

**REPORT TO ENVIRONMENTAL SERVICES COMMITTEE  
MEETING OF WEDNESDAY, SEPTEMBER 25, 2024**

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**SUBJECT**     **Update on Corporate Greenhouse Gas Emissions Targets**

**ISSUE SUMMARY**

To provide an update on planned actions to reduce corporate transportation and building emissions to meet the Capital Regional District's (CRD) 2030 target, and to outline further emission reduction options, including those for Capital Region Housing Corporation (CRHC) buildings.

**BACKGROUND**

In 2021, the CRD Board approved a renewed Climate Action Strategy (CAS) and Five-Year Action Plan. The CAS guides the CRD in demonstrating climate leadership within its operations and community services and sets a corporate goal to reduce greenhouse gas (GHG) emissions by 45% by 2030 from 2007 levels and to achieve net-zero emissions before 2050. The CRD provides annual updates on progress and conducts a corporate emissions inventory.

Following the 2023 Climate Action Progress Report in May 2024, the Board directed staff to explore options for reducing corporate transportation and building emissions, including those from Capital Region Housing Corporation (CRHC) buildings. This report provides an update on planned actions to reduce CRD emissions to meet the 2030 target and outlines additional reduction strategies, along with the CRHC's efforts to assess energy use and emissions.

The Board has also issued additional climate-related directives. To integrate these into existing work plans and coordinate responses, staff plan to expedite the renewal of the Climate Action Strategy, originally set for 2026, beginning the process in late 2024 with completion by 2025. This renewal will incorporate current Board directives, ongoing activities, and initiatives under the future Regional Transportation Service, to guide priorities in the updated Strategy. For details on planned work and timelines, see Appendix A.

**Corporate Emissions**

In 2023, CRD operations generated 2,956 tonnes of CO<sub>2</sub>e, a 1.6% decrease from 2007 levels. Despite a recent upward trend in emissions due to increased service levels, significant GHG reductions are expected from 2026 onwards, as projects transition from planning to implementation, and more electric vehicles are introduced.

Note: Emissions from the Capital Region Housing Corporation, Hartland Landfill and Capital Region Hospital District are excluded from the CRD's annual corporate GHG inventory due to provincial reporting guidelines.

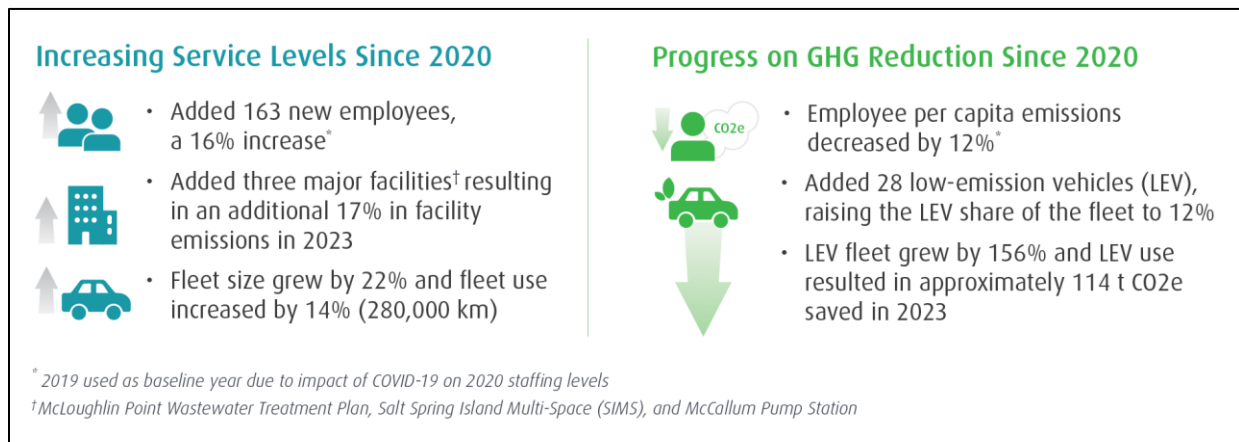


Figure 1: Statistics indicating increasing CRD service levels and greenhouse gas reduction progress.

Updated GHG Reduction Pathway and Status of Planned Actions

In 2021, the CAS identified key emissions reduction projects and a pathway to achieving the 2030 corporate target. Since 2021, staff have completed additional studies and progressed these projects, resulting in updated information on GHG impacts, costs and timelines. Figure 2 shows an updated GHG reduction pathway based on the latest information, showing how the CRD may meet and exceed the 2030 target. This updated pathway is based on “planned actions” that are scheduled for implementation between now and 2030 and included in current five-year capital plans, with some conditions.

Actions addressing the largest GHG emitters in the CRD portfolio and scheduled equipment replacements were prioritized. The pathway assumes the current electrification rate of light-duty vehicles, implementation of four building electrification projects, and that BC Hydro will achieve its target of 100% clean electricity by 2030. For more information about each action, see Appendix B.

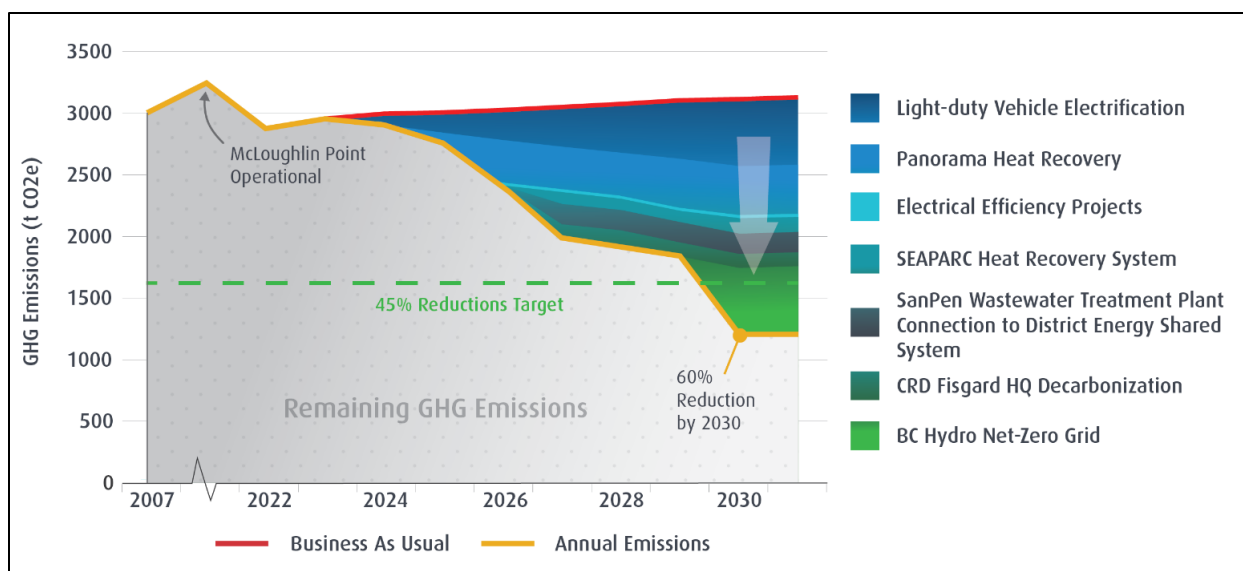


Figure 2: Updated CRD corporate greenhouse gas emissions reduction pathway based on planned actions by 2030.

Table 1 below details the GHG impact, cost, cost per tonne saved, and estimated timeline for each planned action and other key assumptions that will have material impacts on CRD corporate emissions.

Key costing considerations:

- Incentives and grants available to assist with GHG mitigation projects are not reflected.
- Many projects leverage end-of-life equipment replacements; costs shown are absolute, not incremental.
- Cost estimate confidence varies by project stage and will be refined as projects progress through study, design, and implementation phases.
- Preliminary lifetime cost per t CO<sub>2</sub>e categories:
  - Low: < \$500
  - Medium: \$500 - \$1,000
  - High: > \$1,000

*(see next page for Table 1)*

Table 1: Estimated corporate greenhouse gas emissions reduction by 2030 based on planned actions

					REDUCTION FROM BASELINE (%)	ANNUAL EMISSIONS (t CO2e)
2007 Baseline Emissions (Actual)					-	3,005
2023 Emissions (Actual)					1.6%	2,956
2030 Target (45% reduction from 2007 baseline)					45.0%	1,653
PLANNED ACTIONS	ANNUAL EMISSION REDUCTION (t CO2e)	CAPITAL COST <sup>1</sup>	LIFETIME COST PER t CO2e	ESTIMATED COMPLETION YEAR		
<b>Light-duty Vehicle Electrification</b> <i>66% by 2030</i>	-533	\$2.35M <sup>2,3</sup> (incremental)	Low	2030	17.7%	
<b>Panorama Recreation Centre Heat Recovery</b> <i>Phase 1 – Dehumidifier electrification</i> <i>Phase 2 – Heat recovery loop</i> <i>Phase 3 – Remaining HVAC units</i>	-408	\$2.85M <sup>4</sup>	Low	2027 <i>(Phase 1: 2024, Phase 2: 2025, Phase 3: 2027)</i>	13.6%	
<b>Saanich Peninsula Wastewater Treatment Plant Connection (SPWWTP) to the District Energy Shared System</b>	-170	\$1.2M <sup>4</sup>	Low	2027	5.7%	
<b>SEAPARC Heat Recovery System</b> <i>Phase 1 – Heat recovery loop</i> <i>Phase 2 – Dehumidifier electrification</i>	-120	\$2.2M <sup>3</sup>	High	2030 <i>(Phase 1: 2026, Phase 2: 2030)</i>	4.0%	
<b>CRD Fisgard HQ HVAC Fuel-Switch</b>	-110	\$2.1M <sup>3</sup>	Medium	2027	3.7%	
<b>Electrical Efficiency Projects</b>	-15	Variable	Low-Medium	2030	0.5%	
<b>OTHER ASSUMPTIONS</b>						
<b>BC Hydro Net-Zero Grid</b>	-539	N/A	-	2030	17.9%	
<b>Energy Increase from CRD Growth in the 2030 year</b>	98	N/A	-	Ongoing	-3.3%	
<b>TOTALS IN 2030<sup>5</sup></b>					<b>59.8%</b> reduction from baseline	<b>1,159</b> annual emissions

<sup>1</sup> High-level estimate of implementing all planned actions by 2030 is approximately \$10.7M.

<sup>2</sup> Estimated cost includes charging infrastructure.

<sup>3</sup> Class D estimate

<sup>4</sup> Class C estimate

<sup>5</sup> 494 t CO2e or 14.8% additional reduction compared to 2030 target

### Additional Actions

As staff have completed studies and projects identified in the 2021 CAS, additional opportunities for GHG reduction have emerged. These “additional actions” can either accelerate GHG reductions or be used as substitutes for delayed projects. In most cases, these projects have been identified because of equipment nearing the end of service life. This allows the opportunity to either fuel-switch or increase system efficiency, while leveraging existing equipment replacement funds, in accordance with the CRD’s Green Building Policy.

Additional actions:

- decarbonization of HVAC systems at Integrated Water Services HQ, Parks HQ and Salt Spring Island Multi-Space
- accelerated light-duty vehicle electrification
- electrification of medium- and heavy-duty vehicles

These actions are not yet included in capital plans; further studies and engagement are needed to determine timelines. These additional actions will be required to achieve net-zero targets beyond 2030. For details, see Appendix B.

### Capital Region Housing Corporation Update

Although emissions data for the Capital Region Housing Corporation (CRHC) portfolio is not yet available, CRHC is actively working to incorporate energy efficiency and low-carbon buildings into their portfolio. Newly-constructed CRHC buildings meet or exceed performance, energy efficiency and GHG requirements of local governments and BC Housing funding requirements. However, retrofitting existing buildings is limited by available capital resources. In 2024, CRHC is advancing two key initiatives with support from the BC Non-Profit Housing Providers Association:

- Portfolio-Wide Building Condition Assessment
  - **Goal:** Review all CRHC properties to assess asset condition, detail deficiencies, estimate replacement costs, and provide a high-level schedule.
  - **Benefits:** Enhance capital planning, better incorporate energy-efficient measures into asset planning, and understand equipment lifespans.
  - **Timeline:** Complete late 2024.
- Portfolio-Wide Energy Benchmarking
  - **Goal:** Document energy consumption across CRHC buildings.
  - **Benefits:** Understand consumption trends, detect utility anomalies, and prioritize buildings for energy audits to identify opportunities to reduce energy use and emissions.
  - **Timeline:** Discussions ongoing with BC Non-Profit Housing Providers Association; project to begin late 2024.

The CRHC portfolio includes 52 properties with buildings of various ages and conditions, with about half using fossil fuels. The Building Condition Assessment and Energy Benchmarking initiatives further detail the condition and type of system in each of the buildings. Results will be reported to the CRHC Board. Following these projects, Climate Action can support CRHC in further understanding pathways to further reduce carbon emissions in CRHC buildings.

## **IMPLICATIONS**

### *Climate Implications*

The planned actions and updated GHG emissions reduction pathway will enable the CRD to meet its 2030 corporate emissions reduction target. Potential risks to not meeting these targets include project delays due to funding challenges, acquisition of new facilities energized by fossil fuels, or BC Hydro not meeting its 100% clean electricity goal by 2030. If major projects face delays or scope reductions, the CRD could consider using renewable natural gas (RNG) as a transitional fuel. RNG is best reserved for processes that are hard to electrify or for backup systems.

Further analysis is needed to define the future impact of CRHC emissions.

### *Financial Implications*

#### Corporate GHG reductions

The CRD's corporate climate reserve fund supports energy audits, feasibility and pre-design studies for key climate initiatives. Each service is responsible for implementing retrofits, with funding allocated in their five-year capital plans. The SEAPARC Recreation Centre and Saanich Peninsula Wastewater Treatment Plant's District Energy Shared Systems depend on grant funding and/or debt servicing. As projects near implementation, cost details will be refined and reported.

If RNG becomes necessary to meet GHG targets, operating budgets may need to account for its higher cost. Beyond 2030, ongoing investment in fleet transition, energy efficiency and fuel-switching will be necessary and should be included in future capital plans.

#### CRHC GHG reductions

Significant investment will be required to reduce GHG emissions in CRHC buildings. According to a Pembina Institute study supported by BC Housing, the median cost for deep energy retrofits (DERs) in social housing is approximately \$138,000 per unit (2024 dollars), potentially reducing GHG emissions by around 80%. The Canada Greener Affordable Housing - Retrofit Funding program offers up to \$170,000 per unit for DERs.

If CRHC were to solely opt for equipment replacements to reduce GHGs, a 2023 study by BC Hydro and LandlordBC estimates the cost to fully electrify at \$13,600 to \$22,560 per unit (adjusted to 2024 dollars). Assuming 50% of CRHC's 2,028 units rely on fossil fuels, the estimated cost for DERs could reach \$280M, and electrification up to \$23M.

### *Alignment with Board & Corporate Priorities*

Reducing GHG emissions is embedded in the Climate Action & Environment Board and Corporate Priorities.

### *Alignment with Existing Plans & Strategies*

The planned actions, except for the Saanich Peninsula Wastewater Treatment Plant Connection to the District Energy Shared System, align with the critical actions listed to be implemented by 2030 in the 2021 Climate Action Strategy.

While monitoring emissions of CRHC buildings is not a specific action in the Strategy and is out of scope for the CRD’s corporate annual GHG emissions inventory, actions to reduce emissions from CRHC buildings align with action 4-5: *Pursue climate-friendly development and retrofits for CRHC and CRHD facilities.*

**CONCLUSION**

The CRD is advancing many key projects to meet its corporate greenhouse gas (GHG) emissions target of 45% reduction from 2007 levels by 2030. Additional opportunities for GHG reductions have been identified that could contribute to meeting the target or accelerate reductions. The expedited renewal of the Climate Action Strategy in 2025 will incorporate these insights, ensuring the renewed Strategy outlines a pathway to achieve the 2030 target and the net-zero emissions goal by 2050. New buildings within the Capital Regional Housing Corporation (CRHC) portfolio are low carbon and retrofits of existing buildings would require significant investment. The CRHC is progressing on two initiatives to support energy and emissions planning. Results will be provided to the CRHC Board.

**RECOMMENDATION**

There is no recommendation. This report is for information only.

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**ATTACHMENTS**

- Appendix A: Timeline of Work – Recent CRD Board Directives & Climate Action Strategy Renewal
- Appendix B: Planned and Additional Action Details – CRD Corporate Greenhouse Gas Reduction Projects