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**REPORT TITLE: Investing in Low Carbon Technologies to Reduce Greenhouse Gas Emissions Across 10 Peel Housing Corporation Buildings**

**FROM: Gary Kent, CPA, CGA, ICD.D, Chief Financial Officer and Commissioner of Corporate Services**

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## **RECOMMENDATION**

**That the implementation of low carbon heat pumps at 10 Peel Housing Corporation (PHC) Buildings with an estimated cost of \$12 million, be approved;**

**And further, that a capital budget funded from the Region's reserve fund - Canada Community Building Fund, in the amount of \$12 million be approved to account for the aforementioned asset management investments from the Region to the PHC buildings;**

**And further, that the Chief Financial Officer and Commissioner of Corporate Services and the Regional Treasurer be authorized to execute necessary agreements, documents, and reporting related to these infrastructure investments to satisfy terms and conditions required for the Canada Community Building Fund (formerly known as the Federal Gas Tax Fund).**

## **REPORT HIGHLIGHTS**

- Through the Region of Peel, the sole shareholder of the Peel Housing Corporation (PHC), there is clear opportunity to deeply invest in meaningful climate action where some of our most vulnerable residents live.
  - 14 State of Good Repair (SoGR) projects at 10 PHC sites have been identified in 2022 as having significant greenhouse gas emissions reduction potential.
  - Implementation of all 14 projects will result in an estimated greenhouse gas (GHG) emissions reduction of 1,322 tCO<sub>2</sub>e annually, which represents approximately 1.4 per cent of the Region's total corporate GHG inventory or approximately 8.8 per cent of the emissions reductions required to meet the 2030 target.
  - The proposed investment is identified as the optimal asset management approach that integrates climate change initiatives and is expected to generate cost and operation efficiency in the long run.
  - A total incremental funding of approximately \$12 million is required and can be sourced from the Canada Community Building Fund.
  - The PHC Board of Directors have reviewed and approved amendments to the PHC capital budget to reflect the incremental investments, pending Region of Peel Council approval.
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# Investing in Low Carbon Technologies to Reduce Greenhouse Gas Emissions Across 10 Peel Housing Corporation Buildings

## DISCUSSION

### 1. Background

In 2019, Regional Council approved the Climate Change Master Plan (CCMP) and declared a climate emergency. For the past two years, the Region and the world have reeled from the health emergency but are emerging now with lessons learned for the committed return to fighting the climate crisis, including: existing vulnerabilities are amplified, disasters impact entire communities but they are not distributed evenly, and equity must guide bold, systemic change.

### 2. Findings

In 2021, the Region retained a sustainability consultant to complete a low carbon engineering feasibility study for the Weaver's Hill Pacesetter Project, an affordable housing building in Peel Housing Corporation (PHC). The feasibility study used energy modelling to assess best practices for achieving desired greenhouse gas (GHG) emissions reduction through energy efficiency and conservation, fuel switching and renewable onsite energy generation. The 14 proposed climate projects were identified by applying lessons learned and the same engineering methodology. These proposed investments are supported by a strong business case that is discussed in further details herein.

#### a) Champion the Region's Climate Change Master Plan Action

Through the Region of Peel, the sole shareholder of the PHC, there is clear opportunity to deeply invest in meaningful climate action where some of our most vulnerable residents live. PHC operates as a leader in corporate social responsibility, championing an equitable transition to a low carbon community and understanding tenants are more vulnerable to the impacts of increasingly severe and frequent climate impacts.

The Region's CCMP has an approved GHG emissions reduction target of 45 per cent reduction below 2010 levels by 2030. PHC assets account for 16 per cent of the Region's total GHG inventory. Together, the Region and PHC can play a critical role as climate leaders by scaling the rapid reduction of existing GHGs from the building stock.

Pairing the financial principles underpinning an affordable and social housing provider with the urgency of achieving equitable low carbon outcomes, staff identified 14 previously planned State of Good Repair (SoGR) projects for PHC, which will be undertaken in 2022, as having opportunities to implement proven, low carbon technologies for space and water heating (i.e., electric air source heat pumps).

#### b) Desirable GHG Reduction Performance Outcomes

A total of 1,322 of GHG emissions reduction annually can be achieved through implementation of all 14 SoGR projects using low carbon electric heat pump technologies at 10 PHC building sites, which represents ~1.4 per cent of the Region's total corporate GHG inventory and ~8 per cent of PHC building emissions. This is approximately 8.8 per cent of the emissions reductions required to meet the Region's approved 2030 target.

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While each building is unique, the average Carbon Return on Investment of these 14 projects (expressed in cost/tCO<sub>2</sub>e of GHG reduction) is approximately \$8,800/tCO<sub>2</sub>e, which is a strong business case for return on carbon. For context, the return on carbon for the Weaver's Hill Pacesetter Project is projected at approximately \$12,000/tCO<sub>2</sub>e. For more details refer to Appendix I.

### **c) Optimal Asset Management Investment Approach Expected to Generate Cost Efficiency**

Consultants conducted further investigative studies to inform project-level budget estimates, including:

1. Cost to replace existing equipment with like-for-like natural gas technology.
2. Incremental cost (relative to no.1 above) to replace existing equipment with low carbon electric heat pumps, a proven and available technology.
3. Cost to upgrade any electrical infrastructure to support the heat pumps (in addition to no. 2 above).
4. Overall GHG emissions reduction estimated per building site

The study also identified projected annual operational savings (energy) over the asset life cycle and determined incremental capital costs based on various technology options. Given the rising price on carbon (set to increase from \$40/tonne to \$50/tonne on April 1st, 2022), and the high efficiency of operating an electric heat pump, operating cost savings are expected over the 20-year life cycle of the assets.

The above scenario analysis suggested that the incremental investments proposed in this report as the optimal asset management investment approach.

### **3. Next Steps**

Should the incremental capital investments be approved by Regional Council, staff will advance these projects to design and tender which would incorporate implementation of the designed low carbon technologies. Related operational and performance evaluation steps will be updated to ensure the Region maximize the benefits from the combination of advanced technology and the best operation practice, which in turn would help inform future climate change investment decisions.

### **RISK CONSIDERATIONS**

These SoGR projects are currently scheduled for design and tender in 2022. If incremental funding is not approved, all 14 projects will proceed with like-for-like natural gas technologies and 1,322 tCO<sub>2</sub>e of GHG emissions will enter the atmosphere, each year, for the next 20 years. At-risk is also the Region's reputation as a climate leader and meeting its 2030 GHG emissions reduction target.

### **FINANCIAL IMPLICATIONS**

Historically, the Region has been using Canada Community Building Fund (CCBF) primarily in TransHelp and Active Transportation related infrastructures. In recent years, there have been growing emphasis on utilizing CCBF as a critical funding source to support general asset

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management plans and strategies. The incremental investment proposed in this report is in alignment with that long- term goal of CCBF fund utilization while adopting an innovative and integrated asset management and climate change capital planning.

A review of the CCBF fund balance indicates that there is sufficient uncommitted CCBF funds available to fund the 14 projects. Further, eligibility of these projects was sought and confirmed by the Association of Municipalities Ontario (AMO).

In consultation with AMO, staff is recommending a Region of Peel capital budget be established and funded from the Region's CCBF reserve fund in the amount of \$12 million. The Region of Peel may enter into a funding grant agreement with PHC for this project including all 14 identified sites as listed in Appendix I. The agreement would further define the parameters of funding and set the necessary reporting requirements associated with Canada Community Building Fund requirements and expected GHG goals. PHC will engage Region of Peel staff to review and manage the utilization of these funds to meet the expected outcomes.

### **CONCLUSION**

Staff have identified that 14 previously scheduled SoGR projects can benefit from incremental investments of approximately \$12 million to implement low carbon technologies and to achieve greenhouse gas reduction. The Region's Canada Community Building Fund reserve fund has been identified as a viable funding source for this investment. The Peel Housing Corporation (PHC) Board of Directors have reviewed and approved these PHC capital projects pending Region of Peel Council approval.

### **APPENDICES**

Appendix I – Incremental Project Costs and GHG Emissions Reductions Estimate by PHC Building

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*Authored By: Christine Tu, Director, Office of Climate Change and Energy Management*