



COMMITTEE OF THE WHOLE INFORMATION REPORT

To: Mayor and Council

Date: November 21, 2023

From: Paul Gipps, CAO

File No: P 21-20

Subject: **P 21-20; Corporate Climate Action Plan – Draft Plan**

Report Prepared by: Holden Blue, Planner II

INFORMATION SUMMARY

The City's Corporate Climate Action Plan (CCAP) was initiated in the Spring of 2023 and the draft plan has now been prepared for Council's initial consideration. The plan outlines corporate emissions and energy expenditures for City-owned assets (primarily buildings and fleet), emissions reduction targets, actions to lower emissions and save money on energy expenditures, ways to demonstrate corporate leadership on climate action, and assists the City in fulfilling its commitments as a signatory to the British Columbia Climate Action Charter.

STRATEGIC AREA(S) OF FOCUS

Invest in Infrastructure – We will invest in building, improving and maintaining infrastructure to meet the needs of, and to provide a high quality of life for, current and future generations.

Foster Safety and Well-Being – We will pursue through direct action, advocacy, and collaboration with local and regional service providers, investments in community health, needs-based housing, emergency preparedness, policing, and other services that foster safety and well-being in West Kelowna.

BACKGROUND

What is a Corporate Climate Action Plan?

A CCAP is a corporate-wide plan to reduce energy and emissions from municipal operations and fleets. It focuses on greenhouse gas emissions and energy expenditures that the City has direct control over but does not consider emissions as a result of activities from sources not controlled or owned by the City. The completion of the plan alone does not result in emissions reductions or cost savings and requires further investment (both time and financial) to reduce the City's emissions and energy expenditure.

Why has this plan been undertaken?

The Plan was initially identified in Council's 2021-2022 Strategic Priorities and continues to be a priority in the 2022-2026 Strategic Priorities. A CCAP is an important first step for a municipality to take when coordinating an approach to lower emissions that contribute to climate change and prepare for the impacts of extreme weather. It allows the City to be strategic and effective so co-benefits can be built throughout the plans implementation and set the stage for future work and investment in climate action. The City has direct control over its emissions, which allows for notable change in a short amount of time. The CCAP will also aid in the advance the goals of “Our Adaptability” outlined as one of the five foundations of the Community Vision adopted in 2021.

Plan Development

The plan was developed by the Community Energy Association (CEA) in collaboration with representatives from various City departments (the Technical Committee) including those who have a direct role in the plan implementation including Corporate Initiatives, Facilities, Fleet Operations, Fire Department, Finance, Parks, and Public Works.

City's Work to Date

While the CCAP is the first collective climate action plan for the City, various departments are already taking action against climate change and corporate emissions in numerous capacities. An expanded list is provided in the draft report (Attachment 1) and a few projects have been highlighted below:

- Energy assessments completed for major facilities (grant through Fortis BC) that identifies specific actions to reduce emissions and save money. These actions have been reviewed as part of the CCAP and will form part of its implementation. (Facilities and Recreation)
- LEED RCMP Building and Electric Zamboni (Facilities and Recreation)
- Energy optimization for water and wastewater pumps and a City-wide streetlight replacement program to LED (Public Works)
- Acquisition planning to convert the City's fleet to electric or hybrid and implementation of GeoTab tracking monitoring to help with fleet conversion and improve fuel efficiency. (Fleet Operations)
- Installation of EV charging stations and ongoing work to evaluate additional opportunities for EV charging stations. (Fleet Operations)
- Resiliency actions related to fire prevention through mitigation and public education. (Fire Department)
- Resiliency measures being implemented in various locations such as fire and flood mitigation measures, introducing more shade trees, foreshore and riparian areas restoration and upgrades to irrigation systems. (Parks)

Many other corporate actions have been taken, including climate related strategic priorities in Councils 2022-2026 Strategic Plan, Climate Action Charter commitments, adoption of key policies including Emissions Reduction policy and Vehicle and Equipment

Acquisition, Replacement and Disposal policy and identification of community emissions reduction targets in the City's Official Community Plan.

Energy and Emissions Inventory, Fleet Analysis and Targets

Corporate Energy and Emissions Inventory

The City's corporate energy use and emissions were determined and analyzed using available energy use and cost data for the years between 2012 and 2022. Analysis of the data determined that the City's total corporate emissions amount to 2,501 tCO₂e¹ (includes Contracted Services), and emissions have increased by 43% between 2012 and 2022. Considering the City has experienced significant population growth since 2012, it is important to consider per capita emissions which have increased by 17% since 2012. (Figure 1) Natural Gas and diesel fuel have continued to be the biggest contributor to the City's emissions since 2012.

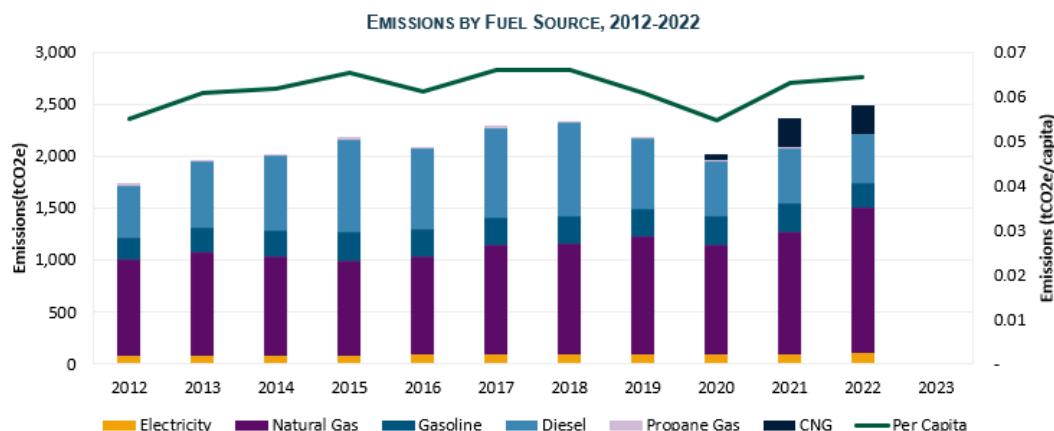


Figure 1: West Kelowna Emissions by Fuel Source (2012-2022)

Energy consumption has increased by 28% since 2012, with natural gas being responsible for over half the growth, however, per capita energy consumption has only increased by 5%. Electricity contributes 43% of energy use and 57% of cost and only 4% of total emissions. Natural gas contributes 37% of energy use and 21% of expenditures, however, is the highest source of emissions, contributing over half of the total corporate emissions. Energy consumption and costs by fuel source are further explained on page 23 of the draft Plan. (Attachment 1) Overall, natural gas and diesel are the highest contributors to the City's emissions as 56% and 19% respectively, but only a third of expenditures. Electricity on the other had only contributes to 4% of emissions but over half of the costs. The total cost of energy consumption in 2022 amounted to approximately \$1,902,432. (Figure 2)

EMISSIONS (tCO₂e) AND ENERGY COSTS BY FUEL SOURCE, 2022

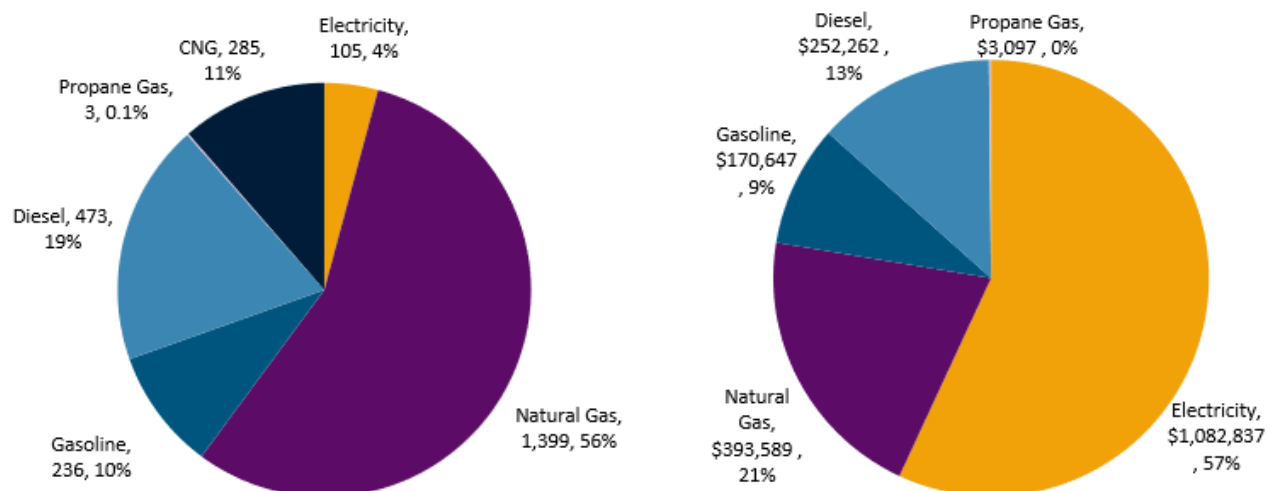


Figure 2: Emissions and Energy Costs by Fuel Source (2022)

Parks, Recreation and Culture Facilities (e.g. the City owned buildings) are the largest source of emissions (1,240 tCO₂e), which is nearly half of the City's overall emissions. This is largely due to three large recreation centres: Johnson Bentley Memorial Aquatic Centre, Mount Boucherie Complex (Royal LePage Place and Jim Lind Arena, not including current City Hall) and the West Kelowna Multi-Sport Centre. Parks, Recreation and Culture Facilities account for the most expenditures (\$651,000), followed by Water Infrastructure and the Remaining Fleet categories. (Figure 3) A list of what each "City of West Kelowna Service" represents, referenced in Figure 3, can be found in Appendix D of the CCAP.

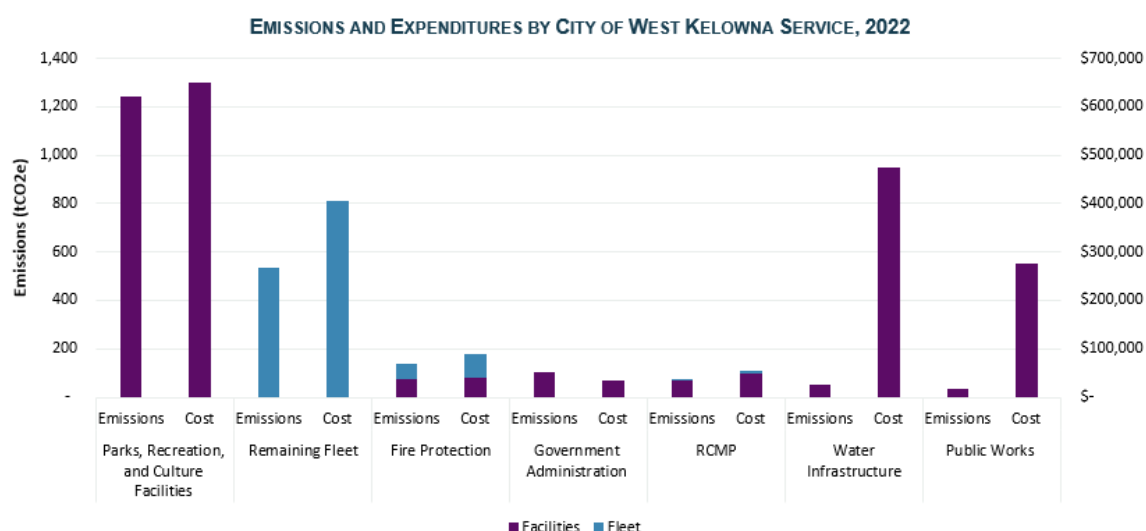


Figure 3: Emissions and Expenditures by City of West Kelowna Service Category (2022)

The top 5 buildings and infrastructure in terms of energy expenditure and emissions are outlined on page 27 of the Plan and include the Mount Boucherie Complex (Royal LePage Place and Jim Lind Arena only), Johnson Bentley Memorial Aquatic Centre, Multi-Sport Centre, and Fire Hall 34 and 32. It is recommended that those facilities with the highest

energy expenditures and emissions are investigated as priority to identify energy saving opportunities and emissions reductions opportunities.

Fleet Analysis

In addition to the energy and emissions inventory that was developed, a Fleet Analysis was undertaken to identify opportunities to decarbonize the City's fleet. The fleet analysis reviewed all vehicles in the City's fleet to identify those nearing the end of their life and that may be ready for replacement. Six vehicles in the existing fleet were identified for possible replacement with Electric Vehicle (EV) options, and an analysis of lifetime greenhouse gas emissions savings, and payback years was completed on these six units. The fleet analysis also outlined steps and information on considerations to install required electric vehicle charging stations as the City's fleet transitions to EV's. Cost analysis would need to be completed prior to the installation of EV chargers.

The information provided will aid in the City's ongoing work to purchase electric vehicles and each purchase will have to be analyzed on an as needed basis, considering cost, emissions reduced and operational needs for each unit. If the six vehicles recommended for replacement with EV's are replaced, an anticipated lifetime greenhouse gas emissions reduction of approximately 140 tCO₂e may be realized.

Business As Usual Projections and Corporate Emissions Reduction Target

Based on the plan, if the City chooses to not implement any special efficiency or conservation activities, and assuming future changes are proportional with population increase, the City's emissions are forecast to increase by 13% in 2030 and 56% in 2050 compared to 2022 levels. (Figure 4) Choosing inaction has the potential to significantly increase expenditures long term, impact resources and will continue to contribute to the global climate crisis.

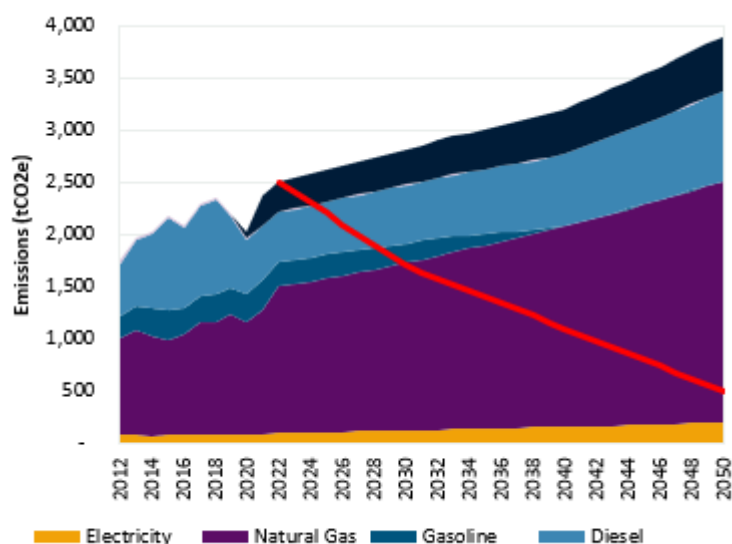


Figure 4: Business as Usual Projection

The CCAP recommends a greenhouse gas emissions reduction target of 30% of 2022 emissions by 2030 and 80% of 2022 emissions by 2050. The following corporate emissions reduction targets have been highlighted for reference from surrounding municipalities:

- Summerland: 25% reduction by 2025, 35% reduction by 2030, and 80% reduction by 2050 from 2012 levels;
- Penticton: 25% reductions by 2025, 40% reductions by 2030 from 2009 levels and zero carbon by 2050; and

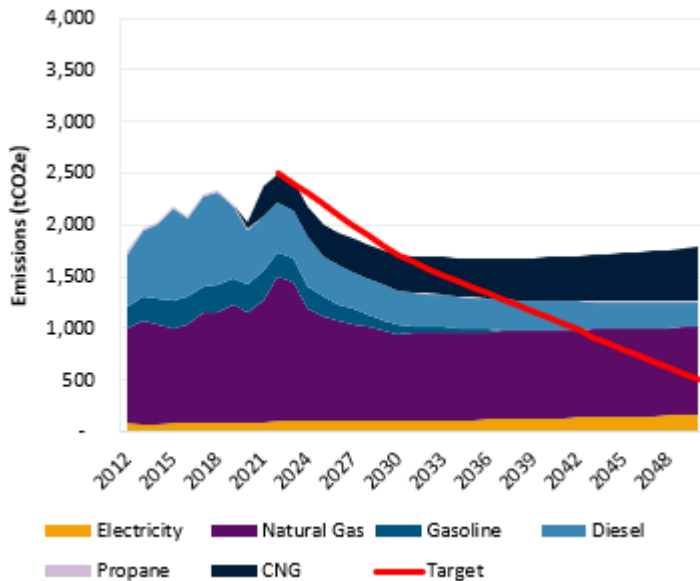


Figure 5: Emissions profile based on implementation of recommended actions.

- Kelowna: 12% reduction by 2022 from 2007 levels.

The plan has identified actions to address emissions and meet the identified targets in the plan. By establishing a target, it provides the city with a goal to work towards and creates a sense of accountability when considering corporate projects that can significantly reduce emissions. The planned actions are expected to drive the City's emissions below the target line until 2030, until which time, additional work and review will be required to achieve the long-term goal. (Figure 5)

Implementation and Actions

To achieve the targets outlined in the plan, several actions have been identified in the plan to be implemented over the next 5-7 years, along with numerous other guidance material to implement the plan including an evaluation matrix for projects. Considering current staff capacity, the plan will rely on each department to implement actions that have been identified as their responsibility.

The plan also emphasizes the need for dedicated staff to successfully implement the plan; under the current operations, existing staff resources will be required to begin to implement the plan as resources and budgets permit. It is noted that the scale of implementation may be accelerated based on the level of staff and financial resources which are allocated to implementation of the plan.

Actions have been placed into five categories;

1. New Buildings and Infrastructure
2. Existing Buildings and Infrastructure
3. Renewable Energy
4. Transportation and Fleet;
5. Enabling Actions and Corporate Leadership

A full list of actions, including information on how to implement them, greenhouse gas and economic impacts, effort, potential high level costs, identified possible funding partners, timing and staff responsibility, is outlined in Appendix A of the plan. "Potential" timing has been included in Appendix A of the Plan to recognize that each action could be initiated at a different time depending on availability of resources, however, analysis of emissions reductions and cost savings are based on the implementation prior to 2030.

A few actions have been highlighted below which illustrates a broad example of actions from each category, actions that have already gained momentum, and actions related to efficient implementation of the Plan:

Action 2.1 - Conduct Building Energy Audits (Existing Buildings and Infrastructure)

The City has already conducted audits through the use of FortisBC funding to identify areas to improve efficiency of our gas-powered infrastructure in some of our larger buildings. Additional audit opportunities exist at a minimal cost through other energy providers to identify areas of improvement. Building audits provide detailed information, including specific costs, on what improvements can be made to reduce greenhouse gas emissions and save money. Implementation of the recommendations from audits will need to be explored further for feasibility and cost. Implementing results of audits have the potential to significantly impact emissions reductions considering they relate to the assets that are the greatest emitters.

Action 3.3 - Conduct Corporate Renewable Energy Study (Renewable Energy)

Renewable energy solutions include both electricity generation such as solar and renewable gas from waste such as Renewable Natural Gas from landfills, anaerobic digestion of household organics and manure. It is recommended the City explore opportunities through a renewable energy study that has the potential to benefit the City through local investment, job creation, transparency and accountability in association with greenhouse gas reductions.

Action 4.3 Invest in EVs and EV Charging Stations

It is recommended the City consider the purchase of EV's when vehicles are due for replacement and consider the lifecycle costs including fuel and maintenance when comparing vehicles for purchase. The Fleet Analysis conducted in the plan outlines long term costs of EV's vs Internal Combustion Engine vehicles, and in some cases EVs have a better long term business case. EV chargers necessary for charging EV will be required and the City can report annual charging amounts to the Province and sell Low Carbon Fuel Standard Credits to further fund additional climate action initiatives. More on Low Carbon Fuel Standard Credits can be found in the Fleet Assessment section of the report.

Action 5.1 – Have a Dedicated Staff Person or Department for Plan Implementation (Enabling Actions and Corporate Leadership)

A Corporate Climate Action Plan details actions to reduce emissions, but the plan itself does not result in savings, it is the implementation of actions that does. Limited staff capacity can be a barrier to implementation and having dedicated staff to implement the plan is critical to its success. BC Hydro's Energy Manager Program offers an opportunity to cover 50% of the salary of a new hire who would develop a strategic energy management plan, secure budgets and business cases

and identify other opportunities for grants/incentives to implement climate action initiatives.

Actions and their associated emissions reduction potential are outlined in Figure 6. The plan recommends prioritizing the following actions that will achieve the largest reductions in greenhouse gas emissions over the next 5 years:

- **Implement building energy retrofits** recommended by building energy audits (approximately 350 tCO₂e reduced per year) – Related to Action 2.1 and 2.2;
- **Low carbon heating retrofits** for buildings (approximately 200 tCO₂e per year) – Related to Action 2.1, 2.2 and 3.2; and,
- **Investment in EV's and EV charging stations** (Approximately 170 tCO₂e per year) – Related to Action 4.3

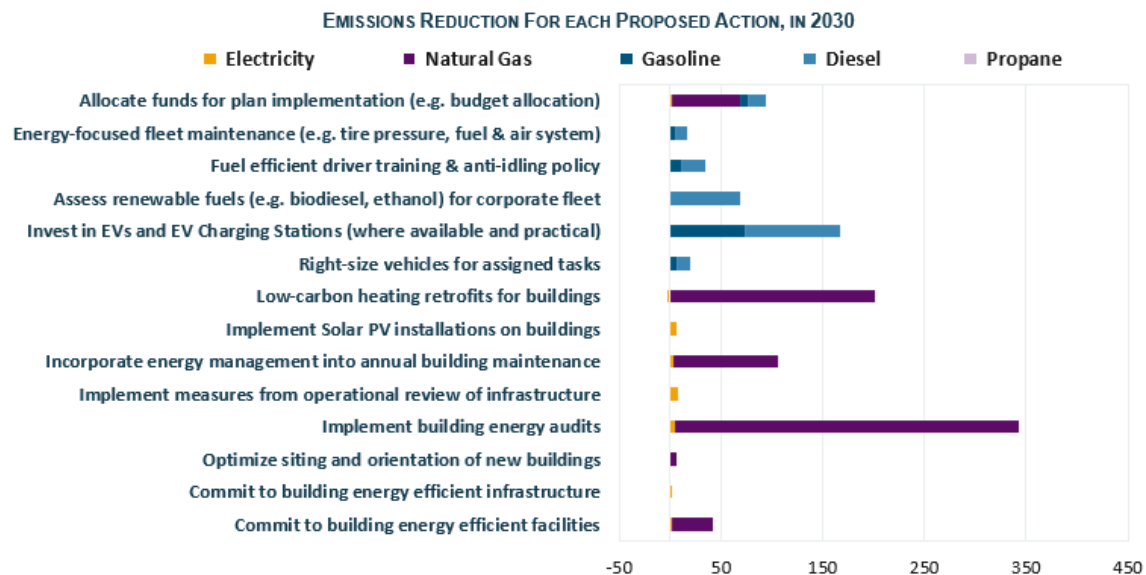


Figure 6: Potential emissions reductions based on full implementation of each proposed action.

The plan indicates that the investment in EV's and EV charging will result in the highest cost savings (approximately \$144k following implementation), followed by implementing building energy audits (approximately \$125k following implementation), and implementing measures from infrastructure review (approximately \$86k following implementation). These savings assume all actions are implemented. (Figure 7)

Additional work to prioritize projects/actions and develop a full business case including cost, cost savings and emissions reductions will be required following the adoption of this plan through implementation. Several actions related to operational best practices in building, fleet and asset maintenance to reduce emissions and save money can be implemented in the short term by individual departments through a review of current processes.

The plan emphasizes the importance of establishing broad support for implementation, building staff and financial capacity for implementation, and institutionalizing the plan to withstand staff and political turnover. Dedicated staff and policies on funding emissions reductions would aid in institutionalizing the plan.

Regional Context on Climate Change and Climate Action

Both the City's of Penticton and Kelowna have declared climate emergencies in 2022 and 2023 respectively. Declaration of a climate emergency places the issue at the forefront of decision making and holds staff and Council accountable to the commitments being made to make progress on corporate emissions and take action against climate change. Both municipalities have dedicated staff to advance climate action. The District of Summerland also has two plans that address emissions reduction; a Community Energy and Emissions Reduction Plan and a Corporate Energy and Emissions Management Plan. The District also employs a full time staff member dedicated to advancing climate action initiatives.

In addition to declaring a climate emergency, some municipalities in the region have chosen to include climate action considerations in reports to Council and in the budgeting process to institutionalize climate action. The draft CCAP provides several other recommendations, such as those mentioned above, that don't necessarily translate to emissions reductions, but help to bring climate action into focus within the organization.

FINANCIAL IMPLICATIONS

Financial investment into climate action initiatives is required to reduce corporate emissions. The actions in the plan provide high level potential costs for each, however, additional work on each action would be required to identify exact costs as scope could vary based on how an action is implemented. The plan recommends a number of internal and external funding sources and opportunities available to the City that would need to be explored to fund climate action. Completion and adoption of the plan alone opens the City up to additional financial opportunities that otherwise would not have been available without a plan (i.e. BC Hydro Energy Manager Program). Long term success of the plan depends on the level of investment allocated to the initiatives, including financial and staff resources.

Next Steps

Following Council's review and comment on the plan, it will be brought back to a future Council meeting for endorsement. It is noted that should the plan be adopted, it is anticipated that plans, strategies, and policies will be amended accordingly to be aligned with the direction of the CCAP (i.e. Vehicle and Equipment Acquisition, Replacement and Disposal Policy).

COUNCIL REPORT / RESOLUTION HISTORY

Date	Report Topic / Resolution	Resolution No.
April 18 th , 2023	Corporate Climate Action Plan Kick Off	Information Only
July 11 th , 2023	Corporate Climate Action Plan Council Workshop	Information Only

REVIEWED BY

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APPROVED FOR THE AGENDA BY

Trevor Seibel, Deputy CAO

Powerpoint: Yes ☒ No ☐

Attachments:

1. Draft Corporate Climate Action Plan