



To: Public Works and Transportation Committee
From: Cecilia Achiam, MCIP, BCSLA
 Interim Director, Sustainability and District Energy

Date: October 15, 2012
File: 01-0370-01/2012-
 Vol 01

Re: Carbon Neutral Progress Update

Staff Recommendation

That the City pursue the “Making Progress” option for meeting the terms of the Climate Action Charter for 2012.

That the “Towards Carbon Neutrality – Progress Report 2012” (Attachment 1) be made accessible to the community through the City’s website and in limited hard-copy supply at City Hall and key community centres.

Cecilia Achiam, MCIP, BCSLA
 Interim Director, Sustainability and District Energy
 (604-276-4122)

Att. 3

REPORT CONCURRENCE			
ROUTED TO:	CONCURRENCE	CONCURRENCE OF GENERAL MANAGER	
Major Buildings and Project Development	<input checked="" type="checkbox"/>		
Fleet and Environmental Programs	<input checked="" type="checkbox"/>		
Parks Services	<input checked="" type="checkbox"/>		
Transportation	<input checked="" type="checkbox"/>		
Community Safety	<input checked="" type="checkbox"/>		
REVIEWED BY SMT SUBCOMMITTEE	INITIALS: AE	REVIEWED BY CAO OK	INITIALS:

Staff Report

Origin

At the July 18, 2012 meeting, the City's Public Works and Transportation Committee requested an update on the City's progress towards carbon neutrality. This report responds to this request and supports the following Council Term goal pertaining to sustainability:

Council Term Goal #8.1: *"Continued implementation and significant progress towards achieving the City's Sustainability Framework, and associated targets."*

Background

In September 2008, the City of Richmond signed the BC Climate Action Charter (the "Charter"), voluntarily committing to become carbon neutral with respect to corporate greenhouse gas (GHG) emissions. This commitment to carbon neutrality means that the City must reduce GHG emissions generated from its own operations and invest in additional action, outside of the City's operations, to compensate for emissions that could not be avoided. The City's commitment to carbon neutrality is one of the targets established to-date in the City's Sustainability Framework.

Achieving carbon neutrality involves two main activities:

1. Reducing internal GHG emissions from 3 key sectors: buildings & infrastructure, fleet and solid waste.
2. Investing in initiatives outside of the City's operations to compensate for unavoidable emissions.

Various programs throughout the organization contribute towards reducing GHG emissions and achieving carbon neutrality by the City of Richmond. Examples include:

- the City's Corporate Energy Management Program (EMP) which seeks to reduce corporate energy use and related GHG emissions pertaining to the City's civic buildings and other infrastructure (e.g., street lighting, water and wastewater pumps, etc.);
- the City's Sustainable Fleet Program which, among broader objectives, serves to reduce fuel consumption and related GHG emissions from corporate vehicular travel;
- the City's Solid Waste and Recycling Programs which reduce corporate waste and related GHG emissions and incorporate community initiatives recognized as potential compensation action;
- the City's Environmental and Parks Programs which strive to protect natural ecosystems that contribute to climate stability.

Progress Made To-Date

The “*Towards Carbon Neutrality – Progress Report*” (*Towards Carbon Neutrality*) highlights the substantive action and investment the City has made in reducing corporate GHG emissions and moving towards achieving carbon neutrality in a manner that supports overall sustainability (**Attachment 1**). A snapshot of the “Progress at a Glance” is provided in **Attachment 2**.

Key highlights from the City’s *Towards Carbon Neutrality* Report include:

1. A focus on a strategic and practical approach

As noted in the report, carbon neutrality is a relatively new concept and methodologies are emerging. A key focus of the City of Richmond has been on ensuring that approaches under the BC Climate Action Charter contribute to overall sustainability. In 2011, Richmond Council adopted the City’s Carbon Responsible Strategy. The Strategy is focussed on managing GHG emissions effectively and outlines key principles for ensuring a sustainable approach. For example, this approach recognizes that the City of Richmond contributes a relatively small amount of GHG emissions (1% of community-wide emission levels) and that the City’s resources can be more effective at reducing GHG emissions when directed at community-scale initiatives (e.g., transportation demand-side management initiatives, integration of renewable energy systems, etc.). Combined, the City’s Carbon Responsible Principles help the City avoid myopia (i.e., over-focus on carbon neutrality) as well as other common pitfalls of carbon neutrality (**Attachment 3**).

2. Keep local tax dollars in the community

From the beginning, a key objective of the City of Richmond was to pursue carbon neutrality in a manner that made investments in the Richmond community. This is generally not the case as most organizations achieve carbon neutrality by purchasing external offsets through an offset supplier. With the purchase of external offsets, organizations have limited influence on where their funds are spent and projects investments are made throughout various jurisdictions.

The BC government was seeking for local governments to achieve carbon neutrality through the purchase of external offsets. Specifically, the Province was seeking for local governments to purchase external offsets through the Pacific Carbon Trust, a crown corporation established by the Province to supply carbon offsets generated by projects throughout BC. This is the mechanism that has been followed for provincial public sector organizations (e.g., schools, hospitals, Ministries, etc.).

The City of Richmond was active in expressing the need for a local community-based approach that enabled re-investment of tax dollars within Richmond. This approach generates significantly greater value for the Richmond community as it supports the advancement of initiatives that not only reduce GHG emissions but contribute to multiple benefits locally. For example, the City’s alternative transportation initiatives reduce GHG emissions while at the same time, provide other important benefits such as reduced congestion, increased affordability and improved air quality. A focus on local investment also means that the City is able to leverage its already existing initiatives, helping to reduce costs associated with compensation action.

Efforts made by Richmond as well as other local governments, have been successful in establishing a change in Provincial policy direction to include recognition of local community investments as valid options. Work is now proceeding to develop methodologies for evaluating appropriate compensation credit levels.

3. *A focus on resourcing action*

The City has recognized that advancing sustainability means more than declaration of commitments. Resources must be put in place to actually realize intentions. Richmond Council and other local governments have been working with the Province to establish funding sources for supporting climate protection action. In Fall 2008, the Province announced the Climate Action Revenue Incentive Program (CARIP) program which provides carbon tax rebates to municipalities who have signed onto the Climate Action Charter. This means that local governments have avoided double expenditures (i.e., paying the carbon tax and paying for carbon neutrality). Amount of rebate changes each year, but on average the CARIP means that the City of Richmond avoids about \$200,000 in additional costs. Richmond Council was one of the first municipalities to establish a dedicated fund for supporting GHG emission reduction. This fund, the Carbon Provisional Account, receives the rebate monies from the carbon tax. Currently, there is approximately \$500,000 in this fund.

The CARIP is an important program for reducing costs associated with carbon neutrality. However, whereas funding exists in pockets to help support the advancement of specific initiatives, no dedicated sources of funding have been established to support local government efforts in delivering a complete carbon neutral program. Richmond Council and other local governments have expressed to the Province the need for dedicated funding sources to support GHG emission reduction action.

The City has also been active in ensuring that available funds are directed towards on-the-ground greenhouse gas reduction actions rather than excessively on administrative components of carbon neutrality (e.g., measuring, report, etc.). Richmond Council's recent decision to not track contractor fuel consumption is likely to avoid costs of about \$50,000.

4. *A focus on reducing harm and on improving conditions*

A main focus of the City's overall Sustainability Initiative has been to shift from an agenda of reducing level of harm and mitigating damage (i.e., making conditions "less bad") towards a vision of positive contribution, making things better. The City's approach to carbon neutrality showcases this vision by recognizing the need to both *reduce* (i.e., reduce GHG emissions from being emitted into the atmosphere) and *restore* (i.e., improve natural conditions which absorb and sequester GHG emissions to help serve to rebalance healthy conditions).

5. *Extensive action has been taken*

The *Towards Carbon Neutrality* Report highlights the extensive action that the City has taken to increase the sustainability performance of its own operations and support GHG emission reduction in the community. As noted in the report, the City of Richmond had already put in place various programs for increasing sustainability performance of its operations prior to the BC Climate Action Charter. Based on broader sustainability objectives, these initiatives serve to

achieve multiple benefits, including but not limited to GHG emission reduction. Highlights of examples are:

- the establishment of high performance building standards for all new civic facilities, resulting in the development LEED buildings such as Hamilton Community Centre, Richmond's Community Safety Building and Steveston Fire Hall¹;
- the integration of renewable energy systems into civic facilities, including the installation of solar panels at Minoru Pool and current installation of a heating system based on sewage waste heat recovery for Gateway Theatre; and
- the advancement of various initiatives to improve fleet performance such as increasing efficiency through right-sizing of vehicles and replacement of vehicles with higher performing and alternative fuel vehicles (e.g., SMART cars, hybrids and electric vehicles). The City has also reduced GHG emissions by installing equipment in vehicles which reduce the need for generators and idling (e.g., installation of auxiliary batteries to power safety lights, installation of invertors to power tools).

By reducing the amount of corporate GHG emissions, these initiatives lower the City's carbon liability (i.e., the amount of emissions that need to be compensated for). The City has also advanced various initiatives in the community. Once appropriately evaluated, these initiatives could serve to compensate for unavoidable corporate emissions. Examples of the City's community-based initiatives that support GHG emission reduction include the City's purchase of the NE Bog Forest, implementation of the GreenCan program, installation of the Alexandra District Energy System, delivery of the Climate Change Showdown initiative, development of alternative transportation infrastructure (e.g., cycling lanes, trails, etc.) and establishment of land-use policies aimed at creating complete and compact communities. Most recently, the City is now encouraging the uptake of electric vehicles through policies that encourage installation of electric vehicle charging stations in new developments, facilitating installation of charging stations in the business community and by installing electric charging infrastructure at civic sites. In addition to supporting the City's fleet, most of these stations will be publically accessible and be part of a regional network.

Analysis

The City has made substantive progress towards managing corporate GHG emissions responsibly and implementing the processes necessary to secure carbon neutrality. The City is currently positioned to achieve carbon neutrality in all areas necessary, except for one – compensation. This latter challenge is not because the City lacks projects that contribute compensation value but rather in the technical challenge in determining appropriate compensation credit.

¹ Most of the civic buildings built since the introduction of the City's High Performance Building Policy include the following features: renewable energy systems (e.g., solar, geothermal), green roofs, rain gardens, low VOC materials, energy efficient mechanical and electrical systems and use of local and renewable products and materials.

Since the introduction of the Climate Action Charter, the Province committed to working with UBCM to establish a Green Communities Committee (GCC) tasked with developing a common approach to carbon neutrality for the purposes of the Charter. In 2011, the BC Province recognized that methodologies for community-based project investments needed further work. As such, the Province announced a “Making Progress” option that enables local governments to meet their Climate Action Charter commitment by fulfilling actions pertaining to measuring, reducing and reporting. The “Making Progress” option is viewed as a compromise between the Province’s goal of a carbon neutral local government sector through offset purchases and local governments’ visions to direct local funds towards projects of multiple local benefit.

Action by Other Municipalities

Municipal Councils at the Cities of North Vancouver and Surrey have recently endorsed the strategy to pursue the “Making Progress” option for meeting the Climate Action Charter commitments for 2012. Staff in the City of Victoria and other Lower Mainland municipalities (i.e., West Vancouver, New Westminster, City of North Vancouver, District of North Vancouver, Township of Langley, District of Langley, Corporation of Delta) have advised that they anticipate pursuing the “Making Progress” option.

Because it has a unique local investment opportunity that has a recognized and endorsed methodology (i.e., capturing methane from the Vancouver landfill), the City of Vancouver is likely to pursue and achieve carbon neutrality for 2012. Two municipalities, Village of Harrison Hot Springs and Resort Municipality of Whistler, declared carbon neutrality in 2010. These municipalities achieved carbon neutrality through the purchase of external offsets. These municipalities have not committed to achieving carbon neutrality in 2011 or 2012 and are currently reviewing their options. The City of Burnaby never signed the BC Climate Action Charter and is not pursuing carbon neutrality.

Options for Meeting Climate Action Charter Commitments in 2012

1. Making Progress – *Recommended*

This option means that the City would continue to reduce GHG emissions from its corporate services and continue investment into key community-based initiatives that support climate protection goals and serve multiple community benefits (e.g., alternative transportation initiatives, renewable energy initiatives, complete/compact development, natural areas protection, etc.). The City would continue to work with the Province and other partners on developing methodologies for evaluating compensation values.

2. Purchase Offsets for 2012

This option would mean that the City of Richmond could declare itself to be carbon neutral in 2012 and would establish this to be the performance standard for future years. At \$25/tonne to offset, it is estimated that this option would cost approximately \$300,000 for 2012.

Funding could come from the City's Provisional Account to meet expenditure requirements for 2012. Because the City established the account early on, the City has funding in place from the accumulation to-date. Over time, once the build-up had been eroded, the City would experience funding shortfalls on an annual basis if this approach was continued. This option would mean that the City could not use the carbon tax rebate funds to support greater corporate GHG reduction action or support community-based investments. Consequently, this is likely to place the City into a "continuous payment" scenario with increasing costs over time.

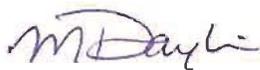
Financial Impact

There is no financial impact associated with the recommendations of this report.

Conclusion

Achieving carbon neutrality is a corporate-wide endeavour, requiring collaborative effort across the organization. The report "*Towards Carbon Neutrality – Progress Report 2012*" provides an overview of Richmond's progress to-date in achieving carbon neutrality. The report highlights the suite of action being taken by multiple City departments to reduce corporate GHG emissions and invest in community-based initiatives that contribute to climate protection and broader sustainability goals.

Carbon neutrality is a relatively new concept and best practices are emerging. The City of Richmond, as with many other local governments, has been working with the Province to develop a local approach to carbon neutrality that supports community-based initiatives. Recently, the Green Communities Committee has begun to work on developing a framework that includes options for retaining local tax dollars and advancing initiatives that advance multiple benefits. The Province has recognized that further work is needed on developing the framework and has established a "Making Progress" option to enable local governments to meet their Climate Action Charter commitments in 2012. This report recommends that the City of Richmond pursue the "Making Progress" option.



Margot Daykin, M.R.M.
Manager, Sustainability
(604-276-4130)

Towards Carbon Neutrality



PROGRESS REPORT 2012



CNCL - 264





Introduction

As part of its efforts to advance sustainability, and specifically to address the issue of climate change, the City of Richmond has committed to achieving carbon neutrality in its own **corporate activities**. Realizing carbon neutrality corporately means that every year, the City reduces greenhouse gas (GHG) emissions generated through the delivery of its service to the best extent possible and then invests in initiatives to compensate for those GHG emissions that could not be avoided. To achieve carbon neutrality, various tools and processes need to be implemented. This report provides an update on the actions taken to-date towards carbon neutrality.

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.

The City's corporate emissions are relatively small and contribute a fraction towards overall community, regional and Provincial emissions. While small, taking action corporately is important for "leading by example" and establishing a strong foundation for working in partnership and facilitating broader action.

The City's carbon neutral commitment is one way that the City of Richmond is taking leadership action to address climate change. Adopted in 2010 as part of the City's Sustainability Framework the City's Climate Change Strategic Program establishes five (5) climate change targets. Together, these targets seek to build capacity, reduce emissions both corporately and in the community, and prepare for unavoidable change.

The City's five (5) climate action targets are:

1. Reduce community-wide GHG emissions by 33% (from 2007 levels) by 2020 and 80% by 2050.
2. Be carbon neutral in corporate activities by 2012.
3. Engage 100% of Grade 6 students in climate action by 2015.
4. Build corporate awareness and understanding of climate change.
5. Prepare a Climate Change Adaptation Plan.

The City's carbon neutral commitment, when combined with the other climate change targets, helps the City take a comprehensive approach to responding to climate change.

“The City of Richmond is focussed on advancing sustainability, a vision of working collaboratively to create a strong Richmond community based on a healthy social, economic and environmental fabric.

Managing greenhouse gas emissions from the City's own corporate activities is one of the many important initiatives that the City is doing to support this vision.”

Realizing carbon neutrality corporately means that every year, the City reduces its corporate greenhouse gas emissions and invests in initiatives to compensate for those emissions that could not be avoided.

The City's carbon neutral and other climate change targets have been embedded within the City's Sustainability Framework. The Sustainability Framework recognizes that for sustainability to be achieved, action must be taken to address climate change as well as other key priorities. Accordingly, because it is part of the City's Sustainability Framework, the City is better positioned to allocate the appropriate level of investment towards carbon neutrality in proportion to the relative priority of other key action areas (e.g., resilient economy, local agriculture and food, affordable communities, etc.).

Realizing the suite of climate change targets and other sustainability targets will require strong collective action by all sectors of society.

Richmond's Sustainability Framework

Realizing sustainability means that action must be taken across many fronts. Richmond's Sustainability Framework is designed to bring together the City's individual components of sustainability into a unified and coherent program. The Framework is being developed to capture the multiple actions at various levels throughout the organization to provide a "one-stop" overview of the City's activities as they relate to advancing nine (9) priority areas: Climate Change, Sustainable Resource Use, Mobility, Resilient Economy, Green Built and Natural Environment, Local Agriculture and Food, Inclusive, Safe and Affordable Communities, Thriving and Vibrant Communities (Figure 2).

The Framework also serves to collate and develop performance-based targets and establish an overall system for measuring and reporting progress across the many objectives of sustainability. By having the targets clearly defined in one place, the City will be able to maximize opportunities for collective and multi-objective based action. The Sustainability Framework also helps ensure a complete approach to sustainability, ensuring the right balance of investment across the various action agendas. The City's carbon neutral target is one of the targets developed to-date in Richmond's Sustainability Framework. The City is continuing to develop targets for other important goal areas.

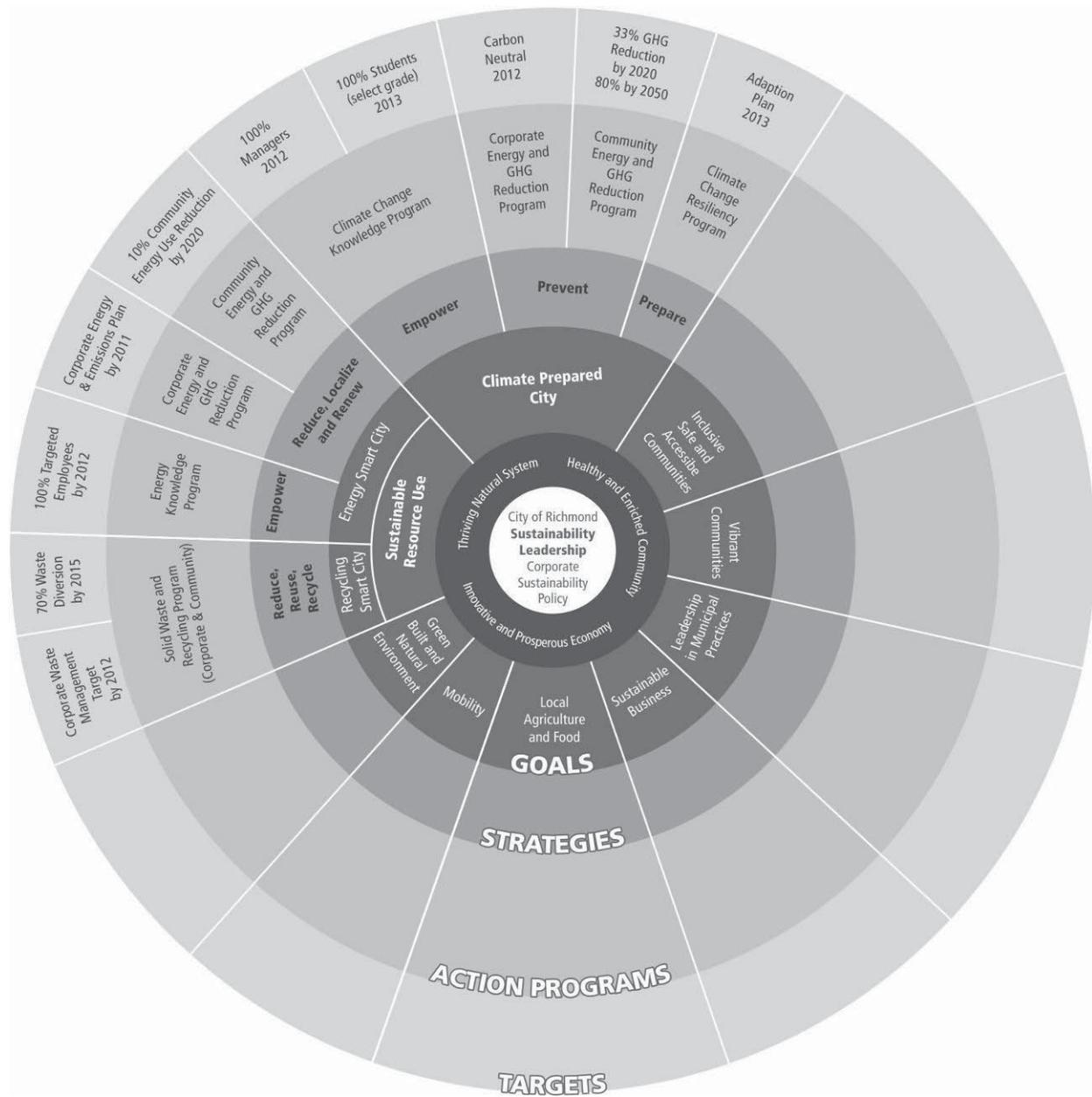
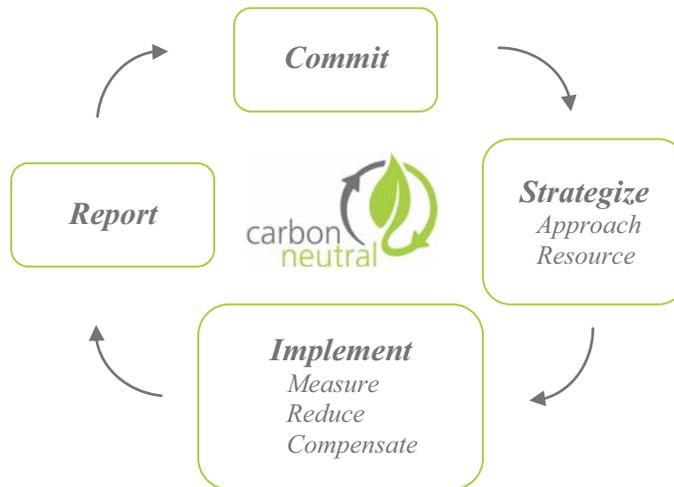


Figure 1: City of Richmond's Sustainability Framework (as developed to-date)

Towards Carbon Neutrality: Four (4) Steps

There are four main steps for achieving carbon neutrality (Figure 2). Like balancing yearly expenses, carbon neutrality is a continual effort that needs to be done every year. While it is not necessary to review commitments and strategy every year, it is necessary to implement (i.e., measure, reduce, compensate) and report on an annual basis.



“The City’s “Carbon Responsible Strategy” helps ensure that the City of Richmond is pursuing carbon neutrality in a manner that makes sense for our local community and supports emergence of overall sustainability.”

Figure 2: Four (4) Steps to Carbon Neutrality

1. Commit

Commitment is the first step towards realizing carbon neutrality. The City of Richmond committed to becoming carbon neutral in its operations in 2008 when it signed the BC Climate Action Charter.

2. Strategize

Approach

Carbon neutrality is an emerging concept and best practices are evolving. The Province, UBCM and local governments have been working on developing a common approach to carbon neutrality as defined under the Climate Action Charter. While the target for reaching carbon neutrality is 2012, the Charter recognizes that the commitment can only be achieved once a common approach has been developed.

The City of Richmond has been working to ensure that a strategic and practical approach to carbon neutrality is developed. It is important that efforts in pursuing carbon neutrality result in meaningful benefits to local communities, use fiscal resources wisely and don't come at the expense of other important sustainability objectives.

Richmond's Principles For Achieving Carbon Neutrality

1. **Focus on Sustainability** (not carbon neutrality) – advance carbon neutrality as one component strategy within the broader sustainability agenda. This principle supports the City in allocating appropriate level of resources towards carbon neutrality, helping to ensure that efforts directed at this one important target do not come at the expense of other important sustainability objectives.
2. **Invest in the Richmond Community** (invest locally) – retain expenditures for GHG emission compensation within the local community. This principle helps ensure that local tax dollars are re-invested back into the Richmond community.
3. **Reduce First, Offset Second** – prioritize reducing GHG emissions from civic activities, not offsetting. This principle focuses limited resource on efforts which reduce corporate GHG emissions. These efforts yield climate protection goals while simultaneously reducing costs and providing other benefits.
4. **Focus on Action, not Accounting** – focus on high value action that yields significant community benefit. This principle minimizes costs associated with GHG administration and helps to ensure wise use of limited resources.
5. **Reduce Harm and Restore** (be carbon-balanced) – direct action towards both GHG emission reduction and towards carbon sequestration which absorbs and retains carbon away from entering the atmosphere. This principle seeks to reduce further harm while simultaneously working to rebalance systems to avoid issues in the first place.

In 2010, the City adopted a Carbon Responsible Strategy to guide the City's efforts in pursuing carbon neutrality. Five key principles were identified to help ensure that the City stayed focussed on the underlying issue (reducing GHG emissions) and overarching goal of sustainability.

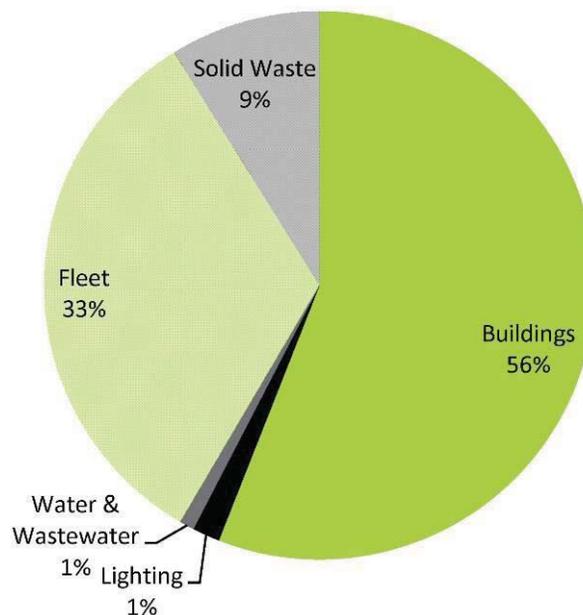
The City's Carbon Responsible Strategy has been highly effective in influencing evolving methodologies. This means that limited resources can stay focussed on direct actions that reduce GHG emissions and provide value to the community.

Resourcing

Reducing GHG emissions will ultimately reduce societal costs over the long-term; however, managing emissions requires upfront investment. Resources are needed to build capacity, develop methodologies, establish internal systems and continue to support action. The City's Carbon Responsible Strategy seeks to use resources most effectively. Strategies include securing funding sources, minimizing costs associated with administration, and leveraging City's existing investments.

The City of Richmond was one of the first municipalities to establish an internal Carbon Fund. Established in 2010, the City’s Carbon Provisional Account receives the carbon tax rebate which is provided to local governments who have signed the Climate Action Charter. The Carbon Fund provides some of the necessary fiscal resources needed for managing internal emissions and achieving carbon neutrality. Additional support is also provided through the City’s existing management programs, including the City’s Sustainable Fleet Program, Corporate Energy Management Program and Corporate Solid Waste and Recycling Program. Considerations for GHG emission reduction has also been incorporated into the City’s Land and Capital Budget decision-making process.

2007 Corporate GHG Emissions by Sector



3. Implement

Achieving carbon neutrality is a corporate-wide endeavour, requiring collaborative effort across the organization. An overview of key initiatives is provided on Figure 3.

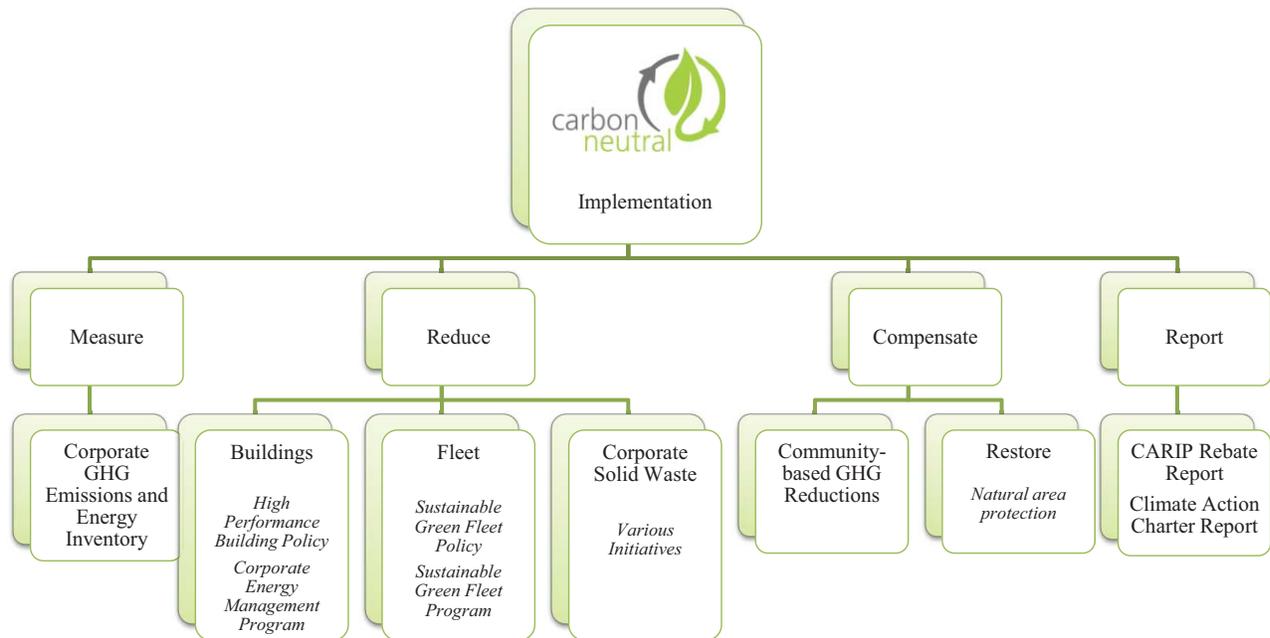


Figure 3: Carbon Neutrality Implementation Summary

Measure

Measuring GHG emissions is the first step in implementing a program for reaching carbon neutrality. In 2010, the City produced its first Corporate Energy and Emissions Inventory. This report provided the first comprehensive analysis of the City’s energy consumption levels, costs and direct GHG emissions corporate-wide. This report established the City’s baseline, based on 2007 levels, for measuring and reporting on future progress. Additionally, this report provided trend data to better enable the City to advance strategic reduction action. Specifically, the report identified the need to focus action on reducing fossil fuel use in civic buildings and corporate fleet. Combined, these two activities account for the vast majority of GHG emissions currently being measured. Corporate solid waste generation was also identified as an important area for further reduction action.

To manage its emissions responsibly and reach carbon neutrality, the City will need to measure its corporate GHG emissions on an annual basis. In preparation for this, the City is currently working on integrating GHG emission measurement into its existing management systems (e.g., Corporate Fuel Use Management System for Fleet, Corporate Energy Use Management System for Civic Buildings and

Infrastructures). By embedding GHG emission measurement within existing departmental systems, the City avoids costs associated with new systems. This approach also empowers respective departments in implementing and monitoring the effectiveness of GHG reduction initiatives in day-to-day operations.

Reduce Corporate GHGs

Reducing internal corporate GHG emissions is the second step in implementation. The City has been taking actions to reduce emissions for some time as part of its broader sustainability objectives, prior to becoming a signatory to the BC Climate Action Charter. Highlights in three of the most important areas (e.g., buildings, fleet, and solid waste) for reducing emissions are provided below.

Buildings

In 2004, the City implemented its corporate High Performance Building Policy. This Policy sets performance standards for new and existing civic buildings which strive to:

- reduce resource consumption (energy, water, materials),
- accelerate transition to use of renewable energy sources,
- reduce corporate costs,
- reduce emissions and wastes,
- protect local ecosystems, and
- support healthy work environments.

The City's Project Development and Corporate Energy Management Programs serve to advance initiatives that meet these policy objectives. Key initiatives that support the City's carbon neutral initiatives have included development of LEED Gold buildings, installation of renewable energy systems into existing facilities and lighting retrofits. These initiatives have resulted in significant levels of avoided energy consumption, reduced GHG emissions as well as various other benefits (e.g., reduced water consumption, improved indoor air quality, etc.).



Green roof of the Hamilton Fire Hall



Solar panels on the roof of Minoru Pool

Fleet

Originally implemented in 2006 and updated in 2012, Richmond's Sustainable Fleet Policy aims to meet the City's mobility needs in a manner that:

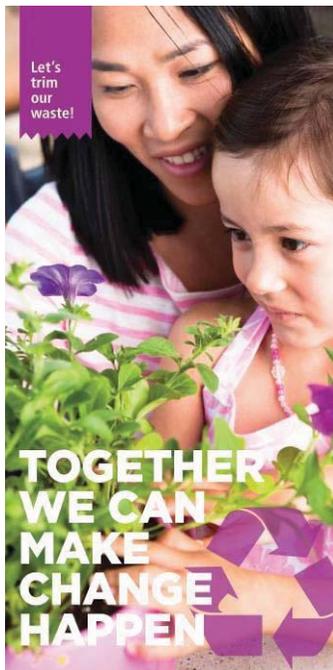
- reduces corporate costs,
- conserves natural resources (e.g., energy, materials, etc.),
- reduces emissions and wastes, and
- supports broader sustainable economic development

The Policy is implemented through the City's Sustainable Fleet Program which procures high performing and alternative fuel vehicles (e.g., SMART cars, hybrids, electric vehicles) and increases efficiency through various tactics (e.g., right-sizing vehicles, undertaking preventative maintenance procedures, improving driver practices and improving fuel management system).

Currently, effort is being directed at installing electric vehicle charging stations at key civic facilities, most of which will be publically accessible. Additionally, the City is currently developing a Sustainable Fleet Plan which will evaluate progress made to-date, identify future action opportunities and recommend a specific GHG emission reduction target pertaining to the City's fleet use.



City of Richmond's Electric Vehicle



Solid waste and recycling initiatives

Solid Waste

The City of Richmond has been active in reducing corporate waste since the early 1990s. Various initiatives have been advanced to reduce the amount resources consumed in the delivery of City's services, and to increase the diversion and recycling of unwanted materials. In 2000, the City was one of the first municipalities to adopt an Environmental Purchasing Policy and Guidebook. These tools help the City make greener choices in its procurement. More recently, the City introduced its E-Agenda Initiative. This Initiative provides digitized agenda packages for Committee and Council meetings, aiming to significantly reduce the amount of paper needed for these meetings. When waste generation cannot be avoided, corporate reuse and recycling initiatives help ensure that as much waste as possible is diverted from the waste stream. Some of the City's recycling initiatives include the City's office recycling program, the composting of Park green waste into soil and its re-use in the City's nursery, as well as the reclamation and re-use of material from the City's drainage projects.

In 2011, the City adopted a Solid Waste Strategic Program under the City's Sustainability Framework. In addition to a community-wide waste diversion target of 70% by 2015, this Program also includes a commitment to develop a corporate waste reduction target. The establishment of the corporate waste reduction target will help the City continue to reduce waste and lower corporate GHG emissions.

Compensate

Despite best efforts, it is simply unfeasible to avoid GHG emissions completely. Accordingly, obtaining carbon neutrality means that investments must be made to offset or compensate for remaining emissions. An offset or compensatory action is an investment in an action external to one's services that compensates for the GHG emissions generated by one's internal operations. Carbon neutrality is achieved when the amount of such (external) investments equals the level of unavoidable GHG emitted corporately (internally).

Carbon neutrality is an emerging concept and methodologies for evaluating the value of alternative compensation investments are evolving. Most work has been done on developing methodologies for purchasing external offsets through a third party supplier. In general, this approach means that monies used to purchase the offsets leave their local community to contribute to projects in other areas. Conversely, the City's Carbon Responsible Strategy focuses on making investments in the local Richmond community. In this regard, the City is able to:

- keep local tax dollars within Richmond,
- reduce local GHG emissions,
- reduce costs by leveraging existing initiatives, while at the same time,

- contribute to other important local community benefits and services (e.g., increased affordability, improved air quality, reduced congestion, increased local reliance, etc.).

Reduce Community GHGs

The City has advanced numerous initiatives that support GHG emission reduction in the community. Examples include the City's land-use policies directed at creating complete and compact communities which among other benefits, reduce reliance on the automobile. Other initiatives include the:

- Climate Change Showdown Program which engages Richmond students in climate action,
- City's alternative and low-GHG emission transportation programs (e.g., e-vehicle infrastructure requirements in new developments, bikeway development, density planning near transit, etc.),
- community energy projects (e.g., West Cambie district energy system), and
- City's community solid waste and recycling programs.

Over the past two (2) years, the Province has been working on methodologies to evaluate local community investments. Unfortunately, methodologies are still evolving. As such, the City is currently working with the Province, other municipalities and other partners to secure appropriate compensation valuations for various actions being advanced by local governments.



Biking infrastructure in Richmond community



Restore

The City of Richmond recognizes that it is insufficient to solely rely on investments to reduce GHG emissions – actions also need to be taken to re-instate healthy conditions that prevent issues (such as climate change) from occurring in the first place. A key contributing factor to climate change is the imbalance of the carbon cycle where more carbon is being released into the atmosphere than that which is being absorbed and/or stored in Earth via healthy natural systems.

To support the rebalancing necessary for long-term climate stability, the City of Richmond is investing in the preservation of its natural local ecosystems. Most recently, the City purchased the last remaining parcel of the Northeast Bog Forest as well as wetlands along Sturgeon Banks. Richmond's bogs and wetlands are some of the most effective ecosystems for absorbing and retaining carbon. The City's purchase will help ensure that these productive lands are protected and can continue to sequester carbon. The City is currently working with the Province and other partners on developing carbon offset valuation.

4. Report

The final step in achieving carbon neutrality is reporting. The City of Richmond has been preparing various reports on its GHG emission actions since 2007. The City is currently developing a system for streamlining reporting, providing one-stop approach for meeting reporting requirements to meet various commitments (i.e., Provincial Climate Action Charter, Carbon Tax Rebate Requirements, Mexico Pact).

The City's carbon neutral action reports will help the City communicate the effectiveness of its corporate actions and investments, and support future planning and action implementation to reduce GHG emission reductions and advance overall sustainability in the City of Richmond.

Summary

The City of Richmond is well on its way for achieving carbon neutrality. A key focus of the City's progress to-date has been on ensuring that achieving carbon neutrality is done in a manner that reduces GHG emissions while at the same time, reinvests in the Richmond community. While a strong start has been made, further work is needed in developing an effective compensation framework that works for local governments and their communities.

Over the next year, the City will continue to measure its corporate GHG emissions, reduce existing emissions (both corporately and in the community) and work with the Province and other partners to develop effective compensation frameworks.