities of the Climate Leadership Plan (CLP) and the ongoing Facilities Master Planning process. Staff recommend drawing down on the climate reserve funds to allocate \$135,500 to allow internal staff resources to implement these upgrades into existing 2020 capital construction projects. Additional energy and emissions reduction priorities for City facilities will be recommended as part of the suite of Master Planning processes/actions. If Council approves the allocation of these resources, staff will implement these changes in 2020.

PURPOSE

The purpose of this report is to seek Council's approval to implement priority greenhouse gas reductions and energy improvements into existing 2020 Facilities Capital Projects.

BACKGROUND

In July 2018 the City of Victoria adopted the CLP, which includes a corporate GHG reduction target stating that: *"By 2040, all City facilities are powered 100 percent by renewable energy"*. The CLP also stipulates that the City will reduce corporate greenhouse gas emissions 60% by 2030. In October 2019, the City hired its first Facilities Energy Specialist, to progress priority analysis and propose greenhouse gas/energy upgrades to City buildings.

ISSUES AND ANALYSIS

The Facilities Energy Specialist has already completed several energy/emissions audits and identified priority energy and GHG improvements. Staff have identified and started several operational energy and efficiency improvements and upgrades. The first phase of these upgrades are currently underway at a no/low cost, and a second phase of proposed low-cost upgrades are summarized in the table below:

Facilities Energy Improvements (ongoing and proposed)

Table 1. Project Energy and Emissions Benefits.

Phase	Project	Details	Upgrade Material Cost	Annual GHG Reductions (tonnes CO2e)	Annual Electrical Savings (kWh)	Estimated Annual Cost Savings
1 (underway)	Parkade Lighting Upgrades	<ul style="list-style-type: none"> LED conversion Controls 	0	2.5	230,000	\$16,500
	Energy Improvements	<ul style="list-style-type: none"> City Hall Arcade Boiler Oakland Package AC Fernwood Solar Panel LED upgrades in identified offices 	0	15	130,000	\$9,500
	Victoria Police Department Operational Optimization	<ul style="list-style-type: none"> HVAC Optimization 	0	3.5	150,000	\$10,500
	City Hall Operational Improvement	<ul style="list-style-type: none"> HVAC Optimization 	0	3.0	10,000	\$1,000
	Crystal Pool Energy Improvement	<ul style="list-style-type: none"> LED Upgrades HVAC System Optimization 	0	5.0	70,000	\$5,000
2 (ready to execute)	City Hall Energy Improvements	<ul style="list-style-type: none"> LED conversion & lighting control installation 	\$26,000	2.0	200,000	\$14,000
	Public Works Facilities Energy Improvements	LED conversion and auto shut off	\$20,000	2.0	150,000	\$10,500

	Community Centre Energy Improvements	<ul style="list-style-type: none"> LED conversions Hot water tank replacements (Gas to Electric, where feasible) 	\$35,000	10.0	100,000	\$10,000
	Victoria Police Department Energy Improvements	LED conversion & lighting control installation	\$15,000	2.0	200,000	\$14,000
	Beacon Hill Park Administration Building and Greenhouses	<ul style="list-style-type: none"> LED Conversions Hot water tank replacements (Gas to Electric) Potting Shed - Furnace to Baseboards 	\$18,000	11.0	(60,000)	(\$3,600)*
	Royal Athletic Park Boiler Fluid Replacement	<ul style="list-style-type: none"> Boiler working fluid replacement 	\$15,000	5.0	-	-
Total				61.0	1,300,000	87,400

*-Electrification in this case represents a net annual cost.

Project Financial Considerations

The City's Climate Action Reserve Fund has been established to provide a source of funds to support climate mitigation and adaptation strategies. This reserve is funded by Climate Action Revenue Incentive Program (CARIP) grants and electrical cost savings from conversion of City streetlights to LED. The forecasted unallocated balance of the reserve in 2020 is \$295,000. These energy efficiency projects can be implemented into existing 2020 capital work using City staff labour resources. These upgrades pay for themselves in less than five (5) years, when considering material costs, labour and energy savings.

Table 2. Phase 2 Cost / Savings Summary

Proposed Facility Energy / GHG Upgrades (2020)	Magnitude
Material Costs	\$129,000
*Internal Labour Value	\$82,000
Project Contingencies (5%)	\$6,500
Total Project Costs	\$217,500
CARF Draw Requirement	\$135,500

Annual Energy Cost Savings	\$44,900
Annual GHG / Energy Savings	32 tCO ₂ e / 590,000 kWh

*-City Staff labour resources.

Funding Priorities:

The long-term funding strategy for the Climate Action Program is part of the 2020 work plan. Staff are committed to bringing forward recommendations to Council in this regard, as part of the commitments in the November 14, 2019 COTW report.

Energy efficiency and conservation efforts for City facilities and City fleet will save operating costs and can be reinvested in additional efficiency/conservation projects. Staff are confident that moving forward with these upgrades now aligns with the City's leadership-by-example commitments, with quick payback period, similar to what was achieved with the City's LED replacement project. These upgrades represent 'shelf ready' projects.

OPTIONS & IMPACTS

Two options are provided for Council's consideration.

Option 1 (recommended): Allocate \$135,500 from the Climate Action Reserve Fund for facility upgrades. With this allocation, work can commence immediately and GHG and energy savings begin in 2020. If this option is chosen, the Climate Action Reserve Fund will be reduced from \$295,000 to an unallocated reserve balance of \$159,500.

Once complete staff will also apply to the BC Hydro LED Lighting Retrofit Incentives for a 30% grant of the project's LED lighting component. Realized energy cost savings and grant rebates funds would be transferred to the Climate Action Reserve in future years.

Option 2: Defer the facility upgrades to the 2021 budget request. Energy and emissions savings are delayed and begin in 2021. If this option is chosen, the Climate Action Reserve budget will not be reduced by \$135,500.

Official Community Plan Consistency Statement

These energy efficiency improvements align with Chapter 12 of the OCP and the CLP's commitments to leadership by example.

2019-2022 Strategic Plan

Aligns with Strategic Objective Six: Climate Leadership and Environmental Stewardship

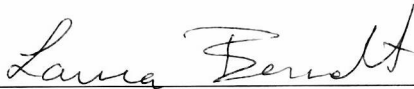
Impacts to Financial Plan

The proposed additional projects (outlined above) would be added to the 2020 Financial Plan, if approved, with funding from the Climate Action Reserve. Any realized energy cost savings as a result of the upgrades would be transferred to the Climate Action Reserve in future years.

CONCLUSIONS

The additional resources invested in hiring a Facilities Energy Specialist to improve energy efficiency and reduce GHG emissions from City facilities are delivering quick wins. An opportunity to make further substantial savings in electricity consumption and reduce GHGs is available through allocation of funds from the Climate Action Reserve Fund. Allocation of \$135,500 in 2020 from the reserve to accelerate efforts to reduce corporate GHG emissions is consistent with the City's response to the climate emergency.

Respectfully submitted,



Laura Berndt
Manager, Energy & Climate Action



Jas Paul
Assistant Director, Engineering



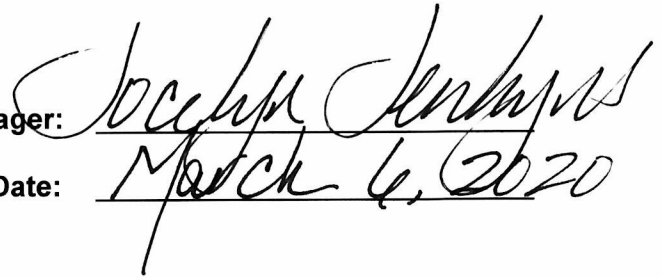
Derrick Newman
Assistant Director, Facilities &
Construction Management



Thomas Soulliere
Director, Parks, Recreation & Facilities

Report accepted and recommended by the City Manager:

Date:


March 6, 2020