



City of Richmond

Report to Committee

To: General Purposes Committee

Date: May 30, 2013

From: John Irving, P.Eng., MPA
Director, Engineering

File:

Re: Climate Action Revenue Incentive Program (CARIP) & Carbon Neutrality Reporting - Update

Staff Recommendation

That the staff report titled Climate Action Revenue Incentive Program (CARIP) & Carbon Neutrality Reporting – Update dated May 30, 2013 from the Director, Engineering, be received for information.

John Irving, P. Eng., MPA,
Director, Engineering
Engineering and Public Works
604-276-4140

Att: 1

REPORT CONCURRENCE	
CONCURRENCE OF GENERAL MANAGER	
REVIEWED BY CAO	INITIALS:

Staff Report

Origin

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

- 5.7 *Investigate maximizing investment opportunities and returns while remaining fiscally responsible.*
- 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.*

Background

The City of Richmond committed to becoming carbon neutral in its own operations in 2008 when it signed the BC Climate Action Charter – a voluntary agreement among the Province, UBCM and local governments in BC. Inclusive of the agreement, the City of Richmond committed to reporting out on its corporate greenhouse gas (GHG) emissions annually, which ensures that the City continues to receive the Climate Action Revenue Incentive Program (CARIP) grant from the province. The grant is a refund of the corporate carbon tax payments made on fuel purchases, which in 2012 equalled \$232,000.

The 2012 reports (**Attachments 1-4**) are to be posted on the City's website on June 1, 2013 as part of the grant requirements that stipulate public reporting. New for the 2012 reporting period, a Carbon Neutral Progress report is now required that lists corporate GHG emissions and emissions reduction credits.

Analysis

The City of Richmond's Carbon Neutral Progress reporting adheres to the BC Ministry of Environment's methodology and guidance documentation. The following were the reported values for the City's 2012 Carbon Neutral Progress Report:

Emissions	Total (tonnes CO2e)	Quantification Method
Source: Emissions from services delivered directly by the local government	10,108	This emissions value is derived from two components; stationary sources (buildings, lighting, and pumps) and mobile sources (fleet).
Source: Emissions from contracted services	167	This emission value obtain as per 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.

Credit: Household Organic Waste Composting	3,157	This value was derived from the Metro Vancouver analysis and report entitled “2012 Green Communities Committee Carbon Credits for Organic Diversion” that was presented to the Regional Engineers Advisory Committee – Climate Protection Subcommittee on April 15, 2013. The report determined the carbon credits that could be claimed by the City of Richmond for its green organics collection between 2007-2012.
Total Net 2012 Corporate GHG Emissions	7,118	

Consistent with the City’s Carbon Responsible Strategy (adopted June 2011), the City has chosen the “working towards carbon neutrality” option for reporting purposes. For 2012, the City was able to claim credit for GHG emissions that resulted from diverted organics between 2007 and 2012 that were above the 2006 baseline year. During that time the City diverted 9,916 tonnes of organic waste from the landfill above the 2006 baseline amount. This diverted waste produced a credit of 3,157 tonnes of CO₂e for the City that was used to offset the City’s 2012 corporate GHG emissions total. Most Metro Vancouver municipalities are claiming these credits in 2012, as per provincial protocol. Going forward, the total amount of credits that are obtainable from diverted organics will be less than the 2012 amount as local governments will only be able to claim the previous year’s diverted waste above the baseline amount as opposed to an accumulation of five years of diverted waste.

If the City had chosen to offset the remaining net corporate 2012 GHG emissions (7,118 tCO₂e) through the purchase of carbon offsets on the open market, the total cost of offset purchases would have been approximately \$180,000 at a price of \$25 per tonne of CO₂e.

Per the Carbon Responsible Strategy, steps that the City plans to take this year to continue of work in reducing our GHG emissions include the following:

1. Continuing and expanding the corporate energy management program to reduce corporate energy and GHG emissions further;
2. Developing and adopting a Corporate Energy and Emissions Plan, which includes a working towards Carbon Neutral Strategy; and,
3. Exploring community investment opportunities for future corporate emission credits (offsets).

Financial Impact

None.

Conclusion

The City of Richmond continues to meet its commitments as a signatory of the BC Climate Action Charter and is making progress towards corporate carbon neutrality. This effort includes the mandatory public reporting of GHG emissions and energy consumption from corporate operations.

The City's 2012 reports (**Attachments 1-4**) will be posted on the City's website to facilitate public access.



Peter Russell, MCIP, RPP
Senior Manager, Sustainability and District Energy,
Engineering and Public Works
604-276-4130

Attachment #1	Climate Action Revenue Incentive (CARIP) Final Public Report for 2012
Attachment #2	Final CARIP Public Report Attestation
Attachment #3	Contracted Emissions Estimation Template
Attachment #4	Option 1 GHG Reduction Reporting Template

Climate Action Revenue Incentive Plan (CARIP) Public Report

Climate Action Revenue Incentive (CARIP) Public Report for 2012

City of Richmond
Metro Vancouver
Regional District

Reported by
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General Information

Name of Local Government

City of Richmond

Member of Regional District (RD)

*Metro Vancouver
Regional District*

Regional Growth Strategy (RGS) in region

Yes

Population

200,000

Community-Wide Actions for 2012

1.1 Measure

Community-Wide Measurement Actions

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

1.2 Plan

Community-Wide Targets

Question	Do 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.
Answer	Yes
Additional Information	<i>Absolute GHG emissions targets: 33% below 2007 levels by 2020, and 80% below 2007 levels by 2050. Richmond Council has also adopted an absolute energy reduction target of 10% below 2007 level by 2020. This target is being considered to be embedded into Richmond's Official Community Plan (OCP) as part of the OCP update currently underway.</i>

1.3 Reduce

Supportive Community-Wide Actions

Action Type	Broad Planning (e.g. creation/revision of OCPs, CEPs, transportation plans)
Actions Taken this Year	<i>Continued to implement the City Centre Area Plan (CCAP) which directs the majority of City growth to the City Centre and near the Canada Line Stations. Adopted the 2041 OCP Bylaw 9000 with numerous new policies and objectives relating to long term GHG and energy reduction strategies including; a complete chapter on Climate Change Response with objectives for GHG emissions reduction and for carbon sequestration through the protection and enhancement of 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 reducing the mode share of automobile trips accordingly, developing further densification, transportation, and sustainable build plans for shopping centres outside the City Centre.</i>
Proposed Actions for Next Year	<i>Complete City of Richmond Community Energy and Emissions Plan. Continue to implement City Centre Area Plan.</i>

Action Type	Building and Lighting (e.g. developed green building policy, increased density in the downtown)
Actions Taken this Year	<i>Continued to implement CCAP requirement that all rezoning applications with development over 2,000 m2 are required to at least meet LEED silver standards. Continued to advance District Energy Utility (DEU) ready development in the Alexandra neighbourhood of West Cambie.</i>
Proposed Actions for Next Year	<i>Continue to implement CCAP policies as new development applications are processed. Develop and implement policy to establish higher minimum energy standard for City Centre. Complete study "Neighbourhood Energy Planning for Local Government Policy Makers" through BC Hydro's Power Smart Implementation Offer. Assess implementing sustainable development requirements, LEED silver, for areas outside of the City Centre, greater than 2,000 m2.</i>

Action Type	Energy Generation (e.g. signed on to provincial 'solar ready' regulation, explored options for bioheating for buildings)
Actions Taken this Year	<i>Completed a feasibility study of the potential opportunity to use sewer heat recovery for the planned River Green DEU, in collaboration with the Metro Vancouver. Completed a district energy pre-feasibility study for North City Centre, which assessed various potential renewable energy sources for DEU use and the sizing options for the utility centre.</i>
Proposed Actions for Next Year	<i>Complete the development of the business case and detail plan for the design, construction, financing, and operation the River Green DEU.</i>

Action Type	Green Space (e.g. developed urban forestry policy, adopted park acquisition policy)
Actions Taken this Year	<i>As part of the completion of the OCP (2041) update, numerous policy directions were adopted to protect and enhance the natural capital of Richmond, including, using the completed ecological network map to guide strategic enhancement, layout, and acquisition of natural and semi natural lands; continuing the implementation of the 2012 Environmental Sensitive Areas (ESA) Management Strategy; and promoting "green infrastructure" and their underlying ecosystem services. Continued development of the Parks and Open Space Strategy. Continued implementation of parkland acquisition strategy. Established new Area Coordinator position for the Parks division. Began public consultation process for North-South Pedestrian Link trail. Began planning process to develop a large city-centre open space.</i>
Proposed Actions for Next Year	<i>Continue to implement the 2012 ESA Management Strategy and begin implementation of the newly adopted OCP "green space" protection and enhancement policies. Develop the Community Gardens Strategic Plan. Adopt the Parks and Open Space Strategy. Complete planning for North-South Pedestrian Link trail. Continue to facilitate the ongoing planning for large city-centre open space.</i>

Action Type	Transportation (e.g. developed sustainable transportation plan, completed bicycle master plan)
Actions Taken this Year	<i>As part of the completion of the OCP (2041) update the following policy directions were adopted; updated policies to place greater emphasis on the development of sustainable transportation modes, updated city-wide cycling and greenway network plan, developed new city-wide neighbourhood links network plan, updated policies to support electrical vehicle and bicycle infrastructure development, and developed directed funding for civic walking, cycling and transit improvements. Supported education and encouragement programs for transit, cycling and walking (annual bike tour, cycling education courses, and Walk Richmond program). Facilitated introduction of car-share service in Richmond. Facilitated implementation strategy to fund construction of the Capstan Canada Line Station.</i>
Proposed Actions for Next Year	<i>Collaborate with TransLink to begin update of Richmond Area Transit Plan. Continue to support education and encouragement programs for cycling and walking. Implement transportation-related OCP policies. Expand scope of City bicycle advisory committee to include other forms of active transportation. Support any interest in the expansion of car-share services in Richmond.</i>

Action Type	Waste (e.g. introduced composting and recycling education programs)
Actions Taken this Year	<i>In conjunction with the Council adopted Strategic Waste Program, the City continued with its annual reporting to the community concerning our waste reduction and diversion progress, "Report 2012, Recycling and Solid Waste Management". Developed a communications strategy program and supporting elements for increased waste reduction and diversion entitled, "Let's Trim Our Waste". Continued to facilitate and enhance community engagement efforts through communications strategies, educational workshops, and volunteer engagement, e.g. Public Works Open House, Earth Day-ReadY Summit, and theatrical shows at elementary schools.</i>
Proposed Actions for Next Year	<i>Continue to advance the City's Strategic Waste Program and implement initiatives that enable the Community to reach its adopted waste diversion target of 70% by 2015. Continue annual reporting to the community concerning our waste reduction and diversion progress. Complete the comprehensive communications strategy and approach for launch of the "Green Cart" program, to expand the collection and diversion of "green" waste from the landfill disposal stream.</i>

Action Type	Water/Sewer (e.g. participated in water smart initiatives, implemented Water Action Plan, introduced rebates on low flush toilets)
Actions Taken this Year	<i>Encouraged water conservation in the community through workshops and events (e.g., Public Works Open House, Project Wet). Continued implementation of City's low-flow retrofit rebate program (approximately 1,450 rebates were issued in 2012).</i>
Proposed Actions for Next Year	<i>Continue implementation of City's water conservation educational initiatives and low-flow retrofit program.</i>

Action Type	Other Actions
Actions Taken this Year	<i>Supported youth climate awareness through delivery of the Climate Change Showdown initiative with elementary school children and Ready Youth Summit with high school children.</i>
Proposed Actions for Next Year	<i>Continue and enhance delivery of the Climate Change Showdown initiative and Ready Youth Summit.</i>

Direct Community-Wide Actions

Action Type	Buildings (e.g. implement use of sustainability checklists and development permit guidelines for new buildings)
Actions Taken this Year	<i>Implemented rezoning requirement, on a case by case basis, for new City Centre developments to be DEU "ready".</i>
Proposed Actions for Next Year	<i>Formalize and adopt the DEU "ready" development policy for all new Multi Unit Residential Buildings (MURB) in City Centre. Develop a policy to establish a mandatory DEU "ready" bylaw for the River Green neighbourhood.</i>

Action Type	Energy Generation (e.g. implement district energy, geothermal, solar)
Actions Taken this Year	<i>Completed construction and commissioning of Phase 1 and 2 of the Alexandra District Energy utility, which supplies heating and cooling to three new West Cambie residential developments.</i>
Proposed Actions for Next Year	<i>Complete connections and servicing to 450 new residential units that are under construction to the Alexandra District Energy utility. Commence Phase 3 of the Alexandra district energy utility project, which will involve further DEU construction and connections to new developments.</i>

Action Type	Transportation (e.g. implement bike lanes, pedestrian paths, upgrade transit service and infrastructure, improve roads, parking fees etc.)
Actions Taken this Year	<i>Completed numerous mobility related initiatives to promote sustainable modes of transportation, including; construction of 1.1 km of new bike routes including on-street bike lanes and off-street multi-use paths, upgrade of 4 crosswalks including installation of accessible pedestrian features, construction of 2 new accessible bus stops, upgrade of 1 existing bus stops to become accessible (e.g., adding a landing pad), and construction of 755m of neighbourhood walkways.</i>
Proposed Actions for Next Year	<i>Complete all outstanding 2012 transportation initiatives and develop 2013 capital program, which will include similar projects as in 2012.</i>

Action Type	Waste (e.g. introduce composting and recycling programs)
Actions Taken this Year	<i>Obtained Council approval to enhance and expand organics recycling services to multi-family townhome residents. Formalized a public spaces recycling program (entitled 'Go!Recycle") for graduated expansion throughout the community and at events, including installation of specially designed containers at 13 civic facilities. Expanded services at the City's Recycling Depot to include additional materials, e.g. light bulbs, exercise/hobby/sewing, etc. machines and power tools.</i>
Proposed Actions for Next Year	<i>Continue intensive community communication strategies to maximize participation in recycling services. Implement enhanced organics collection service to single-family homes through the use of 'Green Carts'. Expand organics collection/Green Cart service to residents in multi-family townhomes. Evaluate and propose an organics pilot program for multi-family apartment buildings and commercial residents. Introduce a large item collection program. Review existing recycling service programs to determine opportunities to expand the range of materials collected. Review expansion of City's recycling depot, i.e. evaluate its expansion to an Eco-Centre model.</i>

Action Type	Water/Sewer (e.g. implement water conservation and reduction initiatives)
Actions Taken this Year	<i>Continued implementation of the City's water metering program. To-date this program has resulted in metering for 69% of single family homes, 23% of multi-family homes and 100% for industrial and commercial. Continued providing subsidies for residential rain barrels (approximately 160 rain barrels were issued in 2012). Supported implementation of Metro Vancouver water sprinkling restrictions.</i>
Proposed Actions for Next Year	<i>Continue management and financial support for community water conservation initiatives.</i>

Action Type	Green Space (e.g. plant trees, conserve forest etc.)
Actions Taken this Year	<i>Continued to implement the City's Parks and Open Space Plan, which included tree planting activities in parks and school sites, maintenance of our urban forest, and the addition of new park spaces and facilities across the City.</i>
Proposed Actions for Next Year	<i>Continue to implement Parks and Open Space Plan capital program.</i>

Action Type	Other Actions
Actions Taken this Year	<i>Continued to offer outreach workshops and educational programs (in multiple languages), in consultation with community partners, to promote more sustainable living (e.g. Organic gardening, "green" consumer choices, water conservation, etc.).</i>
Proposed Actions for Next Year	<i>Continue to provide outreach workshops and educational programs in the community</i>

1.4 Community Wide Innovation

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.
Answer	<p><i>Upgrade of No. 1 Road and Moncton Street intersection, which is a gateway entrance to Steveston Village. The improvements included:</i></p> <ul style="list-style-type: none"> <i>• raising the intersection,</i> <i>• providing pedestrian priority via a "pedestrian scramble" signal phase (the first in BC to be re-introduced),</i> <i>• installing distinct pavement textures and markings to better define the pedestrian precinct, and</i> <i>• installing accessible pedestrian features.</i> <p><i>Development of a model public spaces recycling program with branding "Go!Recycle" and approval to expand on a graduated basis throughout the community and in civic facilities.</i></p>

Corporate Actions for 2012

2.1 Measure

Corporate Measurement Actions

Question	What steps has your local government taken toward completing its corporate emissions inventory (e.g. corporate assets identified related to energy and fuel data and calculated GHG emissions from energy use)?
Answer	<i>We have established our corporate energy and emissions baseline for 2007 and have embedded this within a broader sustainability reporting framework. We have an energy use database that tracks consumption for buildings and other assets. Fleet fuel is currently tracked through our Purchasing Department and management software.</i>

Question	What tool are you using to measure, track and report on your corporate emissions (e.g. SMARTtool, other tools including excel spreadsheets)?
Answer	<i>For this reporting year we will be using a spreadsheet to complete our requirements. We are in the process of upgrading our energy tracking database to a system that will allow for greater flexibility for multiple GHG and energy reporting requirements, e.g. BC Government, Mexico City Charter, etc</i>

2.2 Reduce

Supportive Corporate Actions

Action Type	Broad Planning (e.g. developed corporate climate action plan)
Actions Taken this Year	<i>Began process of upgrading our corporate energy use database.</i>
Proposed Actions for Next Year	<i>Complete upgrade of our corporate energy use database. Develop corporate energy and emissions targets, and update the City's High Performance Building Policy. Develop energy use targets for anticipated new capital infrastructure.</i>

Action Type	Building and Lighting (e.g. developed energy reduction plan for all corporate buildings)
Actions Taken this Year	<i>Incorporated walkthrough energy audits for all civic municipal building concurrent with our yearly condition assessments. Completed building envelope assessments at five facilities.</i>
Proposed Actions for Next Year	<i>Complete corporate energy demand projection profile, to help guide corporate capital program and building design considerations.</i>

Action Type	Energy Generation (e.g. undertook feasibility study of green energy generation for civic buildings)
Actions Taken this Year	<i>Completed a feasibility study for a solar wall installation at a Community Centre.</i>
Proposed Actions for Next Year	<i>Review the potential for a district energy system for civic building complexes, e.g. Minoru facilities.</i>

Action Type	Transportation (e.g. created anti-idling policy for city vehicles, bike to work week promotion)
Actions Taken this Year	<p><i>Expanded capacity of the City employee carpool program (replaced carpool sedans with vans). Continued other existing initiatives for encouraging use of alternative modes of transportation for commuting to and from work and corporate travel such as:</i></p> <ul style="list-style-type: none"> <i>o promotion of Bike to Work week,</i> <i>o use of corporate bike fleet,</i> <i>o promotion of transit fare tickets and passes.</i> <p><i>Continued implementing the City's Sustainable Green Fleet policy that outlines various sustainability-based initiatives, such as right sizing vehicles and increasing fleet fuel efficiency while meeting operational requirements. Incorporated promotion of the City's new anti-idling bylaw as a component of driver training and orientation programs for new hires.</i></p>
Proposed Actions for Next Year	<p><i>Continue to support greater use and expansion of the City employee carpool program. Continue to support of alternative modes of transportation for work related travel and other corporate initiatives. Work with TransLink to explore opportunities for the City to join TransLink's Employer Pass Program, which is anticipated to be revised upon introduction of the Compass Card.</i></p> <p><i>Review current fuel management system to ensure data integrity and fuel security provisions are in place. Implement a new fleet management software system. Continue to explore new vehicle technologies to reduce emissions in all new vehicle purchases. Continue to support the workplace carpool program and explore upgrading carpool vehicles that are up for replacement with fuel efficient mini-vans to accommodate waitlisted carpool participants.</i></p>

Action Type	Waste(e.g. completed waste audit of City Hall)
Actions Taken this Year	<i>Reviewed potential alternate methods for collecting corporate waste, with the goal of reducing our waste and increasing diversion rates.</i>
Proposed Actions for Next Year	<i>Continue efforts to implement the City's Strategic Waste program as it applies corporate activities. Develop a Special Events Recycling Guide and apply to all events led by the City.</i>

Action Type	Water/Sewer (e.g. completed study of sewer and water energy use)
Actions Taken this Year	<i>Reviewed over 100 pump electricity account listings and reconciled data to ensure accuracy of location and energy use.</i>
Proposed Actions for Next Year	<i>Complete the upgrade of the City's energy database, to allow for automatic monthly reports to be generated for water and sewer services energy use for internal use.</i>

Action Type	Other Actions
Actions Taken this Year	<i>Active participant in the BC Hydro Workplace Conservation Awareness Program.</i>
Proposed Actions for Next Year	<i>Develop and implement Workplace Conservation Awareness Program - Year 3.</i>

Direct Corporate Actions

Action Type	Building and Lighting (e.g. energy efficiency retrofits to municipal buildings)
Actions Taken this Year	<i>Completed lighting retrofits at City Hall, Library and Cultural Centre, and for outdoor tennis court lighting. Replaced 15 gas fired rooftop units with very efficient electric heat pumps. Completed investigation phase of the retro-commissioning program at City Hall.</i>
Proposed Actions for Next Year	<i>Complete corporate parking lot lighting retrofits at various facilities. Complete building envelope re-sealing at five corporate facilities. Complete implementation phase of retro-commissioning project at City Hall, and investigation phases at Richmond Ice Centre and Watermania. Complete lighting retrofits from CFL to LED at West Richmond Community Centre and South Arm Community Centre. Further replace end of life gas fired roof-top units with efficient electric heat pumps.</i>

Action Type	Energy Generation (e.g. implemented heat recovery systems, solar)
Actions Taken this Year	<i>Installed heat recovery system on an arena ice plant chiller, to pre-heat ice flood water. Installed a sewage heat recovery system at a civic theatre, to displace natural gas heating.</i>
Proposed Actions for Next Year	<i>Complete installation of a solar thermal wall at West Richmond Community Centre.</i>

Action Type	Fleet (e.g. anti-idling policies for fleet vehicles, purchasing of hybrid)
Actions Taken this Year	<i>In 2012 the City purchased its 1st 100% electrical passenger vehicle (2012 Nissan Leaf) as well as Five (5) 2012 Electric Ice Bear, Ice resurfacers. Ninety-five (95) new vehicle and equipment purchases incorporated LED emergency lighting solutions.</i>
Proposed Actions for Next Year	<i>Continue to ensure that all new vehicle purchases that require auxiliary power will use inverters powered by auxiliary batteries as opposed to gas fuelled generators. Complete the retrofitting of a trailer's lighting system, previously powered by a gas generator, to operate using only solar panels for the new LED lighting system. Install five Electrical vehicle charging stations (comprising 10 charge points) throughout the City to allow charging of both City and residential electric vehicles. Complete a Sustainable Fleet Plan to facilitate the management and reduction of corporate greenhouse gas emissions from fleet services. Initiate the process to obtain E3 Fleet Certification through the Fraser Basin Council.</i>

Action Type	Waste (e.g. introduction of composting and recycling programs and education)
Actions Taken this Year	<i>Expanded recycling services at 13 corporate facilities by installing Go!Recycle containers. Ensured that recycling services were available at City led community events.</i>
Proposed Actions for Next Year	<i>Expand food scraps collection at City facilities, in conjunction with expansion of the Green Cart program.</i>

Action Type	Water/Sewer (e.g. initiated water conservation and reduction initiatives)
Actions Taken this Year	<i>Continued initiatives for upgrading fixtures at our corporate facilities to lower flow units, e.g. Minoru arena and Gateway Theatre.</i>
Proposed Actions for Next Year	<i>Continue to implement corporate initiatives that result in a reduction and more efficient use of water.</i>

Action Type	Green Space (e.g. planting of trees)
Actions Taken this Year	<i>Continued to implement the City's Parks and Open Space Plan, which included tree planting activities in parks and civic facilities, maintenance of our urban forest, and the addition of new park spaces and facilities across the City.</i>
Proposed Actions for Next Year	<i>Continue to implement Parks and Open Space Plan capital program.</i>

2.3 Corporate Innovations

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.
Answer	<i>Currently undergoing a review of the anticipated capital program until 2030 and the implications to the corporation from a cost and energy use perspective – corporate energy projection demand profile. This will allow the corporation to better plan its capital program and maximize the opportunities to reduce energy use in new and replacement buildings.</i>

Carbon Neutral Progress Reporting

TonnesCO2e

Annual corporate emissions using SMARTTool or equivalent inventory tool	10,274.97
<i>Emissions from services delivered directly by the local government</i>	10,108.27
<i>Emissions from contracted services</i>	166.7
Less: GHG reductions being claimed for this reporting year from Option 1 - GHG reduction project	3,157
<i>Energy Efficient Building Retrofits and Fuel Switching</i>	0
<i>Solar Thermal</i>	0
<i>Household Organic Waste Composting</i>	3,157
<i>Low Emissions Vehicles</i>	0
Less: GHG reductions being claimed for this reporting year from Option 2 - GHG reduction projects <i>Please list all Option 2 Projects Implemented (insert title of the projects(s) as per project plan template. If you have more than two Option 2 projects you can add more lines at the bottom of this sheet)</i>	0
Less: Offsets purchased for this reporting year (Option 3). Please identify your offset provider in the offset provider information section below.	0
Balance of corporate emissions for this reporting year. <i>(If the corporate emissions balance is zero, your local government is carbon neutral for this reporting year)</i>	7,117.97

Making Progress on Your Carbon Neutral Commitment

Question	Balance of corporate emissions for this reporting year. <i>(If the corporate emissions balance is zero, your local government is carbon neutral for this reporting year)</i>
Answer	The City of Richmond will be not be achieving carbon neutrality for 2012, based on Government of BC methodology, and has chosen the making progress option moving forward. Steps that the City of Richmond plans to take this year to continue of work in reducing our GHG emissions include the following: <ol style="list-style-type: none">1. Developing and adopting a Corporate Energy and Emissions Plan, which includes a working towards Carbon Neutral Strategy,2. Exploring community investment opportunities for future corporate emission off-sets,3. Continuation of and expansion of corporate energy management program to reduce corporate energy and GHG emissions further.

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 8, 2013** has been made public and also indicate if it is the Final or *Interim* Report.

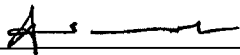
If applicable, the Financial Officer will also be required to attest that the local government's updated *Interim* CARIP report submitted on **June 1, 2013** has been made public and is the Final Report. Please complete the attestation below that applies to your 2012 CARIP Public Report at this time. 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

FINAL CARIP Report attestation:

I declare that this is the Final 2012 CARIP Public Report for the City of Richmond and that this report was made public on May 31, 2013

Name, Title (print) CFO ANDREW NALARETA, GM FINANCE & CORP. SVCS

Signature 

Date May 28, 2013

INTERIM CARIP Report attestation:

I declare that this is the *Interim* 2012 CARIP Public Report for the City of Richmond and that this Report was made public on March 8, 2013.

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 1, 2013**.

As per the CARIP Guidance document, I am aware that local governments that do not make public and submit an updated, Final 2012 CARIP Public Report to the Province by the **June 1, 2013**, 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 2012 Provincial level report on local government climate action progress

Name, Title (print) CFO or CAO _____

Signature _____

Date _____

CARIP/Carbon Neutral Progress Report Reporting Year 2012

Supporting Documentation Contracted Emissions Template

LOCAL GOVERNMENT
City of Richmond 6911 No. 3 Road Richmond, BC V6Y 2C1
PROJECT DESIGNATE
Levi Higgs, Energy Manager, Sustainability Unit Direct 604-244-1239; Cell 778-835-0716 lhiggs@richmond.ca
RATIONALE
<p>An estimation methodology is being utilized since actual emissions are not known from the contractor. The City of Richmond is considering ways to improve documentation for future reports. Most contracts over \$25,000 for delivery of traditional services have not been awarded or renewed between June 1 and December 31, 2012.</p> <p>The City has identified three main contract areas for delivery of traditional services:</p> <ol style="list-style-type: none"> 1. Super Save Disposal Inc., Cascades Recovery Inc. and BFI provide recycling depot container collection and recycling services (T.4311); 2. Sierra Waste Services deliver residential solid waste and recycling services (T.2988); 3. BFI Canada Waste Management supplies of garbage containers and collection services at City facilities. <p>Each of these contracts was awarded prior to June 1, 2012 and is not quantified as per BC government guidance.</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"> 1. Hired equipment records sorted to exclude out of scope contracts; 2. City equipment operating records assessed to determine average consumption factors in litres per hour for each equipment family; 3. Consumption factors used to estimated fuel consumption for hired equipment; 4. Environment Canada emissions factors applied to calculate GHG emissions.

CONTRACTED EMISSIONS	
Option 3: Vehicle/Equipment Type and Hours or Kilometers of Usage	
Traditional Service Area	Estimated Annual GHGs (tonnes)
Drinking, Storm and Wastewater	43.0
Solid Waste Collection, Transportation and Diversion	0
Roads and Traffic Operations	114.0
Arts, Recreation and Cultural Services	9.7
Fire Protection	0
Total	166.7

CARIP/Carbon Neutral Progress Report Reporting Year 2012

Supporting Documentation

GHG Reduction Project: Option 1 Reporting Template

LOCAL GOVERNMENT
<p>City of Richmond 6911 No. 3 Road Richmond, BC V6Y 2C1</p>
PROJECT DESIGNATE
<p>Levi Higgs, Energy Manager, Sustainability Unit Direct 604-244-1239; Cell 778-835-0716 lhiggs@richmond.ca</p>
PROJECT INFORMATION
<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 Metro Vancouver's landfills and waste to energy facility.</p> <p>Attached is the carbon credit rationale as provided by the Metro Vancouver report to the Regional Engineers Advisor Committee Climate Protection Subcommittee. From 2007 until 2012, the City of Richmond has diverted a total of 9,926 tonnes of eligible organics above the 2006 baseline. This diversion is equivalent to 3,157 tonnes CO₂e.</p>
PROJECT TRANSPARENCY
<p>As a GCC-supported project utilizing the attached Metro Vancouver rationale, this project is understood to be:</p> <ul style="list-style-type: none"> • outside of the corporate emissions boundary; • with GHG emissions counted only once; • with the City of Richmond having ownership of the specified GHG reductions; • with the emissions verifiable as having occurred following the release of the Climate Action Charter to the end of the 2012 reporting year; • part of the City's Carbon Neutrality report that indicates the City is making progress towards its carbon neutral commitment.

To: Regional Engineers Advisory Committee – Climate Protection Subcommittee

From: Conor Reynolds, Senior Project Engineer
 Planning, Policy & Environment Department

Date: April 15, 2013 Meeting Date: April 18, 2013

Subject: **2012 Green Communities Committee Carbon Credits for Organics Diversion**

RECOMMENDATION

That the Regional Engineers Advisory Committee – Climate Protection Subcommittee receive for information the report titled “2012 Green Communities Committee Carbon Credits for Organics Diversion”, and that municipalities that undertook organic diversion activities consider using the resulting carbon credits towards carbon neutrality for the 2012 (or subsequent) reporting year.

PURPOSE

This report provides the final amount of Green Community Committee (GCC) carbon credits, by municipality, for additional organics diverted from single family residences following release of the Climate Action Charter (2007) to the end of the 2012 reporting year.

BACKGROUND

Municipal curbside organics collection programs have been successful in diverting increasing quantities of organic waste (yard trimmings and food scraps) from landfill. Organics diversion activities have environmental benefits, including avoided emissions of landfill gas (which contains methane, a potent greenhouse gas). The Provincial Green Communities Committee (GCC) has developed a calculator to allow municipalities to calculate GHG reductions attributable to organics diversion. The resulting carbon credits can be used towards Municipal Carbon Neutrality goals, under the Climate Action Charter framework.

REAC-CPS has directed staff to calculate GCC carbon credits from organics diversion activities, using the GCC Organics Diversion Profile/Calculator [1] and the “Regional Approach to Determining Carbon Credits from Organics Diversion”, as reported to the Regional Engineers Advisory Committee on November 9, 2012 [2].

DISCUSSION

Metro Vancouver’s Solid Waste Department receives information from municipalities on solid waste diversion activities annually, including tonnes of municipal solid waste (MSW), recycling and organics (yard trimmings and food scraps) collected by municipal programs. These data are combined with data from Metro Vancouver’s Transfer Stations and the three regional final disposal sites (Cache Creek Landfill, Vancouver Landfill and the Waste to Energy Facility), to provide a complete picture of waste management activities in the region. As discussed in the report to REAC titled “Regional Approach to Determining Carbon Credits from Organics Diversion” [2], this

aggregated approach to quantifying waste flows is necessary because there is not sufficient data resolution to link all of the waste disposed in the region to individual municipalities. The critical factor determining whether a municipality receives GCC carbon credits is whether they collected additional organics in 2007-2012, above and beyond the amount collected in the 2006 baseline year. Attachment A provides the diverted organics by municipality, as reported to Metro Vancouver by the municipal solid waste coordinators, for 2006-2012, and the proportion eligible for carbon credits (in 2007-2012) based on the GCC's additionality criteria.

The GCC Organics Diversion Calculator was used to calculate the carbon credits by municipality, by year. Key inputs to the calculator were:

- Table 1: regional proportion of MSW sent to each of the three final disposal sites by year (applies to all municipalities except City of Vancouver and Corporation of Delta);
- Table 2: landfill gas collection efficiencies for the Vancouver Landfill and Cache Creek Landfill, by year, as provided in the facilities' public reports.

Table 1: Proportions of waste sent to each of the three final disposal facilities for the region (all municipalities except City of Vancouver and Corporation of Delta).

Year	WTEF	VLF	CCLF
2007	29.9%	27.4%	42.7%
2008	29.2%	26.7%	44.1%
2009	30.7%	25.8%	43.5%
2010	32.2%	22.4%	45.4%
2011	35.7%	30.3%	34.0%
2012	37.0%	31.4%	31.6%

Table 2: Landfill Gas Collection Efficiency, by year, for Vancouver Landfill (VLF) and Cache Creek Landfill (CCLF).

Year	VLF	CCLF
2007	50%	39%
2008	37%	47%
2009	39%	44%
2010	47%	40%
2011	38%	65%
2012	58%	71%
2013*	72%	73%
2014*	75%	75%
2015*	75%	75%
2016*	75%	75%

* Landfill gas (LFG) collection efficiencies up to and including 2012 are based on modeled LFG generation and actual LFG collection data; while efficiencies post 2012 are estimated from modeled generation and projected collection. Collection efficiencies greater than 75% are reported as 75%, according to the guidance in the GCC Organics Diversion Profile.

The factors presented in Tables 1 and 2 were used in the GCC Organics Diversion Calculator [1] to determine the GCC carbon credits from diverting one tonne of additional organic waste from disposal at the three facilities (Table 3). This “carbon credit factor” (i.e. amount of credits per tonne organics diverted) decreases over time because of improvements to the LFG collection systems at the two landfills.

Table 3: GCC Carbon Credits (tonnes) per tonne of diverted organics for all municipalities in the region except City of Vancouver and Delta.

Year	GCC Carbon Credits (tonnes) per tonne of diverted organics
2007	0.41
2008	0.39
2009	0.36
2010	0.32
2011	0.29
2012	0.26

Using the factors presented in Table 3, the number of carbon credits available to each municipality for the 2012 reporting year was calculated, and is presented in the table in Attachment B. The number of new GCC carbon credits available in 2013 and future years will depend on the amount of eligible organics diversion activity in those years and the 2013 inputs to the calculators (i.e. updated Tables 1 and 2).

ALTERNATIVES

The regional municipalities represented by the members of the REAC-CPS may choose to:

1. “Retire” the GCC carbon credits in Attachment B against their carbon liability for the 2012 reporting year, as part of their Carbon Neutral reporting.
2. “Bank” the credits for use in a subsequent Carbon Neutral reporting year.
3. Receive this report for information and take no further action at this time.

FINANCIAL IMPLICATIONS

GCC Carbon Credits are not saleable to carbon markets, such as the market managed by the Pacific Carbon Trust. However, if used (“retired”) towards carbon neutrality in place of the purchase of carbon credits, their value would be equivalent to the market value of the avoided offsets purchase. Currently, the purchase price of carbon offsets from the Pacific Carbon Trust is \$25 dollars per tonne.

SUMMARY / CONCLUSION

Municipal curbside organics collection programs result in avoided GHG emissions from landfill. The Provincial Green Communities Committee has released a calculator to enable local governments to calculate the carbon credits from organics diversion activities beyond the baseline level of activity in 2006. Metro Vancouver has calculated the carbon credits available to its member municipalities because it manages the waste for the whole region, except for City of Vancouver and the Corporation of Delta. Significant quantities of carbon credits are available to municipalities in the region for 2007-2012, which may be used towards carbon neutrality.

References:

1. Green Communities Committee (GCC), "Option 1D: Project Profile – Household Organic Waste Composting" (Profile and Calculator Version 3.0). Available at: <http://www.toolkit.bc.ca/resource/becoming-carbon-neutral-workbook-and-guidebook>
2. "Regional Approach to Determining Carbon Credits from Organics Diversion" Report to Regional Engineers Advisory Committee (REAC) from REAC-CPS and REAC-SWS, November 9, 2012.

Attachments:

- A. Table: Organics Diverted by Municipality, 2006-2012.
- B. Table: GCC Organics Diversion Carbon Credits by Municipality, 2007-2012, and total credits available for use in 2012 or subsequent reporting year.

ORBIT: 7260745

Attachment A. Organics (Yard Trimmings and Food Scraps, tonnes) Diverted by Municipality from single-family residences, 2006-2012

Municipality	2006 [1]		2007 [2]		2008		2009		2010		2011		2012	
	Baseline Organics (tonnes)	Diverted Organics (tonnes)	Eligible Organics (post-Charter) (tonnes)	Diverted Organics (tonnes)	Eligible Organics (tonnes)	Diverted Organics (tonnes)	Eligible Organics (tonnes)	Diverted Organics (tonnes)	Eligible Organics (tonnes)	Diverted Organics (tonnes)	Eligible Organics (tonnes)	Diverted Organics (tonnes)	Eligible Organics (tonnes)	Diverted Organics (tonnes)
Anmore	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Belcarra	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bowen Island, Elec B&C	50	82	9	96	46	112	62	0	0	0	0	0	0	0
Burnaby	9,634	10,123	129	9,979	345	9,655	21	12,714	3,080	13,050	3,416	14,410	4,776	14,410
Coquitlam	4,612	5,261	171	6,466	1,854	6,649	2,037	7,692	3,080	7,923	3,311	8,295	3,684	8,295
Delta	5,732	6,358	165	7,552	1,820	6,954	1,222	7,947	2,215	8,405	2,673	10,242	4,510	10,242
Langley City	504	0	0	1,211	707	1,010	506	1,138	634	1,138	634	1,138	634	1,138
Langley Township	3,433	3,206	0	5,388	1,955	5,267	1,834	5,992	2,559	6,733	3,300	7,884	4,451	7,884
Lions Bay	0	126	33	165	165	47	47	89	89	88	88	88	88	88
Maple Ridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Westminster	0	0	0	115	115	420	420	922	922	3,111	3,111	3,777	3,777	3,777
North Vancouver City	1,152	1,261	29	1,425	273	1,533	381	1,475	323	1,528	376	1,706	554	1,706
North Vancouver District	4,511	4,601	24	4,601	90	5,747	1,236	5,390	879	5,619	1,108	6,165	1,654	6,165
Pitt Meadows	0	0	0	0	0	0	0	0	0	0	0	1,139	1,139	1,139
Port Coquitlam	3,186	3,537	92	3,865	679	3,867	681	5,058	1,872	5,371	2,185	5,549	2,363	5,549
Port Moody	1,200	1,040	0	1,249	49	1,450	250	1,908	708	2,887	1,687	2,901	1,701	2,901
Richmond	7,783	10,075	603	9,443	1,660	8,904	1,121	9,434	1,650	9,900	2,117	10,549	2,765	10,549
Surrey	17,962	20,044	548	22,359	4,397	24,333	6,371	26,444	8,482	27,000	9,038	34,627	16,665	34,627
UBC/UEL	0	0	0	143	143	211	211	161	161	155	155	172	172	172
Vancouver	17,700	15,950	0	21,400	3,700	22,400	4,700	24,640	6,940	25,220	7,520	52,222	34,522	52,222
West Vancouver	3,184	3,436	66	3,647	463	3,906	722	3,773	589	4,023	839	4,458	1,274	4,458
White Rock	0	0	0	872	872	1,132	1,132	1,459	1,459	1,459	1,459	1,680	1,680	1,680
Total Eligible Organics:			1,867	19,333	22,954	35,643	43,018	86,410						

[1] The "Baseline" level of organics diversion is 2006. Eligible organics are the additional amount each year above and beyond the baseline amount.

[2] In 2007, eligible diverted organics are pro-rated to post-Charter (i.e. after September 26th, not the whole year).

Attachment B. GCC Organics Diversion Carbon Credits (tonnes CO2 equivalent), by Municipality for 2007-2012.

	2007	2008	2009	2010	2011	2012	Aggregate (2007-12) [1]
Municipality	(tonnes CO2e) [2]	(tonnes CO2e)	(tonnes CO2e)	(tonnes CO2e)	(tonnes CO2e)	(tonnes CO2e)	(tonnes CO2e)
Anmore	0	0	0	0	0	0	0
Belcarra	0	0	0	0	0	0	0
Bowen Island, Electoral B&C	3	18	22	0	0	0	43
Burnaby	52	135	7	985	992	1,247	3,418
Coquitlam	69	723	727	985	962	961	4,429
Langley City	0	276	181	203	184	166	1,009
Langley Township	0	762	655	819	958	1,162	4,356
Lions Bay	13	64	17	28	25	23	171
Maple Ridge	0	0	0	0	0	0	0
New Westminster	0	45	150	295	904	986	2,379
North Vancouver City	12	106	136	103	109	145	611
North Vancouver District	10	35	441	281	322	432	1,521
Pitt Meadows	0	0	0	0	0	297	297
Port Coquitlam	38	265	243	599	635	617	2,396
Port Moody	0	19	89	227	490	444	1,269
Richmond	245	647	400	528	615	722	3,157
Surrey	223	1,715	2,275	2,714	2,625	4,350	13,900
UBC/UEL	0	56	75	51	45	45	273
West Vancouver	27	181	258	188	244	333	1,230
White Rock	0	340	404	467	424	438	2,073
Totals:	693	5,387	6,081	8,474	9,533	12,365	42,533

[1] 2012 credits are the sum of all eligible credits since the signing of the Climate Action Charter. [Therefore 2013 and subsequent credits will be significantly less]

[2] It has been assumed that the additional organics diverted to date are 50:50 food scraps and yard trimmings, per Provincial guidance.