

---

**TO:** CITY MANAGER **DATE:** 2017 June 05

**FROM:** DIRECTOR ENGINEERING **FILE:** 1010-01  
DIRECTOR PLANNING AND BUILDING *Reference:*

**SUBJECT: 2016 CLIMATE ACTION REVENUE INCENTIVE PROGRAM REPORT**

**PURPOSE:** To inform Council on the City's 2016 corporate greenhouse gas (GHG) emissions inventory, and fulfill the annual Climate Action Revenue Incentive Program (CARIP) grant requirement to report on the City's plan and progress toward meeting the City's climate action goals.

---

**RECOMMENDATION:**

1. **THAT** this report be received for information purposes.
2. **THAT** a copy of this report be sent to the Sustainable City Advisory Committee.

**REPORT****1.0 INTRODUCTION**

Following Council's decision to join the BC Climate Action Charter on 2017 January 30, the City received a signed Climate Action Charter from the Province on 2017 April 07. For Council's information, 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 2016 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 on the City's 2016 corporate greenhouse gas (GHG) emissions inventory, and fulfill the annual Climate Action Revenue Incentive Program (CARIP) grant requirement to report on City's plan and progress toward meeting the City's climate action goals.

## **2.0 2016 CORPORATE GREENHOUSE GAS INVENTORY**

The Province requires a CARIP Climate Action/Carbon Neutral Progress Survey to be completed for the previous year by 2017 June 01. However, due to the delay in receiving the signed Charter from the Province, the City has been granted an extension to June 15 to complete the survey. This Survey has been completed and is attached for Council's information (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 2016, Burnaby continued to make progress on its longstanding commitments towards sustainability and climate action. Notably, the City adopted both the Burnaby Environmental Sustainability Strategy and the Burnaby Community Energy and Emissions Plan, following extensive Phase 3 engagement with stakeholders and the public. Burnaby also continues to plan for compact, complete communities in its Town Centres, as demonstrated by adoption of the Lougheed Town Centre Core Area Master Plan.

Burnaby has supported low-carbon and innovative action within the community, including advancing the SFU/UniverCity biomass district energy facility through the development approval process. This project is expected to reduce campus and community GHG emissions at SFU by 80%. Burnaby continues to work with developers to find opportunities for the use of renewable and energy efficient building systems such as geo-thermal, as well as opportunities to reduce community-wide transportation emissions through a range of measures.

In support of multi-modal transportation the City continues to take strong action, including with car-share, bike facilities and transit passes as well as electric vehicle charging considered during development review and approval. Continued implementation of the new Town Centre Standards for streets is providing improvements to walking, cycling, public transit and vehicle infrastructure within Burnaby's four Town Centres.

In support of climate change adaptation, the City's network of protected greenspaces and open watercourses plays an important role, and significant enhancements are being achieved in 2016 and 2017 in new private development and City programs. Additional climate adaptation measures include upgrades to Fraser River dykes, storm sewers and other infrastructure, and provision of green infrastructure such as street trees and raingarden components of the Town Centre Standards for streets.

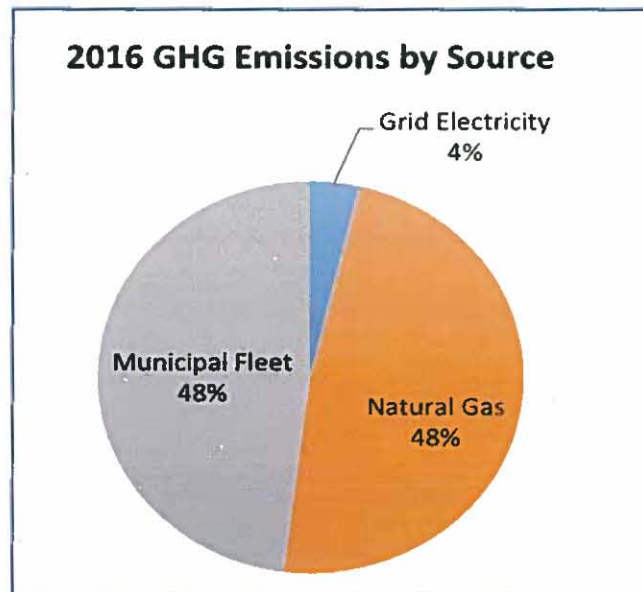
Burnaby's 2016 organics diversion from household garbage resulted in GHG reductions of 3,022 tonnes, as compared to a 2006 baseline. In 2017, the City's move to bi-weekly garbage collection will further support the efforts to increase organics and recycling diversion rates. The City also continues to demonstrate its commitment to the ecological integrity of its parks and waterways through extensive Greenspace and Climate Adaptation actions, documented in the CARIP report.

On the corporate side, Burnaby continues its long history of energy efficiency and emissions reductions in its facilities, as outlined in the Climate Action Charter report to Council of January 30, 2017. The LED streetlight conversion program is underway, with Phase 1 completed in 2016 and Phases 2 and 3 slated for completion in 2017, which will result in 66% of the streetlights converted. Efficiencies in Fleet are being realized through technology improvements including new fuel management systems and vehicle locator/GPS systems.

The City's Green Team has implemented numerous staff Workplace Conservation Awareness campaigns, supporting energy, water and resource conservation and staff well-being. Campaigns include Stay Bright by Daylight, Tap is Terrific, Earth Hour and the recently implemented Stair Rise Campaign.

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. Indirect or contractor emissions are not being reported on in 2016; procedures to include contractor emissions will be developed in 2017.

In 2016, Burnaby's corporate emissions were 11,134 tCO<sub>2</sub>e or carbon dioxide equivalent tonnes. Figure 1 shows the breakdown by source.




Burnaby's 2016 CARIP-reported corporate emissions were reduced by 3,022 tonnes due to the City's participation in municipal organic waste diversion, as documented by Metro Vancouver. The City's total 2016 CARIP corporate emissions were 8,112 tCO<sub>2</sub>e and based on the Green Communities Committee Climate Action Recognition Program, the City is at Level 2 – Measuring GHG Emissions.

### 3.0 CONCLUSION

In 2016, 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 2016 CARIP-reported corporate emissions were reduced by 3,022 tonnes due to the City's participation in municipal organic waste diversion, as documented by Metro Vancouver. The City's total 2016 CARIP corporate emissions were 8,112 tCO<sub>2</sub>e and based on the Green Communities Committee Climate Action Recognition Program, the City is at Level 2 – Measuring GHG Emissions.

To: City Manager  
From: DIRECTOR ENGINEERING  
Re: 2016 Climate Action Revenue Incentive Program  
Report  
2017 May 30.....Page 4

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.



Leon A. Gous, P.Eng., MBA  
DIRECTOR ENGINEERING



Lou Pelletier  
DIRECTOR PLANNING AND BUILDING

DD:ac

Attachment

Copied to: Director Finance  
City Clerk

## Climate Action Revenue Incentive (CARIP) Public Report for 2016

**Local Government: City of Burnaby**

**Date: May 26, 2017**

Optional box for image

The City of Burnaby has completed the 2016 Climate Action Revenue Incentive Program (CARIP) Public Report as required by the Province of BC. The CARIP report summarizes actions taken in 2016 and proposed for 2017 to reduce corporate and community-wide energy consumption and greenhouse gas emissions (GHG) and reports on progress towards achieving carbon neutrality.



## 2016 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 2016	
	Completed final phase of public consultation for the Environmental Sustainability Strategy (ESS) and Community Energy and Emissions Plan (CEEP), through online and in-person engagement. Over 2,500 people engaged and 8,000 ideas collected in total over the 3 phases of consultation.
	Adopted Burnaby's Environmental Sustainability Strategy. The ESS completes the trilogy of sustainability strategies, following the Economic and Social Sustainability Strategies previously approved, establishing an integrated sustainability framework for the City.
	Adopted Burnaby's Community Energy and Emissions Plan as a supporting component of the ESS.
	Adopted Lougheed Core Area Masterplan (redevelopment of suburban mall site to mixed use, transit oriented, complete community).
	Conducted preparatory work for Official Community Plan (OCP) update.
	Engaged in public consultation for Metrotown Town Centre Plan (strong emphasis on transit oriented, walkable/bikeable, complete community).
Community-Wide Actions Proposed for 2017	
	Prioritization and implementation planning for the ESS and CEEP.
	Continue to work toward OCP update.
	Continue to advance Metrotown Town Centre Plan.
	Advance the Gilmore Station Master Plan, including seamless integration of improved public transit and active transportation infrastructure.

Corporate Actions Taken in 2016	
	Project planning and pilot phase implementation of various projects to improve Fleet efficiency.
	Project planning to reduce printing across the City through multi-function device refresh.
Corporate Actions Proposed for 2017	
	Develop contractor emissions process and documentation.
	Continue planning and roll-out of pilot projects and full implementation of various projects to improve Fleet efficiency.
Broad Planning	

## 2016 Burnaby CARIP Report

What is (are) your current GHG reduction target(s)? 5% and 29%	<b>(Please provide details here)</b> 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.
Has your local government used the Community Energy and Emissions Inventory (CEEI) to measure progress?	<b>Yes</b>
What plans, policies or guidelines govern the implementation of climate mitigation in your community?	
• Community Energy and Emissions (CEE) Plan	<b>Yes</b>
• Integrated Community Sustainability Plan	<b>Yes</b>
• Official Community Plan (OCP)	<b>Yes</b>
• Regional Growth Strategy (RGS)	<b>Yes</b>
Does your local government have a corporate GHG reduction plan?	<b>No</b>
Does your local government have a climate reserve fund or something similar	<b>No</b>

## 2016 BUILDINGS 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 2016	
	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.
	Continued to work with developers to encourage energy efficiency and investigate opportunities for low-carbon systems in new developments, through development review process. Two high-rise multi-unit residential buildings completed in 2016 implemented geothermal heating/cooling systems with significant GHG reduction.
	Advanced SFU/UniverCity biomass district energy facility through City development approval process and BCUC approval; the project is expected to reduce campus and community GHG emissions by 80%.
Community-Wide Actions Proposed for 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 low-carbon systems in new developments, through development review process.
	Implement ESS/CEEP including consideration of policy to support building/energy performance related strategies.

## 2016 Burnaby CARIP Report

--	--

Corporate Actions Taken in 2016	
	Completed Phase 1, Streetlight LED conversion.
	Began Phase 2, Streetlight LED conversion.
	Continued facility LED conversion lighting program, with inside and outside lights for six Civic buildings converted. These projects netted 71,500 kWh of annual savings.
	Replaced boilers and HVAC units with more efficient ones in six buildings.
	At Eileen Daily pool, replaced two air handling units with new units to provide air to air heat recovery. To date averaging greater than 25% gas savings; projected to save 2600 GJ annually.
	With the help of BC Hydro Energy Wise Program for workplace awareness, rolled out energy conservation programs with the Green Team, including a conservation survey to all staff for tracking their knowledge and habits toward conservation. Energy conservation campaigns included: Space Heater Usage Reduction; Spotlight Conservation (informing staff of energy loss due to dripping faucets, and equipment, appliances and lights left on, and encouraging staff to take action by reducing energy); Celebrate Earth Hour at Work; Stay Bright by Daylight (encouraging staff to use natural light and reduce overhead lights to save energy).
Corporate Actions Proposed for 2017	
	Complete Phase 2, Streetlight LED conversion.
	Complete Phase 3, Streetlight LED conversion (for a total of 66% of the City's streetlight inventory).
	Continue the facilities LED conversion program, with a focus on outdoor area lights, from parking lots to trail lighting.
	Continue to replace HVAC equipment and boilers as part of the annual capital plan, with energy conservation a major consideration during design and equipment selection.
	Continue to roll-out energy conservation campaigns for staff.

## 2016 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 2016	
	SFU/UniverCity biomass district energy facility was advanced through City development approval process and BCUC approval; the project is expected to reduce campus and community GHG emissions by 80%.



## 2016 Burnaby CARIP Report

<b>Community-Wide Actions Proposed for 2017</b>	

<b>Corporate Actions Taken in 2016</b>	
<b>Corporate Actions Proposed for 2017</b>	

<b>Energy Generation</b>	
Is your local government developing, or constructing:	
• A district energy system	No
• A renewable energy system	No
Is your local government operating:	
• A district energy system	No
• A renewable energy system	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 <a href="#">BC Climate Action Toolkit</a> ?	Yes

## 2016 GREENSPACE/ NATURAL RESOURCE PROTECTION ACTIONS

## 2016 Burnaby CARIP Report

### 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.

<b>Community-Wide Actions Taken in 2016</b>	
	Protection and enhancement of riparian areas through development review process; approval of various specific projects, implementation and monitoring.
	Achieved removal of private materials/vehicles being stored on environmentally sensitive City owned lands adjacent Still Creek, as part of ongoing Still Creek ISMP implementation.
	Advanced individual rezoning as part of previously approved Master Plan for Southgate neighbourhood in Edmonds Town Centre, which includes significant new greenspace, trees and riparian habitat.
	Adopted Lougheed Core Area Master Plan (redevelopment of suburban mall site to mixed use, transit oriented, complete community), incorporating significant new greenspace, trees and naturalized water features.
<b>Community-Wide Actions Proposed for 2017</b>	
	Continue to review greenspace and riparian protection and enhancement opportunities as part of development review process.
	Advance Phase 2 of Woodlands mixed-use master-plan rezoning in Brentwood Town Centre, including creation of new park/greenspace, riparian habitat and stream channel improvements.
	Advance Oxford-Riverbend business park rezoning adjacent Fraser River, including environmentally sensitive dyke design, site contamination remediation and new riparian habitat.

<b>Corporate Actions Taken in 2016</b>	
	Acquisition of new lands for conservation and neighbourhood parks.
	Completed Integrated Watershed Management Plan for Deer Lake; initiated for Hastings, Glenbrook and Stoney Creek (update).
	Ongoing implementation of various integrated watershed management plans (capital works).
	Advanced Willingdon Linear Park in Brentwood Town Centre (approved in 2015), for creation of public greenspace, pedestrian/bike paths and transit infrastructure; design and re-designation of land from road to public park.
	Completed stream channel improvements and riparian enhancements in Deer Lake Park.
	Ongoing tree planting and management on City lands, by Urban Forestry staff.
	Ongoing management of invasive species in Parks.
	Undertook riparian planting and in-stream salmonid enhancement along Fraser Foreshore and Glenlyon Creek, as compensation for Fraser River dyke works.
<b>Corporate Actions Proposed for 2017</b>	
	Begin construction of Willingdon Linear Park in Brentwood Town Centre, for creation of public greenspace, pedestrian/bike paths and transit infrastructure.
	Continue with tree planting and management on City lands, by Urban Forestry staff.

## 2016 Burnaby CARIP Report

	Continue with management of invasive species in Parks.
	Advancement or completion/approval of Integrated Watershed Management Plans for Hastings, Glenbrook and Stoney creek (update).
	Continue parkland acquisition as opportunities arise.

<b>Greenspace</b>	
Does your local government have urban forest policies, plans or programs?	Yes

## 2016 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.

<b>Community-Wide Actions Taken in 2016</b>	
	Completed planning, preparation and public outreach for Every Other Week Garbage Collection.
	Implemented pilot project for Bear-resistant Green Bins for multi-family complexes.
	Completed waste audit for garbage, green bin and recycling for single and two family curbside collection.
	Provided education and outreach to residents on contamination in residential waste stream.
	Participated in the National Solid Waste Benchmarking Initiative.
	Provided DreamRider Theatre education plays "Zero Heroes" (waste reduction, recycling and composting) to local elementary schools.
<b>Community-Wide Actions Proposed for 2017</b>	
	Implement Every Other Week garbage Collection for single and two-family properties and multi-family properties that receive curbside service from the City.
	Undertake a review of public street litter receptacles and develop an action plan to expand the number of three-stream recycling receptacles.
	Integrate AVL and Telematics software programs to the collection fleet to create efficiencies in collection, contamination management and enhanced fleet management.
	Implement improvements to the Bulky Item, Appliance and Mattress Collection Program and Abandoned Waste Material service.
	Report on the Bear-resistant Green Bin Pilot Project for multi-family properties and recommend an action plan to Council for consideration.
	Complete the roll out of the City's Green Bin program to the remaining multi-family complexes; and, explore options for improving participation and contamination reduction in the multi-family Green Bin program.
	Review the City's Industrial, Commercial and Institutional customers for compliance of organics separation
	Continue with waste audits for single and two-family and multi-family collection, and utilize audit findings to target outreach and education programs to reduce contamination rates and increase

## 2016 Burnaby CARIP Report

	participation in the Recycling and Green Bin programs.
	Develop educational video clips on diversion, sorting and set out requirements to be used on the City's website and Social Media.
	Review the City's Solid Waste and Recycling Bylaw for amendments to reflect operational service changes.
	Implement service improvement relating to winter snow events.
	Complete and implement the disaster debris waste management guidelines.

Corporate Actions Taken in 2016	
	Audited "I Recycle at Work" Program to determine program performance and contamination.
	Outreach to staff provided by the City's Green Team to promote holiday waste reduction and paper reduction.
	Ongoing implementation of "Smartboards" Technology in City facilities for paperless meetings/webex meetings.
	Project planning undertaken for corporate refresh of Multi-Function Device (MFD) fleet of equipment, including Managed Print Services for peripheral equipment, to reduce solid waste generated by printing.
Corporate Actions Proposed for 2017	
	Continue education and outreach to staff to divert waste.
	Reduce solid waste generated by printing through roll out of new Multi-Function Devices across City Facilities and implementation of Managed Print Services.

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

## 2016 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 2016	
	Completed annual update to the Burnaby Bike Map.
	Continued implementation of the Town Centre Standards for streets in Metrotown, Lougheed,

## 2016 Burnaby CARIP Report

	Brentwood and Edmonds. The standards integrate pedestrian, cyclist, transit and driving networks with the sustainable storm water, urban forestry, street lighting, public art and place making functions of accessible, complete and resilient streets.
	Ongoing design of Willingdon Linear Park in Brentwood Town Centre, with central focus on amenities for walking/cycling as well as greenspace.
	Constructed new sections of Urban Trails (separated pedestrian/bike paths) in various locations.
	Upgraded and constructed new sidewalks, wheelchair ramps, pedestrian signals/crossings, bus shelters, to improve accessibility and safety and encourage walking and taking transit.
	Achieved 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.
	Achieved new car-share, bike facilities, transit passes, electric vehicle charging in various new developments through development review and approval process. Received voluntary commitment by a developer of high-rise multi-unit residential building to supply 100% of parking stalls with EV charging.
	Provided a letter of support for Metro Vancouver's project to purchase, install and commission a multi-purpose DC Fast Charge station at Metrotower III in Metrotown for staff and public EV charging, including the testing of innovative pricing schemes and usage rules to encourage fair access.
<b>Community-Wide Actions Proposed for 2017</b>	
	Continue 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.
	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.
	Advance a Burnaby Transportation Plan update process.

<b>Corporate Actions Taken in 2016</b>	
	Project planning and pilot phase implementation of a new Fuel Management System (FMS) including 182 vehicles and 147 pieces of equipment.
	Project planning undertaken for Auto Vehicle Locator (AVL)/GPS functionality for City vehicles/equipment. Pilot phase planning completed, including use of Route Optimization Software.
	No net new vehicle acquisition for the City Hall Fleet.
	Participated in the Commuter Challenge/Bike to Work week by Burnaby staff.
<b>Corporate Actions Proposed for 2017</b>	
	Roll out final phases of Fuel Management System across six sites, including Firehalls and Works Yard.
	Assess AVL/GPS pilot phase findings, and implement functionality for City vehicles/equipment.
	Participate in the Commuter Challenge/Bike to Work week by Burnaby staff.



## 2016 Burnaby CARIP Report

<b>Transportation</b>	
Does your local government have policies, plans or programs to support:	
• Walking	<b>Yes</b>
• Cycling	<b>Yes</b>
• Transit Use	<b>Yes</b>
• Electric Vehicle Use	<b>Yes</b>
• Other (please specify)	<b>No</b>
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)?	<b>Yes</b>
Does your local government have policies, plans or programs to support local food production (thus reducing transportation emissions)?	<b>Yes</b>

## 2016 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 greenhouse gas emissions.

<b>Community-Wide Actions Taken in 2016</b>	
	Continued implementation of the Regional Integrated Liquid Waste and Resource Management Plan (ILWRMP) provisions including: controlling sediment release from land development construction; restricted use of cosmetic pesticides; outreach plans to support liquid waste source controls; further develop inflow & infiltration mitigation plans and onsite storm water management plans for development.
	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. In 2016, the City issued 350 warning letters, 21 second warning letters and 1 ticket. 94% compliance rate was achieved after the first warning letter was issued to residents.
	Provided Burnaby residents with rain barrels at a subsidized cost.
	Implemented a water conservation poster contest open to students in Grades 4-12 for both private and public schools. Grand Prize winner had their artwork displayed as a mural on our pump station.
	Provided community water conservation education and attended five outreach events focusing attention on outdoor/indoor water use.
	Burnaby Mayor proclaimed BC Water Week and City Staff promoted BC Water Week at various events at our Public Libraries, Creeks and Burnaby Eco-Centre.
	In collaboration with the City of Burnaby Energy Coordinator and Turnleaf Consulting, the Bonsor Pool Campaign was designed to encourage patrons to take less than a 5 minute shower to help reduce water and energy consumption.

## 2016 Burnaby CARIP Report

	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.
<b>Community-Wide Actions Proposed for 2017</b>	
	Continue focus on the Regional Integrated Liquid Waste and Resource Management Plan (ILWRMP) provisions, providing updates and advances as opportunities arise.
	Continue to implement and enforce watering restrictions.
	Provide three water conservation H2Whoa plays (Dreamrider Productions) to Kindergarten to Grade 7 classes.
	Continue to provide water conservation education and attend outreach events.
	Provide Nematode Coupons to residents at subsidized cost to combat European Chafer Beetle infestation using biological treatment instead of chemical treatment.

<b>Corporate Actions Taken in 2016</b>	
	Continued existing combined sewer separation program at a rate of a minimum of 1.5% per year of the existing inventory.
	Hired three Water Conservation Officers to enforce Metro Vancouver Water Shortage Response Plan (WSRP) and assist in delivering outreach/education.
	Undertook a water conservation program in civic buildings to replace sink faucets and continuously filled flushing tanks with self shut-off units.
<b>Corporate Actions Proposed for 2017</b>	
	The City of Burnaby received Federal funding (\$5.8M) under the Clean Water and Wastewater Fund to complete further combined sewer separation projects from 2017 through to 2018 completion.
	Continue with the water conservation program.
<b>Water Conservation</b>	
Does your local government have water conservation policies, plans or programs?	Yes

## 2016 CLIMATE CHANGE ADAPTATION ACTIONS

### Climate Change Adaptation Actions

For local governments, adaptation to a changing climate can take the form of changes in policy, management, technology and behaviour that minimize negative impacts or exploit opportunities. It can involve both “hard” and “soft” solutions, including: changes in infrastructure engineering, planning, zoning, bylaws, and public education.

<b>Climate Change Adaptation Actions Taken in 2016</b>	
	Continued with the dyke upgrades along Fraser River to address climate change sea level rise projections.

## 2016 Burnaby CARIP Report

	Completed Master Drainage Plans for Still Creek and Big Bend areas, incorporating climate change projections.
	Continued with the assessment and upgrade of storm sewer infrastructure. Initiated City-wide culvert study/assessment for capacity and replacement/upgrade, including incorporation of fish passage where appropriate/feasible.
	Achieved stream and riparian area protection and enhancement in various areas through development review process and SPEA Bylaw.
	Worked with developer to achieve environmentally sensitive dyke design in new business park adjacent Fraser River, incorporating projected sea level rise and significant riparian enhancements.
	Approved a framework for the future provision of emergency back-up power supply at select key City facilities to provide public access, service provision and centres for respite during extended power outages.
	Implemented Town Centre Street Standards, including installation of raingardens and street trees in various areas along public roads, in new large developments in town centres.
<b>Climate Change Adaptation Actions Proposed for 2017</b>	
	Continue dyke upgrades along Fraser River to address climate change sea level projections.
	Continue ongoing assessment and upgrading of storm sewer infrastructure and culvert assessment and replacement/upgrade.
	Continue stream and riparian area protection and enhancement through development review process and SPEA Bylaw.
	Update floodplain analysis for Still Creek, incorporating climate change projections.
	Implement emergency back-up power supply framework through feasibility study/costing for initial phase.
	Continue to implement Town Centre Street Standards, including installation of raingardens and street trees in various areas, in new large developments in town centres. Continue to refine and improve City design standards for raingardens.
	Continue to achieve on-site storm water management using low-impact-development approaches in new developments through development review and approval.

### Resources you have used to support climate change adaptation (e.g. [Plan2Adapt](#), [Preparing for Climate Change: Implementation Guide](#))


### In 2016 did you consider climate change impacts in any of the following areas? (check if yes)

Risk reduction strategies	
✓ Risk and Vulnerability assessment	
✓ Asset management	
✓ Infrastructure upgrades (e.g. storm water system upgrades)	
✓ Cross-department working groups	

## 2016 Burnaby CARIP Report

✓ Emergency response planning ✓ Land-use policy changes (eg. OCP, DPA) Economic diversification initiatives ✓ Ecosystem-based approaches (incl. shorelines) Incentives (e.g. property owner reducing storm water run-off) Public education and awareness Research (e.g. mapping, participation in studies)  Other (Please Identify):	
--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--

### 2016 OTHER CLIMATE ACTIONS

#### Other Climate Actions

This section provides local governments the opportunity to report other climate actions that are not captured in the categories above.

Community-Wide Actions Taken in 2016	
Community-Wide Actions Proposed for 2017	

Corporate Actions Taken in 2016	
	On-going and expanded implementation of Workplace Conservation Awareness by the City's Green Team. Campaigns included: energy conservation as noted under Buildings and Lighting; Tap is Terrific (encouraged City staff to replace the plastic non-reusable water bottle for a mug, drinking glass or a reusable water bottle); and, Food Waste and Food Recovery (tips for reducing food waste at home).
Corporate Actions Proposed for 2017	



## 2016 Burnaby CARIP Report

	Implementation of new Workplace Conservation Awareness Campaigns by the City's Green Team, including: Stair Rise Campaign (encourages City staff to take the stairs rather than the elevator, an action that helps reduce energy, elevator wait times and encourages a healthier lifestyle); Throwback Sweater Day (asking City staff to put on their favorite sweater and turn down the heat in their office to save energy); We Love Water (prompting City staff to think about what their life would be like without water and facts on our indirect use of water such as 1 sheet of paper uses about 9.5L of water).

Other	
Are you familiar with the <a href="#">Community Lifecycle Infrastructure Costing Tool (CLIC)</a> ?	Yes
Have you used CLIC?	No

## INNOVATION AND PEER-TO-PEER LEARNING

### Innovation

This section provides the opportunity to showcase an innovative Corporate and/or Community-Wide GHG reduction or climate change adaptation activity that your local government has undertaken and that has had or has the potential to have a significant impact. Projects included here may be featured as success stories on the B.C. Climate Action Toolkit and/or shared with other local governments to inspire further climate action. Please add links to additional information where possible.

<b>Community-Wide Innovative Action</b>
<b>Corporate Innovative Action</b>



## 2016 Burnaby CARIP Report

### 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.

Programs and Funding
BC Hydro Joint provincial and federal government storm sewer separation funding

### 2016 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.

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

### Reporting Emissions

Did you measure your local government's corporate GHG emissions in 2016?	Yes
If your local government measured 2016 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:	11,134
If your local government measured 2016 corporate GHG emissions, please report the number of corporate GHG emissions (in tonnes of carbon dioxide equivalent) from <u>contracted</u> services:	
<b>TOTAL A: CORPORATE GHG EMISSIONS FOR 2016</b>	<b>11,134 tCO<sub>2</sub>e</b>

### Reporting Reductions and Offsets

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

- undertake GCC-supported Option 1 Projects

## 2016 Burnaby CARIP Report

- undertake GCC-supported Option 2 Projects (community GHG emissions reduction projects that meet project eligibility requirements)
- purchase carbon offsets from a credible offset provider

If applicable, please report the 2016 GHG emissions reductions (in tonnes of carbon dioxide equivalent (tCO<sub>2</sub>e)) being claimed from Option 1 GHG Reduction Projects:

OPTION 1 PROJECTS	REDUCTIONS
Energy Efficient Retrofits	
Solar Thermal	
Household Organic Waste Composting	3022
Low Emission Vehicles	
Avoided Forest Conversion	
<b>TOTAL B: REDUCTIONS FROM OPTION 1 PROJECTS FOR 2016</b>	<b>3022 tCO<sub>2</sub>e</b>

If applicable, please report the names and 2016 GHG emissions reductions (in tonnes of carbon dioxide equivalent (tCO<sub>2</sub>e)) being claimed from Option 2 GHG Reduction Projects:

OPTION 2 PROJECT NAME	REDUCTIONS
<b>TOTAL C: REDUCTIONS FROM OPTION 2 PROJECTS FOR 2016</b>	<b>tCO<sub>2</sub>e</b>

If applicable, please report the number of offsets purchased (in tonnes of carbon dioxide equivalent (tCO<sub>2</sub>e)) from an offset provider for the 2016 reporting year:

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

## 2016 Burnaby CARIP Report

OFFSET PROVIDER NAME	OFFSETS
<b>TOTAL D: OFFSETS PURCHASED FOR 2016</b>	<b>tCO<sub>2</sub>e</b>

**TOTAL REDUCTIONS AND OFFSETS FOR 2016 (Total B+C+D) = 3022 tCO<sub>2</sub>e**

### Corporate GHG Emissions Balance for 2016

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 2016 = 11,134-3022 (A – (B+C+D)) = 8,112 tCO<sub>2</sub>e**

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

## 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.

This year a new recognition level has been added – **Level 3: Accelerating Progress on Charter Commitments**–. Recognition is provided on an annual basis to local governments who demonstrate progress on their Charter commitments, according to the following:

## 2016 Burnaby CARIP Report

**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 the Community Energy and Emissions Inventory (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 (corporate or community wide) to reduce GHG emissions in the reporting year (ie: 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.

For purposes of 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 or financial resources and is intended to result in significant GHG reductions:

<b>PROJECT NAME:</b>

Based on your local government's 2016 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	
<input type="checkbox"/>	Not Sure	