



# City of Richmond

## Report to Committee

**To:** Public Works and Transportation Committee      **Date:** April 30, 2014  
**From:** John Irving, P.Eng., MPA      **File:** 10-6000-01/2014-Vol  
 Director, Engineering      01  
**Re:** **Climate Action Revenue Incentive Program (CARIP) & Carbon Neutral Implementation Strategy Reporting Update**

### Staff Recommendation

That:

1. Climate Action Revenue Incentive Program reports indicating the City’s achievement of carbon neutrality in 2013, included as attachments in the staff report titled “Climate Action Revenue Incentive Program (CARIP) & Carbon Neutrality Reporting – Update”, dated April 30, 2014, from the Director, Engineering, be posted on the City’s website.
2. Staff work with the Climate Action Secretariat, joint Provincial-UBCM Green Communities Committee, and other municipalities to refine carbon accounting methods that are part of the Carbon Neutral Progress Reporting and Climate Action Recognition programs.

John Irving, P.Eng. MPA  
 Director, Engineering  
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Att. 5

<b>REPORT CONCURRENCE</b>	
<b>CONCURRENCE OF GENERAL MANAGER</b> 	
<b>REVIEWED BY STAFF REPORT / AGENDA REVIEW SUBCOMMITTEE</b>	<b>INITIALS:</b> 
<b>APPROVED BY CAO</b> 	

## Staff Report

### Origin

The initiative described in this report supports the following Council Term Goals:

- 8.1. *Continued implementation and significant progress towards achieving the City's Sustainability Framework, and associated targets.*
- 13.1. *Use the City's website and other communication tools to inform and regularly update the Richmond Community on Council's Term Goals, plans, priorities and progress.*

### Analysis

Significant progress has been made in developing policies and programs to reduce energy consumption from buildings and fleet activities. The City's Green Fleet Action Plan, adopted in 2013, aims to achieve a 21% reduction in GHG emissions by the year 2020. The Energy Management Program and revised High Performance Building Policy are ongoing tools that are focused on reducing energy consumption and GHG emissions through increased efficiency and greater use of renewable energy sources in civic buildings.

#### 2013 Corporate Carbon Emissions

Table 1 provides a summary of recorded emissions associated with buildings, civic infrastructure, and fleet activities for 2013; the reported figures adhere to the BC Ministry of Environment's methodology and guidance documentation and includes GHG reductions that resulted from the City's purchase of renewable natural gas. Table 1 also includes, for the first time, emissions from major contractors providing services on behalf of the City. Emissions for some contracted municipal services, namely waste and recycling collection, were not included in the 2012 reported contracted as they were not required to be reported. However, reporting contracted emissions is a pre-condition for achieving carbon neutrality. As such, the City's inventory includes contracted emissions from all sources. Attachment 1 provides more detail regarding specific emissions sources, as per Provincial reporting guidelines.

Table 1: Emission Sources

<b>Emission Sources</b>	<b>Tonnes CO<sub>2</sub>e</b>	<b>Quantification Method</b>
Emissions from services delivered directly by the local government	10,214	Derived from actual energy consumption and associated GHG emissions from stationary sources (buildings, lighting, and pumps) and mobile sources (fleet) used directly by the City.
Emissions from contracted services delivering municipal government responsible services	1,170	The BC government standard methodology and guidance for estimated contracted emissions, Option 3 (Vehicle/Equipment Type and Hours of Usage) was used to determine the contracted emissions value.
<b>TOTAL</b>	<b>11,384</b>	

### 2013 Carbon Offsets

Table 2 provides a summary of offsets (also known as credits) that the City expects to benefit from for the 2013 reporting year. Like 2012, offsets from diverted household organic waste, which are above the 2006 baseline, are eligible for credits. For the 2012 reporting year, as it was a new eligible source of offsets, the City was able to report credits that resulted in 2007 through to 2012, for a total of 3,157 tonnes. For 2013, the total reported amounts represent the amount of credits from diverted organics for 2013 only. Due to the significant growth in diverted organics, there was a corresponding increase in carbon offsets in this year.

The City will also be able to claim additional offsets for GHG emissions that previously were not available prior to 2013. These offsets come from avoided emissions that result from the installation of a methane gas capture system at the Vancouver Landfill. Waste that originated in Richmond that is managed by Metro Vancouver translates to a corresponding offset allocation to the City of Richmond. Another new source of offsets relates to composting that occurs as a result of residents dropping off yard trimmings at EcoWaste. Since the City provides this free service to residents, but pays EcoWaste, these credits belong to the City. Like above, offsets that date as far back as the baseline year, 2006, through to 2013 can be reported. Going forward, only annual offsets will be reported. Staff used an offsets calculator provided by the Province of BC, Climate Action Secretariat. The calculator requires that a 3<sup>rd</sup> party validate the information provided. Staff are still pursuing the validation and have confidence in the numbers provided; staff will report back to Council if there is a change.

Table 2: Emission Offsets (Credits)

<b>Offsets</b>	<b>Tonnes CO2e</b>	<b>Quantification Method</b>
Household Organic Waste Composting – Municipally Collected	Estimated 2784	As quantified per Option 1 GHG Reduction Projects reporting methods.
Regional Vancouver Landfill Methane Gas Capture Credits	Estimated 7651	Richmond's credit allocation or credits earned from the capture of landfill gas (methane) at the Vancouver Landfill in Delta.
Household Organic Waste Composting – Yard Trimmings Dropped Off at EcoWaste	Estimated 4663	As quantified per Option 1 GHG Reduction Projects reporting methods.
<b>TOTAL</b>	Estimated <b>15,098</b>	

### Carbon Neutrality & Offset Programs

Based on the above figures, it is staff's expectation that the City will be eligible for a "Level 3: Achievement of Carbon Neutrality" through the Climate Action Recognition Program. Staff are in the process of procuring 3<sup>rd</sup> party verification; if results change, staff will provide an update to Council on these results. If the above figures are confirmed, the City's carbon offsets will exceed its carbon footprint in 2013 by an estimated 3,714 tonnes. Unused carbon offsets can be banked for use in the following year.

In addition to the above offsets, the Province has just released a pilot “Avoided Forest Conversion Profile” carbon accounting methods which quantifies the carbon offsets that result from avoided deforestation. This quantification method will allow the City to claim carbon offsets for all or portions of the Northeast Bog Forest since by purchasing the land, deforestation for development or agricultural activities was avoided. As a result and depending on the completion of a full analysis, the City will be in a position to claim additional carbon offsets for 2013 or 2014. Staff will also review other recent conservation projects (e.g. Grauer Lands) to determine if they are eligible for carbon offsets for future years.

Through staff’s ongoing review and analysis of carbon accounting and reporting requirements, there is a growing concern that some of the methodologies developed by the Province are not fully acknowledging the amount of available carbon offsets or, in some cases, potentially penalizing cities for early actions (e.g. actions carried out prior to signing the Climate Action Charter that have potential for carbon offsets). Staff see an opportunity to engage the Province’s Climate Action Secretariat to improve carbon accounting methods. In order to confirm Council’s support for pursuing this engagement, this report includes a recommendation to this effect.

#### Towards Carbon Neutrality: Implementation Strategy – Richmond Carbon Marketplace Update

To help the City maintain carbon-neutrality in the future through investments in community-based carbon offsets, Council approved the Richmond Carbon Marketplace pilot program in 2013. The pilot program was to be implemented through the following phased approach, with regular reporting back to Council on progress of each phase:

- Phase 1: Determine the Potential for Local GHG Reduction Projects (through outreach)
- Phase 2: Identify Potential Local GHG Reduction / Offset Projects
- Phase 3: Assessment and Quantification of local GHG Reduction Projects
- Phase 4: Achieving Carbon-Neutrality for the City of Richmond
- Phase 5: Continued Growth of Richmond’s Local Low-Carbon Economy

Staff are currently in Phase 1 at this time and are actively working on a communications and outreach campaign for the Richmond Carbon Marketplace. Communication and outreach activities are being planned in tandem with the Richmond Energy Challenge outreach efforts, a program for building energy upgrades in existing buildings approved by Council on April 28<sup>th</sup>, 2014. Meetings with community-based organizations and businesses are scheduled for June. Approximately 8-10 non-profit groups and/or businesses will be engaged with face to face meetings. Development work on the “Request for Community Carbon Credits (RFC3)” and community web “hub”, that includes a carbon offset self-assessment tool will be completed in time to coincide with the launch of the community outreach campaign in June. Once the RFC3 and the web “hub” are available, the City will further engage community stakeholders through workshops and direct marketing. It is planned to report back to Council on the results of the engagement campaign for the Richmond Carbon Marketplace by the end of the summer with a list of applicable community GHG emissions reduction projects.

**Financial Impact**

None at this time.

**Conclusion**

The City of Richmond continues to meet its commitments as a signatory of the BC Climate Action Charter and is working towards Council’s objective to become carbon neutral through investing in community projects. This effort includes the mandatory public reporting of GHG emissions and energy consumption from corporate operations. As such, the City’s 2012 reports (**Attachments 1-5**) will be posted on the City’s website to facilitate public access. For the 2013 reporting year and pending validation of staff’s analysis, it is staff’s expectation that the City will be recognized for carbon neutrality by the joint Provincial – UBCM Green Communities Committee and will have carry over carbon offsets for the 2014 reporting year.



Peter Russell  
Senior Manager, Sustainability and District Energy

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PR:pr

Attachment 1	Carbon Emissions Provincial Reporting Template - 2013	REDMS# 4218420
Attachment 2	Climate Action Revenue Incentive Public Report for 2013	REDMS# 4169179
Attachment 3	Interim Climate Action Revenue Incentive Public Report Attestation	REDMS# 4169007
Attachment 4	Contracted Emissions Estimation Template	REDMS# 4221715
Attachment 5	Draft - Option 1 GHG Reduction Reporting Template	REDMS# 4221722

<b>Local Government Name:</b>	The City of Richmond
<b>Year:</b>	2013
<b>Contact Information:</b>	
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<b>Stationary Emission Sources:</b>				
<b>Building Fuel</b>	<b>Unit of Measure</b>	<b>Quantity</b>	<b>Emissions (tCO<sub>2</sub>e)</b>	
Electricity	KWH	46,199,347.00	1154.98	
Natural Gas	GJ	112,341.39	5841.75	
<b>Mobile Emission Sources:</b>				
<b>Vehicle Class</b>	<b>Vehicle Fuel</b>	<b>Unit of Measure</b>	<b>Quantity</b>	<b>Emissions (tCO<sub>2</sub>e)</b>
Light Duty Vehicle	Gasoline	L	58,937	137.09
Light Duty Vehicle	Diesel	L	1,713	4.50
Light Duty Truck	Gasoline	L	469,964	1,109.11
Light Duty Truck	Diesel	L	59,891	157.27
Heavy Duty Truck	Gasoline	L	149,603	334.81
Heavy Duty Truck	Diesel	L	380,787	991.95
Off Road Vehicle	Gasoline	L	17,326	38.93
Off Road Vehicle	Diesel	L	147,542	427.87
Off Road Vehicle	Propane	L	10,272	15.74
Light Duty Truck	Gasoline	L	10,304	24.32
Heavy Duty Truck	Diesel	L	410,145	1,068.43
Heavy Duty Truck	Natural Gas	GJ	298.29	15.51
Off Road Vehicle	Diesel	L	21,121	61.25
<b>Total Emissions (all Sources)</b>				<b>11,383.52</b>

# Climate Action Revenue Incentive Program (CARIP) Public Report

## Climate Action Revenue Incentive (CARIP)

### Public Report for YEAR 2013

City of Richmond

Metro Vancouver



#### Report Submitted by

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Sustainability Project Manager  
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The City of Richmond has completed the 2013 Climate Action Revenue Incentive Program (CARIP) Public Report as required by the Province of BC. The CARIP report summarizes actions taken in 2013 and proposed for 2014 to reduce corporate and community-wide energy consumption and greenhouse gas emissions (GHG).

May 13, 2014

#### General Information

<b>Name of Local Government</b>	City of Richmond
<b>Member of Regional District (RD)</b>	Metro Vancouver
<b>Regional Growth Strategy (RGS) in region</b>	Yes
<b>Population</b>	205,000

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## Community Wide Actions for 2013

### 1.1 Measure

#### Community Wide Measurement Actions

<b>Question</b>	Have you been using the Community Energy and Emissions Inventory (CEEI) to measure progress? What else have you been using instead of/in addition to CEEI?
<b>Answer</b>	Yes

### 1.2 Plan

#### Community Wide Targets

<b>Question</b>	Does your OCP(s) have targets, policies and actions to reduce GHG emissions, as per the requirements under the <i>Local Governments Act (LGA)</i> ? If yes, please identify the targets set. If no or in progress, please comment.
<b>Answer</b>	Yes
<b>Additional Information</b>	The 2041 Official Community Plan (OCP) GHG emissions reduction targets are 33% below 2007 levels by 2020 and 80% below 2007 levels by 2050. The OCP also includes an energy reduction target of 10% below 2007 levels by 2020.

1.3 Reduce

**Supportive Community Wide Actions**

Action Type	Broad Planning
<p><b>Actions Taken this Year</b></p>	<p>Continued implementation of the long-term Climate Change Response chapter of the OCP reducing GHG emissions and sequestering carbon. Policies and objectives include: protection and enhancement of the natural habitat; increasing the use of sustainable modes of transportation with the 2041 goal of increasing the mode share of transit, walking, and cycling by a combined 34%; and developing further densification, transportation, and sustainable building plans for shopping centres outside the City Centre. Continued implementation of the City Centre Area Plan (CCAP) directing the majority of City growth to the City Centre near Canada Line Stations. Updated the Steveston Heritage Strategy promoting increased transit usage, walkable neighbourhoods and energy efficient construction in the Steveston neighbourhood. Undertook BC Hydro funded neighbourhood energy study as part of Hamilton Area Plan and completed Community Implementation Offer project “Neighbourhood Energy Planning for Local Government Policy Makers.”</p>
<p><b>Proposed Actions for Next Year</b></p>	<p>Continue to implement the OCP and CCAP. The citywide Community Energy and Emissions Plan and the Hamilton Area Plan—improving transit, promoting walkability, and planning for more energy efficient mixed-use and multi-unit residential buildings (MURB)—are anticipated to be adopted.</p>

Action Type	Building and Lighting
<p><b>Actions Taken this Year</b></p>	<p>Continued implementation of CCAP requirement that all rezoning applications with development over 2,000 m<sup>2</sup> are equivalent to LEED silver standards. Continued to require District Energy Utility (DEU) ready development in the Alexandra neighbourhood of West Cambie. Developed Service Area Bylaw for the River Green District Energy Utility (RGDEU) to ensure mandatory connection of all new developments in the area to RGDEU. Formed District Energy Coordinator part time position.</p>
<p><b>Proposed Actions for Next Year</b></p>	<p>Continue to implement CCAP policies through new development applications. Develop higher minimum energy standard for City Centre and assess sustainability requirements for rezoning applications greater than 2,000 m<sup>2</sup> outside of City Centre. Develop a long-term City Centre district energy strategy, update the heat load map to identify DEU project priorities, establish a mandatory DEU ready service area bylaw for City Centre and implement RGDEU Service Area Bylaw.</p>

Action Type	Energy Generation
<b>Actions Taken this Year</b>	Completed due diligence phase for RGDEU design, construction, financing, and operation.
<b>Proposed Actions for Next Year</b>	Execute agreement with utility partner and develop implementation plan for the design, construction, financing, and operation of RGDEU. Complete pre-feasibility study that will explore opportunities to develop district energy node with renewable energy source(s) for the new aquatic centre, older adults centre, fire hall and existing buildings in the City Precinct area.

Action Type	Green Space
<b>Actions Taken this Year</b>	Completed the 2022 Parks and Open Space Strategy (POSS) with actions to support expanded walking, rolling and cycling networks, increased ecological connectivity and integration of green infrastructure within the parks and open space system.
<b>Proposed Actions for Next Year</b>	Develop the Urban Forest Management Strategy to consider GHG reduction. Continue to implement POSS and complete the Community Gardens Strategic Plan including proposed conservation of bog areas and agricultural uses.

Action Type	Transportation
<b>Actions Taken this Year</b>	Increased funding for walking, cycling and transit improvements consistent with OCP goals and targets. Expanded mandate of City bicycle advisory committee to include other forms of active transportation and supported education and encouragement programs (e.g. annual bike tour, Walk Richmond program and cycling education courses for students and adults). Facilitated expansion of car-share services in Richmond.
<b>Proposed Actions for Next Year</b>	Collaborate with TransLink to begin update of Richmond Area Transit Plan. Continue to forward education and encouragement programs for cycling and walking, implement transportation-related OCP policies and continue to support any interest in the expansion of car-share services.

Action Type	Waste
<b>Actions Taken this Year</b>	Completed annual report on waste reduction and diversion progress in conjunction with the Strategic Waste Program. Developed multilingual communications and outreach materials promoting recycling. Continued community engagement through workshops, theatrical shows at elementary schools, outreach displays and other events (e.g. Public Works Open House and Richmond Earth Day Youth (REaDY) Summit).
<b>Proposed Actions for Next Year</b>	Advance the Strategic Waste Program and implement initiatives to reach the adopted waste diversion target of 70% by 2015. Continue annual reporting on waste reduction and diversion progress and promote new recycling initiatives and pending disposal bans.☐

Action Type	Water/Sewer
<b>Actions Taken this Year</b>	Delivered water quality and conservation education through workshops and events (e.g. Public Works Open House, Project WET, H2Whoa!, Waterwise) and supported BC Water & Waste Association Drinking Water Week. Installed water stations at community events to promote high-quality tap water. Issued 852 rebates through the low-flow retrofit Toilet Rebate Program.
<b>Proposed Actions for Next Year</b>	Continue engagement events including education on tap water consumption and water sprinkling regulations. Continue Toilet Rebate Program and introduce redeveloped Rain Barrel Program.

**Direct Community Wide Actions**

Action Type	Buildings
<b>Actions Taken this Year</b>	Implemented City Centre rezoning consideration for developments to be DEU ready with 8,000 DEU-ready units currently approved. Incorporated city-owned corporation Lulu Island Energy Company Ltd to manage district energy systems. Required 20% of MURB parking stalls to have 120V receptacles for EV charging and an additional 25% of stalls to be constructed to facilitate future installation (e.g. conduit for future wiring).
<b>Proposed Actions for Next Year</b>	Formalize and adopt DEU ready policy for all City Centre MURB development and create implementation plan to provide district energy service for North City Centre Area development. Continue to implement policies supporting the use of electric vehicles.

Action Type	Energy Generation
<b>Actions Taken this Year</b>	Provided ADEU service to second building (260 units).
<b>Proposed Actions for Next Year</b>	Provide ADEU service to third building (250 units) and commence Phase 3 to expand ADEU.

Action Type	Transportation
<b>Actions Taken this Year</b>	Completed mobility initiatives to promote sustainable modes of transportation including: construction of 350m of neighbourhood walkway and 300m of off-street multi-use path; addition of anti-skid surface at greenway-road intersections; upgrade of 3 crosswalks and 10 existing bus stops with accessible pedestrian features; expansion of bus stop benches and connecting pathways; implementation of traffic calming measures in school zones.
<b>Proposed Actions for Next Year</b>	Complete all outstanding 2013 transportation initiatives and implement the 2014 capital program which includes an increased number of projects from 2013.

Action Type	Waste
<b>Actions Taken this Year</b>	Introduced the Green Cart and large item pickup programs to 41,000 single-family and townhome dwellings. Commenced 15-month food scraps recycling pilot for 5,500 MURB units to inform design of full-scale program in 2015. Expanded Recycling Depot services to collect Styrofoam, batteries, cell phones, used books and plastic bags. Evaluated and improved recycling containers to ensure attractiveness and operability for use in public spaces. Engaged as a collection contractor with Multi-Material BC as part of the provincial product stewardship program.
<b>Proposed Actions for Next Year</b>	Undertake pilot to determine optimal cart sizing and collection frequency for waste and recycling. Obtain Council approval for full-scale MURB organics recycling program (30,000 units). Expand recycling under the Multi-Material BC stewardship program and continue intensive outreach to maximize recycling participation. Evaluate Recycling Depot expansion to an Eco-Centre model.

Action Type	Water/Sewer
<b>Actions Taken this Year</b>	Continued implementation of water metering program to include 69% single-family, 23% MURB units and 100% industrial and commercial properties. Subsidized 70 barrels through the Rain Barrel Program and supported implementation of Metro Vancouver water sprinkling restrictions.
<b>Proposed Actions for Next Year</b>	Continue to support water conservation initiatives and programs and advance implementation of the water metering program. Promote the redeveloped Rain Barrel Program.

Action Type	Green Space
<b>Actions Taken this Year</b>	Continued implementation of POSS including tree planting in parks and schools sites, maintenance of urban forest and addition of park spaces and facilities.
<b>Proposed Actions for Next Year</b>	Continue to implement POSS and capital program.

Question	Is there any activity that you have been engaged in over the past year(s) that you are particularly proud of and would like to share with other local governments? Please describe and add links to additional information where possible.
<b>Answer</b>	Richmond is committed to increasing the share of walking and other modes of sustainable transportation. In order to support this effort and in anticipation of the needs of an aging population, the City is improving accessibility and walkability via implementation of an Accessible Pedestrian Signal (APS) program. To the City's knowledge, it is the only city of its size to commit to the upgrade of all City-owned signalized intersections and special crosswalks to include APS features. Currently, the City has 75 special crosswalks and 38 pedestrian signal locations with APS features. Approximately 25% of the City's 149 signalized intersections have APS features and completion of the program is anticipated by 2020.

## Corporate Actions for 2013

### 2.1 Measure

#### Corporate Measurement Actions

<b>Question</b>	What steps has your local government taken toward completing its corporate emissions inventory?
<b>Answer</b>	Richmond established a corporate energy and emissions baseline of 2007, embedding it within its broader sustainability framework. The City has developed a database to track energy consumption of buildings and other assets, and the Green Fleet Action Plan adopted in 2013 improves its ability to manage fleet fuel use and related emissions.

<b>Question</b>	What tool are you using to measure, track and report on your corporate emissions?
<b>Answer</b>	Richmond is using a spreadsheet to meet requirements for this reporting year. The City is in the process of upgrading its energy tracking database to a platform that allows greater flexibility to meet multiple GHG reporting commitments.

### 2.2 Reduce

#### Supportive Corporate Actions

<b>Action Type</b>	Broad Planning
<b>Actions Taken this Year</b>	Continued upgrade of corporate energy use database and developed energy use targets for new infrastructure.
<b>Proposed Actions for Next Year</b>	Complete upgrade of corporate energy use database and define administrative procedures for improved energy performance of existing facilities. The revised corporate High Performance Building Policy including better than code energy performance for new buildings, no net increase of overall building energy and GHG emissions and a target of net zero and carbon neutral buildings by 2030 is anticipated to be adopted.

<b>Action Type</b>	<b>Building and Lighting</b>
<b>Actions Taken this Year</b>	Completed energy demand profile for corporate buildings estimating long term baseline given population growth projections.
<b>Proposed Actions for Next Year</b>	Complete long term energy assessment and retro-commissioning plan for corporate buildings.

<b>Action Type</b>	<b>Energy Generation</b>
<b>Actions Taken this Year</b>	Advanced opportunity review for corporate building projects.
<b>Proposed Actions for Next Year</b>	Complete Energy Strategy and Options Evaluation for new buildings in City Precinct.

<b>Action Type</b>	<b>Transportation</b>
<b>Actions Taken this Year</b>	Continued initiatives to encourage use of alternative modes of transportation for commuting and corporate travel including Bike to Work week promotion, corporate bike fleet and promotion of transit fare tickets and passes. Developed Green Fleet Action Plan to improve fuel efficiency, minimize overall environmental impact of equipment and vehicle operations and reduce GHG emissions 20% by 2020. Undertook best-in-class procurement of 44 fleet units, including units with highest fuel efficiency (tier 4 compliant models for excavator equipment, one electric forklift and two solar powered message board signs). Increased seating capacity of vans used in carpool program. Installed eleven electric vehicle charging stations for community and fleet use, and included anti-idling bylaw awareness in driver training and orientation.
<b>Proposed Actions for Next Year</b>	Continue to implement Green Fleet Action Plan actions including: demand side management; improved maintenance, monitoring and reporting; and alternative fuels. Explore expansion of employee carpool program, upgrade units upon replacement and support use of alternative modes of transportation for work related travel and other corporate initiatives.



<b>Action Type</b>	<b>Water/Sewer</b>
<b>Actions Taken this Year</b>	Reviewed >100 pump electricity account listings and reconciled data for location and use.
<b>Proposed Actions for Next Year</b>	Upgrade energy use database to generate monthly reports of water and sewer energy consumption.

### Direct Corporate Actions

<b>Action Type</b>	<b>Building and Lighting</b>
<b>Actions Taken this Year</b>	Completed City Hall, Community Safety Building, and South Arm, West Richmond and Thompson Community Centres lighting retrofits. Replaced faulty couplings, end-of-life boiler and improved building envelope at Gateway Theatre to reduce natural gas consumption. Upgraded Works Yard building controls to improve energy efficiency. Active participant in the BC Hydro Workplace Conservation Awareness Program.
<b>Proposed Actions for Next Year</b>	Complete major equipment replacement and upgrade at Richmond Ice Centre and Watermania. Complete lighting retrofits at Kwantlen building and three other suitable locations. Replace end-of-life gas fired rooftop units with efficient electric heat pumps. Develop and implement Workplace Conservation Awareness Program for Year 4.

<b>Action Type</b>	<b>Energy Generation</b>
<b>Actions Taken this Year</b>	Completed installation of solar thermal air wall at South Arm Community Centre.
<b>Proposed Actions for Next Year</b>	Complete installation of heat recovery system at Richmond Ice Centre to pre-heat ice flood water and optimize solar thermal energy system at South Arm Community Centre Pool. Complete Energy Strategy and Options Evaluation to identify appropriate renewable energy source(s) for City Precinct buildings.

Action Type Fleet	
<b>Actions Taken this Year</b>	Undertook review of fuel management system and improved fuel security. Implemented tracking measures to establish baseline—correlating vehicle kilometres traveled with fuel consumption—and enable measurement of the effectiveness of new initiatives. Prepared for implementation of new fleet management software with business improvement processes and reviewed GPS systems for potential pilot program.
<b>Proposed Actions for Next Year</b>	Initiate Fraser Basin Council E3 Fleet Certification and implement new fleet software management system. Complete GPS pilot with 50 units to measure impact on fuel consumption and vehicle resource use efficiency.

Action Type Waste	
<b>Actions Taken this Year</b>	Delivered 14 adult workshops on composting, harvesting compost, eco-cleaning, and related waste reduction and recycling strategies. Supported Climate Change Showdown and 2nd REaDY Summit for youth. Coordinated the delivery of two theatrical productions (Zero Heroes and Clean Up Your Act) to 10 elementary schools reaching 3,500 students and “Make Richmond Sparkle” show to 8 elementary schools reaching 850 students. Provided recycling services at community events and organized Green Ambassador Program with student volunteers contributing 1,500 hours to promote recycling.
<b>Proposed Actions for Next Year</b>	Expand food scraps collection at City facilities in conjunction with expansion of organics recycling services to MURB units.

Action Type Water/Sewer	
<b>Actions Taken this Year</b>	Continued upgrading corporate facilities with lower flow units (e.g. Minoru Arena and Gateway Theatre).
<b>Proposed Actions for Next Year</b>	Continue to implement corporate and departmental initiatives for more efficient use of high-quality tap water.

<b>Action Type</b>	Green Space
<b>Actions Taken this Year</b>	Completed Phase 1 of 5km Railway Greenway multimodal trail connecting neighbourhoods from the Middle Arm Dyke Trail to the Steveston Waterfront. Planted 1,200 trees on streets and in parks.
<b>Proposed Actions for Next Year</b>	Continue to acquire land for parks and open space, begin construction of 4 acre neighbourhood park in City Centre and plant 800 trees on streets and in parks.

### 2.3 Corporate Innovation

<b>Question</b>	Is there any activity that you have been engaged in over the past year(s) that you are particularly proud of and would like to share with other local governments? Please describe and add links to additional information where possible.
<b>Answer</b>	Richmond's long-term corporate energy use analysis indicates that, without additional action, building energy use will increase 25% by 2020. This projection informs the revised High Performance Building Policy target of no net increase in building energy use from 2012 levels. In addition to this target, the policy—to be considered by Council in early 2014—sets the direction for new corporate buildings to achieve energy performance of 24% better than code.

## Carbon Neutral Progress Reporting

### 3.1 Carbon Neutral Progress Reporting

Emissions/Offsets	Tonnes CO2e
<b>Annual corporate emissions using SMARTTool or equivalent inventory tool</b>	<b>11,384</b>
<i>Emissions from services delivered directly by the local government</i>	<b>10,214</b>
<i>Emissions from contracted services</i>	1,170
<b>Less:</b>	<b>2,784</b>
GHG reductions being claimed for this reporting year from Option 1 - GHG reduction project	
<i>Energy Efficient Building Retrofits and Fuel Switching</i>	
<i>Solar Thermal</i>	
<i>Household Organic Waste Composting</i>	<b>2,784</b>
<i>Low Emissions Vehicles</i>	
<b>Less:</b>	<b>12,314</b>
GHG reductions being claimed for this reporting year from Option 2 - GHG reduction projects	
<i>Option 2 Project A</i>	4,663
<i>Option 2 Project B</i>	7,651
<i>Sum of Other Option 2 Projects (if you have added projects below)</i>	<b>0</b>
<b>Less:</b>	
<i>Offsets purchased for this reporting year (Option 3). Please identify your offset provider in the offset provider information section below.</i>	
<b>Balance of corporate emissions for this reporting year.</b> <i>(If the corporate emissions balance is zero, your local government is carbon neutral for this reporting year)</i>	<b>-3,714</b>
<b>Additional "Option 2" Projects</b>	
<i>Option 2 Project C</i>	
<i>Option 2 Project D</i>	
<i>Option 2 Project E</i>	
<i>Option 2 Project F</i>	
<i>Option 2 Project G</i>	
<i>Option 2 Project H</i>	

### 3.2 Making Progress on Your Carbon Neutral Commitment

<b>Question</b>	If your community has not achieved carbon neutrality for this reporting year please describe the actions that you intend to take next year to move you toward your carbon neutral goal.
<b>Answer</b>	

### 3.3 Offset Provider Information

<b>Question</b>	Please Identify the name(s) of your offset provider(s) (Please answer below):
<b>Answer</b>	

<b>Question</b>	The offsets being claimed in this CARIP Report were purchased from the offset provider(s) indicated above prior to making this CARIP report public (please indicate yes or no):
<b>Answer</b>	

<b>Question</b>	If your community has not achieved carbon neutrality for this reporting year please describe the actions that you intend to take next year to move you toward your carbon neutral goal.
<b>Answer</b>	



Ministry of **Community, Sport and  
Cultural Development**

### CARIP Public Report Attestation Form

**The Purpose of this Attestation:** As per the CARIP guidance, the Financial Officer is required to attest that the CARIP report submitted to the Province on or before **March 7, 2014** has been made public and also indicate if it is the Final or *Interim* Report.

If applicable, the Financial Officer will also be required to attest that the local government's updated *Interim* CARIP report submitted on **June 2, 2014** has been made public and is the Final Report. Please complete the attestation below that applies to your 2013 CARIP Public Report at this time. **Please review the general CARIP Guidance document for more information on this requirement.**

**Financial Officer must complete and sign the APPLICABLE attestation form below and email a scanned copy to the province at [infra@gov.bc.ca](mailto:infra@gov.bc.ca)**

#### **FINAL CARIP Report attestation:**

I declare that this is the Final 2013 CARIP Public Report for (insert name of local government) and that this report was made public on (date)

Name, Title (print) CFO \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

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#### **INTERIM CARIP Report attestation:**

I declare that this is the *Interim* 2013 CARIP Public Report for (insert name of local government) and that this Report was made public on (insert date)

Additional carbon neutral information is needed to complete this CARIP Report and once that information is received; this CARIP report will be updated, made public and submitted as Final to the Province on or before **June 2, 2014**.

As per the CARIP Guidance document, I am aware that local governments that do not make public and submit an updated, Final 2013 CARIP Public Report to the Province by the **June 2, 2014**, deadline:

- May not be eligible for next year's CARIP grant.
- Will not be eligible for certain elements of the Green Communities Recognition Program, and
- Will not be included in the 2013 Provincial level report on local government climate action progress

Name, Title (print) CFO or CAO JERRY CHONG (FOR A NAZARETH)

Signature: [Handwritten Signature]

Date: March 5, 2014

## CARIP/Carbon Neutral Progress Report Reporting Year 2013

### Supporting Documentation Contracted Emissions Template

LOCAL GOVERNMENT
<p>City of Richmond 6911 No. 3 Road Richmond, BC V6Y 2C1</p>
PROJECT DESIGNATE
<p>Peter Russell, Sr. Manager, Sustainability &amp; District Direct 604-276-4130 <a href="mailto:peter.russell@richmond.ca">peter.russell@richmond.ca</a></p>
RATIONALE
<p>An estimation methodology for hired equipment contractor emissions is being utilized for 2013 since actual emissions for some contracts over \$25,000 have not provided fuel usage values.</p> <p>The City has identified three main contract areas for delivery of traditional services:</p> <ol style="list-style-type: none"> <li>1. Cascades Recovery Inc. and BFI provide recycling depot container collection and recycling services (T.4311);</li> <li>2. Sierra Waste Services deliver residential solid waste and recycling services (T.2988);</li> <li>3. BFI Canada Waste Management supplies of garbage containers and collection services at City facilities.</li> </ol> <p>Each of these contracts was awarded prior to June 1, 2012 and are not required to be quantified as per BC government guidance. However, as the City is planning on achieving carbon neutrality for 2013, these contracted emissions have been included in our mobile fleet emissions reporting spreadsheet. With the exception of Cascades Recovery, fuel usage values were provided by the contractors and Provincial conversion factors were used to determine associated GHG emissions. For Cascades Recovery, fuel usage was estimated by from total kilometers driven.</p> <p>The hired equipment contracted emissions, with the exception of equipment used outside of the defined traditional service boundaries or for capital rather than maintenance projects, is listed in the table below by traditional service area.</p> <p>Option 3 is the estimation methodology used:</p> <ol style="list-style-type: none"> <li>1. Hired equipment records sorted to exclude out of scope contracts;</li> <li>2. City equipment operating records assessed to determine average consumption factors in litres per hour or kilometers driven for each equipment family;</li> <li>3. Consumption factors used to estimated fuel consumption for hired equipment;</li> <li>4. Environment Canada emissions factors applied to calculate GHG emissions.</li> </ol>

**CONTRACTED EMISSIONS****Option 3: Vehicle/Equipment Type and Hours or Kilometers of Usage**

<b>Traditional Service Area</b>	<b>Estimated Annual GHGs (tonnes)</b>
<b>Drinking, Storm and Wastewater</b>	<b>56.8</b>
<b>Solid Waste Collection, Transportation and Diversion</b>	<b>8.0</b>
<b>Roads and Traffic Operations</b>	<b>173.1</b>
<b>Arts, Recreation and Cultural Services</b>	<b>3.0</b>
<b>Fire Protection</b>	<b>—</b>
<b>Total</b>	<b>240.9</b>



## CARIP/Carbon Neutral Progress Report Reporting Year 2013

### Supporting Documentation GHG Reduction Project: Option 1 Reporting Template

<b>LOCAL GOVERNMENT</b>
<p>City of Richmond 6911 No. 3 Road Richmond, BC V6Y 2C1</p>
<b>PROJECT DESIGNATE</b>
<p>Peter Russell, Sr. Manager, Sustainability and District Energy Direct 604-276-4130 <a href="mailto:peter.russell@richmond.ca">peter.russell@richmond.ca</a></p>
<b>PROJECT INFORMATION</b>
<p>City of Richmond Project 1C: Household Organic Waste</p> <p>The City of Richmond operates a curbside organics collection program to divert organic waste from the Vancouver Landfill.</p> <p>The City of Richmond diverted a total of 14,237 tonnes of organics in 2013. Eligible diverted organics beyond the 2006 baseline translated into 2784 tonnes CO<sub>2</sub>e (to be verified) of offset.</p>
<b>PROJECT TRANSPARENCY</b>
<p>As a Green Communities Committee supported project utilizing Metro Vancouver reporting rationale, this project is understood to be:</p> <ul style="list-style-type: none"> <li>• outside of the corporate emissions boundary;</li> <li>• with GHG emissions counted only once;</li> <li>• with the City of Richmond having ownership of the specified GHG reductions;</li> <li>• with the emissions verifiable as having occurred following the release of the Climate Action Charter to the end of the 2013 reporting year;</li> <li>• part of the City's Carbon Neutrality report that indicates the City is making progress towards its carbon neutral commitment.</li> </ul>