Corporate Operations

City of Coquitlam

The City of Coquitlam set ambitious voluntary Corporate Climate Action targets in 2007 to reduce greenhouse gas emissions (GHG) by 30%. The City recognizes that in order to achieve these targets, it is required to invest significantly in energy-efficiency. Through year-end 2015, the City reduced corporate GHG emissions by 1407 tonnes or 24% and achieved carbon neutrality. These tremendous results were accomplished through a strategic and comprehensive energy management plan which included implementing energy conservation measures, prioritizing energy-efficiency in renovations and new construction, and staff adoption of energy-conscious behaviours. The City has implemented more than 70 energy conservation measures since 2008. Using respective annual rates, the City is avoiding a total of approximately $4 million ($2.3 million from electricity and $1.7 million from natural gas) in energy costs from the overall energy management portfolio performance. The City also avoids 4.9 GWh in electricity annually from these projects.

According to BC population estimates, the City of Coquitlam has grown by 20% since 2007. This rapid growth has affected City operations in a variety of ways: the addition of more than 24,000 square meters of City facilities, an increase in Recreation Centre attendance and a significant expansion in services related to new parks, improved roads and facility maintenance. It is remarkable that despite the growth of services and infrastructure to meet these demands, the City's 2015 GHG emissions were 24% less than 2007 GHG emissions.

Cowichan Valley Regional District

In 2015, the Island Savings Centre (ISC) reduced natural gas consumption by 50% and electricity consumption by 20% compared to 2012 energy consumption. This equals over $140,000 in annual energy costs savings and a reduction of 250 tonnes of greenhouse gas emissions. This equals 50% of the facility's 2012 emissions and is equivalent to the emissions from heating 60 homes.

"These results validate the cost effectiveness of energy upgrades to the CVRD's aging facilities. It also demonstrates the Cowichan Valley Regional District's (CVRD) commitment to carbon neutral operations and sustainable service delivery," commented Sharon Jackson, Chair Island Savings Centre Commission.

Through the implementation of the CVRD's Strategic Energy Management Plan and Greenhouse Gas Emissions Reductions Strategy, the ISC completed an Energy Study in 2013, which identified a bundle of energy upgrades to mechanical, refrigeration, and lighting systems. These upgrades were successfully implemented, and qualified for approximately $230,000 in combined grants from BC Hydro and Fortis BC which brought the simple payback of the investment to 2.8 years.

City of Cranbrook

The City began participating in BC Hydro's Energy Management Program in 2012, and has demonstrated leadership in energy management by completing numerous projects and initiatives. Highlights of the City's progress in energy and climate action include:

• Completing a detailed energy study at Western Financial Place and curling rink (2015);

• Upgrading the library building boiler and one furnace at the RCMP building to energy efficient equipment (2015);

• Converting City owned streetlights to LED lighting (2015 and 2016);

• Adopting the updated Energy Policy No. 60-101 (2016);

• Regularly monitoring, verifying and reporting on facility energy use;

• Engaging staff in energy conservation awareness through presentations and newsletters (2016); and

• Reducing greenhouse gas emissions by 11% (222 tCO2e) from 2014 to 2015.

For 2016, the City is completing energy upgrades at Western Financial Place (including the pool dehumidification project and lighting upgrades), library and the curling rink. By completing these projects, it is anticipated that greenhouse gas emissions will be reduced by approximately 250 tCO2e. Additional plans include an energy study at the spray irrigation facility, a City-wide motor inventory, and the establishment of facility energy reduction targets in order to incorporate energy efficiency projects and initiatives in future planning. This planning will be supported by the completion of the City's Strategic Energy Management Plan in November 2016.

Corporation of Delta

In 2007, Delta's Climate Change Initiative set a goal of reducing corporate greenhouse gas emissions by 20% below 2007 levels by 2015. Delta has surpassed the goal, achieving a 21% reduction by 2015. Delta's corporate greenhouse gas emission baseline for 2007 was 7,411 tonnes of carbon dioxide equivalent. The most recent inventory conducted for 2015 found Delta's annual emissions associated with corporate buildings and fleet were 5,798 tonnes of carbon dioxide equivalent, representing a 21% reduction over 2007 levels. A large portion of the reductions in emissions achieved was the result of major energy retrofits at recreation centres that included geoexchange and solar systems, as well as the use of hybrid vehicles and lower carbon blends of fuel within Delta's fleet.

City of Langley

The Timms Community Centre Renewal Project serves as a community and cultural hub where residents can come together to access group activities, health and fitness opportunities, public information and community resources. A truly integrated facility, it draws together three primary users – Langley City Hall, Fraser Valley Regional Library and Timms Community Centre – into a single, active and inviting civic facility.

The facility was designed to optimize energy consumption in accordance with the energy hierarchy, which encourages consideration of sustainable design solutions relative to the perceived cost and complexity of each measure. It took into account the required resources for construction, occupancy, operation and maintenance of the building and its assemblies and the social, economic and environmental impact of products and materials in their whole life cycle. The building orientation and form relative to the site were optimized to specific macro and micro climatic features (e.g. daylighting,

wind direction) to maximize internal comfort and durability and minimize energy demand and use of resources. Consideration was given to daylighting levels and associated risk of glare, levels of indoor air quality, thermal comfort, controllability of systems and acoustic performance that responds to the requirements of the building users. Efficient building systems were installed with the use of high-efficiency services and fittings including heat recovery systems, efficient irrigation systems, high efficiency lighting and water fixtures and fittings. Specification of materials and finishes possessing high recycled content or salvaged and regional materials and low volatile organic compound (VOC) content were used to ensure healthy indoor environments.

District of North Saanich

The energy retrofit of North Saanich Municipal Hall includes the use of Tesla power packs which will be the first installation in BC. These packs provide state of the art energy back up for power outages, allowing full functioning during emergencies using photovoltaic and Tesla. The retrofit will be complete in winter 2016/17.

City of Penticton

In an effort to reduce energy consumption, lower the city's overall carbon footprint and reduce maintenance costs, the City of Penticton undertook an LED conversion project in 2015. This project consisted of the replacement of 582 100W HPS streetlights with 50W LED fixtures as well as the replacement of 2406 150W HPS streetlights with 108W LED fixtures.

City of Richmond

The City of Richmond is working towards a future vision, where the City maintains carbon neutral corporate operations, corporate energy use is as efficient as possible and greenhouse gas (GHG) emissions are reduced to minimal levels. The City believes that this corporate vision and associated actions can help spearhead a community transition to more efficient energy use and a “low carbon” economy.

In 2015, City of Richmond buildings accounted for 61% of corporate energy use and 52% of its GHG emissions. Besides civic facilities, the other main corporate GHG emissions source in 2015 was from fuel use by fleet services at 28% of the City’s total. A GHG emissions reduction target for fleet services of 20% by 2020 from 2011 levels was approved by City Council in 2014. To help ensure corporate focus remains directed on reducing GHG emissions from both main corporate sources, Council recently endorsed a target of 65% reduction in corporate buildings GHG emissions from 2007 levels by 2020.

Achieving a 65% GHG emissions reduction target for corporate buildings by 2020 will help to ensure that the City can exceed the community GHG emissions reduction target of 33% from 2007 levels by 2020 and will support progress on achieving the GHG emissions reduction target of 80% from 2007 levels by 2050. Achieving these community emissions reduction targets corporately positions the City as a leader in corporate emissions management, and enables the City to further promote the opportunity and need for community partners to follow suit.

Community Planning & Development

Bowen Island

On Bowen Island, inconvenience leads to innovations contributing to reducing emissions from the island's largest source—island cars driving on mainland roads.

When the ferry was replaced by a smaller one, the municipality initiated education through a Smaller Ferry Survival Guide to help commuters find ways to avoid taking their cars into Metro Vancouver and still get to work on time. When the larger ferry returned, many commuters continued to use their new ways of transportation.

From scooters to a ride-sharing app and hitchhiking stops, van pool and water taxis, all sorts of transportation alternatives flourished. More commuters walked onto the ferry instead of driving. Once across, buses transferred them.

One bus service, for example, was introduced specifically to meet the smaller ferry challenge. The Bowen Downtown Express bus meets morning ferries in Horseshoe Bay to carry commuters into downtown Vancouver. Afternoon runs take them back, with many looking forward to getting home sooner than they used to. Surprisingly, over a third of these bus riders reported shifting from driving as their primary means of getting downtown. Around 250,000 fewer km were driven in individual vehicles over the past year, reducing GHG emissions. After the return of the regular ferry, this bus service continues. Other commuters also continue in their new travel habits.

By leaving their cars at home, these islanders turned a potential commuter crisis into an opportunity to improve their day to day quality of life, save time and money, and address climate change.

Capital Regional District & Salt Spring Island

Salt Spring Island is embracing low impact transportation with rapid growth in battery electric vehicle ownership and charging infrastructure. It is estimated that the island has the highest EV ownership per capita in Canada and this number continues to grow.

Reducing transportation related greenhouse gas emissions is a priority for the Capital Regional District (CRD). The provincial 2010 Community Energy and Emissions Inventory data shows that transportation accounts for 82% of community GHG emissions with gasoline accounting for 67% of total community emissions by fuel type.

The SSI Climate Action Council Society, a local community organization formed to assist in the development of GHG emission reduction targets in the SSI Official Community Plan, further investigated this by conducting on the ground research. Their findings showed that on island transportation accounts for 36% of Salt Spring Island’s total GHG emissions.

To address this, the CRD and community groups such as Transition Salt Spring Electric Vehicle Group have collaborated to promote EV ownership and encourage residents to transition from oil dependency to local resilience. The collaboration included, but was not limited to, community education and events,

media promotion, and the installation of charging infrastructure through rebates and strategic relationships.

Since the middle of 2014, the island's EV ownership has increased by 650% (from less than 10 EVs to 75 EVs as of June 2016) and EV charging infrastructure increased fivefold. This increase is the direct result of the collaboration between local government and community organizations. It is projected that community GHG emissions have been reduced by 270 tonnes per year and fossil fuel consumption has dropped by 82,000 litres per year.

City of Coquitlam

In 2008, the Provincial Government enacted Bill 27 Local Government Statutes Amendment Act requiring all local governments in British Columbia to incorporate community greenhouse gas (GHG) reduction targets in their Official Community Plans. In May 2010, the City of Coquitlam set ambitious targets to reduce the City's annual community-wide greenhouse gas emissions 15% below 2007 levels by 2031 and per-capita emissions 30% below 2007 levels by 2021.

In order to meet these targets and to strengthen the City's response to climate change, Coquitlam developed a Community Greenhouse Gas Reduction Strategy in 2012. This initiative builds on the City's existing Corporate Climate Action Plan and looks at opportunities to reduce energy use and GHG emissions across the broader community. With the help of a consultant, the City is drafting an updated Community GHG Strategy Implementation Plan which will help the City further operationalize its Community Greenhouse Gas Reduction Strategy. This Implementation Plan is set to be complete in 2016 and will provide a thorough analysis of measures and progress to date by reviewing existing plans, identifying external synergies, and developing new actions in consultation with staff.

Fraser Valley Regional District

Following extensive community engagement , the Fraser Valley Regional District and BC Transit received statutory municipal consent in March of 2014 to develop a sub-regional transit service, the Fraser Valley Express (FVX). The Fraser Valley Express, as it transitioned from a high level strategic vision into reality, illustrates how a series of planning processes can, over time, build the political support necessary to implement an entirely new and innovative service.

As signatories to the Climate Action Charter, the FVX affirms the municipal partner's commitment to improving air quality and reducing Greenhouse Gas emissions in the region. In the FVRD, on-road vehicles account for 45% of nitrogen oxides and 37% of greenhouse gas emissions. In an airshed as sensitive as the Fraser Valley's, this large single source of pollution represents a significant opportunity to improve air quality in the region. To date, there have been more than 75,000 trips taken on the FVX, with slightly less than 10,000 this past April alone.

The FVX also is closely aligned with the FVRD Regional Growth Strategy; supporting plan policies for compact communities, developing transportation alternatives and accomodating growth in a sustainable manner. In comparison with other new routes implemented by BC Transit, the FVX is performing beyond expectations and represents an extremely successful introduction to regional service. The Fraser

Valley Express is now an integral component of the FVRD's evolving transit network and a significant step towards realizing the region's climate change commitments.

Township of Langley

The Township of Langley recently completed work on a neighbourhood plan for the new Latimer neighbourhood. The Latimer plan area encompasses 268 hectares on both sides of 200th Street from 84th Avenue south to approximately 74A Avenue. At full build out, it is estimated that the Latimer neighbourhood will be home to approximately 18,700 people living in 7,900 dwelling units.

Through the neighbourhood planning process, Mayor and Council, property owners, community stakeholders, and residents agreed on the following vision statement for the new neighbourhood: "In 2036, Latimer will be a complete, livable, mixed density, walkable neighbourhood, well-served by high frequency transit, framed by its natural features."

On September 29, 2015, Mayor and Council adopted the Latimer Neighbourhood Plan. Using the legislative powers granted to local governments under Bill 27, the plan includes an innovative Passive Solar Energy Conservation Development Permit Area (DPA) to help achieve the neighbourhood vision. The DPA was developed to ensure that all buildings constructed in Latimer are built to optimize passive energy from the sun and minimize the need for fossil-fuel based energy for mechanical heating, cooling and lighting systems.

The DPA prioritizes passive design, supported by a foundational east to west road alignment, to ensure future buildings have optimal access to solar energy. The very process of developing the Latimer Passive Solar Energy Conservation DPA has had a transformational impact on the way the Township plans neighbourhoods with energy now a standard consideration.

City of North Vancouver

The City of North Vancouver has completed an area-wide rezoning to deliver family-friendly, sustainable housing in the Moodyville neighbourhood. Five new zones permit a range of energy-efficient, ground-oriented housing and support a community scale park, improved regional greenways and a future rapid transit corridor. The rezoning of over 250 existing lots allows 1,500 new dwellings and two million square feet of residential capacity. New housing will be efficiently processed through a development permit process, creating more certainty for the public, elected officials, and the development industry.

Future development is served by the City's district energy utility, Lonsdale Energy Corporation, and must meet one of the following enhanced energy options:

- Passive House;
- 10% better than NECB 2011;
- 15% better than ASHRAE 90.1-2010;
- EnerGuide 86; or

- most stringent stretch building code adopted by the Province of BC.

Substantial verification and a performance bond are required prior to permit issuance, and any surrendered security is contributed to the City's Carbon Fund. While the enhanced energy options provide for a diversity of approaches, the City prioritizes permit processing for Passive House applications. Passive House projects are also exempt from hydronic energy service for space heating, noise mitigation and LEED Gold certification otherwise required.

Moodyville development will also support dramatic and durable decreases in GHG emissions from transportation. This includes land dedication for the future rapid transit corridor, improvement of bicycle and pedestrian greenways, reduced parking provision—with a minimum ratio supplied with EV charging infrastrure—and car-share incentives.

Village of Salmo

In 2015, the Village of Salmo changed direction with a new Council and CAO. With the experience of a small but devoted staff and an amazing number of community groups and community spirit, the Village has accomplished many energy savings and community building improvements this year.

In December 2015, a Strategic Community Energy and Emissions Planning workshop was held with the involvement of many community stakeholders. The plan, adopted in January, sent Salmo towards implementation. The farmers market moved to a central walking distance location, with booths set up at community events to discuss SCEEP and implementation. Street lights have been mapped with an inventory created in preparation for LED conversion, green initiatives supported through grant-in-aids, and Fortis BC rebate energy saving information circulated. Furthermore, Salmo has a water ambassador and has concluded major SCADA upgrades to measure night time flow, water leakage and conserve water and energy. A policy to reserve CARIP funds for energy conservation was adopted and SCEEP actions have been integrated into the Strategic Directions document. Salmo has been successful with grant applications to repair a pedestrian bridge promoting Active Transportation. The community also installed two TESLA EV stations and purchased a universal one as well as supports Fueling Changes in the Kootenays, a regional approach to transforming the rural landscape with greener transportation. Using the SCEEP workshop format, the Village of Salmo has embarked on a community driven OCP process which will produce a sustainable development document complete with community GHG reduction targets.

District of Sparwood

In early 2015, Sparwood Council endorsed an energy efficiency incentive program that provides a 50% building permit fee rebate for new single-family dwellings, and a 100% rebate on the Certified Energy Advisor fees (up to $500) for homes that achieve at least an EnerGuide rating of 80 or better. For a typical new home with a construction value of $350,000, that works out to a rebate of about $1,600. When combined with the rebates available from BC Hydro (at the time), it could amount to a total of about $6,000 in rebates.

City of Surrey

The West Clayton Neighbourhood Concept Plan (NCP) was approved by Council in the summer of 2015. This is the City of Surrey's first secondary plan to establish an explicit vision for an "Energy Shift" neighbourhood, where innovative ideas were included to help reduce energy costs for residents and meet Surrey's commitment to reducing GHG emissions.

To help achieve this vision, the plan 1) designates density concentrations in and around the neighbourhood commercial and village nodes and transit corridors to encourage active transportation and transit use; 2) maximizes east-west oriented streets for solar gain and energy conservation; and 3) establishes a density bonus policy that encourages developers to build more energy efficient homes.

West Clayton's density bonus policy is one of only a few examples in British Columbia where developers are provided an incentive in the form of additional density in return for constructing buidlings that help to reduce GHG emissions. The density bonus policy was specifically designed to address the unique considerations for the neighbourhood and is estimated to result in a reduction of over 2,000 tonnes of CO2 a year while saving the community more than $1 million annually on their utility bills.

Public Sector Collaboration

Collaborating to Plan and Implement: Regional District of Central Kootenay

In February 2016, RDCK with funding partners FortisBC and Columbia Basin Trust hosted a multi-stakeholder Strategic Community Energy Emissions workshop and developed an encompassing Community Energy Action Plan to guide policy and work towards energy and emissions reductions for 11 electoral areas and 9 member municipalities. Once implemented, the identified actions will result in 15,000 tonnes of GHG reductions and 9% below 2007 levels by 2020.

This was a collaborative workshop with representatives from 20 regional jurisdictions, School Districts, Ministry of Transportation, Interior Health, three utilities and community members. Now all RDCK jurisdictions are covered by a Community Energy Plan and together working towards implementation.

Underway are collaborative activities including:

School District 8 policy to allow staff to ride school buses, renewed opportunity to share facilities, student ambassadors in energy conservation, and pilot of new Energy Conservation curriculum for Nelson in the 2016-2017 school year;

Ministry of Transportation and RDCK collaborating on recreation opportunities to improve Active Transportation infrastructure and specified Highway 6 pedestrian crossing;

Interior Health involvement to support healthy and active communities; and

member municipalities collaborating on the development of a sustainability checklist to be used for a cohesive approach to regional energy efficient development, a region-wide energy efficiency program in partnership with Nelson Hydro, and “Fueling the Kootenays”, a regional strategy to support electric vehicle market transformation in rural areas.

The RDCK SCEEP is truly a regional collaborative exercise that has engaged our rural and dispersedly populated area to work on meaningful community emissions reductions.

Empower Me: Cities of Surrey, Coquitlam & Vancouver

The Empower Me program's roots are in energy efficiency and conservation. Since its inception in 2012, Empower Me has created more than 1,400 energy 'Champions' (program participants), avoided more than 8,000 tonnes of greenhouse gas emissions and saved participating households across Metro Vancouver an average of $224 per year on their energy bill.

Empower Me's program partners include the Cities of Coquitlam, Surrey, Vancouver, BC Hydro and FortisBC. Partners provide program guidance in addition to funding. BC Hydro and FortisBC participate on the program steering committee, help guide program evaluations and support outreach to prospective funding partners.

All program partners benefit from energy savings driven by the program. In addition, municipal partners increasingly use Empower Me to deliver news about other important city programs like water restrictions, wildlife management and safety.

Empower Me reaches tight-knit, multi-lingual communities with information to help them save energy, save money and increase the comfort and safety of their homes. The program is significant because it reaches these communities in a way that other programs do not, delivering important information to newcomers to Canada in a culturally appropriate and sensitive way.

Equally important to these impressive energy saving and environmental results, Empower Me is welcomed into tight-knit communities, and invited to many well-attended invite-only events, adding to the program's reach and status as a trusted brand within these communities.

The program is available in three South Asian languages, three Chinese languages, Farsi, Korean and English. Empower Me is free for participants.

Sun Mine: City of Kimberley

Sunmine is a one megawatt peak production solar facility constructed on reclaimed mine land in the City of Kimberley. The facility features 4,032 photovoltaic panels mounted on 96 solar trackers that track the sun in two dimensions and produce power for 200-300 homes. The power is sold to BC Hydro.

The project is 100% owned and operated by the City of Kimberley and was built with a total budget of $5.35 million, with contributions of $2 million by the City, $2 million by Teck Resources, $1 million by the Province of BC through the Innovative Clean Energy Fund, $300,000 by Columbia Basin Trust, and $50,000 from the Southern Interior Development Trust Initiative.

The Sunmine concept was first introduced in 2008. In a 2011 referendum, 76% of Kimberley voters were in favour of the City borrowing $2 million toward the project. The decision to proceed with construction was made in April 2014. Sunmine began commercial operation on June 22, 2015.

During its first year of production, Sunmine has generated 1,915 MWh of electricity, $195,730 in revenue and $34,000 in operating costs. Since construction, the City has toured over 1,000 people around the facility, including 420 students and inspired Lindsay Park Elementary School in their successful educational bid to win three awards through the BC Green Games.

Collaboration with funders, the mining company, BC Hydro and others was essential in overcoming the barriers associated with numerous firsts that challenged existing ways of doing business, and to concluding 18 agreements with 8 organizations.