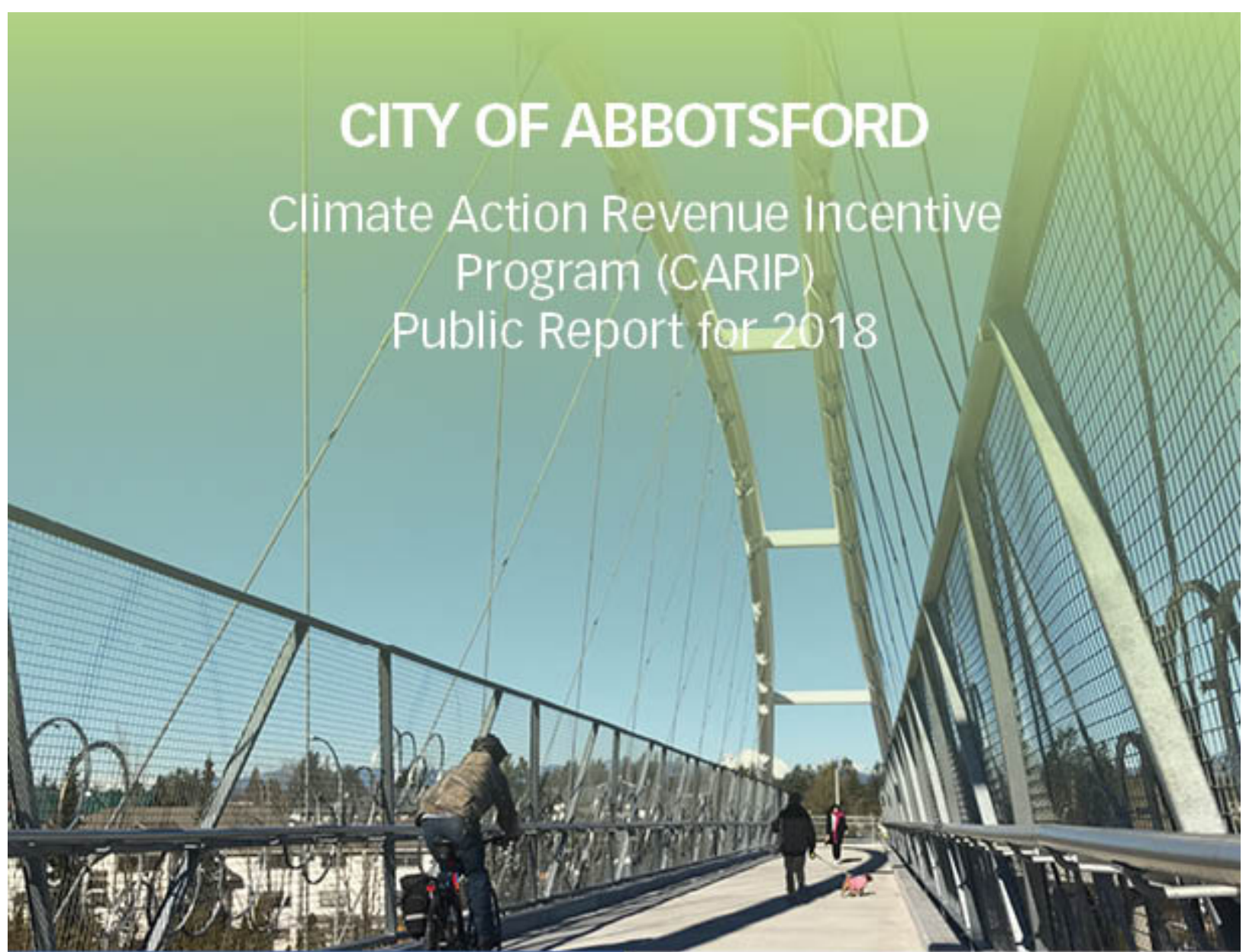


CITY OF ABBOTSFORD

Climate Action Revenue Incentive Program (CARIP) Public Report for 2018



May 27, 2019



CLIMATE ACTION
COMMUNITY 2017



Climate Action Revenue Incentive (CARIP) Public Report for 2018

Local Government: City of Abbotsford

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The City of Abbotsford has completed the 2018 Climate Action Revenue Incentive Program (CARIP) Public Report as required by the Province of BC. The CARIP report summarizes actions taken in 2018 and proposed for 2019 to reduce corporate and community-wide energy consumption and greenhouse gas emissions (GHG) and reports on progress towards achieving carbon neutrality.

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1.0 General Report Information

Climate action is a provincial priority and local governments are key partners in helping to reduce greenhouse gas (GHG) emissions and create complete, compact, energy efficient communities. The Climate Action Revenue Incentive Program (CARIP) is a conditional grant program that provides funding to BC Climate Action Charter signatories equivalent to one hundred percent of the carbon taxes that they pay directly. This funding supports local governments in their efforts to reduce GHG emissions and move forward on achieving their charter goals.

The City of Abbotsford has completed the 2018 CARIP Public Report as required by the Province of British Columbia. The report summarizes community wide and corporate actions that the City has taken in 2018 and is proposing for 2019 to support the reduction of energy consumption and GHG emissions. The actions are separated into ten categories: Broad Planning, Buildings and Lighting, Energy Generation, Greenspace/Natural Resource Protection, Solid Waste, Transportation, Water and Wastewater, Climate Change Adaptation, Other Climate Actions, and Innovation and Peer-to-Peer Learning. The report encompasses a majority of the action items that the City has undertaken or is involved in to support GHG and energy reduction.

2.0 Broad Planning Actions

Broad Planning refers to high level planning that sets the stage for GHG emissions reductions, including plans such as Official Community Plans, Integrated Community Sustainability Plans, Climate Action Plans or Community Energy Emissions Plans. Land use planning that focuses on Smart Growth principles (compact, complete, connected, centred) plays an especially important role in energy and GHG reduction. Summarized below are the City of Abbotsford’s responses to the inquiries pertaining to broad planning issues, and a summary of initiatives undertaken in 2018 and planned for in 2019.

General Broad Planning Questions	
What is (are) your current GHG reduction target(s)?	40% by 2040
Are you familiar with your community’s community energy and emissions inventory (e.g. CEEI or another inventory)?	Yes
What plans, policies or guidelines govern the implementation of climate mitigation in your community?	
<ul style="list-style-type: none"> • Community Energy and Emissions (CEE) Plan • Integrated Community Sustainability Plan • Community- Wide Climate Action Plan • Official Community Plan (OCP) • Regional Growth Strategy (RGS) 	Yes Yes Yes Yes Yes
Does your local government have a corporate GHG reduction plan?	Yes

2.1 Broad Planning Actions

Community-Wide Actions Taken in 2018	
	Continued work on “Plan 200K”, an initiative that looks forward to the City reaching a population of 200,000 while considering the impacts of different development and land use scenarios on GHG emissions. This initiative takes improvements into account with respect to building energy efficiencies, vehicle efficiencies, solid waste diversion rates, and currently planned transportation infrastructure.

Community-Wide Actions Taken in 2018	
	Completed the UDistrict Neighbourhood Plan and incorporated it into the Official Community Plan (OCP). The Plan supports the long-term growth and diversification of the University of the Fraser Valley, through shaping new development to take advantage of this strategic location and result in a vibrant, green and transit-oriented community.
	Completed stage 3 of the following Neighbourhood Plans as part of the Plan 200K initiative: <ul style="list-style-type: none"> • City Centre; and • Historic Downtown.
	Completed the following Master Plans as part of the Plan 200K initiative: <ul style="list-style-type: none"> • Parks, Recreation & Culture; • Fire Rescue Services; • Transit; • City Water; • City Wastewater; • Transportation; • Abbotsford-Mission Joint Water; • Abbotsford-Mission Joint Wastewater; and • Drainage.
	Continued work on the following special studies as part of the Plan 200K initiative: <ul style="list-style-type: none"> • AgRefresh; and • Water Source Supply.
	Continued work on the Urban Infill Study to clarify the City's objectives and intent for the Urban 3 – Infill land use designation in the OCP, which applies to approximately 5,600 lots in existing neighbourhoods surrounding Abbotsford's urban core. The OCP provides general directions for redevelopment within this land use; however, more detailed zoning regulations and guidelines are needed to provide clarity.
	Continued work on the Solid Waste Operating Master Plan to assess current operations and to consider options for changes and enhancements to the program.
	Continued to implement OCP policies when processing new development applications.
Community-Wide Actions Proposed for 2019	
	Continue progress on the following neighbourhood plans as part of the Plan 200K initiative: <ul style="list-style-type: none"> • City Centre; • Historic Downtown; and • McKee.
	Continue progress on the following special studies as part of the Plan 200K initiative: <ul style="list-style-type: none"> • AgRefresh; • Water Source Supply; • Fishtrap Creek Integrated Stormwater Management Plan; • Willband Creek Integrated Stormwater Management Plan; • Housing Strategy; and • Zoning Bylaw Update.
	Continue progress on the Urban 3 – Infill Study.
	Complete the Solid Waste Operational Master Plan.
	Continue to implement OCP policies through new development applications.

2.2 Corporate Actions

Corporate Actions Taken in 2018	
	Continued use of energy accounting software to provide an efficient method of tracking the City's corporate energy consumption.
	Updated the City's Strategic Energy Management Plan as part of the City's continued participation in the BC Hydro Energy Manager Program.
	Continued development of a Green Fleet Plan to reduce GHG emissions associated with the City's vehicle and equipment use.
	Continued work on the energy and GHG reduction projects identified in the City's Facilities Energy and Greenhouse Gas Assessment and Reduction Plan. Details are outlined in the "Buildings and Lighting Action" portion of this report.
	Continued support for the corporate anti-idling policy.
	Continued environmental engagement of staff.
	The City was recognized as a Smart21 community, moving us forward in being more connected, engaged, inclusive and sustainable.
Corporate Actions Proposed for 2019	
	Continue use of the energy accounting software to track the City's corporate energy consumption.
	Approval and implementation of the Green Fleet Plan to reduce GHG emissions associated with the City's vehicle and equipment use.
	Continue to work on energy and GHG reduction projects identified in the City's Facilities Energy and Greenhouse Gas Assessment and Reduction Plan.
	Continue to support the corporate anti-idling policy.
	Continue to support the environmental engagement of staff.
	Review and update the City's Corporate Energy Policy.

3.0 Building and Lighting Actions

Low-carbon buildings use the minimum amount of energy needed to provide comfort and safety for their inhabitants and tap into renewable energy sources for heating, cooling and power. These buildings can save money, especially when calculated over the long term. This category also includes reductions realized from energy efficient street lights and lights in parks or other public spaces. Summarized below are the City of Abbotsford's responses to the inquiries pertaining to building and lighting initiatives undertaken in 2018 and planned for in 2019.

General Building and Lighting Questions	
Is your local government aware of the BC Energy Step Code?	Yes
Is your local government implementing the BC Energy Step Code?	Yes

3.1 Community-Wide Actions

Community-Wide Actions Taken in 2018	
	Continued to encourage residential development within the existing Urban Development Boundary, as required by the OCP. The OCP Growth Plan notes that all future growth will be contained within the existing Urban Development Boundary, with 75% of future residential growth taking place in centres and existing neighbourhoods, and 25% of future residential growth taking place in new neighbourhoods.

Community-Wide Actions Taken in 2018	
	Encouraged the incorporation of electric vehicle charging stations within new multi-family developments.
	Completed a feasibility study on the adoption of an approach to the BC Energy Step Code and electric vehicle readiness in new houses and brought to Council for approval.
Community-Wide Actions Proposed for 2019	
	Continue to encourage residential development within the existing Urban Development Boundary, as required by the OCP.
	Implement the approved approach to the BC Energy Step Code for new buildings effective September 2019. Specifically, implement a two-phase approach to require Part 9 buildings, to meet Step 1 in the Energy Step Code for new Part 9 buildings by September 1, 2019, for phase one, and for new Part 9 buildings by April 1, 2020, for phase two. Investigate optional requirements for new buildings to meet Step 3 in the Energy Step Code, effective September 1, 2019, and investigate proposed incentives and an enforcement framework.
	Develop a strategy to create regulations, incentives, and remove regulatory barriers to reduce energy consumption in buildings.
	Continue to encourage the incorporation of electrical vehicle charging stations within new multi-family developments and investigate options to require EV charging readiness. Join the Metro Vancouver-area EV peer network to stay updated on related ideas, policies and progress.

3.2 Corporate Actions

Corporate Actions Taken in 2018	
	Partnered with BC Hydro through their Energy Manager Program to reduce electricity consumption in civic facilities and utilities.
	Updated the City's Strategic Energy Management Plan as part of the City's continued participation in the BC Hydro Energy Manager Program.
	Implemented Year 2 energy and GHG reduction projects identified in the City's Facilities Energy and Greenhouse Gas Assessment and Reduction Plan, resulting in reducing energy consumption by over 400,000 kWh annually: <ul style="list-style-type: none"> • LED lighting upgrades at Clearbrook Library/UFV, the Reach and the Police Annex; • LED lighting upgrade at ARC; • Mechanical upgrades at Clearbrook Library, Exhibition Park, Matsqui Centennial Auditorium and five Fire Halls; • Mechanical optimization at City Hall and the King Road Works Yard; and • Mechanical upgrades and optimization at the Police Building and the Police Annex.
	Completed a pilot project converting 120 street lights to LED. The City's five year financial plan includes replacing 6,259 of the City's high pressure sodium street lights with energy efficient LED technology, over a four year period.
	Developed an Electric Vehicle (EV) Charging Station Strategy, and obtained Council approval for funding to install ten charging stations over the next five years at various City facilities.
	Installed pre-work for four Level 2 charging stations with eight charging heads at City Hall.
	Initiated a "Sweater Weather" campaign to reduce natural gas consumption during the gas supply shortage in the Fall. Temperatures were lowered by 2°C at all Fire Halls and utilities buildings, at the Operations Works Yard, and at City Hall for approximately 6 weeks.

Corporate Actions Proposed for 2019	
	Continue partnership with BC Hydro through their Energy Manager Program. Hire an Energy Manager co-funded by Hydro.
	Join the BC Hydro Energy Wise Network to help engage City employees to increase energy conservation awareness and knowledge, inspire conservation action and leadership, and to establish a permanent culture of conservation at work.
	Use the Climate Action Reserve Fund (CARF) to fund projects identified in the City’s Facilities Energy and Greenhouse Gas Assessment and Reduction Plan.
	Complete installation of four Level 2 charging stations with eight charging heads at the City Hall staff parking lot.

4.0 Energy Generation Actions

A transition to renewable or low-emission energy sources for heating, cooling and power supports large, long-term GHG emissions reductions. Renewable energy including waste heat recovery (e.g. from biogas and biomass), geo-exchange, micro hydroelectric, solar thermal and solar photovoltaic, heat pumps, tidal, wave, and wind energy can be implemented at different scales, e.g. in individual homes, or integrated across neighborhoods through district energy or co-generation systems. Summarized below are the City of Abbotsford’s responses to the inquiries pertaining to energy generation, and a summary of initiatives undertaken in 2018 and planned for in 2019.

General Energy Generation Questions	
Is your local government developing, or constructing: <ul style="list-style-type: none"> • A district energy system • A renewable energy system 	No No
Is your local government operating: <ul style="list-style-type: none"> • A district energy system • A renewable energy system 	No No
Is your local government connected to a district energy system that is operated by another energy provider?	No
Are you aware of the Integrated Resource Recovery guidance page on the BC Climate Action Toolkit ?	Yes
Are you familiar with the 2018 “ List of Funding Opportunities for Clean Energy Projects Led by First Nations and Local Governments? ”	Yes

4.1 Community-Wide Actions

Community-Wide Actions Taken in 2018	
	Supported development projects proposing alternative energy use.
Community-Wide Actions Proposed for 2019	
	Continue to support development projects proposing alternative energy use.

4.2 Corporate Actions

Corporate Actions Taken in 2018	
	Continued methane capture for space and process heat production at the JAMES Wastewater Treatment Plant.
	Continued beneficial reuse of biosolids through land application.
	Continued methane capture from the Trethewey Landfill for space heating at the Ag Rec building.
	Continued use of geothermal energy at the Reach.
	Continued use of solar power for electricity requirements at the Operations Yard Native Plant Nursery where plants are cared for and grown until planting time.
	Continued use of solar power for electricity requirements at the Urban Forestry Workshop for lighting in the sea cans.
	Continued use of an electric bike in place of fossil fueled vehicles at select locations for urban forestry trail inspections.
	Purchased one electric chainsaw and one electric hedge trimmer to replace two-stroke gas powered equipment. The electric chainsaw and trimmer were put into use and charged at the Operations Yard using solar power.
Corporate Actions Proposed for 2019	
	Continue methane capture for space and process heat production at the JAMES Wastewater Treatment Plant.
	Continue beneficial reuse of biosolids through land application.
	Continue methane capture from the Trethewey Landfill for space heating at the Ag Rec building.
	Continue to use geothermal energy at the Reach.
	Continue use of solar power for the Operations Yard Native Plant Nursery and at the Urban Forestry Workshop.
	Continue use of the electric chainsaw and electric hedge trimmer and assess potential for expanding electric equipment fleet.

5.0 Greenspace/Natural Resource Protection Actions

Greenspace/Natural Resource Protection refers to the creation of parks and greenways, boulevards, community forests, urban agriculture, riparian areas, gardens, recreation/school sites, and other green spaces, such as remediated brownfield/contaminated sites as well as the protection of wetlands, waterways and other naturally occurring features. Summarized below are the City of Abbotsford’s greenspace and natural resource protection initiatives undertaken in 2018 and planned for in 2019.

General Greenspace Questions	
Does your local government have urban forest policies, plans or programs?	Yes
Does your local government have policies, plans or programs to support local food production?	Yes

5.1 Community-Wide Actions

Community-Wide Actions Taken in 2018	
	Encouraged the inclusion of community gardens in proposed developments.
	Continued implementation of the Natural Environment Development Permit (NEDP) and Steep Slope Development (SSDP) area guidelines to help conserve greenspace during development.
	Continued work on a comprehensive update to the Zoning Bylaw to align it with the new policies and visions of the updated OCP.
	Continued to work on the review of urban agriculture under the AgRefresh initiative.
	Restoration of various park areas with volunteers and community partnerships including the Fraser Valley Watershed Coalition, Fraser Valley Conservancy, Abbotsford Mission Nature Club, and the Abbotsford Ravine Park Salmon Enhancement Society.
	Provided education and initiated bylaw enforcement regarding invasive species reported on private property, including efforts aimed at reducing the spread of Knotweed.
	Partnered with the FVRD in their Invasive Weed Control Program targeting Wild Chervil, Tansy Ragwort, Giant Hogweed and Knotweed.
Community-Wide Actions Proposed for 2019	
	Continue encouragement of community gardens in proposed developments.
	Continue work on updating the Zoning Bylaw and completing the AgRefresh initiative.
	Review and update the Tree Protection Bylaw.
	Continue restoration of various park areas with volunteers.
	Continue to partner with the FVRD in their Invasive Weed Control Program.
	Expand and strengthen a healthy and diverse tree canopy to improve air quality, capture carbon dioxide, reduce heat island effects, support public health and quality of life, and create beauty in the City through a number of approaches: <ul style="list-style-type: none"> • Establish a tree canopy coverage target; • Increase the urban forest to a determined target in public spaces; • Require tree conservation strategies, and street tree plantings and landscaping in all development and infrastructure projects.

5.2 Corporate Actions

Corporate Actions Taken in 2018	
	Planted 800 new trees at various locations around the City.
	Continued control of invasive species on City property. Aggressive control efforts of Himalayan Blackberry was undertaken throughout municipal parks and included manual removal, mechanized cutting or mowing, herbicide application and competitive/suppressive planting. Knotweed was controlled through cutting, pulling or herbicide application and was prioritized based on environmental impact.
	Continued support of invasive species removal by volunteer groups, with group effort focused on manual removal of Himalayan Balsam, English Ivy, and Dead Nettle.
Corporate Actions Proposed for 2019	
	Continue to plant new trees at various locations around the City.
	Continue to detect and effectively respond to invasive species encroachment on City property.

Corporate Actions Proposed for 2019	
	Continue park development using environmentally friendly materials and methods. New park development will consider long-term maintenance and how to reduce these maintenance needs through design. New park sites will also introduce new native vegetation and trees.
	Continue to provide new parkland and greenways in areas as being deficient and in future growth areas, high density areas, and intensification areas. Acquire parkland through dedication associated with development projects where it fits within the broader open space network.
	Continue to protect and maintain ecosystems, habitat corridors, and environmental quality within the City and enhance it by increasing the urban tree canopy, embracing integrated stormwater management practices, and creating new greenways throughout the City.

6.0 Solid Waste Actions

Reducing, reusing, recycling, recovering and managing the disposal of the residual solid waste minimizes environmental impacts and supports sustainable environmental management, greenhouse gas reductions, and improved air and water quality. Summarized is the City of Abbotsford's solid waste initiatives undertaken in 2018 and planned for in 2019.

General Solid Waste 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-Wide Actions

Community-Wide Actions Taken in 2018	
	Continued participation in the provincial Recycle BC recycling program for both the City's curbside collection program and the Abbotsford Mission Recycling Depot. An expanded list of materials are accepted for recycling under the program.
	Continued source separation of recyclables and compostables in the City's curbside collection program for single family homes and duplexes. In 2018, approximately 4,900 tonnes of recyclables and 12,600 tonnes of compostable waste were diverted from landfill through the curbside collection program, resulting in a curbside diversion rate of 66%.
	Continued to provide residents with the Curbside Collection App to access collection schedules and sorting information through smartphones and the web. In 2018, residents looked up waste sorting information for over 68,000 items.
	Continued implementation of an enhanced communication strategy to promote participating and increase awareness on: <ul style="list-style-type: none"> • Proper sorting requirements; • Contamination reduction; • Waste reduction; and • Recycle BC program changes.
	Continued consultation on the proposed compostables collection requirements for the multi-family and industrial, commercial and institutional (ICI) sectors. Program requirements will continue to be developed in partnership with the FVRD in order to realize synergies and to ensure consistent messaging across the region.

Community-Wide Actions Taken in 2018	
	Provided a City information booth regarding the curbside collection program and waste reduction at 28 public events.
	Continued partnership with Abbotsford Community Services for providing classroom education for students in Pre-K to grade 8 regarding recycling and waste diversion. In 2018, provided education to a total of 2,099 students (1,577 in grades Pre-K to 3, 210 in grades 4 to 7, and 312 in grades 8 to 12).
	Continued partnership with Abbotsford Community Services for presentations for special interest groups regarding recycling and waste diversion. In 2018, provided 16 presentations to 370 attendees at special interest groups.
	Continued partnership with Abbotsford Community Services for providing recycling information at 16 public events.
	Continued partnership with Abbotsford Community Services for hosting the 5 th annual Environmental Mind Grind competition for secondary school students.
	Continue participation in the provincial Recycle BC program.
	Continue to require source separation of recyclables and compostables in the City's curbside collection program for single family homes and duplexes.
Community-Wide Actions Proposed for 2019	
	Continue to provide collection schedule and waste sorting information through the Curbside Collection App.
	Continue to update and enhance the communication strategy to promote waste diversion and increase awareness.
	Continue to develop compostables collection requirements for the multi-family and ICI sectors in partnership with the FVRD. Update the Solid Waste Collection Bylaw to include program requirements.
	Continue to provide a City information booth at public events regarding the curbside collection program and waste reduction.
	Continue to partner with Abbotsford Community Services for recycling education and community outreach.
	Undertake a pilot study for providing waste bins to public event organizers for the separate collection of waste including refundables, recycling, compost and garbage.
	Undertake a comprehensive solid waste audit for materials collected from the curbside program including garbage, compostable waste and recycling.
	Participate in a CityStudio student project with the University of the Fraser Valley on compostables collection at multi-family properties.
	In partnership with the FVRD, participate in the national Love Food Hate Waste campaign which focuses on providing information and tips to residents on how to reduce food waste.

6.2 Corporate Actions

Corporate Actions Taken in 2018	
	Continued use of landfill gas generated by the Trethewey Landfill for space heating at the Ag Rec building.
	Continued work on the Solid Waste Operating Master Plan to assess current operations and to consider options for changes and enhancements to the program.

Corporate Actions Taken in 2018	
	Participated in the FVRD Solid Waste Action Team (SWAT), the Metro Vancouver Regional Engineers Advisory Committee (REAC) Solid Waste Subcommittee, and the Metro Vancouver Municipal Waste Reduction Coordinators Committee (MWRCC).
	Continued collection of compostable waste at City Hall and the Public Works Yard.
	Continued education and enforcement of recycling and composting initiatives with staff.
Corporate Actions Proposed for 2019	
	Continue to use landfill gas generated by the Trethewey Landfill for space heating at the Ag Rec building.
	Complete work on the Solid Waste Operating Master Plan, including evaluating container and timeline options for transition to reusable curbside containers for recycling.
	Continue to participate in the FVRD Solid Waste Action Team (SWAT), the Metro Vancouver Regional Engineers Advisory Committee (REAC) Solid Waste Subcommittee, and the Metro Vancouver Municipal Waste Reduction Coordinators Committee (MWRCC).
	Continue collection of compostable waste at City Hall and the Public Works Yard, and the collection of recycling at all civic facilities.
	Continue education and enforcement of recycling and composting initiatives with staff.
	Participate in the Recycle BC Collector GHG Working Group and the Recycle BC Streetscape Round Table projects.

7.0 Transportation Actions

Transportation actions that increase transportation system efficiency, emphasize the movement of people and goods, and give priority to more efficient modes, e.g. walking, cycling, ridesharing, and public transit, can contribute to reductions in greenhouse gas emissions and more livable communities. Summarized below is the City of Abbotsford’s transportation initiatives undertaken in 2018 and planned for in 2019.

General Transportation Questions	
Does your local government have policies, plans or programs to support: <ul style="list-style-type: none"> • Walking • Cycling • Transit Use • Electric Vehicle Use 	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)?	No
Does your local government integrate its transportation and land use planning?	Yes

7.1 Community-Wide Actions

Community -Wide Actions Taken in 2018	
	Completed the Transportation and Transit Master Plans as part of the Plan200K initiative.
	Completed construction of the pedestrian bridge and bike overpass over Highway 1 at Salton Road. The bridge/overpass will enhance the existing cycling network, will improve public safety, and

	reduce GHG emissions while supporting healthy active living.
Community -Wide Actions Taken in 2018	
	Completed the UDistrict Neighbourhood Plan and incorporated it into the Official Community Plan. The Plan offers residential, commercial and applied research investment opportunities and works to support the long-term growth and diversification of the University of the Fraser Valley, through shaping new development to take advantage of this strategic location and result in a vibrant, green and transit-oriented community.
	Maintained and serviced 412 km of sidewalks, 98 km of bicycle lanes, and 89 pedestrian crosswalks to enhance walking and cycling in the City.
	Continued improvements to crosswalks, sidewalks and transit stops to enhance walkability and transit access in the community.
	Continued to encourage car share and vehicle charging stations in development applications.
	Conducted a workshop on EV infrastructure planning (CEMA) with support from BC Hydro and the Community Energy Association including identification of priority locations for charging need.
Community-Wide Actions Proposed for 2019	
	Increase transportation choices by making walking, biking and transit the most attractive options for most trips in the Urban Core and Neighbourhood Centres, and viable options across the City.
	Create a continuous and complete urban network of safe, direct biking routes suitable for commuting, school and other daily trips.
	Continue to ensure decisions, investments and policies embrace the synergy and overlapping relationship between land use decisions and transportation, recognizing that the most important element of achieving a shift to walking, biking and transit is supportive land uses.
	Provide abundant, weather protected, secure, and conveniently located bike parking in all new multi-family, mixed use, commercial, institutional, major employment hubs, and major transit locations.
	Work with BC Transit to create a simple and easily understandable frequent transit network that provides all day frequent service.
	Follow up on recommendations from the 2018 workshop on EV infrastructure planning (CEMA), including for federal and provincial funding opportunities related to EV infrastructure for public facilities.
	Evaluate the potential to require electric vehicle charging infrastructure in new single family, multi-family, mixed use, commercial, institutional, major employment hubs, and major transit locations.
	Continue to encourage car share and electric vehicle charging stations in development applications.
	Increase the safety, accessibility and enjoyment of sidewalks and pedestrian pathways by improving the design of new streets and retrofitting existing streets as they are replaced or upgraded: <ul style="list-style-type: none"> • Develop continuous sidewalks with no interruptions or obstacles; • Adjust or extend curbs at intersections to reduce crossing distances; • Maximize crosswalk visibility through lighting, pavement markings, curb extensions, and clear sight lines; • Use different materials and raise sidewalks in parked areas; • Minimize the width and number of driveways that cross sidewalks; • Plant street trees and ensure a full cover mature tree canopy is created over time; • Use landscaping, bike lanes, and/or on street parking to separate sidewalks from vehicle travel lanes where the posted speed limit is 30 km/hr or greater; and

	<ul style="list-style-type: none"> Investigate innovative street approaches such as complete streets, shared streets, and pedestrian streets.
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7.2 Corporate Actions

Corporate Actions Taken in 2018	
	Continued development of a Green Fleet Strategy to reduce GHG emissions associated with the City's vehicle and equipment use.
	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.
	Continued to encourage staff participation in programs promoting cycling, walking and reduction in GHG emissions (e.g., Commuter Challenge, City carpool program, City anti-idling policy, etc.).
	Continued providing a dual electric vehicle charging station at City Hall, and began the installation of four Level 2 charging stations with eight charging heads at City Hall.
	Began implementation of the EV Charging Station Strategy, including the installation of ten charging stations over five years at various civic facilities.
Corporate Actions Proposed for 2019	
	Approve and implement a Green Fleet Strategy.
	Continue replacing older less fuel efficient City fleet vehicles with newer, more fuel-efficient vehicles, where possible.
	Continue to encourage staff participation in programs promoting cycling, walking and reduction in GHG emissions.
	Continue to provide electric vehicle charging stations at City Hall including completing the installation of the four Level 2 stations with eight charging heads in the staff parking lot.
	Continue implementing the EV Charging Station Strategy.

8.0 Water and Wastewater Actions

Managing and reducing water consumption and wastewater is an important aspect of developing a sustainable built environment that supports healthy communities, protects ecological integrity, and reduces greenhouse gas emissions. Summarized below are the City of Abbotsford's water and wastewater initiatives undertaken in 2018 and planned for in 2019.

Water Conservation	
Does your local government have water conservation policies, plans or programs?	Yes

8.1 Community-Wide Actions

Community-Wide Actions Taken in 2018	
	Continued water conservation program including the implementation of ongoing water restrictions from May 1 st to September 30 th . The different stages of water restrictions are based on the Dickson Lake water level and are outlined in the City's Water Shortage Response Plan. In 2018, the residential demand was 179 L/c/d resulting in a 1.3% reduction in residential water usage compared to 2017.
	Continued AMI water meter program with bimonthly billing. Installed 81 new water meter connections and 436 meter drop ins in 2018.
	Launched the Waterwise Portal for residents and business owners to view their water consumption online.

Community-Wide Actions Taken in 2018	
	Continued to work with residents and business owners to identify and resolve water leaks. In 2018, processed 3,957 water leak notifications (based on 10L/hr over 3 days) and sent approximately 2,084 final meter reads.
	Continued partnership with BC Hydro to provide a clothes washer rebate program to reduce home water use and electricity. In 2018, 153 rebates were issued to homeowners who replaced their less efficient (water and electricity) washer for a new efficient model.
	Issued 387 toilet rebates to homeowners that replaced old toilets with a low-flow toilet to reduce residential water use.
	Provided 17 irrigation and landscape assessments and 3 rebates.
	Provided subsidy for 30 rain barrels.
	Provided subsidy for 50 indoor and outdoor water savings kits.
	Provided water conservation information and display at 35 public events.
	Hosted an event for Drinking Water Week that included the presentation of water system and water conservation information to 200 students.
	Continued partnership with Green Bricks Education Society for providing classroom education for grades 4 and 10 students and adult ESL students regarding the water system, water quality and conservation. In 2018, provided education to approximately 1,525 grade 4 students, 900 grade 10 students, and 100 adult ESL students.
Community-Wide Actions Proposed for 2019	
	Continue water conservation efforts including the continued implementation of ongoing water restrictions.
	Continue AMI meter program including bimonthly billing and leak notifications.
	Continue to offer the Waterwise Portal for residents and business owners to view their water consumption online.
	Continue to partner with BC Hydro to provide a clothes washer rebate program.
	Continue to offer toilet rebates to homeowners for the replacement of old toilets with new low-flow toilets.
	Continue to offer landscape and irrigation assessments and rebates.
	Continue to offer subsidies for rain barrels and water savings kits.
	Continue to attend public events to provide information on water conservation.
	Continue to participate in Drinking Water Week.
	Continue to provide an education program for grades 4 and 10 students and adult ESL students regarding the water system, water quality and conservation.

8.2 Corporate Actions

Corporate Actions Taken in 2018	
	Continued use of a 4,000 gallon rainwater harvesting tank at the Abbotsford Centre to collect rainwater for making ice.
	Continued use of an 8,000 gallon rainwater harvesting tank at the Tradex to collect rainwater for flushing toilets.
	Continued use of a 9,000 gallon rainwater harvesting tank at the Operations Yard to collect

	rainwater for watering trees and boulevards.
Corporate Actions Taken in 2018	
	Continued use of a 2,500 gallon rainwater harvesting tank at the Operations Yard Native Plant Nursery to water plants stored until planting season.
	Passive lawn areas on City property were left to go dormant in the summer.
	Continued participation in the Metro Vancouver Municipal Water Conservation Coordinator Committee. The meetings revolve around networking with other municipalities and discussing initiatives, progresses and updates in policies and results through group communication.
	Contracted beneficial reuse of 4,200 tonnes of biosolids through land application.
	Continued methane capture for space and process heat production at the JAMES Wastewater Treatment Plant.
Corporate Actions Proposed for 2019	
	Continue to work with the Abbotsford Mission Water & Sewer Commission to ensure drinking water supply and distribution is managed and expanded to safeguard public health, protect the environment, and provide adequate supply for a growing population: <ul style="list-style-type: none"> • Monitor demand and implement conservation strategies, including awareness and education; • Implement system efficiencies to ensure infrastructure use is maximized; and • Plan for short, medium and long term water supply sources.
	Continue to collect and use rainwater for ice making, flushing toilets, and watering trees and boulevards.
	Continue to promote passive lawn areas to go dormant in the summer, and to promote planting of Waterwise plants in new planting areas or replacements.
	Continue to participate in the Metro Vancouver Municipal Water Conservation Coordinator Committee.
	Update the 2013 Water Efficiency Plan that guides conservation efforts in the region.
	Continue to work with the Abbotsford Mission Water & Sewer Commission to ensure provincial and federal wastewater treatment requirements are met, to safeguard public health, and to protect the environment: <ul style="list-style-type: none"> • Monitor flow and effectiveness of treatment measures; • Implement system efficiencies to ensure infrastructure use is maintained; and • Plan for short, medium and long term treatment systems.
	Continue to contract land application for the beneficial use of biosolids.
	Continue methane capture for space and process heat production at the JAMES Wastewater Treatment Plant.

9.0 Climate Change Adaptation Actions

For local governments, adaptation to a changing climate can take the form of changes in policy, management, technology and behavior 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. Summarized on the following page are the City of Abbotsford’s climate change adaption initiatives undertaken in 2018 and planned for in 2019.

Please identify the THREE climate impacts that are most relevant to your Local Government.	
• Warmer winter temperatures reducing snowpack	
• Changes to temperature and precipitation causing seasonal drought	X
• Heatwaves impacting population health	
• Increased temperatures increasing wildfire activity	
• Increased temperatures affecting air quality	X
• Changing temperatures influencing species migration and ecosystem shifts	
• Extreme weather events contributing to urban and overland flooding	X
• Sea level rise and storms causing coastal flooding and/or erosion	

In 2018 has your local government addressed the impacts of a changing climate using any of the following?	
Risk and Vulnerability Assessments	Yes
Risk Reduction Strategies	No
Emergency response planning	Yes
Asset management	No
Natural/Eco asset management strategies	Yes
Infrastructure upgrades (e.g. storm water system upgrades)	Yes
Beach Nourishment projects	No
Economic diversification initiatives	No
Strategic and financial planning	Yes
Cross-department working groups	No
OCP policy changes	Yes
Changes to zoning and other bylaws and regulations	Yes
Incentives for property owner (e.g. reducing storm water run-off)	Yes
Public education and awareness	Yes
Research	Yes
Mapping	Yes
Partnerships	Yes

Climate Change Adaptation Actions Taken in 2018	
	Provided City water conservation information at 35 public events.
	Continued not watering grass at civic facilities, and left passive lawn areas to go dormant in the summer.
	Continued to collect rainwater for use in ice making, toilet flushing and watering of trees and boulevards.
	Participation in the Fraser Valley Agricultural Adaptation Strategy.
	Completed a geotechnical assessment of the dykes along the Fraser River to further enhance our flood protection infrastructure, and began work on a project to finalize and implement the long term solution for bank stabilization along a 2.5 km reach of the river.
Climate Change Adaptation Actions Proposed for 2019	
	Update the 2013 Water Efficiency Plan that guides conservation efforts in the region. Continue to

	provide water conservation information at public events.	
	Continue to allow passive lawn areas at civic areas to go dormant in the summer.	
Climate Change Adaptation Actions Proposed for 2019		
	Continue to collect rainwater for use in ice making, toilet flushing and watering of trees and boulevards.	
	Continue participation in the Fraser Valley Agricultural Adaptation Strategy.	
	Review and update the Tree Protection Bylaw.	
	Expand and strengthen a healthy and diverse tree canopy to improve air quality, capture carbon dioxide, reduce heat island effects, support public health and quality of life, and create beauty in the City through a number of approaches: <ul style="list-style-type: none"> • Establish a tree canopy coverage target; • Increase the urban forest to a determined target in public spaces; and • Require tree conservation strategies, and street tree plantings and landscaping in all development and infrastructure projects. 	
	Continue to protect and maintain ecosystems, habitat corridors, and environmental quality within the City and enhance it by increasing the urban tree canopy, embracing integrated stormwater management practices, and creating new greenways throughout the City.	
	Continue to protect and maintain ecosystems, habitat corridors, and environmental quality within the City and enhance it by increasing the urban tree canopy, embracing integrated stormwater management practices, and creating new greenways throughout the City.	
	Implement the OCP policy regarding the identification of floodplain hazards and impacts to infrastructure systems, such as transportation, agriculture, water, and economic, and in particular, to align habitable space in the floodplain with the provincial flood construction levels.	
	Implement the OCP policy regarding the assessment of municipal infrastructure to determine the level of risk and impact from more frequent and larger storms, droughts, or other natural disasters such as earthquakes, and ensure future development is informed by this assessment.	
	Implement the OCP policy regarding working with senior levels of government to assess projected impacts on dykes and stormwater infrastructure and respond to changing conditions through management strategies. The policy indicates that particular attention should be given to the Fraser River, Vedder Canal and Sumas River for protection of the Sumas and Matsqui Prairies.	
For more information on Climate Change Adaptation Actions please contact:		
Anna Mathewson Director, Environmental Services T: 604-864-5528	Mark Neill Director, Community Planning T: 604-864-5513	Rob Isaac Deputy General Manager, Engineering & Regional Utilities T: 604-864-5685

The following are key resources that may be helpful to your local government in identifying climate impacts, as well as, strategies, actions and funding to deal with them. For those resources that you have used, please indicate whether they were useful in advancing your work in climate change adaptation.	
Indicators of Climate Change for British Columbia, 2016 Plan2Adapt Climate Projections for Metro Vancouver Climate Projections for the Capital Region Climate Projections for the Cowichan Valley Regional District Province of BC's BC Adapts Video Series	Haven't Used Useful Useful Haven't Used Haven't Used Haven't Used

Preparing for Climate Change: An Implementation Guide for Local Governments The Public Infrastructure and Engineering Vulnerability Committee's (PIEVC) protocol Sea Level Rise Primer	<p>Useful Useful Haven't Used</p>
<p>The following are key resources that may be helpful to your local government in identifying climate impacts, as well as, strategies, actions and funding to deal with them. For those resources that you have used, please indicate whether they were useful in advancing your work in climate change adaptation.</p>	
BC Regional Adaptation Collaborative Webinars www.ReTooling.ca Water Balance Model The Water Conservation Calculator Funding: National Disaster Mitigation Program (NDMP) Community Emergency Preparedness Fund (CEPF) Municipalities for Climate Innovation Program (MCIP) Climate Adaptation Partner Grants (FCM) Infrastructure Planning Grants (MAH) Federal Gas Tax Fund	<p>Haven't Used Haven't Used Useful Useful Useful Useful Useful Haven't Used Haven't Used Useful</p>

10. Other Climate Actions

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

General Other Climate Actions Questions	
Are you familiar with the Community Lifecycle Infrastructure Costing Tool (CLIC) ?	YES
Have you used CLIC?	No

10.1 Community-Wide Actions

Community-Wide Actions Taken in 2018	
	Participation in the Fraser Valley Agricultural Adaptation Strategy.
Community-Wide Actions Proposed for 2019	
	Continue participation in the Fraser Valley Agricultural Adaptation Strategy.
	Continue to implement OCP policies that will embrace a full cost accounting of growth decisions as standard practice, which includes lifecycle infrastructure costs and performance.

10.2 Corporate Actions

Corporate Actions Taken in 2018	
	Continued awareness of environmental and climate impacts for all staff.
Corporate Actions Proposed for 2019	
	Continue awareness of environmental and climate impacts for all staff.

11.0 Innovation and Peer-to-Peer Learning

This section provides the opportunity to showcase an innovative Corporate and/or Community-Wide GHG reduction and/or climate change adaptation activity that the City has undertaken and that has had, or has the potential to have, a significant impact. Projects included here may be featured as success

stories on the B.C. Climate Action Toolkit and/or shared with other local governments to inspire further climate action.

11.1 Community-Wide Action

Community-Wide Action
Implementation of OCP Policies and alignment of all strategies with OCP (Plan 200K initiative)
For more information contact: Mark Neill Director, Community Planning T: 604-864-5513

11.2 Corporate Action

Corporate Action
Facilities Energy and Greenhouse Gas Assessment and Reduction Plan (3 Year Project Plan) Green Fleet Strategy
For more information contact: Anna Mathewson Director, Environmental Services T: 604-557-1465

12.0 Programs, Partnerships and Funding Opportunities

Local governments often rely on programs, partnerships and funding opportunities to achieve their climate action goals. Summarized below are the names of programs and organizations that have supported the City of Abbotsford’s climate actions by listing each entry in the boxes below.

12.1 Mitigation

Programs and Funding
Abbotsford Community Services Abbotsford Mission Nature Club Abbotsford Ravine Park Salmon Enhancement Society BC Hydro Fortis Fraser Valley Conservancy Fraser Valley Regional District Fraser Valley Watershed Coalition Greenbricks Education Society ReCollect Recycle BC Recycling Council of British Columbia TD Tree Day Trans Canada Trail

12.2 Adaptation

Programs and Funding

BC Hydro BC Transit Bike BC
Programs and Funding
Fortis Fraser Valley Regional District Metro Vancouver Recycle BC University of British Columbia (UBC) University of the Fraser Valley (UFV)

13.0 Carbon Neutral Reporting

Local governments are required to report on their progress in achieving their carbon neutral goal under the Climate Action Charter. Working with B.C. local governments, the joint Provincial-UBCM Green Communities Committee (GCC) has established a common approach to determining carbon neutrality for the purposes of the Climate Action Charter, including a Carbon Neutral Framework and supporting guidance for local governments on how to become carbon neutral.

13.1 Reporting Emissions

Did you measure your local government's corporate GHG emissions in 2018?	Yes
If your local government measured 2018 corporate GHG emissions, please report the number of corporate GHG emissions (in tonnes of carbon dioxide equivalent) from services delivered <u>directly</u> by your local government:	5,491
If your local government measured 2018 corporate GHG emissions, please report the number of corporate GHG emissions (in tonnes of carbon dioxide equivalent) from <u>contracted</u> services:	256
TOTAL CORPORATE GHG EMISSIONS FOR 2018	5,747 tCO₂e

13.2 Corporate GHG Emissions Balance

The Corporate GHG Emissions Balance is the difference between total corporate GHG emissions (direct + contracted emissions) and the GHG emissions reduced through GCC Option 1 and Option 2 projects and/or the purchase of offsets. If the Corporate GHG Emissions Balance is zero or negative, then the local government is carbon neutral for the reporting year.

Total Corporate GHG Emissions for 2018	5,747
Reductions from Option Projects for 2018	0
CORPORATE GHG EMISSIONS BALANCE FOR 2018	5,747 tCO₂e

14.0 GCC Climate Action Recognition Program

The joint Provincial-UBCM Green Communities Committee (GCC) is pleased to be continuing the Climate Action Recognition Program again this year. This multi-level program provides the GCC with an

opportunity to review and publicly recognize the progress and achievements of each Climate Action Charter (Charter) signatory.

Recognition is provided on an annual basis to local governments who demonstrate progress on their Charter commitments, according to the following:

Level 1 – Demonstrating Progress on Charter Commitments: for local governments who demonstrate progress on fulfilling one or more of their Charter commitments

Level 2 – Measuring GHG Emissions: for local governments that achieve level 1, and who have measured their Corporate GHG Emissions for the reporting year and demonstrate that they are familiar with their community’s energy and emissions inventory (i.e. CEEI)

Level 3 – Accelerating Progress on Charter Commitments: for those local governments who have achieved level 1 and 2 and have demonstrated undertaking significant action (corporately or community wide) to reduce GHG emissions in the reporting year (i.e. through undertaking a GHG reduction project, purchasing offsets, establishing a reserve fund).

Level 4 - Achievement of Carbon Neutrality: for local governments who achieve carbon neutrality in the reporting year.

For purposes of Level 3 recognition, if applicable, the City must identify any new or ongoing corporate or community wide GHG reduction projects (other than an Option 1 or Option 2 project) undertaken that reflects a significant investment of time or financial resources and is intended to result in significant GHG reductions:

PROJECT NAME:
Facilities Energy and Greenhouse Gas Assessment and Reduction Plan (3 Year Project Plan)
Green Fleet Strategy

14.1 Program Level

Based on the City’s 2018 CARIP Climate Action/Carbon Neutral Progress Survey, the GCC Climate Action Recognition Program level that best applies:

Level 1 – Demonstrating Progress on Charter Commitments	
Level 2 – Measuring GHG Emissions	
Level 3 – Accelerating Progress on Charter Commitments	X
Level 4 - Achievement of Carbon Neutrality	
Not Sure	

15.0 Conclusion

This report summarizes community wide and corporate actions that the City is undertaking to help reduce energy consumption and GHG emissions. This report encompasses a majority of the action items that the City has undertaken or is involved in to support GHG and energy reduction, but does not cover all sustainability related initiatives.