

## Climate Action Revenue Incentive Program (CARIP) Public Report

# Climate Action Revenue Incentive (CARIP) Public Report for YEAR 2015

City of Richmond

Metro Vancouver



### Report Submitted by

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The City of Richmond has completed the 2015 Climate Action Revenue Incentive Program (CARIP) Public Report as required by the Province of BC. The CARIP report summarizes actions taken in 2015 and proposed for 2016 to reduce corporate and community-wide energy consumption and greenhouse gas emissions (GHG), as well as general sustainability related initiatives.

**April 27, 2016**

### 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>	214,000

## Table of Contents

1. GENERAL REPORT INFORMATION .....	3
2. BROAD PLANNING .....	3
2.1. Community Actions .....	4
2.2. Corporate Actions .....	4
3. BUILDINGS AND LIGHTING .....	5
3.1. Community Actions .....	5
3.2. Corporate Actions .....	6
4. ENERGY GENERATION .....	7
4.1. Community Actions .....	8
4.2. Corporate Actions .....	8
5. GREENSPACE .....	9
5.1. Community Actions .....	9
5.2. Corporate Actions .....	10
6. SOLID WASTE .....	10
6.1. Community Actions .....	11
6.2. Corporate Actions .....	12
7. TRANSPORTATION .....	12
7.1. Community Actions .....	13
7.2. Corporate Actions .....	14
8. WATER AND WASTEWATER .....	14
8.1. Community Actions .....	15
8.2. Corporate actions .....	15
9. CLIMATE ADAPTION .....	16
9.1. Community Actions .....	16
10. INNOVATION .....	17
11. CONCLUSION .....	17

## 1. GENERAL REPORT INFORMATION

This 2015 Climate Action Revenue Incentive Program (CARIP) Public Report documents the actions that the City of Richmond has taken corporately and in the community to support the reduction of greenhouse gas (GHG) emissions and energy use, as well as other sustainability related initiatives. The actions are separated into eight main categories; Broad Planning, Buildings and Lighting, Energy Generation, Greenspace, Solid Waste, Transportation, Water and Wastewater, and Climate Adaptation. There are also is an Innovation category, which the City has inputted action items. The categories are further divided into corporate and community related actions, with general climate action questions at the beginning of each category.

This report encompasses a majority of the action items that the City is involved in to support GHG and energy reduction, but does not cover all sustainability related initiatives that the City conducts or supports. The report represents a “snapshot” of City activities over the past year, and proposed actions for 2016.

## 2. BROAD PLANNING

Broad planning refers to high level planning that sets the stage for GHG emissions reductions, including plans such as Official Community Plans, Integrated Community Sustainability Plans, Climate Action Plans or Community Energy Emissions Plans. Land use planning that focuses on Smart Growth principles (compact, complete, connected, centred). Broad Planning plays an especially important role in energy and GHG reduction. Summarized below are the City of Richmond’s responses to the Provincial inquiries regarding broad planning issues, and summary of initiatives conducted in 2015 and planned in 2016.

<b>General Climate Action Questions</b>	
Does your local government set aside funds in a climate reserve fund or something similar?	Yes
Does your local government have a corporate GHG reduction plan?	Yes
What is your current GHG reduction target (s) as identified in your OCP or RGS?	GHG reduction targets of 33% by 2020, and 80% by 2050, below 2007 levels. Reduce energy use by 10%.
Has your local government used the Community Energy and Emissions Inventory (CEEI) to measure progress?	Yes
Which of the following does your local government use to guide climate action implementation? <ul style="list-style-type: none"> <li>• Energy and Emissions Plan</li> <li>• Integrated Community Sustainability Plan</li> <li>• Community-Wide Action Plan</li> </ul>	Yes Yes Yes

## 2.1. Community Actions

<b>Community-Wide Actions Taken in 2015</b>	
	Official Community Plan (OCP) amendment was completed, which revised the policy to improve townhouse energy efficiency and incorporate more renewable energy systems in new developments
	The City worked closely with Translink in developing the Southwest Area Transport Plan, which defines Richmond's long-term transportation network goals and priorities.
	Continued to implement the OCP and City Centre Area Plan (CCAP) directives, which directs the majority of Richmond's urban growth to the City Centre and near major transit stations.
	Continued to ensure new developments within the City Centre Area were "District Energy Utility (DEU) Ready" for future connection to a district energy system, as per the City by-law.

<b>Community-Wide Actions Proposed for 2016</b>	
	Update development permit guidelines to require electrical vehicle charging stations at multi-family residential and non-residential locations throughout the City.
	Revise arterial road and coach house policies to encourage more energy efficient buildings and more compact communities.
	Continue to implement OCP and CCAP policies as new development applications are processed.
	Continue to meet with Richmond's Small Home Builders and Urban Development Institute when preparing new community building related sustainability initiatives.
	Revise the Steveston Area Plan and include measures that promote a more compact, sustainable, energy efficient, and pedestrian friendly built environment
	Continue to follow City by-law requirements and implement "DEU" ready development in the City Centre and West Cambie neighborhood areas

## 2.2. Corporate Actions

<b>Corporate Actions Taken in 2015</b>	
	Continued to implement the corporate High Performance Building Sustainability Policy. This policy sets targets for the construction of energy efficient new corporate buildings and sets in place processes to ensure that energy and resources are used efficiently in existing buildings.
	Continued to implement action items from the City's Green Fleet Action Plan, to reduce GHG emissions associated with the City's vehicle and equipment use.
	Completed the internal Corporate Building, Equipment, Monitoring, and Integration Requirements document, which sets out guidelines for equipment energy efficiency, energy and GHG emissions monitoring requirements, and the integration of buildings and equipment into the City's network. This document will help streamline building and equipment operation.

<b>Corporate Actions Proposed for 2016</b>	
	Continue to implement the corporate High Performance Building Sustainability Policy.
	Continue to implement action items from the City's Green Fleet Action Plan
	Continue to implement Corporate Building, Equipment, Monitoring, and Integration Requirements

### 3. BUILDINGS AND LIGHTING

Low-carbon buildings use the minimum amount of energy needed to provide comfort and safety for their inhabitants and tap into renewable energy sources for heating, cooling and power. These buildings can save money, especially when calculated over the long term. This category also includes reductions realized from energy efficient street lights and lights in parks or other public spaces. Below are the City of Richmond's responses to the Provincial inquiries regarding building and lighting initiatives conducted in 2015 and planned in 2016.

<b>General Climate Action Questions</b>	
Does your local government have green building/construction policies, plans or programs?	Yes

#### 3.1. Community Actions

<b>Community-Wide Actions Taken in 2015</b>	
	Continued to implement building and district energy policies. Secured commitments from new development in the City Centre to achieve LEED Silver, and townhome developments city-wide to build to EnerGuide 82 standard.
	Participated in Provincial Energy Efficiency Working Group, to inform draft "Stretch Code" energy efficiency standard for new developments.
	Implemented the following EnergySave Richmond suite of programs. <ul style="list-style-type: none"> <li>• Building Energy Challenge, a friendly competition to save energy use over the course of the year, engaged 5.6 million square feet of property.</li> <li>• Richmond Carbon Marketplace pilot program, which supports community based GHG emissions reduction projects through facilitation and funding</li> <li>• Smart Thermostat Pilot Program involved 150 participants, providing a \$125 rebate on a smart thermostat.</li> </ul>
	Coordinated with regional local governments and utilities on benchmarking and disclosure policy development.
	Identified opportunities to remove barriers to renewable energy and energy efficiency as part of development regulations and permitting processes.

<b>Community-Wide Actions Proposed for 2016</b>	
	Develop revised electric vehicle charging infrastructure policy for new developments for City of Richmond Council's consideration.
	Develop energy efficiency policy for new developments for City Council consideration
	Explore the implementation of a benchmarking and disclosure policy, in coordination with the Province, utilities, and other local governments.
	Continue to implement EnergySave Richmond suite of programs. <ul style="list-style-type: none"> <li>• Host Year 2 of Building Energy Challenge.</li> <li>• Evaluate case to expand Smart Thermostat Program.</li> <li>• Host Climate Smart program for businesses.</li> <li>• Implement water and energy saving programs for businesses and residences.</li> <li>• Develop energy program for multifamily condominiums, coordinating with other regional local governments and utility stakeholders.</li> <li>• Consider expansion of the Richmond Carbon Marketplace pilot program.</li> </ul>
	Implement renewed development regulations and/or permitting processes to better accommodate renewable energy and energy efficiency.

### 3.2. Corporate Actions

<b>Corporate Actions Taken in 2015</b>	
	Completed energy efficiency upgrades at Watermania Aquatic Centre, Steveston Community Centre, and other corporate recreational facilities that will reduce energy use by approximately 1.8 GWh, and GHG emissions by over 300 tonnes of CO <sub>2</sub> e (equal to removing 90 Richmond cars off of the roads)
	Completed the upgrade and replacement of less energy efficient street lighting with more energy efficient LED street lighting fixtures at Mang and Chatterton Roads, and Miller and Garden City Roads)
	Initiated a pilot project with BC Hydro to replace less energy efficient leased street lighting with more efficient LED street lighting fixtures. This pilot project will help lead to further upgrades of City of Richmond leased street lights to LED
	Completed the upgrade of the mechanical building automation system at City Hall to help improve overall occupant comfort and equipment scheduling and monitoring

<b>Corporate Actions Proposed for 2016</b>	
	Complete energy efficiency upgrades at various City facilities and Fire Halls, as per the 2016 capital Energy Management Program work plan
	Complete the upgrade of the building automation systems at Thompson Community Centre, Gateway Theatre, and Library Cultural Centre to improve overall occupant comfort and improve equipment scheduling and monitoring
	Complete Phase 1 of the City of Richmond street lighting conversion project, with the replacement of approximately 950 less energy efficient street light fixtures with new more efficient LED technology
	Initiate the internal Energy Statement reporting functionality to further engage City staff in corporate energy reduction initiatives.
	Continue to work towards achieving key targets in the City's High Performance Building Policy for new and existing facilities, with focus on energy efficiency, reduced resource use, and environmental sustainability.

#### 4. ENERGY GENERATION

A transition to renewable or low-emission energy sources for heating, cooling and power supports large, long-term GHG emissions reductions. Renewable energy including waste heat recovery, geo-exchange, micro hydroelectric, solar thermal and solar photovoltaic, heat pumps, tidal, wave, and wind energy can be implemented at different scales, e.g. in individual homes, or integrated across neighbourhoods through district energy or co-generation systems. Below are the City of Richmond's responses to the Provincial inquiries regarding energy generation, and summary of initiatives conducted in 2015 and planned in 2016.

<b>General Climate Action Questions</b>	
Is your local government currently developing or constructing new district energy projects?	Yes
Is your local government currently developing or constructing a new renewable energy system?	Yes
Is your local government operating a district energy centre?	Yes
Is your local government operating a renewable energy system?	Yes
Is your local government connected to a district energy system that is operated by another energy provider?	Yes
Are you aware of the integrated resource recovery (IRR) guidance page on the BC Climate Action Toolkit?	Yes

## 4.1. Community Actions

<b>Community-Wide Actions Taken in 2015</b>	
	Completed Phase 3 of the Alexandra District Energy Utility (ADEU), which included expansion of the energy centre to add a second geo-exchange field, associated equipment, and 1,150 m of distribution piping. A total of 1,200 residential units and 30,000 ft <sup>2</sup> non-residential space are now connected to this ADEU system.
	Constructed Phase 1 of the Oval Village District Energy Utility (OVDEU), in partnership with a private utility. Phase 1 consisted of two interim energy centres and 550 m of distribution piping. Two developments with a total of 505 units and 571,000 ft <sup>2</sup> of building gross floor area were connected to the OVDEU system.
	Supported the completion of a feasibility study of the effluent heat recovery potential for Lulu Island Wastewater Treatment Plant and the potential for connecting this energy source to a City Centre District Energy system.
	Issued a request for an expression of interest (RFEOI) to find a partner to design, finance, build and operate City Centre North District Energy Utility (CCNDEU).

<b>Community-Wide Actions Proposed for 2016</b>	
	Implement Phase 4 expansion of the ADEU. This consists of a satellite energy plant to service the demands of a new 200,000 ft <sup>2</sup> commercial development, and the connection of two more residential buildings (additional 400,000 ft <sup>2</sup> ). The satellite energy plant will use high efficient air source heat pumps to provide heating and cooling energy.
	Continue OVDEU Phase 1 construction in partnership with private utility partner. Install additional distribution piping and connect four new developments with a total of 884,000 ft <sup>2</sup> of building gross floor area. Phase 2 of this project will include implementation of sewer heat recovery technology as an energy source for the DEU.
	Complete extension test and feasibility study to expand the current OVDEU service area from 5million ft <sup>2</sup> to 20million ft <sup>2</sup>
	Select a district energy utility operations partner for the CCNDEU, complete a due diligence review, and execute a partnership agreement to design, finance, build and operate CCNDEU

## 4.2. Corporate Actions

<b>Corporate Actions Taken in 2015</b>	
	Completed the detailed design for the new Fire Hall No.3 to connect to the City's Alexandra District Energy utility centre
	Secured external grant funding to complete a solar photovoltaic system/renewable energy feasibility study for the new Minoru Complex
	Secured funding for the installation of a solar photovoltaic array at City Hall, to displace electricity and reduced peak demand load



<b>Corporate Actions Proposed for 2016</b>	
	Complete a feasibility study on the installation of solar photovoltaic array at the new Minoru Complex
	Continue to target renewable energy integration, a key component of the City's High Performance Building Policy, during design development for new corporate facilities.
	Install solar photovoltaic array at City Hall to offset electrical demand.
	Complete the connection of the new Fire Hall No.3 to the corporate Alexandra District Energy Utility Centre, which provides heating and cooling to residential and commercial customers in the area through a renewable geexchange system.

## 5. GREENSPACE

Greenspace refers to parks and greenways, boulevards, community forests, urban agriculture, riparian areas, gardens, recreation/school sites, and other green spaces, such as remediated brownfield/contaminated sites. Greenspaces support climate change mitigation (reducing emissions by absorbing and sequestering GHG) and adaptation (providing shade, cooling, deflecting strong wind, and improving air quality). Below are the City of Richmond responses to the Provincial inquiry regarding "greenspace" management in the City, and summary of community initiatives conducted in 2015 and planned in 2016.

<b>General Climate Action Questions</b>	
Does your local government have urban forest policies, plans or programs?	Yes

### 5.1. Community Actions

<b>Community-Wide Actions Taken in 2015</b>	
	Continued mapping of key invasive species locations in the Community, including the installation of signage aimed at reducing the spread of knotweed.
	Adopted the Ecological Network Management Strategy. A first of a kind ecological strategy with ecological protection, enhancement and connectivity of all natural lands, throughout the city, regardless of ownership.
	Planted 1,067 trees on City streets and parks, as per the City's Tree Management Plan
	Continued to partner with the Province of BC to detect new invasive species, develop rapid response plans, and conduct coordinated response efforts.

<b>Community-Wide Actions Proposed for 2016</b>	
	Adopt an Invasive Species Action Plan
	Implement the partnership agreement with Metro Vancouver for the Go Green program aimed at backyard naturalization as a component of the newly adopted Ecological Network Management Strategy.
	Continue to plant new trees on City streets and parks, and update the Urban Forest Management Strategy.
	Promote the Bridgeport Industrial Park/Bath Slough Pollinator Pasture, through Richmond Doors Open event, with tours, information booths and interpretive opportunities for learning more about the importance of native pollinators and their habitat in the City.

## 5.2. Corporate Actions

<b>Corporate-Wide Actions Taken in 2015</b>	
	Conducted a hydrogeological study of the Garden City Lands site, and modelled the implications of the potential proposed park and local agricultural development. This study work included identifying ways that the bog ecosystem of the site could be enhanced, and will inform the Garden City Lands Water and Ecological Resource Management Strategy
	Continued Parrot feather control trials with geotextile on City property
	Designed and planted of pollinator pasture in Bridgeport Industrial Park through a collaboration with Public Art. This ecological enhancement project encompasses community involvement, native pollinator habitat and interpretive pollinator features in Bridgeport Industrial Park located along Bath Slough.

<b>Corporate-Wide Actions Proposed for 2016</b>	
	Complete a carbon and hydrological assessment of the City's Northeast Bog conservation area
	Complete the development of the Garden City Lands Water and Ecological Resource Management Strategy including recommendations for construction and management practices and long-term monitoring of the bog ecosystem.
	Continue to detect and respond to invasive species encroachment on City property effectively

## 6. SOLID WASTE

Reducing, reusing, recycling, recovering and managing the disposal of the residual solid waste minimizes environmental impacts and supports sustainable environmental management, greenhouse gas reductions, and improved air and water quality. Below are the City of Richmond responses to the Provincial inquiries regarding solid waste management in the City, and summary of initiatives conducted in 2015 and planned in 2016.

### General Climate Action Questions

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

## 6.1. Community Actions

### Community-Wide Actions Taken in 2015

Expanded food scraps collection from just single family residential, to 489 multi-family housing sites with approximately 26,295 units. Collected and diverted 18,495 tonnes of organic materials in 2015.
Enhanced Richmond Recycling Depot signage and made site improvements to increase awareness of how and where to recycle materials, and introduced traffic counters to measure public use in July 2015. The total traffic count from July to December 2015 was 68,474 visits.
Delivered 32 workshops with 599 community participants on waste reduction, recycling and avoiding food wastage.
Hosted 400 information sessions as part of the implementation of food scraps recycling for 489 multi-family complexes
Made recycling stations available at over 40 community events and achieved more than 80% waste diversion at Ships to Shore, Salmon Festival, World Festival and Maritime Festival.

### Community-Wide Actions Proposed for 2016

Accept an expanded range of materials for recycling in public spaces and enhance the recycling container replacement and maintenance program.
Explore options for expanded Recycling Depot service (i.e. Eco Centre).
Introduce a bylaw to require 70% waste diversion from the demolition of single-family and duplex homes.
Implement a bi-weekly garbage cart collection program for single-family homes and townhomes to encourage greater waste diversion.
Increase awareness of the expanded range of materials accepted in the Blue Box and Blue Cart recycling programs, including proper recycling practices under the MMBC partnership, to reduce contamination and increase recycling levels.

## 6.2. Corporate Actions

Corporate Actions Taken in 2015	
	Expanded in-house recycling under the City's WeRecycle program to include organics collection and expanded the range of materials accepted for recycling.
	Implemented enhanced communication strategy to increase awareness and encourage greater participation in corporate waste diversion.
	Assisted with the introduction of the Corporate Sustainable Event, 7-Step Quick Guide Toolkit and website

Corporate Actions Proposed for 2016	
	Conduct corporate site and visual audits of the garbage and recycling stations to ensure that staff are disposing of materials in the correct receptacles
	Host a corporate sustainable event solutions conference to raise awareness and educate organizers of different tactics they could implement to make their event more sustainable
	Continue promoting the corporate WeRecycle program, to encourage staff to increase corporate waste diversion

## 7. TRANSPORTATION

Transportation actions that increase transportation system efficiency, emphasize the movement of people and goods, and give priority to more efficient modes, e.g. walking, cycling, ridesharing, and public transit, can contribute to reductions in greenhouse gas emissions and more livable communities. Below are the City of Richmond responses to the Provincial inquiries regarding transportation system management in the City, and summary of initiatives conducted in 2015 and planned in 2016.

General Climate Action Questions	
Does your local government have policies, plans or programs to support: <ul style="list-style-type: none"> <li>• Walking</li> <li>• Cycling</li> <li>• Transit Use</li> <li>• Electric Vehicle Use</li> <li>• Other: car-sharing, carpooling</li> </ul>	Yes Yes Yes Yes Yes
Does your local government have a transportation demand management (TDM) strategy (e.g. to reduce single-vehicle occupancy trips, increase travel options, provide incentives to encourage individuals to modify travel behavior)?	Yes
Does your local government have policies, plans or programs to support local food production (thus reducing transportation emissions)?	Yes

## 7.1. Community Actions

<b>Community-Wide Actions Taken in 2015</b>	
	<p>Completed multiple projects to improve transit, biking, and pedestrian accessibility including</p> <ul style="list-style-type: none"> <li>• Constructing a bikeway/multi-use path connection in Blundell Park as part of the development of the Crosstown local street bikeway.</li> <li>• Substantially completed the widening of Westminster Highway between Nelson Road and McMillan Way(1.3 km), which includes an off-street multi-use path.</li> <li>• Upgrading 21 bus stops to become accessible,</li> <li>• Installing two new transit shelters</li> <li>• Upgrading eight arterial road crosswalks to include overhead downward lighting, pedestrian-actuated flashing beacons and verbal wayfinding message</li> <li>• Upgrading 16 signalized intersections to include accessible pedestrian signal features</li> </ul>
	Continued development of TransLink’s Southwest Area Transport Plan encompassing Richmond, South Delta and Tsawwassen First Nation.
	Staged 15 <sup>th</sup> annual “Island City, by Bike” tour for the community to encourage cycling as a mode of transportation.
	Expanded reserved on-street parking spaces for car-share vehicles.
	Initiated partnership with TransLink to identify and encourage alternative travel modes to decrease single occupant vehicles trips to/from business parks and industrial areas in Richmond

<b>Community-Wide Actions Proposed for 2016</b>	
	<p>As part of the approved Transportation Capital Budget, the following improvements and enhancements are planned to be completed in 2016:</p> <ul style="list-style-type: none"> <li>• Eight new special crosswalks and six new pedestrian signals (including four pedestrian signals that are part of existing or planned bike routes)</li> <li>• Three pedestrian walkways and two multi-use pathways for both cyclists and pedestrians</li> <li>• Initiation of two roadway improvement projects (No. 2 Road south of Steveston Highway and Lansdowne Road between Minoru Blvd and Alderbridge Way) that will each include a multi-use pathway</li> <li>• Install new transit shelters</li> </ul>
	Develop streetscape options for key streets in Steveston Village that accommodate active transportation in support of Official Community Plan goals and objectives with respect to mobility and access.
	Continue development of TransLink’s Southwest Area Transport Plan.
	Stage 16 <sup>th</sup> annual “Island City, by Bike” tour for the community to encourage cycling as a mode of transportation.
	Continue to support education and encouragement programs for cycling and walking (e.g., Bike to Work/School Week, cycling education courses for students and adults, Walk Richmond program).

## 7.2. Corporate Actions

<b>Corporate Actions Taken in 2015</b>	
	Continued the City's vehicle replacement program to replace older, less fuel-efficient vehicles with newer, more fuel-efficient vehicles and with best in class fuel efficiency, where possible. In 2015, 46 units were replaced and 13 more units were ordered for 2016.
	Enhanced the corporate fleet driver training program to include emphasis on fuel efficient driving techniques and anti-idling
	Continued other operational improvements as described in the Green Fleet Action Plan, including reducing growth and downsizing the Fleet, incorporation of more electric and hybrid vehicles where possible, and right sizing of existing and new assets. The Green Fleet Action Plan target is to reduce the City's overall Fleet emissions by 20% in 2020 from 2011 levels.
	Completed analysis and review of City Employee Carpool Program, including best practices research and options for expansion to include other sustainable modes (transit, cycling, walking).
	Undertook a compressed natural gas (CNG) study to establish the feasibility of CNG as a potential alternative fuel for reducing GHG emissions. Results indicated that the City's fleet does not travel sufficient distances to makes this financially viable at this time.

<b>Corporate Actions Proposed for 2016</b>	
	Continue replacing older less efficient City fleet vehicles with newer, more fuel-efficient vehicles, where possible.
	Complete a GPS tracking pilot project involving 60 vehicles to evaluate routing efficiency and reduce Fleet vehicle trip times
	Update City Employee Carpool Program based on results of the 2015 analysis and raise awareness of any improvements to the Program to encourage greater use.
	Complete an analysis of converting some medium and light duty trucks to propane, which has been indicated to potentially reduce emissions in the vehicles by 26%.
	Continue to support use of alternative modes of transportation for work related travel, including cycling, providing transit passes for work trips, and carpooling.

## 8. WATER AND WASTEWATER

Managing and reducing water consumption and wastewater is an important aspect of developing a sustainable built environment that supports healthy communities, protects ecological integrity, and reduces greenhouse gas emissions. Below are the City of Richmond responses to the Provincial inquiry regarding water and wastewater management in the City, and summary of initiatives conducted in 2015 and planned in 2016.

<b>General Climate Action Questions</b>	
Does your local government have water conservation policies, plans or programs?	Yes

## 8.1. Community Actions

<b>Community-Wide Actions Taken in 2015</b>	
	Installed 1,500 water meters at single-family residences (approximately 88% of single-family homes in the City of Richmond are now metered)
	Issued 902 toilet rebates to homeowners that replaced old toilets with a low-flush toilet to reduce residential water use. The total incentive paid to homeowners through this program in 2015 was \$90,200.
	Partnered with BC Hydro to provide a clothes washer rebate program to reduce home water use and electricity. In 2015, 294 rebates have been issued to homeowners who replace their less efficient (water and electricity) washer for a new efficient model at a total cost of \$20,200 to the City resulting in an estimated annual savings in water and energy of 1,655,600 liters per year and 53,800 kilowatt hours per year, respectively.
	Installed meters for 141 existing multi-family residential complexes (comprising 8,585 dwelling units) through the volunteer water meter program. It is mandatory for new multi-family residences to have a water meter. A total of 40% of multi-family units in Richmond now have a water meter.
	Provided 150 free water saving kits to Richmond households that included a low-flow showerhead, kitchen and bathroom tap aerators and a pop-flush device for toilets.

<b>Community-Wide Actions Proposed for 2016</b>	
	Continue the single family and multi-family water meter installation programs
	Continue the toilet rebate program (\$100,000 in funding for 2016)
	Continue offering the water saving kits and free leak audits to homeowners with a newly installed water meter.
	Continue to participate in the clothes washer rebate joint program in May/June and October/November with BC Hydro in 2016.
	Continue the City's Rain Barrel Program and promote the use of rain water for gardening and irrigation purposes.

## 8.2. Corporate Actions

<b>Corporate Actions Taken in 2015</b>	
	Continued to participate in the Metro Vancouver Municipal Water Conservation Coordinator Committee. The meetings revolve around networking with other municipalities and discussing initiatives, progresses, updates in policies and results through group communication.
	Conducted a corporate water wise workshop, with over 30 staff attending the information session
	Installed some of the recommended conservation measures at ten water audited buildings, such as; replace constant flush urinals, turn down flush cycle times, replace old toilets with low flush toilets and install aerators
	Installed bottle water re-filling stations at the Works Yard

<b>Corporate Actions Proposed for 2016</b>	
	Continue to take part in the Metro Vancouver Municipal Water Conservation Coordinator Committee.
	Continue to follow the City's landscaping best practices, which emphasize planting grasses and plants at corporate facilities that require little or no irrigation water.
	Install further bottle water re-filling stations at various corporate facilities

## 9. CLIMATE ADAPTION

For local governments, adaptation to a changing climate can take the form of changes in policy, management, technology and behaviour that minimize negative impacts or exploit opportunities. It can involve both "hard" and "soft" solutions, including: changes in infrastructure engineering, planning, zoning, bylaws and public education. Below are the City of Richmond responses to the Provincial inquiries regarding climate change adaption, and summary of initiatives conducted in 2015 and planned in 2016.

<b>General Climate Action Questions</b>	
Are you familiar with the Plan2Adapt guidance located on the Climate Action Toolkit Website?	Yes
Are you familiar with "Preparing for Climate Change - An Implementation Guide for Local Governments in BC?"	Yes
Have you visited the climate change adaptation guidance page on the BC Climate Action Toolkit?	Yes

### 9.1. Community Actions

<b>Community-Wide Actions Taken in 2015</b>	
	Began implementing Phase 2 of the Dike Master Plan, which includes improvements to the North West Dike and the Middle Arm Dike west of No. 6 Road.
	Raised numerous dikes, to elevations between 4.0m and 4.7 m geodectic, which is higher than the current Provincial flood protection standard, and will help to protect the City from medium and long term sea level rise.
	Received approval from the Province to begin surveying and investigating the construction of a dike on Steveston Island. The investigation is required to further develop the feasibility, impact and cost assessment associated with building the Steveston Island Dike recommended in the Lulu Island Dike Master Plan- Phase 1.
	Continued implementing the 2008-2031 Richmond Flood Protection Strategy



<b>Community-Wide Actions Proposed for 2016</b>	
	Update Council on the progress of the Dike Master Plan- Phase 2.
	Complete initial investigations of potential dike construction on Steveston Island, conduct further investigation as needed.
	Continue implementing the 2008-2031 Richmond Flood Protection Strategy

## 10. INNOVATION

This section is intended to give the opportunity to describe any energy and GHG emission reduction activities that have been undertaken over the past year(s) that your local government is particularly proud of and would like to share with other local governments. Below is summary of the innovated initiative that the City is currently supporting.

<b>Community-Wide Actions Taken in 2015</b>	
	Plan is being implemented to upgrade of all City-owned traffic signals to include accessible pedestrian signal (APS) features by 2020. The program was initiated in 2011 and signals are retrofitted at a rate of approximately 15 per year to meet the 2020 completion target. To the City's knowledge, Richmond is the only municipality in Canada to commit to equipping all special crosswalks and signals with APS as opposed to selected sites based on demand/requests.
	The City executed a 30 year concession agreement with the private utility partner and started implementation to design, finance, build, and operate Oval Village DEU. Within the agreement, private utility partner will design, finance, build and operate the OVDEU, while Lulu Island Energy Company (fully owned City corporation) will own the utility, and the City Council will be the utility regulator and setting the customer rates.
	The City coordinated and delivered an interactive elementary school water education program aimed at teaching students about the importance of water conservation, called Project WET.

## 11. CONCLUSION

This report highlights a wide range of initiatives that the City is undertaking to continue to advance sustainability corporately and in the community, with focus on reducing greenhouse gas emissions, and energy and resource use. This report does not encompass all of the sustainability related initiatives and actions that the City is involved in, but simply provides a "snapshot" of some of the key areas and work that the City has completed and is planning on completing. These efforts help to position the City as a leader in our region and beyond. The City has set aggressive sustainability targets on a range of fronts, including for greenhouse gas emissions reduction and waste diversion. The City will continue to pursue best practices and innovation to achieve its sustainability related goals, which are recognized as critical to Richmond's Vision of "being the most appealing, liveable and well-managed community in Canada".