

ENVIRONMENT AND SOCIAL PLANNING COMMITTEE

*HIS WORSHIP, THE MAYOR
AND COUNCILLORS*

SUBJECT: 2018 CLIMATE ACTION REVENUE INCENTIVE PROGRAM REPORT

RECOMMENDATION:

1. THAT Council receive the report for information.

REPORT

The Environment and Social Planning Committee, at its meeting held on 2019 May 06, received and adopted the attached report providing information on the climate actions and corporate emissions reported in the 2018 Climate Action Revenue Incentive Program (CARIP) Report, and fulfilling the annual CARIP grant requirement to report publicly.

Respectfully submitted,

Councillor C. Jordan
Chair

Councillor J. Keithley
Vice Chair

Copied to:	City Manager Director Corporate Services Director Engineering Director Finance Director Parks, Recr. & Cultural Services Director Planning & Building
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COMMITTEE REPORT

TO: CHAIR AND MEMBERS
ENVIRONMENT AND SOCIAL PLANNING
COMMITTEE

DATE: 2019 April 29

FROM: DIRECTOR CORPORATE SERVICES

FILE:
Reference:

SUBJECT: 2018 CLIMATE ACTION REVENUE INCENTIVE PROGRAM REPORT

PURPOSE: To inform Council of the climate actions and corporate emissions reported in the 2018 Climate Action Revenue Incentive Program (CARIP) Report, and fulfill the annual CARIP grant requirement to report publicly.

RECOMMENDATION:

1. **THAT** The Committee forward this report to Council 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 and 2017 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 publicly on their plan and progress toward meeting their climate action goals, including progress toward carbon neutrality.

The purpose of this report is to inform Council of the climate actions and corporate emissions reported in the 2018 Climate Action Revenue Incentive Program (CARIP) Report, and fulfill the annual CARIP grant requirement to report publicly.

2.0 POLICY SECTION

Goal

- 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 2018 CORPORATE GREENHOUSE GAS INVENTORY

For the 2018 reporting year, the province requires a survey to be completed and submitted to the Province by June 1, 2019. The survey information is contained within the 2018 CARIP Public Report (see [Attachment #1](#)).

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

In 2018, Burnaby continued to make progress on its longstanding commitments towards sustainability and climate action. Notably, the City has advanced implementation under both the Burnaby Environmental Sustainability Strategy and the Burnaby Community Energy and Emissions Plan, approved in 2016, with Green Buildings and Electric Vehicle Policy. The Bylaw amendment requiring EV charging in all required parking spaces for new dwellings (single and multi-family) came into effect in 2018, and public EV charging is being planned and designed for new public facilities such as the South Burnaby Ice Arena and other facilities across the City.

Burnaby also 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. Projects include Sears Metrotown, Riverbend Business Park, Concord Brentwood, Gilmore Place, Southgate, and Phase 1 of the Lougheed Core Area Master Plan (under construction). In addition, addressing diverse housing needs through Mayor's Task Force on Community Housing would improve, amongst

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other things, walkability and resource efficiency. Rezoning for a 90 unit affordable rental building at UniverCity, to be built to Passivhaus standards, has been passed.

Burnaby continues to support low-carbon energy generation within the community. In 2018, Council gave final approval of the SFU/UniverCity biomass district energy (DE), expected to reduce campus and community GHG emissions at SFU by 80%. Burnaby continues to work with developers to enable the use of DE systems and energy sharing, as well as future-proofing for DE integration, including at the Gilmore Station and Lougheed developments.

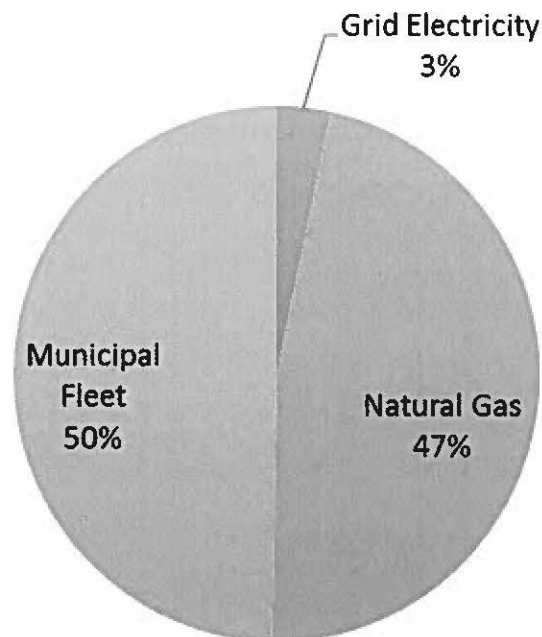
Burnaby continues to demonstrate its commitment to the ecological integrity and climate adaptation of its parks and waterways through extensive greenspace actions, including new parks planning and development, environmentally sensitive dyke design, and riparian enhancement projects. Burnaby's actions emphasize integrated planning and design to meet multiple sustainability goals, demonstrated by completion of the Willingdon Linear Park. Thirteen blocks along the east side of Willingdon Ave between Brentwood Town Centre and Hastings Street now include a multi-use greenway for walking, cycling and transit users, with an enhanced urban forest, pocket parks, public art and rest areas.

On the corporate side, Burnaby continues its commitment to energy efficiency and emissions reductions in its facilities. The City's LED streetlight conversion program has been completed through Phase 4, with 100% conversion of Burnaby's roadway lights. Work is now underway on Phase 5, conversion of pedestrian and trail lighting to LED. The City's Green Team continues to implement innovative staff Workplace Conservation Awareness campaigns, supporting energy, water and resource conservation and staff well-being. Campaigns have included the Wake-on-LAN, Vacation Ready Checklist and a Commuter Challenge.

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. Procedures to include contractor emissions are under development.

In 2018, Burnaby's corporate emissions were 10,769 tCO₂e or carbon dioxide equivalent tonnes. Based on Metro Vancouver's estimates of 2,455 tCO₂e of offsets due to City's organic waste diversion, the estimated total corporate emissions were 8,314 tCO₂e. These

2018 GHG Emissions by Source



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estimates will be finalized and reflected in the survey before it is submitted to the Province. The figure on previous page shows the breakdown by source.

4.0 CONCLUSION

In 2018, the City has continued to make progress on its longstanding commitments towards sustainability and climate action both from a community-wide and corporate perspective. Burnaby's 2018 CARIP-reported corporate emissions were reduced by 2,455 tCO₂e due to the City's participation in municipal organic waste diversion, as estimated by Metro Vancouver. The City's estimated total 2018 CARIP corporate emissions were 8,314 tCO₂e. These estimates will be finalized and reflected in the survey before it is submitted to the Province. Based on the Green Communities Committee Climate Action Recognition Program, the City is at Level 2 – Measuring GHG Emissions.

Providing this public report on the City's climate action progress supports the City's CARIP grant application and the related commitments under the Carbon Neutral Framework.



Dipak Dattani
DIRECTOR CORPORATE SERVICES

DD:dd

Attachment

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



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Climate Action Revenue Incentive (CARIP) Public Report for 2018

Local Government: City of Burnaby

The City of Burnaby has completed the 2018 Climate Action Revenue Incentive Program (CARIP) Public Report as required by the Province of BC. The CARIP report summarizes actions taken in 2018 and proposed for 2019 to reduce corporate and community-wide energy consumption and greenhouse gas emissions (GHG) and reports on progress towards achieving carbon neutrality.

2018 BROAD PLANNING ACTIONS

Broad Planning Actions

Broad Planning refers to high level planning that sets the stage for GHG emissions reductions, including plans such as Official Community Plans, Integrated Community Sustainability Plans, Climate Action Plans or Community Energy Emissions Plans. Land use planning that focuses on Smart Growth principles (compact, complete, connected, and centred) plays an especially important role in energy and GHG reduction.

Q 6 + Q 7 Community-Wide Broad Planning Actions Taken in 2018 + Additional Actions	
	Continued to advance preparatory work for Official Community Plan update.
	Continued to implement zoning policy in support of compact, higher-density, complete communities, and incorporating higher standards of environmental performance in Burnaby's four Town Centres.
	Advanced planning and development of master-planned communities meeting "LEED Neighbourhood Development" standards for protecting and enhancing the overall health, natural environmental and quality of life, including Sears Metrotown, Metropolis Master Plan, Riverbend Business Park, Brentwood Master Plan, Concord Brentwood, Gilmore Place, Springer Master Plan, Dawson Master Plan, Southgate, Phase 1 Lougheed Core Area Master Plan (under construction).
	Initiated review of Phase 2 of Lougheed Core Area Master Plan, including development of a transit plaza featuring public outdoor space, public art and celebrating transit.
	Initiated review of Phase 2 of Gilmore Place, including development of a Carlton plaza featuring public outdoor space and public art.
Q 8 Community-Wide Broad Planning Actions Proposed for 2019	
	Continue to advance initiatives listed above.
	Address diverse housing needs through Mayor's Task Force on Community Housing, which would include, amongst other things, improving walkability and resource efficiency.
	Completion of Phase 1 of Brentwood Master Plan, including a civic square with public art, seating and interactive fountain; transit oriented commercial and two residential towers with over 1100 units, including 300 rental units.
	Begin 5 year construction of Phase 1 of Gilmore Place, including public plaza at Gilmore Station; transit oriented commercial and three residential towers with more than 1500 units.
	Begin Construction of Phase 1b Concord Brentwood, including public staircase/elevator with public art, restoration of Stickleback Creek riparian area and four residential towers in Phase 1 with 1,800 units.

Q 9 + Q 10 Corporate Broad Planning Actions Taken in 2018 + Additional Actions	
	Completion of Willingdon Linear Park: 13 blocks along east side of Willingdon Av between Brentwood Town Centre and Hastings Street; multi-use greenway for walking, cycling and transit users, with enhanced urban forest, pocket parks, public art, walking trail, bike lane and rest areas.

	Continue implementing corporate actions including the following Green Team initiatives: Office Stationary Sustainability Benefits, Sweater Day, Paper Cuts Don't Have to Hurt, Earth Hour, Wake-On-LAN, We Love Water, Working by Daylight, Vacation Ready Checklist, Enhanced Employee Transit Incentive Program, Bike to Work Week, Commuter Challenge, Environment Week.
	Implemented the rollout of new MFD equipment at all City facilities; provided training/education to staff regarding overall printing volume reductions and sustainability metrics. Completed Phase 2 of the project to review printer usage and proximity to departments, and overall equipment rationalization.
	Completed Fire Hall conversions and the final implementation phase of the Fuel Management System which includes the Laurel Street transition to the Still Creek Works Yard.
Q 11 Corporate Broad Planning Actions Proposed for 2019	
	Ongoing messaging of initiatives will continue to focus on environmental reductions, and include a "Wear your Scarf/Toque/Sweater Day"; a refreshed Stair Riser Slogan program for City Hall civic facilities to reduce elevator usage, and focus on healthy activities; an Indoor Water Conservation Tips Sheet; a "How to Grow" Drought Tolerant Plants workshop; additional focus on paper usage reduction with the One Ream Less Paper campaign; a Bike Workshop; Food Safety and Food Waste Reduction Tips; and Earth Hour.
	Additional focus on reporting from Fuel Management System.

Broad Planning		
Q 12 What is (are) your current GHG reduction target(s)?	(Please provide details here) Burnaby's CEEP provides dual targets: a 5% reduction by 2041 by the City Only, and a 30% reduction by 2041 by the City and Others.	
Q 13 Are you familiar with your local government's community energy and emissions inventory (e.g. CEEI or another inventory)?		Yes
Q 14 What plans, policies or guidelines govern the implementation of climate mitigation in your community?	<ul style="list-style-type: none"> Community Energy and Emissions Plan Integrated Community Sustainability Plan Community- Wide Climate Action Plan Official Community Plan Regional Growth Strategy Do not have a plan Other: 	Yes Yes No Yes Yes No
Q 15 Does your local government have a corporate GHG reduction plan?		No

2018 BUILDING AND LIGHTING ACTIONS

Building and Lighting Actions

Low-carbon buildings use the minimum amount of energy needed to provide comfort and safety for their inhabitants and tap into renewable energy sources for heating, cooling and power. These buildings can save money, especially when calculated over the long term. This category also includes reductions realized from energy efficient street lights and lights in parks or other public spaces.

Q 16 + Q 17 Community-Wide Building and Lighting Actions Taken in 2018 + Additional Actions	
	Approved green building policy with requirements for new large (Part 3 BCBC) buildings for improved energy efficiency including BC Energy Step Code and encouraging low-carbon energy systems. www.burnaby.ca/greenbuildings
	Continued to work with developers to achieve higher standards of environmental performance including energy efficiency and low-carbon systems, and ecosystem protection and enhancement, in new developments, through development review process.
	Completed construction of a 22 storey tower in Brentwood Town Centre with LEED Certification.
	Advanced rezoning of a 90 unit affordable rental building at UniverCity, to be built to Passivhaus standards.
	Developed communications strategy for new private developments, to inform residents of environmental benefits of buildings.
Q 18 Community-Wide Building and Lighting Actions Proposed for 2019	
	Development of green building policy for smaller (Part 9 BCBC) buildings including Energy Step Code.
	Continue to work with developers to achieve higher standards of environmental performance including energy efficiency and low-carbon systems, and ecosystem protection and enhancement, in new developments, through development review process.
Q 19 + Q 20 Corporate Building and Lighting Actions Taken in 2018 + Additional Actions	
	Design of South Burnaby Ice Arena, including stub-out for future District Energy connection for future community centre; EV charging in 6 stalls (and additional 22 stalls roughed-in); and incorporation of various energy efficiency and green building features.
	Completed Phase (4) of LED streetlight conversion project (all roadway lighting completed).
	Completion of staff-oriented energy conservation awareness campaigns to encourage them to conserve energy at home and at work, including vacation readiness, Stay Bright by Daylight, and Indoor Water Conservation.
	Facility LED conversion lighting program to 10 civic facilities resulting in 773,000 KWh annual savings.
Q 21 Corporate Building and Lighting Actions Proposed for 2019	
	Construction of South Burnaby Ice Arena, including incorporation of various green building features and EV charging.
	Design of new facilities and buildings, including reviewing opportunities for energy efficiency, low carbon and other green building/site systems: Willingdon Heights (new community centre); CG

	Brown pool and Burnaby Lake ice arena; Cameron Recreation Centre (new centre and library); Confederation Recreation Centre (new gymnasium and fitness centre).
	Construction of new Laurel Street Works Yard, including EV charging stations, remediation of site contamination, native plant landscaping, and green roof.
	Phase 5 LED lighting conversion for pedestrian and trail lighting within the City.

Building and Lighting

The Province has committed to taking incremental steps to increase energy-efficiency requirements in the BC Building Code to make buildings net-zero energy ready by 2032. The BC Energy Step Code--a part of the BC Building Code--supports that effort

Q 22 Is your local government aware of the BC Energy Step Code?	Yes
Q 23 Is your local government implementing the BC Energy Step Code?	Yes

P5 2018 ENERGY GENERATION ACTIONS

Energy Generation Actions

A transition to renewable or low-emission energy sources for heating, cooling and power supports large, long-term GHG emissions reductions. Renewable energy including waste heat recovery (e.g. from biogas and biomass), geo-exchange, micro hydroelectric, solar thermal and solar photovoltaic, heat pumps, tidal, wave, and wind energy can be implemented at different scales, e.g. in individual homes, or integrated across neighbourhoods through district energy or co-generation systems.

Q 24 + Q 25 Community-Wide Energy Generation Actions Taken in 2018 + Additional Actions	
	Advanced rezoning of Gilmore Station mixed use development, to include District Energy, including energy-sharing component resulting in lower residential and commercial carbon emissions.
	Completed approval of Master Plan and Phase 1 of Lougheed development, including future-proofing for District Energy (DE-ready).
	Final development approval of new Corix biomass Neighbourhood Energy Utility at SFU.
	Continuing to investigate district energy and low carbon energy systems for Brentwood Mall and Brentwood Concord master plan development sites.
Q 26 Community-Wide Energy Generation Actions Proposed for 2019	
	Initiate construction of approved Gilmore Station mixed use development, to include District Energy, including energy-sharing component resulting in lower carbon emissions.
	Initiate construction of approved Lougheed Phase 1 development to include future-proofing for District Energy (DE-ready).

	Construction of new Corix biomass Neighbourhood Energy Utility at SFU.
	Continuing to investigate district energy and low carbon energy systems for Brentwood Mall and Brentwood Concord master plan development sites.

Energy Generation	
Q 30 Is your local government developing, or constructing a <ul style="list-style-type: none"> • district energy system • renewable energy system • none of the above 	No No
Q 31 Is your local government operating a <ul style="list-style-type: none"> • district energy system • renewable energy system • none of the above 	No No
Q 32 Is your local government connected to a district energy system that is operated by another energy provider?	Yes
Q 33 Are you familiar with the 2018 List of Funding Opportunities for Clean Energy Projects Led by First Nations and Local Governments?	Yes

2018 GREENSPACE/NATURAL RESOURCE PROTECTION ACTIONS

Greenspace Actions

Greenspace/Natural Resource Protection refers to the creation of parks and greenways, boulevards, community forests, urban agriculture, riparian areas, gardens, recreation/school sites, and other green spaces, such as remediated brownfield/contaminated sites as well as the protection of wetlands, waterways and other naturally occurring features.

Q 34 + Q 36 Community-Wide Greenspace Actions Taken in 2018 + Additional Actions (Q 35 below Q 41)	
	Continued to review greenspace and riparian protection and enhancement opportunities as part of development review process.
	Completed construction of a set-back dyke along Fraser River, as part of industrial development (Riverbend Business Park), incorporating retention of existing trees and natural shoreline; public greenway; and restoration and planting of new riparian habitat along Fraser River and Sturgeon Slough.
	Continued installation of Town Centre Street Standards, including separated sidewalks, cycle paths (with permeable asphalt), street trees and rain gardens, implemented by developers in all new large developments in town centres. 2200 m2 of rain gardens installed so far (2014-2018).

	Continued implementation of stormwater management requirements in new large development; detention of 50% of flows compared to pre-development condition; BMPs for on-site retention and water quality.
	Advanced design of a naturalized stream as part of a park, using rainwater runoff from road drainage and developed areas, in Southgate master plan site.
Q 37 Community-Wide Greenspace Actions Proposed for 2019	
	Begin construction of enhancement of aquatic and riparian habitat in Stickleback Creek as part of a master-planned development in Brentwood Town Centre (Concord Brentwood).
	Begin construction of a set-back dyke along Fraser River west of Byrne Creek, incorporating retention of existing trees and natural shoreline; public access; restoration and fish access improvements in Glen Lyon Creek and provision of new off-channel habitat along Fraser River.
	Continue to incorporate more native plants in Town Centre Street Standards with new development. 2400 m ² of rain gardens planned for 2019.
	Finalize Town Centre Street Standards engineering standards and continue to implement.

Q 38 + Q 39 Corporate Greenspace Actions Taken in 2018 + Additional Actions	
	Started use of beet juice and brine to reduce salt applied to roadways in Parks.
	Working toward Audubon Certification program for city-wide golf courses – site evaluation, water conservation and quality, wildlife and habitat, community engagement.
	Start using Civic Tree Reserve fund to plant “net new” trees, coordinated with Capital Plans (curb/gutters with trees, and in areas that don’t already have trees). Ongoing tree planting in Parks and golf courses.
	Review of Burnaby Mountain Conservation Area and Deer Lake park flora/fauna terrestrial habitats, watercourses, summary of habitat types, along with recommendations for protection, areas for improvement and management and general mapping.
Q 40 Corporate Greenspace Actions Proposed for 2019	
	Continued implementation of ongoing initiatives listed above.
	Planned inventory and management plan for regional priority plant species including Japanese Knotweed and Giant Hogweed on City owned lands outside of Parks.
	Planned improvements for fish passage for creeks, including Stoney Creek Tributary 3 culvert upgrade; Byrne Creek erosion control, riparian enhancement and daylighting.
	Along with proposed re-modeling of Kensington Pitch n' Putt golf course, incorporate significant habitat enhancement.

Greenspace	
Q 41 Does your local government have urban forest policies, plans or programs?	Yes
Q 35. Does your local government have policies, plans or programs to support local food production?	No

2018 SOLID WASTE ACTIONS

Solid Waste Actions

Reducing, reusing, recycling, recovering and managing the disposal of the residual solid waste minimizes environmental impacts and supports sustainable environmental management, greenhouse gas reductions, and improved air and water quality.

Q 42 + Q 43 Community-Wide Solid Waste Actions Taken in 2018 + Additional Actions	
	Implemented a successful pilot project to reduce human-wildlife interactions with bear-resistant waste receptacles at apartment buildings.
	Ongoing support of Metro Vancouver's "Love Food Hate Waste" campaign to reduce unnecessary food waste through outreach and communication
Q 44 Community-Wide Solid Waste Actions Proposed for 2019	
	Continue implementation of ongoing initiatives listed above.
	Wider program for bear-resistant waste receptacles will be implemented with receptacles in bear-prone areas.
	Expanding materials collected at Eco-Centre to include other flexible plastic packaging and extending Eco-Centre hours to increase opportunities for recycling.
	Install additional 150 3 stream streetscape recycling & garbage receptacles to the current 200 receptacles with an option of adding additional 200 units.
	Amend the Solid Waste and Recycling Bylaw to reflect program changes, rates and penalties for non-compliance.
	Undertake planning for waste diversion from demolition and land clearing activities from residential, commercial and institutional facilities.

Q 45 + Q 46 Corporate Solid Waste Actions Taken in 2018 + Additional Actions	
	Expansion of organics recycling program to include all libraries and art galleries.
	Ongoing re-use of asphalt and concrete in public works projects.
	Completed roll-out of Managed Print Services implementation for multifunction devices and printers in all City facilities. Measured sustainability metrics including GHG, energy and solid waste. Provided awareness education and training to City staff.
	Ongoing AVL/Telematics software installation to increase efficiencies in waste collection, contamination management and enhanced fleet maintenance.
Q 47 Corporate Solid Waste Actions Proposed for 2019	
	Use AVL / Telematics software programs in to the multi-family and commercial solid waste and recycling collection fleet to increase efficiencies in collection, contamination management and enhanced fleet maintenance.

Solid Waste	
Q 48 Does your local government have construction and demolition waste reduction policies, plans or programs?	No
Q 49 Does your local government have organics reduction/diversion policies, plans or programs?	Yes

2018 TRANSPORTATION ACTIONS

Transportation Actions

Transportation actions that increase transportation system efficiency emphasize the movement of people and goods, and give priority to more efficient modes, e.g. walking, cycling and public transit, can contribute to reductions in GHG emissions and more livable communities.

Q 50 + Q 51 Community-Wide Transportation Actions Taken in 2018 + Additional Actions	
	Bylaw amendment requiring EV charging in all required parking spaces for new dwellings (single and multi-family). www.burnaby.ca/ev
	Transportation Plan Update: completion and Council adoption of Phase 1; initiated Phase 2 (technical analysis, networks, policies and actions)
	Development of new trails for cycling and pedestrians, including Rumble Street and Willingdon Linear Park; initiated a program to install 38 sidewalk curb ramps at various locations throughout the City to increase the accessibility of existing sidewalks; installation of new bus shelters to increase comfort for transit users.
	The Cities of Burnaby and New Westminster collaborated with the New West Walkers Caucus to host a 5-week walking challenge in the spring of 2018. The Walk30 Burnaby New West Challenge encouraged participants to walk 30 minutes each day for a 5-week period. Approximately 3300 people took part in the challenge, including school children in 134 classes. The aim of the project were to promote walking culture, increase awareness of the benefits of walking (mental and physical health benefits, reduced environmental impact (emissions), and reduced traffic congestion) and increase physical activity levels in both communities.
	Reduced parking supply requirements in purpose-built rental developments and rental only zones, to support affordability and reduced car ownership.
Q 52 Community-Wide Transportation Actions Proposed for 2019	
	Transportation Plan Update: advance Phase 2.
	Finalize Town Centre Street Standards (separated sidewalks, cycle paths, street trees, rain gardens) and continue to implement; install Gilmore Overpass bike lane; continue installation of sidewalk curb ramps (about 95) at various locations throughout the City to increase the

	accessibility of existing sidewalks; continue installation of new bus shelters to increase comfort for transit users.
	Undertake review of opportunities for bike share system.
	Continue support of 5 week Walking Challenge, with other partners taking on lead role to maintain and promote walking culture in Burnaby and New West.
	Consider requirements for EV charging in new commercial and institutional development.

Q 53 + Q 54 Corporate Transportation Actions Taken in 2018 + Additional Actions	
	Undertook fuel management system to track/monitor fuel use for efficiency improvements, in tank truck and Still Creek fuel cells.
	Completed implementation of AVL telematics in nearly 500 vehicles and pieces of equipment, involving tracking idling, driving behaviour, route optimization, efficiencies in customer response.
	Approval of pilot project to install EV charging in select public facilities in 2019.
	Ongoing participation in Bike to Work Week and Commuter Challenge events.
Q 55 Corporate Transportation - Actions Proposed for 2019	
	Continue to address findings from telematics program for fleet optimization and review broader opportunities for right sizing, improvements in efficiency and fuel switching.
	Expansion of eligibility for employee transit pass program to increase participation.
	Implementation of pilot project to install EV charging in select public facilities.

Transportation	
Q 56 Does your local government have policies, plans or programs to support: <ul style="list-style-type: none"> • Walking • Cycling • Transit Use • Electric Vehicle Use • Other (please specify) 	Yes Yes Yes Yes
Q 57 Does your local government have a Transportation Demand Management (TDM) strategy (e.g. to reduce single-vehicle occupancy trips, increase travel options, provide incentives to encourage individuals to modify travel behaviour)?	Yes
Q 58 Does your local government integrate its transportation and land use planning?	Yes

2018 WATER AND WASTEWATER ACTIONS

Water and Wastewater Actions

Managing and reducing water consumption and wastewater is an important aspect of developing a sustainable built environment that supports healthy communities, protects ecological integrity, and reduces GHG emissions.

Q 59 + Q 60 Community-Wide Water and Wastewater Actions Taken in 2018 + Additional Actions	
	Implemented and enforced watering restrictions based on Metro Vancouver's Drinking Water Conservation Plan (DWCP), with online resources and print material for residents, commercial businesses, parks and schools. In 2018, the City issued 300 warning letters and 7 tickets.
	Since 2016 all new residential development required to be water meter-ready (expansion of requirement for ICI only). Participated with Metro Vancouver on a residential end use study to quantify water used in different applications in residences.
	Implemented outreach education for Metro Vancouver's Drinking Water Conservation Plan and "we love water" campaign through community events and lunch and learn sessions.
	Presented six H2Whoa Plays (Dreamrider Productions) focusing on water conservation education through song, story and comedy to various elementary schools.
	BC Drinking Water Week was proclaimed by the Mayor on May 6-12 and celebrated through social media and the City's website.
Q 61 Community-Wide Water and Wastewater Actions Proposed for 2019	
	Continue to implement watering restrictions and water conservation.
	Continue to implement water-meter-ready requirements in new development.
	Ongoing outreach education on water conservation tools i.e. rain barrels, water efficient appliances, and water savings kits.
Q 62 + Q 63 Corporate Water and Wastewater Actions Taken in 2018 + Additional Actions	
	Ongoing water conservation in golf course management through improved irrigation practices, improved soil management, and best practices planning.
	Ongoing irrigation programs in parks areas to reduce water consumption (such as dripline irrigation, watering bags for trees and bark mulch).
	Investigating use of groundwater for irrigation at City facilities in place of potable water.
	Continue to implement annual water conservation program in City facilities to replace old fixtures with water saving versions.
	Continued existing combined sewer separation program at a rate of 1.5% per year of the existing inventory.
Q 64 Corporate Water and Wastewater Actions Proposed for 2019	
	Continue implementation of ongoing initiatives listed above.

Water Conservation

Q 65 Does your local government have water conservation policies, plans or programs? Yes

2018 CLIMATE CHANGE ADAPTATION ACTIONS

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.

Q 66 Please identify the THREE climate impacts that are most relevant to your Local Government.

- Warmer winter temperatures reducing snowpack
- **Changes to temperature and precipitation causing seasonal drought**
- Heatwaves impacting population health
- Increased temperatures increasing wildfire activity
- **Increased temperatures affecting air quality**
- Changing temperatures influencing species migration and ecosystem shifts
- Changing temperatures influencing ecosystem shifts
- **Extreme weather events contributing to urban and overland flooding**
- Sea level rise and storms causing coastal flooding and/or erosion

Other (please specify):

Q 67 In 2018 has your local government addressed the impacts of a changing climate using any of the following?

Risk and Vulnerability Assessments	Yes
Risk Reduction Strategies	Yes
Emergency Response Planning	Yes
Asset Management	Yes
Natural/Eco Asset Management Strategies	No
Infrastructure Upgrades (e.g. stormwater system upgrades)	Yes
Beach Nourishment Projects	No
Economic Diversification Initiatives	No
Strategic and Financial Planning	No
Cross-Department Working Groups	No
Official Community Plan Policy Changes	No
Changes to Zoning and other Bylaws and Regulations	No
Incentives for Property Owners (e.g. reducing storm water run-off)	No
Public Education and Awareness	Yes

Research	No
Mapping	No
Partnerships	Yes
Other (please specify):	

Q 68 Climate Change Adaptation Actions Taken in 2018

Please elaborate on key actions and/or partnerships your local government has engaged in to prepare for, and adapt to a changing climate. Add links to key documents and information where appropriate.

	Continued to implement drought tolerant species in landscaping, and irrigation with water conservation in parks and golf courses
	Finalized design for Fraser River Reach 8 dyke upgrades and determined riparian and in-stream salmonid enhancement compensation project.
	Completed Big Bend master drainage plan which considers climate change.
	Ongoing participation in Lower Mainland Flood Management Strategy with Fraser Basin Council, considering flood risks with climate change.

Q 69 Climate Change Adaptation Actions Proposed for 2019

	Continue dyke upgrades along Fraser River to address climate change sea level projections. Phase 1 of Reach 8 upgrade works to begin.
	Study of Byrne Creek dykes to incorporate climate change projections into design and enhance riparian areas and fish habitat.
	Continue to utilize results of Master Drainage plans for Still Creek and Big Bend areas, incorporating climate change projections, in future capital planning.
	Work with Metro Vancouver to develop a Still Creek Brunette Drainage Area Flood Strategy.

Q 70 For more information please contact

	Ms. Kimberly Wong, Operations Engineer Roads Drainage Asset Management
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Indicators of Climate Change for British Columbia	Haven't Used/Useful/Not Useful
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Plan2Adapt	Haven't Used / <u>Useful</u> /Not Useful
Climate Projections for Metro Vancouver	Haven't Used / <u>Useful</u> /Not Useful
Climate Projections for the Capital Region	Haven't Used / <u>Useful</u> / <u>Not Useful</u>
Climate Projections for the Cowichan Valley Regional District	Haven't Used /Useful/ <u>Not Useful</u>
Province of BC's BC Adapts Video Series	<u>Haven't Used</u> /Useful/Not Useful
Preparing for Climate Change: Implementation Guide for Local Governments	Haven't Used / <u>Useful</u> /Not Useful
Public Infrastructure and Engineering Vulnerability Committee's (PIEVC)	Haven't Used / <u>Useful</u> /Not Useful
Sea Level Rise Adaptation Primer	<u>Haven't Used</u> / <u>Useful</u> /Not Useful
BC Regional Adaptation Collaborative Webinars	Haven't Used / <u>Useful</u> /Not Useful
Retooling for Climate Change	Haven't Used / <u>Useful</u> /Not Useful
Water Balance Model	Haven't Used /Useful/ <u>Not Useful</u>
Water Conservation Calculator	Haven't Used / <u>Useful</u> /Not Useful
Funding:	
National Disaster Mitigation Program (NDMP)	Haven't Used / <u>Useful</u> /Not Useful
Community Emergency Preparedness Fund (CEPF)	Haven't Used / <u>Useful</u> /Not Useful
Municipalities for Climate Innovation Program (MCIP)	Haven't Used / <u>Useful</u> /Not Useful
Climate Adaptation Partner Grants (FCM)	Haven't Used / <u>Useful</u> /Not Useful
Infrastructure Planning Grants (MAH)	Haven't Used / <u>Useful</u> /Not Useful
Federal Gas Tax Fund	Haven't Used / <u>Useful</u> /Not Useful

2018 OTHER CLIMATE ACTIONS

Other	
Q 74 Are you familiar with the Community Lifecycle Infrastructure Costing Tool (CLIC) ?	No
Q 75 Is your local government using the CLIC tool?	No

Programs, Partnerships and Funding Opportunities

Local governments often rely on programs, partnerships and funding opportunities to achieve their climate action goals. Please share the names of programs and organizations that have supported your local government's climate actions by listing each entry in the box below separated by a forward slash (e.g. program1/program2).

Mitigation

Q 79 Mitigation Programs, Partnerships and Funding

BC Hydro – Power Smart

Adaptation

Q 80 Adaptation Programs, Partnerships and Funding

Storm sewer separation (Awaiting for response on funding from Investing in Canada Infrastructure Program).

2018 CARBON NEUTRAL REPORTING

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

Prior to completing this portion of the survey, please ensure that you are familiar with guidance available on the [B.C. Climate Action Toolkit website](#), especially the [Workbook](#) and [Becoming Carbon Neutral: A Guide for Local Governments in British Columbia](#).

Please note: As a result of the BC Recycling Regulation, local governments are no longer required to account for GHG emissions from vehicles, equipment and machinery required for the collection,

transportation and diversion of packaging and printed paper, in their annual Climate Action Revenue Incentive Program (CARIP) reports.

Reporting Emissions

Q 81 Did your local government measure corporate GHG emissions for 2018?	Yes
Q 82 If your local government measured 2018 corporate GHG emissions, please report the number of corporate GHG emissions from services delivered directly by your local government (in tonnes of carbon dioxide equivalent)	10,769
Q 83 If your local government measured 2018 corporate GHG emissions, please report the number of corporate GHG emissions from contracted services (in tonnes of carbon dioxide equivalent)	
Q 84 TOTAL A: CORPORATE GHG EMISSIONS FOR 2018 (Direct GHGs + Contracted GHGs)	10,769 tCO₂e

Reporting Reductions and Offsets

To be carbon neutral, a local government must balance their TOTAL corporate GHG emissions generated in 2018 by one or a combination of the following actions:

- undertake GCC-supported Option 1 Project(s)
- undertake GCC-supported Option 2 Project(s)
- purchase carbon offsets from a credible offset provider

For more information about options to balance or offset corporate GHG emissions please refer to [Becoming Carbon Neutral: A Guidebook for Local Governments in British Columbia](#).

If applicable, please report the 2018 GHG emissions reductions (in tonnes of carbon dioxide equivalent (tCO₂e)) being claimed from any of the following Option 1 GHG Reduction Projects:

OPTION 1 PROJECTS	REDUCTIONS
Q 85 Energy Efficient Retrofits (in tonnes of carbon dioxide equivalent (tCO₂e))	
Q 86 Solar Thermal (in tonnes of carbon dioxide equivalent (tCO₂e))	
Q 87 Household Organic Waste Composting (in tonnes of carbon dioxide	2,385 tCO₂e

equivalent (tCO ₂ e)) - estimated by Metro Vancouver.	
Q 88 Low Emission Vehicles (in tonnes of carbon dioxide equivalent (tCO ₂ e))	
Q 89 Avoided Forest Conversion (in tonnes of carbon dioxide equivalent (tCO ₂ e))	
Q 90 TOTAL B: REDUCTIONS FROM ALL OPTION 1 PROJECTS FOR 2018	2,385 tCO ₂ e

Q 91 If applicable, please report the names and 2018 GHG emissions reductions (in tonnes of carbon dioxide equivalent (tCO₂e)) being claimed from Option 2 GHG Reduction Projects:

Option 2 Project Name	REDUCTIONS
Option 2 GHGs Reduced (tCO ₂ e)	
Option 2 Project Name	
Option 2 GHGs Reduced (tCO ₂ e)	
Option 2 Project Name	
Option 2 GHGs Reduced (tCO ₂ e)	
Q 92 TOTAL C: REDUCTIONS FROM ALL OPTION 2 PROJECTS FOR 2018	tCO ₂ e

Offsets

Q 93 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 2018 reporting year:

NOTE: DO NOT INCLUDE ANY FUNDS THAT MAY BE SET ASIDE IN A CLIMATE ACTION RESERVE FUND.

Offset Provider Name	OFFSETS
Offsets (tCO ₂ e)	
Offset Provider Name	

Offsets (tCO ₂ e)	
Q 94 TOTAL D: OFFSETS PURCHASED FOR 2018	tCO₂e

Q 95 TOTAL REDUCTIONS AND OFFSETS FOR 2018 (Total B+C+D) = 2,385 tCO₂e (estimate from Metro Vancouver)

Corporate GHG Emissions Balance for 2018

Your local government's Corporate GHG Emissions Balance is the difference between total corporate offsettable GHG emissions (direct + contracted emissions) and the GHG emissions reduced through GCC Option 1 and Option 2 projects and/or the purchase of offsets.

Q 96 CORPORATE GHG EMISSIONS BALANCE FOR 2018 = (A – (B+C+D)) = 8,384 tCO₂e

**If your Corporate GHG Emissions Balance is negative or zero,
your local government is carbon neutral.
CONGRATULATIONS!**

Q 97 If your local government was carbon neutral in 2018, please record any emissions reductions you will be carrying over for future years and the source of the reductions, including the year they were earned (e.g. organics diversion, 2018 100 tCO₂e)

SOURCE OF CARRY OVER EMISSION REDUCTIONS (and year earned)	REDUCTIONS
Q 98 BALANCE OF REDUCTIONS ELIGIBLE FOR CARRY OVER TO NEXT YEAR	tCO₂e

Carbon Neutral Reporting	
Q 99 Does your local government set aside funds in a climate reserve fund or similar?	No

GCC CLIMATE ACTION RECOGNITION PROGRAM

Green Communities Committee Climate Action Recognition Program

The joint Provincial-UBCM Green Communities Committee (GCC) is pleased to be continuing the Climate Action Recognition Program again this year. This multi-level program provides the GCC 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, and who have measured 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 have demonstrated undertaking significant action (corporately or community wide) to reduce 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 carbon neutrality in the reporting year.

Q 100 Based on your local government's 2018 CARIP Climate Action/Carbon Neutral Progress Survey, please check the GCC Climate Action Recognition Program level that best applies:

<input type="checkbox"/>	Level 1 – Demonstrating Progress on Charter Commitments	
<input checked="" type="checkbox"/>	Level 2 – Measuring GHG Emissions	✓
<input type="checkbox"/>	Level 3 – Accelerating Progress on Charter Commitments	
<input type="checkbox"/>	Level 4 - Achievement of Carbon Neutrality	

	Not Sure	
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Q 101 Related to Level 3 recognition, if applicable, please identify any new or ongoing corporate or community wide GHG reduction projects (other than an Option 1 or Option 2 project) undertaken by your local government that reflects a significant investment of time and/or financial resources and is intended to result in significant GHG reductions:

PROJECT NAME: