
TO: CITY MANAGER **DATE:** 2020 May 05

FROM: DIRECTOR CORPORATE SERVICES

SUBJECT: 2019 CLIMATE ACTION REVENUE INCENTIVE PROGRAM REPORT

PURPOSE: To inform Council of the climate actions and corporate emissions reported in the 2019 Climate Action Revenue Incentive Program (CARIP) Report, and fulfill the annual CARIP grant requirement to report publicly.

RECOMMENDATIONS:

1. **THAT** Council receive this report for information; and
2. **THAT** A copy of this report be forwarded to the Environment Committee for information.

REPORT

1.0 INTRODUCTION

The City of Burnaby joined the BC Climate Action Charter in 2017, and has subsequently reported on qualitative actions and corporate emissions for 2016, 2017 and 2018 as required under the Charter. Local governments who sign on to the Charter are eligible to receive a rebate on their paid carbon tax through the Climate Action Revenue Incentive Program (CARIP). Three requirements must be met to be eligible for the CARIP rebate:

1. Sign onto the Climate Action Charter;
2. Complete and submit a signed electronic version of the Carbon Tax Calculation Form; and
3. Report publically on their plan and progress toward meeting the climate action goals, including progress toward carbon neutrality.

The purpose of this report is to inform Council of Burnaby's climate-related actions, including its annual corporate emissions, as part of the Climate Action Revenue Incentive Program (CARIP), and fulfill the annual CARIP grant requirement to report publically.

2.0 POLICY SECTION

The *Program* supports a number of goals and sub-goals of the *Corporate Strategic Plan*:

- A Healthy Community
 - Healthy life – Encourages opportunities for healthy living and well-being
 - Healthy environment – Enhance our environmental health, resilience and sustainability
- A Dynamic Community
 - Community development – Manage change by balancing economic development with environmental protection and maintaining a sense of belonging
- A Thriving Organization
 - Financial viability – Maintain a financially sustainable City for the provision, renewal and enhancement of City services, facilities and assets

3.0 2019 CORPORATE GREENHOUSE GAS INVENTORY

For the 2019 reporting year, the Province requires a survey to be completed and submitted to the Province by June 1, 2020. The survey information is contained within the 2019 CARIP Public Report (see Attachment 1). The survey includes a detailed description of notable corporate and community actions undertaken by the City to reduce greenhouse gas (GHG) emissions and notable actions or initiatives undertaken to prepare for adapting to climate change.

The following provides a brief overview of the City's progress towards meeting climate action goals and corporate emissions reductions.

In 2019, Burnaby City Council declared a Climate Emergency on September 9, with a commitment to update and accelerate climate action at the community and corporate levels and directed staff to prepare a second report on Climate Action Framework that would outline the first steps and actions required to progress towards the carbon pollution reduction targets endorsed by Council. The Climate Action Framework report will be advanced to Council in 2020.

Throughout 2019, the City has continued to make progress on its longstanding commitments towards sustainability and climate action. The City's Green Building Policy has continued to be advanced, with BC Energy Step Code requirements for Part 3 (large) buildings starting February 11, 2019 and Part 9 (small) residential buildings starting September 1, 2019. For projects seeking rezoning, Part 3 buildings are required

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to meet Step 3 of the Energy Step Code, or Step 2 with a low-carbon energy system and greenhouse gas limits, starting July 1, 2019. Council also committed to a public EV charging pilot; to date, the project has led to installation of 14 public charging ports across the City with further EV infrastructure to come. Alongside the EV infrastructure, the City developed a fee-for-charging policy, on a cost recovery basis. Council also committed to accelerate pedestrian infrastructure upgrades, with on-going capital commitments over the next decade, and approved public consultation on a new Transportation Plan that addresses community greenhouse gas emissions from vehicles.

Burnaby continues to plan for compact, complete communities in its Town Centres, advancing the development of master-planned communities meeting "LEED Neighbourhood Development" standards. These standards protect and enhance the natural environment while ensuring energy efficiency and a high quality of life for residents. New projects for 2019 include Grove Master Plan, Bosa Brentwood Master Plan, First Capital Brentwood Master Plan, and Grosvenor Brentwood Master Plan. Ongoing projects in 2019 include Sears Metrotown, Metropolis, Riverbend Business Park, Brentwood Master Plan (Phase 1 complete, Phase 3 under construction), Concord Brentwood (Phase 1 under construction), Gilmore Plan (Phase 1 under construction), Springer Master Plan, Southgate, and Phase 1 Lougheed Core Area Master Plan (under construction). Construction of a 90 unit affordable rental building at UniverCity, to Step 4 of the Energy Step Code overall and to Passivhaus standards above grade, is under construction. The Mayor's Task Force on Housing also issued its final report in 2019 with eighteen recommendations, three of which focus on a theme of 'create livable neighbourhoods'. Envisioned to be areas outside of town centres that contain a diversity of housing types and a range of amenities and services in areas accessible by transit and active transportation networks, these recommendations make a linkage between affordable housing and community development that also support climate action.

Burnaby continues to support low-carbon energy generation within the community. In 2019, the City partnered with Metro Vancouver to undertake a feasibility study of district energy using waste heat from the Waste to Energy facility located in Burnaby's Big Bend neighbourhood. The City has supported the development of a district energy system and biomass facility that will serve Simon Fraser University and UniverCity. The biomass facility was under construction in 2019. As previously noted, in accordance with the City's Green Building Policy, new Part 3 (large) buildings requiring rezoning are now subject to a two pathway compliance model that supports low carbon energy systems.

Burnaby continues to demonstrate its commitment to ecological integrity and protecting and enhancing ecosystems through community development. Notable projects in 2019 include the enhancement and restoration of over 1 kilometre of Fraser River and Sturgeon Slough shoreline at Riverbend Business Park and the first phase of riparian restoration at a new light industrial development on Still Creek. In Burnaby's parks,

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ongoing invasive species management programs target species of regional significance in high priority areas. In 2019, the City completed an inventory of invasive species on municipal boulevards and streets to support future management options. Invasive species management using best management practices continues to be a requirement of all City capital projects. Funds accrued in the Civic Tree Reserve Fund supported planting more than 550 boulevard standard trees in 2019, which contributes to ecosystem health and community resiliency.

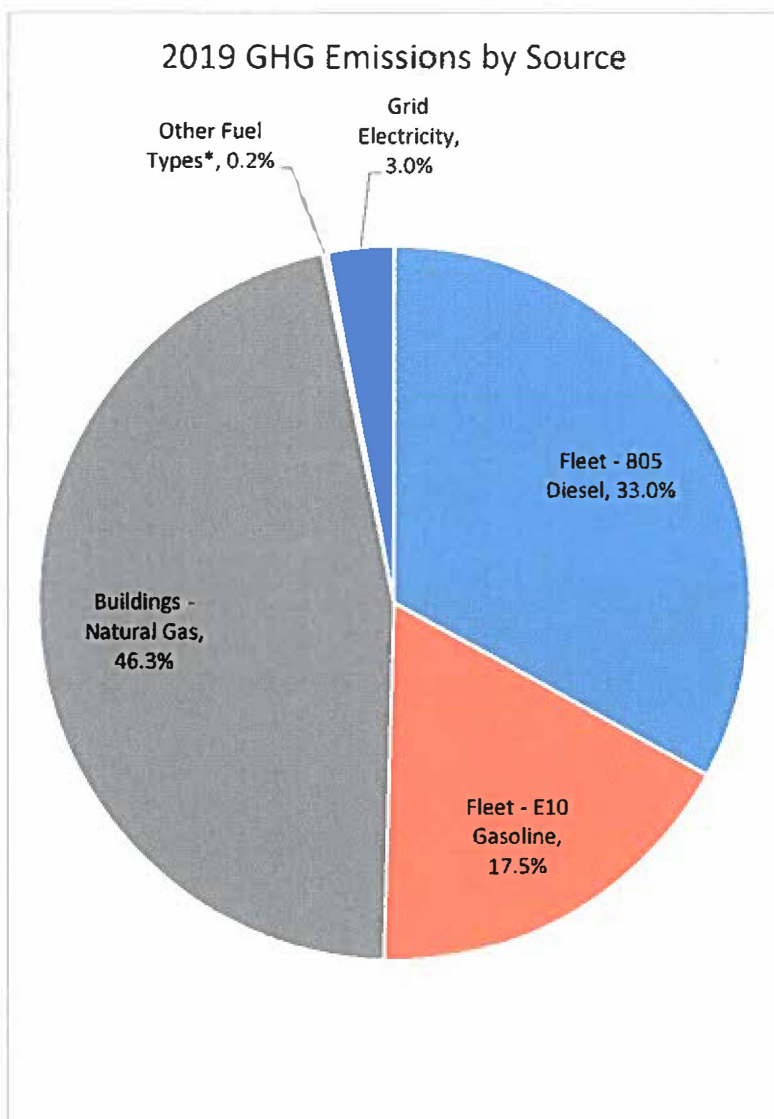
On the corporate side, Burnaby continues its commitment to energy efficiency and emissions reductions in its facilities, fleet and city infrastructure. Preliminary EV infrastructure was installed at City Hall and the Still Creek Works Yard, while detailed infrastructure studies were undertaken to support the long-term goal of Fleet electrification. Facilities began reviewing existing assets on a case by case basis to assess the feasibility of electrification. Major new facility projects incorporate a Sustainability Strategy that considers the feasibility of achieving net zero carbon and climate resiliency during preliminary planning and design. In 2019, the City completed conversion of all streetlights to LED, and moved on to replacing trail lights with LED.

On corporate emissions, the City is reporting on direct corporate emissions related to local government services in the following service areas: Administration and Governance; Drinking, Storm and Waste Water; Solid Waste Collection, Transportation and Diversion; Roads and Traffic Operations; Arts, Recreational and Cultural Services; and, Fire Protection.

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In 2019, Burnaby's corporate emissions were 10,843 tCO₂e or carbon dioxide equivalent tonnes. With 2,255 tCO₂e of offsets due to organic waste diversion, the total corporate emissions were 8,588 tCO₂e. The figure below shows the breakdown by source. Note that other fuel types, responsible for less than 1% of corporate emissions, include propane, light fuel oil, and renewable natural gas.



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4.0 CONCLUSION

Burnaby Council declared a Climate Emergency in September 2019. Following the declaration, cross-departmental staff teams have developed a community Climate Action Framework and a City Energy Strategy, which will be advanced in 2020 with implementation of Quick Start actions. The City anticipates, therefore, that in addition to measuring GHG emissions, in 2020 and beyond, the City and community will accelerate progress on charter commitments to meet corporate and community carbon neutral targets.



Dipak Dattani,
DIRECTOR CORPORATE SERVICES

DD:lt
Attachment

Copied to: Director Engineering
Director Finance
Director Parks, Recreation & Cultural Services
Director Planning & Building
City Clerk

2019 Climate Action Revenue Incentive Program (CARIP) Survey

May 6, 2020

2019 Climate Action Revenue Incentive Program (CARIP) Survey Overview

INTRODUCTION:

The 2019 CARIP survey highlights and celebrates local government climate action in British Columbia. Local governments are required to submit the 2019 CARIP/ Carbon Neutral Progress Survey by June 1, 2020.

SURVEY CONTENT:

- Section 1: Local Government Information
- Section 2: Narrative Focus
 - 2019 Corporate Climate Action
 - 2019 Community-wide Climate Action
 - 2019 Climate Change Adaptation Action
- Section 3: 2019 Carbon Neutral Reporting

Section 1 – Local Government Information

Name of Local Government:

- Burnaby, City of
- Metro Vancouver (Regional District)

Does your region have a Regional Growth Strategy (RGS):

- Yes

Population:

- 100,000+

Section 2 - Narrative Focus

Local government signatories to the B.C. Climate Action Charter have committed to taking climate action by:

- Working towards achieving corporate carbon neutrality;
- Measuring and reporting on their community-wide GHG emissions; and
- Creating complete, compact, energy-efficient communities.

A key part of the 2019 CARIP survey is to highlight and celebrate successful climate actions undertaken by local governments in British Columbia.

In 2019, what actions has your local government taken to support the creation of compact, complete, and energy efficient communities?

The City advanced planning and development of master planned communities and implementation of zoning policy in support of compact, higher density, complete and energy efficient communities in Burnaby's Town Centres. New projects for 2019 include: The Grove Master Plan, Bosa Brentwood Master Plan, First Capital Brentwood Master Plan, and Grosvenor Brentwood Master Plan. Ongoing projects in 2019 include: Sears Metrotown, Metropolis, Riverbend Business Park, Brentwood Master Plan (Phase 1 complete, Phase 3 under construction), Concord Brentwood (Phase 1 under construction) Gilmore Plan (Phase 1 under construction) Springer Master Plan, Southgate, Phase 1 Lougheed Core Area Master Plan (under construction).

2019 CORPORATE CLIMATE ACTION:

Corporate climate actions refer to actions that reduce the GHG emissions produced as a result of a local government's delivery of "traditional services", including fire protection, solid waste management, recreational/cultural services, road and traffic operations, water and wastewater management, and local government administration.

In 2019, when it comes to corporate climate action, did your local government undertake any of the following (PLEASE SELECT ALL THAT APPLY):

- Building and Lighting Actions
- Energy Generation Actions
- Greenspace Actions
- Planning Actions
- Solid Waste Actions
- Transportation Actions
- Water and Wastewater Actions

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When it comes to corporate Building and Lighting Actions, did your local government undertake any of the following in 2019 (PLEASE SELECT ALL THAT APPLY):

- New or upgraded energy-efficient lighting systems
- New or upgraded energy-efficient heating systems
- New or upgraded building envelope initiatives
- Upgrades to amenities in recreation facilities
- Studies related to building and/or lighting energy efficiency
- Other (PLEASE SPECIFY)

Please specify 'Other'

The City of Burnaby is a partner in an energy benchmarking pilot program called Building Benchmark BC (www.buildingbenchmarkbc.ca) that encourages voluntary benchmarking and disclosure of building energy performance over time. The program is based on the principle that building energy consumption must be measured before it can be managed. The City has committed to including key municipal buildings in the program.

When it comes to corporate Energy Generation Actions, did your local government undertake any of the following in 2019 (PLEASE SELECT ALL THAT APPLY):

- Solar power projects
- Heat recovery or heat reclamation projects
- Biomass or bio-gas projects
- Geo-exchange or geothermal projects
- Studies related to energy generation
- Other (PLEASE SPECIFY)

When it comes to corporate Greenspace Actions, did your local government undertake any of the following in 2019 (PLEASE SELECT ALL THAT APPLY):

- Tree planting
- Greenspace acquisition
- New or upgraded amenities in parks

CITY OF BURNABY 2019 CARIP SURVEY

- Invasive species management
- Plans or strategies related to greenspace
- Other (PLEASE SPECIFY)

When it comes to corporate Planning Actions, did your local government undertake any of the following in 2019 (PLEASE SELECT ALL THAT APPLY):

- Energy/Emissions Management Plan (New or Updated)
- Asset Management Plan (New or Updated)
- Corporate Climate Action Plan (New or Updated)
- Strategic Plan (New or Updated)

When it comes to corporate Solid Waste Actions, did your local government undertake any of the following in 2019 (PLEASE SELECT ALL THAT APPLY):

- Introduction, expansion or improvement of recycling initiatives at corporate facilities
- Introduction, expansion or improvement of composting initiatives at corporate facilities
- Communication or education for staff related to corporate solid waste initiatives
- Studies or research related to corporate solid waste initiatives
- Plans or strategies related to corporate solid waste initiatives

When it comes to corporate Transportation Actions, did your local government undertake any of the following in 2019 (PLEASE SELECT ALL THAT APPLY):

- Fleet replacement or upgrades
- New or improved electric vehicle initiatives
- New or improved active transportation infrastructure for staff
- Communication or outreach for staff related to corporate transportation initiatives
- New or improved public transportation initiatives for staff

CITY OF BURNABY 2019 CARIP SURVEY

When it comes to corporate Water and Wastewater Actions, did your local government undertake any of the following in 2019 (PLEASE SELECT ALL THAT APPLY):

- New or improved water or wastewater infrastructure
- Studies or research related to water conservation
- Plans or strategies related to water or wastewater
- Water reduction initiative(s)

As mentioned, a key part of the 2019 CARIP survey is to highlight and celebrate successful climate actions undertaken by local governments in British Columbia. This question provides local governments the opportunity to demonstrate leadership and innovative approaches to reduce corporate GHG emissions.

When it comes to the corporate climate action, please highlight up to three significant actions focused on reducing GHG emissions that your local government undertook in 2019:

Council declared a Climate Emergency on September 9, 2019, with a target of carbon neutral by 2050, and interim targets of a 45% reduction in carbon pollution by 2030 and a 75% reduction by 2040. In declaring a Climate Emergency, Council signaled their understanding of and commitment towards the climate crisis, the necessity of an energy transition, and their commitment to leadership.

Corporate action following the climate emergency declaration to date has included: development of a Climate Action Reserve and internal carbon price, planning for Fleet electrification, partnering on a regional energy benchmarking pilot using municipal buildings, and consideration of net zero options for new facilities during preliminary planning and design. The City continues work to improve energy efficiency and reduce emissions at existing Facilities through the BC Hydro Strategic Energy Manager Program, move more City services online to reduce waste, and continues to acquire greenspace. In 2019, a cross-departmental staff team engaged in development of a City Energy Strategy, to be advanced in 2020.

Corporate Action #2

The City of Burnaby prepared for and began fleet electrification with a focus on infrastructure upgrades. Work included conducting feasibility studies at two Fleet compound sites, the installation of initial charging infrastructure (two L2 charging stations) at one compound, and preparation for service upgrades at the second site to enable full electrification of 100 stalls and light-duty EV procurement going forward. Full Fleet electrification, including heavy-duty vehicles and equipment, will be phased in as part of the City Energy Strategy.

Corporate Action #3

The City of Burnaby completed conversion of all streetlights to LED, becoming the first municipality in Metro Vancouver to do so. The conversion of 11,600 streetlights reduces energy consumption by approximately 60 per cent and saves the City approximately \$750,000 a year in energy costs. The move is also expected to save \$900,000 in maintenance costs over 20 years. Conversion of the streetlights cost \$4.8M, which will be recovered in six years. Streetlight conversion is a key part of the city's longstanding, comprehensive plan to reduce energy consumption.

2019 COMMUNITY-WIDE CLIMATE ACTION:

Community-wide actions refer to actions that reduce GHG emissions across the community (i.e. actions not related to "traditional services" in corporate operations).

When it comes to community-wide climate action in 2019, did your local government undertake any of the following (PLEASE SELECT ALL THAT APPLY):

- Building and Lighting Actions
- Energy Generation Actions
- Greenspace Actions
- Planning Actions
- Solid Waste Actions
- Transportation Actions
- Water and Wastewater Actions
- Other Climate Actions (PLEASE SPECIFY)

Please specify 'Other Climate Actions'

Council declared a Climate Emergency with a target of carbon neutral by 2050, and interim targets for 2030 and 2040.

When it comes to community-wide Building and Lighting Actions, did your local government undertake any of the following in 2019 (PLEASE SELECT ALL THAT APPLY):

- New or upgraded energy-efficient lighting systems
- New or upgraded energy-efficient heating systems
- BC Energy Step Code related projects

Incentives/rebate programs related to energy-efficient building or lighting

Outreach, education or communication related to energy-efficient building or lighting

Other (PLEASE SPECIFY)

Please specify 'Other'

At UniverCity in Burnaby, a purpose-built rental building for graduate students and their families is under construction. The building has been designed to meet Step 4 of the Energy Step Code and above grade the building's energy performance should be equivalent to Passivhaus standards.

When it comes to community-wide Energy Generation Actions, did your local government undertake any of the following in 2019 (PLEASE SELECT ALL THAT APPLY):

Solar power projects

Heat recovery or heat reclamation projects

Landfill gas capture/utilization projects

Micro-hydro projects

Studies or research related to energy generation

Other (PLEASE SPECIFY)

Please specify 'Other'

The City has supported the development of a district energy system and biomass facility that will serve Simon Fraser University and UniverCity. The biomass facility was under construction in 2019.

Through the development review process and its green building policies, the City supports new buildings in larger developments that are energy efficient, considers opportunities for energy sharing and district energy and encourages low carbon energy systems.

When it comes to community-wide Greenspace Actions, did your local government undertake any of the following in 2019 (PLEASE SELECT ALL THAT APPLY):

Tree planting

Greenspace restoration or maintenance

Greenspace acquisition

- Invasive species management
- Plans or strategies related to greenspace
- Other (PLEASE SPECIFY)

Please specify 'Other'

The City finalized Burnaby's Town Centre Street Design Standards in 2019. Street Standards installation includes: separated sidewalks, cycle paths with permeable asphalt, street trees and rain gardens. The standards are implemented by developers in all large Town Centre development projects.

When it comes to community-wide Planning Actions, did your local government undertake any of the following in 2019 (PLEASE SELECT ALL THAT APPLY):

- Official Community Plan (New or Updated)
- Climate Action Plan (New or Updated)
- Regional Growth Strategy (New or Updated)
- New or updated bylaw(s) or zoning addressing climate issues
- Other (PLEASE SPECIFY)

Please specify 'Other'

The Mayor's Task Force on Housing issued its final report in 2019 with 18 recommendations. Three of these recommendations focus on a theme of 'create livable neighbourhoods', which are envisioned to be areas outside the Town Centres that contain a diversity of housing types and a range of amenities and services in areas accessible by transit and active transportation networks. Housing forms in these areas could include low-rise buildings with wood frame construction.

When it comes to community-wide Solid Waste Actions, did your local government undertake any of the following in 2019 (PLEASE SELECT ALL THAT APPLY):

- Introduction, expansion or improvement of recycling initiatives
- Introduction, expansion or improvement of composting initiatives
- Community clean-up initiatives
- General waste reduction initiative (including landfill diversion strategies)
- Outreach, education or communication related to solid waste

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When it comes to community-wide Transportation Actions, did your local government undertake any of the following in 2019 (PLEASE SELECT ALL THAT APPLY):

- New or improved active transportation infrastructure
- New or improved public transportation initiatives
- New or improved electric vehicle initiatives
- Outreach, education or communication related to transportation
- Plans or strategies related to transportation

When it comes to community-wide Water and Wastewater Actions, did your local government undertake any of the following in 2019 (PLEASE SELECT ALL THAT APPLY):

- Water restrictions
- Incentives/rebate programs related to water or wastewater
- Outreach, education or communication related to water or wastewater
- Studies or research related to water or wastewater
- Plans or strategies related to water or wastewater

As mentioned, a key part of the 2019 CARIP survey is to highlight and celebrate successful climate actions undertaken by local governments in British Columbia. This question provides local governments the opportunity to demonstrate leadership and innovative approaches to reduce community-wide GHG emissions.

When it comes to the community-wide climate action, please highlight up to three significant actions focused on reducing GHG emissions that your local government undertook in 2019:

Council declared a Climate Emergency on September 9, 2019 to acknowledge the urgent need to limit the impact of climate change on the health and well-being of residents of Burnaby, our environment and the economy, and to demonstrate understanding, commitment and leadership towards the climate crisis and the necessity for an energy transition. The declaration includes interim carbon pollution reduction targets of 45% by 2030, 75% by 2040 and carbon neutral by 2050, targets that align with the Intergovernmental Panel on Climate Change Special Report and regional targets.

Following the declaration, Council directed staff to prepare a Climate Action Framework to identify community-wide actions to accelerate emission reductions in Burnaby to reach the carbon neutral target. The Big Moves include resilient neighbourhoods, healthy ecosystems, mode shift to active

transportation and public transit, and zero emission buildings and vehicles. The Climate Action Framework will be brought forward to Council in 2020.

Community-Wide Action #2

The City of Burnaby has made it easier for residents to charge their electric vehicles by installing EV charging ports in 14 parking stalls located at six City facilities across the community. The charging ports are owned and operated by the City, which collects a fee based on an hourly pay-per-charge structure. The installation and City ownership of EV charging ports in the community demonstrates the City's commitment to encouraging equitable uptake of EVs and reducing greenhouse gas emissions in the community resulting from transportation.

While the EV charging ports became available for use early in 2020, planning and construction was completed in 2019. The selection of the 14 sites was part of a broader planning process that began with approximately 30 sites. Capital cost, anticipated use and equitable distribution for Burnaby residents were factors considered when selecting the sites. The City has committed funds to expand the number of city-owned EV charging ports at City facilities in 2020. Public EV charging will also be included at new and replacement community recreation facilities.

Community-Wide Action #3

The City of Burnaby is in the process of creating a new transportation plan that will establish a long-term vision for moving people, goods and services in the City, while meeting environmental, social, economic, and community development goals. With approximately 50% of community greenhouse gas emissions coming from transportation, a new transportation plan will play a critical role to reduce emissions and meet Burnaby's carbon reduction targets.

The vision, themes and goals for the new plan were established in Phase 1. In 2019, the City continued to progress on Phase 2 of the plan, developing draft Targets, Big Moves, Policies, and Networks for public consultation scheduled for 2020. A draft plan with actions and an implementation strategy will be prepared as part of the final phase, Phase 3.

As a result of the Phase 2 planning work, Council endorsed public engagement on three draft Targets for the new plan: Vision Zero – zero fatalities and serious injuries for users of the transportation system; Mode Shift – a significant transportation mode shift to transit and active transportation from 2030 to 2050; and Zero Emissions – emissions from transportation reduce to zero by 2050. The proposed Big Moves and Policies to achieve these targets are community focused with the aim of achieving a balanced transportation system that is accessible, safe, healthy, green, prosperous, and connected, and contributes to greenhouse gas reductions.

2019 CLIMATE PREPAREDNESS AND ADAPTATION ACTION:

This section of the CARIP survey is designed to collect information related to the types of climate impacts local governments are experiencing and how they are being addressed.

Please identify the climate impacts that are most relevant to your local government (PLEASE SELECT ALL THAT APPLY):

- Increased temperatures increasing wildfire activity
- Extreme weather events contributing to urban and overland flooding
- Changes to temperature and precipitation causing seasonal drought
- Warmer winter temperatures reducing snowpack
- Sea level rise and storms causing coastal flooding and/or erosion

In 2019, did your local government take any of the following actions in an effort to consider or address the impacts of climate change? (PLEASE SELECT ALL THAT APPLY)

- Emergency response planning
- Asset management
- Infrastructure upgrades
- Public education and awareness
- Strategic and financial planning
- Risk and vulnerability assessments
- Risk reduction strategies
- Official Community Plan policy changes

In 2019, did your local government partner with any of the following organizations to prepare for, and adapt to, a changing climate? (PLEASE SELECT ALL THAT APPLY)

- Adaptation to Climate Change Team (SFU)
- Columbia Basin Trust
- Community Emergency Preparedness Fund (UBCM)
- Federation of Canadian Municipalities

Fraser Basin Council

Pacific Institute for Climate Solutions (UVIC)

Other (PLEASE SPECIFY)

Please specify 'Other'

University of British Columbia.

As mentioned, a key part of the 2019 CARIP survey is to highlight and celebrate successful climate actions undertaken by local governments in British Columbia. This question provides local governments the opportunity to demonstrate leadership and innovative approaches to adapting to a changing climate.

When it comes to climate preparedness and adaptation actions, please highlight up to three significant actions/initiatives that your local government undertook in 2019:

The City of Burnaby is undertaking a nature based climate adaptation study of Byrne Creek. The lower reaches of Byrne Creek in the Big Bend area require dikes on both sides to protect from flooding and the elevation of these dikes have to be raised in the near future in response to a changing climate. Byrne Creek is also an important fish-bearing stream and dikes typically do not integrate well with natural streamside areas.

The study will explore alternative options for flood safety for Byrne Creek while also preserving and enhancing natural values. The City has retained a leading consultant from the Netherlands, specializing in nature-based solutions for flood management. The Fraser Basin Council and the University of British Columbia are project partners with the City. The project will involve systems analysis, workshops to develop options, computer modelling and simulations, and engagement with stakeholders and government agencies. The study was initiated in 2019.

Adaptation Action #2

The City of Burnaby continues to adapt urban forest management practices and operations to a changing climate. Tree and plant species for planting are selected based on what is proving most resilient as the climate changes. Forestry byproduct (wood chips) produced within the City is used to supply nutrients and retain moisture on existing and newly planted trees, while efficient reuse of this material reduces carbon emissions from transportation and disposal. The City is also finding ways to plant trees in groups instead of single boulevard trees for resiliency; co-benefits such as greater water absorption and lower surrounding temperatures also make communities healthier and benefit wildlife.

Adaptation Action #3

The City of Burnaby continues to upgrade dikes along the Fraser River to accommodate future sea level rise and larger flood events resulting from climate change. Ecological assessment informing environmentally sensitive dike design, along with best management practices for construction, are used to minimize and mitigate potential impacts to fish, wildlife, species-at-risk, and sensitive ecosystems. Habitat enhancements to streams and riparian areas offset any permanent impacts. In 2019, work focused on Reach 8.

Section 3: 2019 Carbon Neutral Reporting

Local governments are required to report on their progress in achieving their corporate carbon neutral goal under the B.C. Climate Action Charter. Working with B.C. local governments, the joint Provincial-UBCM Green Communities Committee has established a common approach to determining corporate carbon neutrality for the purposes of the Charter, including a Carbon Neutral Framework and supporting guidance for local governments on how to become carbon neutral.

2019 CARBON EMISSIONS

Did your local government measure corporate GHG emissions for 2019?

Yes

If your local government measured 2019 corporate GHG emissions, please report the number of corporate GHG emissions (in tonnes of carbon dioxide equivalent (tCO₂e)) from:

Service Delivery Type	2019 Corporate GHG Emissions
Services Delivered Directly by your Local Government	10843
Contracted Services	0

TOTAL A - CORPORATE GHG EMISSIONS (DIRECT + CONTRACTED) FOR 2019:

TOTAL A - CORPORATE GHG EMISSIONS (DIRECT + CONTRACTED) FOR 2019:

10843

2019 CARBON REDUCTIONS

To be carbon neutral, a local government must balance their TOTAL corporate GHG emissions generated in 2019 by one or a combination of the following actions:

Undertake Green Communities Committee-supported Option 1 Project(s)

Undertake Green Communities Committee-supported Option 2 Project(s)

Purchase carbon offsets from a credible offset provider

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If applicable, please report the 2019 GHG emissions reductions (in tonnes of carbon dioxide equivalent (tCO₂e)) being claimed from any of the following Option 1 GHG Reduction Projects:

Option 1 GHG Reduction Projects	2019 GHG Emissions Reductions
1A Energy Efficiency Retrofits	
1B Solar Thermal	
1C Household Organic Waste	2255
1D Low Emission Vehicles	
1E Avoided Forest Conversion	
1F Trenchless Technology	

TOTAL B - REDUCTIONS FROM ALL OPTION 1 PROJECTS FOR 2019:

TOTAL B - REDUCTIONS FROM ALL OPTION 1 PROJECTS FOR 2019:

2255

If applicable, please report the names and 2019 GHG emissions reductions (in tonnes of carbon dioxide equivalent (tCO₂e)) being claimed from Option 2 GHG Reduction Projects: N/A

If applicable, please report the name of the offset provider, type of project and number of offsets purchased (in tonnes of carbon dioxide equivalent (tCO₂e)) from an offset provider for the 2019 reporting year: N/A

TOTAL REDUCTIONS AND OFFSETS FOR 2019 (Total B+C+D):

2255

Corporate GHG Emissions Balance for 2019

Your local government's corporate GHG emissions balance is the difference between total corporate offsetable GHG emissions (direct + contracted emissions) and the GHG emissions reduced through Green Communities Committee Option 1 and Option 2 projects and/or the purchase of offsets.

CORPORATE GHG EMISSIONS BALANCE FOR 2019 = (Total A - (B+C+D))

8588

If your corporate GHG emissions balance is negative or zero, your local government is carbon neutral. CONGRATULATIONS!

GREEN COMMUNITIES COMMITTEE CLIMATE ACTION RECOGNITION PROGRAM:

The joint Provincial-UBCM Green Communities Committee is pleased to be continuing the Climate Action Recognition Program again this year. This multi-level program provides the Green Communities Committee with an opportunity to review and publicly recognize the progress and achievements of each Climate Action Charter (Charter) signatory.

Recognition is provided on an annual basis to local governments who demonstrate progress on their Charter commitments, according to the following:

Level 1 – Demonstrating Progress on Charter Commitments: For local governments who demonstrate progress on fulfilling one or more of their Charter commitments.

Level 2 – Measuring GHG Emissions: For local governments that achieve Level 1, who measure their corporate GHG emissions for the reporting year and demonstrate that they are familiar with their community's energy and emissions inventory (i.e. CEEI).

Level 3 – Accelerating Progress on Charter Commitments: For those local governments who have achieved Level 1 and 2 and demonstrate significant action (corporately or community-wide) in reducing GHG emissions in the reporting year (e.g. through undertaking a GHG reduction project, purchasing offsets, establishing a reserve fund).

Level 4 - Achievement of Carbon Neutrality: For local governments who achieve corporate carbon neutrality in the reporting year.

Based on your local government's 2018 CARIP Climate Action/Carbon Neutral Progress Survey, please check the Green Communities Committee Climate Action Recognition Program level that best applies:

- Level 1 – Demonstrating Progress on Charter Commitments
- Level 2 – Measuring GHG Emissions
- Level 3 – Accelerating Progress on Charter Commitments
- Level 4 - Achievement of Carbon Neutrality
- Don't know

Does your local government set aside funds in a climate reserve fund or similar?

- Yes