



SUSTAINABLE CITY ADVISORY COMMITTEE

*HIS WORSHIP, THE MAYOR
AND COUNCILLORS*

SUBJECT: 2017 CLIMATE ACTION REVENUE INCENTIVE PROGRAM REPORT

RECOMMENDATION:

1. THAT Council receive this report for information.

REPORT

The Sustainable City Advisory Committee, at its meeting held on 2018 April 25, received and adopted the *attached* report informing Council of the climate actions and corporate emissions reported on in the 2017 Climate Action Revenue Incentive Program (CARIP) Report, and fulfill the annual CARIP grant requirement to report publicly.

Respectfully submitted,

Councillor S. Dhaliwal
Chair

Copy: City Manager Director Corporate Services Director Planning and Building Director Engineering Director Finance Director Parks, Recreation & Cultural Services



Item
Meeting 2018 April 10

COUNCIL REPORT

TO: CHAIR AND MEMBERS
SUSTAINABLE CITY ADVISORY
COMMITTEE

DATE: 2018 April 4

FROM: DIRECTOR CORPORATE SERVICES
DIRECTOR PLANNING AND BUILDING

FILE: 1010-01
Reference:

SUBJECT: 2017 CLIMATE ACTION REVENUE INCENTIVE PROGRAM REPORT

PURPOSE: To inform the Committee and Council of the climate actions and corporate emissions reported on in the 2017 Climate Action Revenue Incentive Program (CARIP) Report, and fulfill the annual CARIP grant requirement to report publicly.

RECOMMENDATION:

1. **THAT** the Committee recommend Council to receive this report for information.

REPORT**1.0 INTRODUCTION**

The City of Burnaby joined the BC Climate Action Charter in 2017, and reported on qualitative actions and corporate emissions for the 2016 year as required under the Charter.

The purpose of this report is to inform the Committee and Council of the climate actions and corporate emissions reported on in the 2017 Climate Action Revenue Incentive Program (CARIP) Report, and fulfill the annual CARIP grant requirement to report publicly.

2.0 2017 CORPORATE GREENHOUSE GAS INVENTORY

For the 2017 reporting year, the Province requires one survey to be completed by June 1, 2017. This Survey has been completed and is attached as Appendix 1: 2017 CARIP Report.

In 2017, Burnaby continued to make progress on its longstanding commitments towards sustainability and climate action. Notably, the City is advancing 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 under

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Director Planning and Building
Re: 2017 Climate Action Revenue Incentive Program
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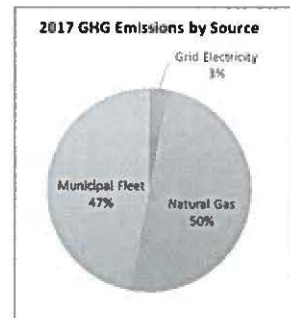
development. Burnaby also continues to plan for compact, complete communities in its Town Centres, with street design standards that integrate pedestrian, cyclist, transit and driving networks with sustainable storm water, urban forestry, street lighting, public art and place-making functions.

Burnaby continues to support low-carbon and innovative action within the community, including advancing the SFU/UniverCity biomass district energy, expected to reduce campus and community GHG emissions at SFU by 80%. In addition, the City continues to work with developers to find opportunities for the use of renewable and energy efficient building systems such as geo-thermal and sewer heat recovery.

In 2017, Burnaby moved to bi-weekly garbage collection, supporting the City’s efforts to increase organics and recycling diversion rates. Burnaby also 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 numerous riparian enhancement projects.

On the corporate emissions, Burnaby continues its long history of energy efficiency and emissions reductions in its facilities. The City’s LED streetlight conversion program is well underway, with Phases 3 and 4 slated for completion in 2018. This will result in 100% conversion of Burnaby’s streetlights. Efficiencies in Fleet are also being realized through technology improvements including new fuel management systems and vehicle locator/GPS systems. The City’s Green Team has implemented numerous innovative staff Workplace Conservation Awareness campaigns, supporting energy, water and resource conservation and staff well-being. Campaigns have included the Stair Riser Challenge, The Chilling Truth About Winter Idling, and Throwback Sweater Day.

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 2017, Burnaby’s corporate emissions were 11,617 tCO2e or carbon dioxide equivalent tonnes. The Figure to the right shows the breakdown by source.



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3.0 CONCLUSION

In 2017, the City has continued to make progress on its longstanding commitments towards sustainability and climate action both from a community-wide and corporate perspective. The City’s total 2017 CARIP corporate emissions were 11,617 tCO2e and 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



Lou Pelletier
DIRECTOR PLANNING AND
BUILDING

DD:dd

Attachment

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

Climate Action Revenue Incentive (CARIP) Public Report for 2017

Local Government: City of Burnaby

Date: April 4, 2018

The City of Burnaby has completed the 2017 Climate Action Revenue Incentive Program (CARIP) Public Report as required by the Province of BC. The CARIP report summarizes actions taken in 2017 and proposed for 2018 to reduce corporate and community-wide energy consumption and greenhouse gas emissions (GHG) and reports on progress towards achieving carbon neutrality.

Climate Action Revenue Incentive (CARIP) Public Report for 2017

2017 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, centred) plays an especially important role in energy and GHG reduction.

Community-Wide Actions Taken in 2017	
	Council approval of Environmental Sustainability Strategy (ESS) and Community Energy and Emissions Plan (CEEP) Phase 1 Implementation Approach and Prioritization, including three priority policy areas: Green Building Policy, Electric Vehicle Policy and Corporate Sustainability Policy. Initiated Electric Vehicle Policy development.
	Continue to undertake background analysis in support of update of the Official Community Plan (OCP).
	Metrotown Downtown Plan: completed public consultation, which between 2016 and 2017 included the City hosting and attending over 40 stakeholder meetings and directly engaging over 2000 people. Council approval of final Metrotown Downtown Plan, supporting Metrotown as the primary Town Centre in the City, with the broadest mix of uses and opportunities to live, work and play, and strong emphasis on urban design, mixed-use development, community amenities and sustainability.
	Third reading of Gilmore Station Plan and Phase 1 of commercial component, supporting a live/work community next to SkyTrain station.
Community-Wide Actions Proposed for 2018	
	Ongoing implementation of Phase 1 ESS/CEEP, tracking and reporting on overall actions taken in support of ESS/CEEP. Initiate Green Building Policy development. Advance Green Building Policy and Electric Vehicle policy recommendations for Council consideration.
	Continue to undertake background analysis in support of update of the Official Community Plan (OCP).
	Implementation of Metrotown Downtown Plan (MDP) including advancing specific plans for development in support of MDP vision, principles and land use guidelines.
	Final adoption of Gilmore Station Master Plan, and advancement of Phase One development applications.
	Final adoption of Phase 1 of Lougheed Core Area Master Plan (mixed use, transit oriented, complete community, greenspace).

Corporate Actions Taken in 2017	
	On-going and expanded implementation of Workplace Conservation Awareness by the City's Green Team. Campaigns included: Stair Riser Campaign, Throwback Sweater Day, We Love Water Contest, Vacation Ready Checklist, The Chilling Truth About Winter Idling, and Green Holiday Tips. These campaigns focused attention on energy conservation, water conservation, waste reduction, carbon emissions reductions and making sustainable purchases.

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	Completed Printer Assessment in seven City facilities as an input to overall project planning for a refresh of all City multifunction devices (MFD), and to finalize a managed print services contract to help direct additional print volume to MFDs, reduce overall volumes, and ensure transparency of overall sustainability metrics.
	Completed the Pilot phase of the Fuel Management System project to enhance traceability and transparency of fuel receipts and fuel issues, and overall inventory management in all fueling sites at the City. Completed the planning and configuration phases for Phase 2 which includes the conversion of five Firehall sites.
Corporate Actions Proposed for 2018	
	Continue implementing corporate actions taken from 2017 which include 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, Food Waste and Food Recovery.
	Implement the rollout of new MFD equipment at all City facilities; provide training/education to staff regarding overall printing volume reductions and sustainability metrics. Complete Phase 2 of the project to review printer usage and proximity to departments, and overall equipment rationalization.
	Completion of the FireHall conversions, and the final implementation phase of the Fuel Management System which includes the Laurel Street transition to the Still Creek Works Yard.

Broad Planning	
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 29% reduction by 2041 by the City and Others.
Are you familiar with your community's community energy and emissions inventory (e.g. CEEI or another inventory)?	Yes
What plans, policies or guidelines govern the implementation of climate mitigation in your community?	Yes No Yes Yes Yes No
Does your local government have a corporate GHG reduction plan?	No

Climate Action Revenue Incentive (CARIP) Public Report for 2017

2017 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.

Community-Wide Actions Taken in 2017	
	Continue 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.
	Continue to work with developers to encourage energy efficiency and investigate opportunities for low-carbon systems in new developments, through development review process.
	Gilmore Station Master Plan: developer advanced proposal and BCUC application for a District Energy System, including consideration of low-carbon options, to serve commercial and office component of site.
	SFU/UniverCity district energy system for low-carbon biomass system being advanced through development review and approval process.
	Council approval of ESS/CEEP Phase 1 Implementation Approach and Prioritization, including development of Green Building Policy addressing provincial Energy Step Code.
Community-Wide Actions Proposed for 2018	
	Continue 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.
	Continue to work with developers to encourage energy efficiency and investigate opportunities for low-carbon systems in new developments, through development review process.
	Gilmore Station Master Plan: BCUC approval of DES system, and advancement of development plans for project.
	Continue to advance SFU/UniverCity DES through development review/approval process.
	Council approval of process for Green Building Policy development. Council consideration of first phase of Green Building Policy focusing on energy efficiency (Energy Step Code) standards for larger (Part 3) multi-family buildings.

Corporate Actions Taken in 2017	
	Completed Phase 2 Streetlight LED conversion.
	Began Phase 3 Streetlight LED conversion.
	Ongoing facility LED conversion lighting program with inside and outside lighting modifications to 10 civic facilities and community centres resulting in 178 KWh annual savings.
	Conversion of parking lot and pathway lighting to LED in two Parks and Recreation Parking lots and pathways involving 100 KWh annual savings.
	Completion of three staff-oriented energy conservation awareness campaigns to encourage them to conserve energy at home and at work.
Corporate Actions Proposed for 2018	
	Complete Phase 3, Streetlight LED conversion.
	Complete Phase 4, Streetlight LED conversion. Completion of Phase 4 would complete all roadway street lighting.

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	Initiation of Phase 5, pedestrian level LED conversion. This program will focus on the conversion of City roadside pedestrian lighting to LED.
	Initiate a Parking Lot and Pathway LED conversion program with a focus on Parks and Recreation parking lot sites.
	Ongoing facility LED conversion lighting program with inside and outside lighting modifications to field houses, washrooms, and community buildings.

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

Is your local government aware of the BC Energy Step Cost?	Yes
Is your local government implementing the BC Energy Step Code?	Yes

2017 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.

Community-Wide Actions Taken in 2017	
	SFU/UniverCity district energy system for low-carbon biomass system being advanced through development review and approval process.
	Gilmore Station district energy system: developer advanced proposal and BCUC application, including consideration of low-carbon options, to serve commercial and office component of site.
	Development site (Concord Brentwood) investigating low carbon district energy opportunities.
Community-Wide Actions Proposed for 2018	
	Continue to advance SFU/UniverCity DES through development review/approval process.
	Gilmore Station Master Plan: BCUC approval of DES system, advancement of system design.
	Continue to investigate/advance low carbon DES at Brentwood Concord.

Corporate Actions Taken in 2017	
	City reviewed sewer heat recovery options, in concert with proposed new development. Pump station at Brentwood designed to support sewer heat recovery, to support adjacent development.
Corporate Actions Proposed for 2018	
	Construction of Brentwood pump station with sewer heat recovery to support adjacent development.

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Energy Generation –	
Is your local government developing, or constructing: <ul style="list-style-type: none"> • A district energy system • A renewable energy system 	No No
Is your local government operating: <ul style="list-style-type: none"> • A district energy system • A renewable energy system 	No No
Is your local government connected to a district energy system that is operated by another energy provider?	No
Are you aware of the Integrated Resource Recovery guidance page on the BC Climate Action Toolkit ?	Yes
Are you familiar with the 2017 “ List of Funding Opportunities for Clean Energy Projects Led by First Nations and Local Governments? ”	Yes

2017 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.

Community-Wide Actions Taken in 2017	
	Continue to review greenspace and riparian protection and enhancement opportunities as part of development review process.
	Ongoing support of Streamkeeper community stewardship efforts in monitoring, protecting and enhancing waterways.
	Coordinate, host and support community events celebrating and raising awareness of Burnaby’s ecosystems: Environment Week, Great Salmon Send-off, River’s Day.
	Design of new public park in Southgate (new Master Plan development in Edmonds Town Centre), to include water features integrated with stormwater treatment, habitat and public aesthetic enjoyment.
	Final adoption of Phase 1B Concord Brentwood master plan, including enhancement of Stickleback Creek and adjacent riparian area, and commitment to provide 10 acre park with public greenspace and riparian area.
	Complete Stoney Creek riparian enhancement as part of development of new multi-family at Cameron St. site.
	Advance Oxford-Riverbend business park development adjacent Fraser River, including environmentally sensitive dyke design, site contamination remediation and new riparian habitat, including detailed design of Fraser River riparian enhancement plan.
	Invasive plant removal in partnership with statutory rights of way holders (Kinder Morgan, Imperial, Chevron and BC Hydro) to treat knotweed in their areas of responsibility, and invasive plant removal

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	and native plant restoration planting with Streamkeeper groups at Byrne Creek, Stoney Creek and Eagle Creek.
	Partner with community volunteers to maintain and install new Mason Bee "condos" and bat boxes in City Parks.
Community-Wide Actions Proposed for 2018	
	Continue to review greenspace and riparian protection and enhancement opportunities as part of development review process.
	Ongoing support of Streamkeeper community stewardship efforts in monitoring, protecting and enhancing waterways.
	Coordinate, host and support community events celebrating and raising awareness of Burnaby's ecosystems: Environment Week, Great Salmon Send-off, River's Day.
	Advance Southgate Park design.
	Begin construction of creek/riparian enhancement works associated with Concord Brentwood Phase 1B.
	Begin construction of Phase 1 Oxford-Riverbend business park, including riparian enhancement along Fraser River, integrated with dyke construction. Complete Phase 2 design and review for Phase 2 enhancement of Sturgeon Slough on west side of site.
	Final adoption of Phase 1 of Lougheed Core Area Master Plan, and subsequent advancement of specific development applications, incorporating significant new greenspace, trees and naturalized water features / stream daylighting.
	Continue to work with community partners for invasive plant removal and native plant restoration.
	Continue to partner with community volunteers to maintain and install new Mason Bee "condos" and bat boxes in City Parks.

Corporate Actions Taken in 2017	
	Continue construction of Willingdon Linear Park in Brentwood Town Centre, for creation of public greenspace, pedestrian/bike paths and transit infrastructure.
	Ongoing tree planting and management on City lands, by Urban Forestry staff.
	Continue parkland acquisition as opportunities arise.
	Ongoing management of invasive species in Parks including manual and herbicide treatment in City Parks and Green Spaces, and working with community partners (see Community-Wide Actions).
	2017 Fraser River dyke works compensation actions completed on riparian planting and in-stream salmonid enhancement along Glenlyon Creek and Fraser River foreshore.
	Continue development of Town Centre Standards which incorporates Rainwater Management Amenities into roadway design.
	Continue to implement actions identified in Integrated Stormwater Management Plans.
Corporate Actions Proposed for 2018	
	Complete construction of Willingdon Linear Park.
	Continue with tree planting and management on City lands, by Urban Forestry staff.
	Continue with management of Invasive species in City Parks and Green Spaces. Invasive plant removal and native planting at four degraded park sites – Warner Loat Park (Eagle Creek), Charles Rummel Park (Eagle Creek), and two sites at Deer Lake (Deer Lake Brook).
	Finalize design for Fraser River Reach 8 dyke upgrades and determine riparian and in-stream salmonid enhancement compensation project. Commence construction of Phase 1 of Reach 8 Dyke upgrade work.
	Continue parkland acquisition as opportunities arise.

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	Finalize Town Centre Standards which incorporate Rainwater Management Amenities into roadway design.
	Continue to implement actions identified in Integrated Stormwater Management Plans.

Greenspace	
Does your local government have urban forest policies, plans or programs?	Yes
Does your local government have policies, plans or programs to support local food production?	Yes

2017 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.

Community-Wide Actions Taken in 2017	
	Implemented Every Other Week Garbage Collection.
	Continued the pilot project for bear-resistant green bins for multi-family complexes.
	Continued education and outreach to residents on contamination in residential waste stream.
	Participated in the National Solid Waste Benchmarking Initiatives.
	Completed the review of public litter receptacles and initiated the development of an action plan to expand the number of three stream receptacles on public lands and increase the diversion of waste.
	Undertook pilot testing of AVL / Telematics software programs on a limited number of collection fleet to test efficiencies in collection, contamination management and enhanced fleet maintenance and management.
	Continued with waste audits for single, two family and multi-family properties and utilized the findings to target outreach and education programs to reduce contamination rates and increase participation in the recycling and green bin programs.
	Implemented service improvements relating to snow events to ensure continued service to residents and other customers served by the City.
	Completed the Disaster Debris management Guidelines and undertook table top exercise to increase awareness and test the use of the Guidelines under various emergencies.
Community-Wide Actions Proposed for 2018	
	Subject to the outcome of the pilot project and receipt of required approvals, implement the bear-resistant green bin program for multi-family residents.
	Continue education and outreach to residents on contamination in residential waste stream.
	Subject to the outcome of the pilot testing of AVL / Telematics software programs and receipt of required approvals, install the required system to the remaining solid waste and recycling collection fleet to increase efficiencies in collection, contamination management and enhanced fleet maintenance.
	Subject to receipt of required approvals, install additional three stream receptacles to the existing streetscape assets to address littering and enhance waste diversion.
	Explore other opportunities to reduce littering and enhance waste diversion.

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	Amend the Solid Waste and Recycling Bylaw to reflect program changes, rates and penalties for non-compliance.
	Review options for reducing construction and demolition waste.

Corporate Actions Taken in 2017	
	Completed Printer Assessment in seven City facilities to gain baseline comparison on sustainability metrics including solid waste.
	Revised menu offerings for Council/Committees/Commission and Boards to reduce/avoid food waste to a greater extent.
Corporate Actions Proposed for 2018	
	Provide City staff with Food Waste and Food Recovery education.
	Complete roll-out of Managed Print Services implementation for multifunction devices and printers in all City facilities. Measure sustainability metrics including ghg, energy and solid waste. Provide awareness education and training to City staff.

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

2017 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, ridesharing, and public transit, can contribute to reductions in greenhouse gas emissions and more livable communities.

Community -Wide Actions Taken in 2017	
	Council approval of Transportation Plan public consultation program and completion of Phase 1 (Vision, Themes and Goals).
	Completed annual update to the Burnaby Bike Map (2017).
	Ongoing funding and in-kind support for promotion (by HUB) of Bike to Work Week and Bike to School Week, education in schools, and promotion of cycling festivals.
	Initiated review of Transportation Demand Management (TDM) program associated with new development, for opportunities to improve.
	Continued implementation of the Town Centre Standards for streets in Metrotown, Lougheed, Brentwood and Edmonds. The standards integrate pedestrian, cyclist, transit and driving networks with the sustainable stormwater, urban forestry, street lighting, public art and place making functions of accessible, complete and resilient streets.
	Began construction of Willingdon Linear Park, a 13-block corridor connecting Brentwood Station to Burnaby Heights along Willingdon. When complete, it will be a safe, accessible, attractive multi-use trail for pedestrians, cyclists and public transit users. Features will include a paved pathway, seating, interactive installations, trees, lights and gathering areas.

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	Continued with Urban Trail (separated pedestrian/bike paths) network design and construction.
	Continue to upgrade and construct new sidewalks, wheelchair ramps, pedestrian signals/crossings, bus shelters, to improve accessibility and safety and encourage walking and taking transit.
	Continued to achieve new and improved sidewalks and pedestrian facilities, bike paths/routes, transit infrastructure and vehicle road network for safety/efficiency through development review and approval process.
	Continued to achieve new car-share, bike facilities, transit passes, electric vehicle charging in various new developments through development review and approval process.
Community-Wide Actions Proposed for 2018	
	Reporting out on Phase 1 public consultation; undertake policy development and technical analysis in support of Phase 2 of Transportation Plan (Networks, Policies and Actions).
	Complete annual update to the Burnaby Bike Map (2018).
	Develop and publish the first Town Centre public walking map for Metrotown.
	Ongoing funding and in-kind support for promotion (by HUB) of Bike to Work Week and Bike to School Week, education in schools, and promotion of cycling festivals.
	Advance TDM program review.
	Together with City of New Westminster and other agencies, host a 5 week Walking Challenge to promote walking for activity/leisure and transportation (kids and adults), including mapping routes, walk to school challenge, and celebration.
	Continued implementation of Town Centre Standards.
	Complete Willingdon Linear Park construction and Central Park Perimeter Trail phase.
	Continue with Urban Trail (separated pedestrian/bike paths) network design and construction.
	Continue to achieve new and improved sidewalks and pedestrian facilities, bike paths/routes, transit infrastructure and vehicle road network for safety/efficiency through development review and approval process.
	Continue to achieve new car-share, bike facilities, transit passes, electric vehicle charging in various new developments through development review and approval process.
	Construction of new Urban Trail along Fraser River foreshore associated with Oxford Riverbend business park development; detailed design of new Urban Trail connecting Wiggins St. with Fraser River, allowing for walking and cycling through Fraser Foreshore Park.

Corporate Actions Taken in 2017	
	Completed pilot phase of a new Fuel Management System (FMS) which included the outfitting of a new fuel truck with monitoring systems, and more than 300+vehicles/equipment across the City's fleet.
	No net new addition to the City Hall fleet of vehicles; staff continue to make use of the City's pool of vehicles available to staff, and departments with assigned vehicles are sharing their allotted vehicles across resources to minimize the overall carbon footprint.
	Assessed AVL/GPS pilot phase findings, and implemented the functionality on 75 units, primarily Engineering vehicles.
	Staff participation in two Bike to Work Week programs and annual Commuter Challenge event.
Corporate Actions Proposed for 2018	
	Finalize Phases 2 (Firehall conversions) and 3 (Laurel/Still Creek Works Yards) of the Fuel Management System; finalize training/education awareness program with staff. Monitor, report and address findings for continuous improvements.
	Complete balance of AVL/GPS installations on City fleet/equipment. Monitor and address findings for improvements to overall fleet operations.

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Ongoing participation in Bike to Work Week and Commuter Challenge events.

Transportation	
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 No
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 behavior)?	Yes
Does your local government integrate its transportation and land use planning?	Yes

2017 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 greenhouse gas emissions.

Community-Wide Actions Taken in 2017	
	Implemented and enforced watering restrictions based on Metro Vancouver’s Water Shortage Response Plan, with online resources for residents about the restrictions and water conservation practices. In 2017, the City issued 371 warning letters, 35 second warning letters and 1 ticket. A 91% compliance rate was achieved after the first warning letter was issued to residents and businesses.
	The City provides residents with rain barrels at a subsidized cost.
	A “Water is Precious-Conserve to Preserve” Campaign ran from July 31-October 12 which was designed to bring public awareness of water conservation measures and tips to the residents. Four contests were held during the watering restrictions and questions were geared to measure residents’ water conservation behaviors.
	Provided community water conservation education and attended three large outreach events focusing attention on outdoor/indoor water use as well as looking at alternative ground cover options.
	Introduced the Nematode Coupon Program which offered residents a 50% subsidy when purchasing Nematodes at Garden Works. This comprehensive program provided education on pest management, water use and lawn care guidelines.
Community-Wide Actions Proposed for 2018	
	Provide three water conservation H2Whoa plays (Dreamrider Productions) to elementary school classes from Kindergarten to Grade 7.
	Continue to provide water conservation education and attend outreach events.
	Continue to provide Nematode Coupons to residents.

Climate Action Revenue Incentive (CARIP) Public Report for 2017

Corporate Actions Taken in 2017	
	Continued existing combined sewer separation program at a rate of 1.5% per year of the existing inventory.
	City Hired three Water Conservation Officers to enforce Metro Vancouver Water Shortage Response Plan (WSRP) and Burnaby's Waterworks Bylaw as well as assists in delivering outreach and education.
	Staff attended the Coquitlam Watershed tours held by Metro Vancouver. These watershed tours provide context to a resource that staff is working to protect and conserve.
Corporate Actions Proposed for 2018	
	Continue combined sewer separation projects ahead of local Liquid Waste Management Plan (LWMP) requirements. Sewer separation minimizes volume of combined sewer over-flows to the environment and reduces wastewater volumes to be treated resulting in better allocation of resources, lower energy consumption and environmental impacts.
	Continue implementing corporate actions taken from 2017 in reference to hiring water conservation officers, celebrating BC Water week and attending Metro's Watershed tours.
	To further water conservation, investigate feasibility for implementing groundwater to augment regionally supplied drinking water for irrigation use within key golf course and recreational facility green space areas in response to water shortages and emergencies.

Water Conservation	
Does your local government have water conservation policies, plans or programs?	Yes

2017 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.

Please identify the THREE climate impacts that are most relevant to your Local Government.	
<ul style="list-style-type: none"> • 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 • Extreme weather events contributing to urban and overland flooding • Sea level rise and storms causing coastal flooding and/or erosion 	
Other:	

In 2017 has your local government addressed the impacts of a changing climate using any of the following?	
Risk and Vulnerability Assessments	Yes
Risk Reduction Strategies	No

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Emergency response planning	Yes
Asset management	Yes
Natural/Eco asset management strategies	No
Infrastructure upgrades (e.g. storm water system upgrades)	Yes
Beach Nourishment projects	No
Economic diversification initiatives	No
Strategic and financial planning	No
Cross-department working groups	No
OCP policy changes	No
Changes to zoning and other bylaws and regulations	No
Incentives for property owner (e.g. reducing storm water run-off)	No
Public education and awareness	Yes
Research	No
Mapping	No
Partnerships	No
Other:	

Climate Change Adaptation Actions Taken in 2017	
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 dyke upgrades along Fraser River to address climate change sea level projections. Designs for Reach 8 continued.
	Completed culvert inventory update and condition assessment for North Burnaby.
	Continued stream and riparian area protection and enhancement through development review process and SPEA Bylaw.
	Began construction of environmentally sensitive dyke design in new business park adjacent Fraser River, incorporating projected sea level rise and significant riparian enhancements.
	Continued to implement Town Centre Street Standards, including installation of raingardens and street trees in various areas, in new large developments in town centres. Continued to refine and improve City design standards for raingardens.
	Continued to achieve on-site stormwater management using low-impact-development approaches in new developments through development review and approval.
Climate Change Adaptation Actions Proposed for 2018	
	Continue dyke upgrades along Fraser River to address climate change sea level projections. Start construction of Reach 8, with the goal to complete construction in early 2019.
	Utilize results of Master Drainage plans for Still Creek and Big Bend areas, incorporating climate change projections, in future capital planning.
	Complete culvert inventory update and condition assessment for South Burnaby. Continue assessment and upgrades of Storm Sewer infrastructure. Initiate designs for various creek and culvert upgrades intended for 2019 construction (erosion mitigation, storm detention, culvert replacement, channel improvements, etc).
	Continue stream and riparian area protection and enhancement through development review process and SPEA Bylaw.

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	Complete construction of environmentally sensitive dyke design in new business park adjacent Fraser River, incorporating projected sea level rise and significant riparian enhancements.
	Formally update Town Centre standards (review was initiated in 2016).
	Work with Metro Vancouver to develop a Still Creek Brunette Drainage Area Flood Strategy.
	Continue to achieve on-site storm water management using low-impact-development approaches in new developments through development review and approval.

The following are key resources that may be helpful to your local government in identifying climate impacts, as well as, strategies, actions and funding to deal with them. For those resources that you have used, please indicate whether they were useful in advancing your work in climate change adaptation?	
Indicators of Climate Change for British Columbia, 2016 Plan2Adapt Climate Projections for Metro Vancouver Climate Projections for the Capital Region Climate Projections for the Cowichan Valley Regional District Province of BC's BC Adapts Video Series Preparing for Climate Change: An Implementation Guide for Local Governments The Public Infrastructure and Engineering Vulnerability Committee's (PIEVC) protocol Sea Level Rise Primer BC Regional Adaptation Collaborative Webinars www.ReTooling.ca Water Balance Model The Water Conservation Calculator Funding: National Disaster Mitigation Program (NDMP) Community Emergency Preparedness Fund (CEPF) Municipalities for Climate Innovation Program (MCIP) Climate Adaptation Partner Grants (FCM) Infrastructure Planning Grants (MAH) Federal Gas Tax Fund	Haven't Used Haven't Used Useful Not Useful Not Useful Haven't Used Not Useful Useful Haven't Used Haven't Used Haven't Used Not Useful Useful Haven't Used /Useful Haven't Used /Useful Haven't Used /Useful Useful Useful Useful
Other:	

2017 OTHER CLIMATE ACTIONS

Other	
Are you familiar with the Community Lifecycle Infrastructure Costing Tool (CLIC) ?	No
Have you used CLIC?	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.

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Mitigation

Programs and Funding
BC Hydro—Power Smart

Adaptation

Programs and Funding
Joint provincial and federal government storm sewer separation funding.

2017 CARBON NEUTRAL REPORTING

Local governments are required to report on their progress in achieving their carbon neutral goal under the 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.

Reporting Emissions

Did you measure your local government's corporate GHG emissions in 2017?	Yes
If your local government measured 2017 corporate GHG emissions, please report the number of corporate GHG emissions (in tonnes of carbon dioxide equivalent) from services delivered <u>directly</u> by your local government:	11,617
If your local government measured 2017 corporate GHG emissions, please report the number of corporate GHG emissions (in tonnes of carbon dioxide equivalent) from <u>contracted</u> services:	
TOTAL A: CORPORATE GHG EMISSIONS FOR 2017	11,617 tCO₂e

Reporting Reductions and Offsets

To be carbon neutral, a local government must balance their TOTAL corporate GHG emissions generated in 2017 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

If applicable, please report the 2017 GHG emissions reductions (in tonnes of carbon dioxide equivalent (tCO₂e)) being claimed from Option 1 GHG Reduction Projects:

OPTION 1 PROJECTS	REDUCTIONS
Energy Efficient Retrofits	
Solar Thermal	
Household Organic Waste Composting	

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Low Emission Vehicles	
Avoided Forest Conversion	
TOTAL B: REDUCTIONS FROM OPTION 1 PROJECTS FOR 2017	tCO2e

If applicable, please report the names and 2017 GHG emissions reductions (in tonnes of carbon dioxide equivalent (tCO2e)) being claimed from Option 2 GHG Reduction Projects:

OPTION 2 PROJECT NAME	REDUCTIONS
TOTAL C: REDUCTIONS FROM OPTION 2 PROJECTS FOR 2017	tCO2e

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 2017 reporting year:

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

OFFSET PROVIDER NAME	OFFSETS
TOTAL D: OFFSETS PURCHASED FOR 2017	tCO2e

TOTAL REDUCTIONS AND OFFSETS FOR 2017 (Total B+C+D) = tCO2e

Corporate GHG Emissions Balance for 2017

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

CORPORATE GHG EMISSIONS BALANCE FOR 2017 = (A – (B+C+D)) = 11,617 tCO2e

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

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If applicable, please record any emissions reductions you will be carrying over for future years and the source of the emissions reductions, including the year they were earned (E.g., Organics diversion, 2016 100 tCO2e).

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

Carbon Neutral Reporting	
Does your local government have a climate reserve fund or something similar?	No

GCC CLIMATE ACTION RECOGNITION PROGRAM

Green Communities Committee (GCC) 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 (i.e: 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.

Based on your local government's 2017 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 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	
<input type="checkbox"/>	Not Sure	