



BC HOUSING'S

2020

PSO Climate Change
Accountability

Report



BRITISH
COLUMBIA



BC HOUSING



Garibaldi Lake, BC

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Declaration Statement

This Climate Change Accountability Report for the period January 1, 2020 to December 31, 2020 summarizes our emissions profile, the total offsets to reach net-zero emissions, the actions we have taken in 2020 to reduce our greenhouse gas emissions and our plans to continue reducing emissions in 2021 and beyond.

By June 30, 2021, BC Housing's final 2020 Climate Change Accountability Report will be posted to our website at www.bchousing.org



A BC Housing employee connecting with nature.

Executive Summary



Shayne Ramsay, Chief Executive Officer, BC Housing

BC Housing's work and mission: *"Making a positive difference in people's lives and communities through safe, affordable and quality housing"* took on a whole new meaning during the global COVID-19 pandemic. During 2020 we mobilized to provide self-isolation sites, distributed personal protective equipment and meals, administered the BC Temporary Rent Supplement program to over 87,000 households, supported over 600 people to relocate to safe indoor accommodation from three encampment sites, secured 300 temporary spaces for women fleeing violence, and more. We did this while continuing to provide housing to over 110,000 households across the province.

BC Housing's COVID-19 response has taken place within, and exposed the interconnections between, other major societal challenges: the deepening opioid crisis, rising homelessness, systemic inequities and discrimination, and increasing impacts of extreme weather patterns. Responding to the pandemic has highlighted the limitations of addressing a single challenge in isolation.

BC Housing works in partnership with the private and non-profit sectors, provincial health authorities and ministries, other levels of government and community groups to develop, manage and administer a wide range of subsidized housing options across the province. We also license



Kee-Kek-Yel-c in Kamloops, built to BC Energy Step Code Level 3 and opened in September 2020.

residential builders, administer owner builder authorizations and carry out research and education that benefits the residential construction industry and consumers. We work with over 820 housing providers and help more than 112,900 households in 309 communities across British Columbia.

BC Housing acknowledges that we conduct these activities on the homelands of thousands of Indigenous peoples and many Nations across British Columbia, each with their own unique traditions, culture, world views, languages and history. As an organization, BC Housing is committed to eliminating racist and discriminatory policies, processes and approaches. We are also committed to helping our employees on their personal efforts to reconciliation. We recognize that reconciliation is an ongoing process, and that we are on a learning journey.

In 2020, while navigating the challenges associated with the COVID-19 pandemic, our organization continued our sustainability efforts; helping affordable housing owners and operators reduce greenhouse gas emissions in their existing building portfolio, developing buildings that achieved high levels of the BC Energy Step Code, and championing innovative building design. We moved forward on important adaptation initiatives, such as the Mobilizing Building Adaptation and Resilience

(MBAR) program, while also reducing our emissions from fleet and paper. The BC Housing Research Centre continues to be a leader in Canada, developing technical guides and reports and providing in-person and on-line training and education on green building technologies for the construction sector.

While we hope to see the end of the COVID-19 pandemic in 2021, as community members are vaccinated against this disease, we should not forget the lessons of the pandemic. We can clearly see that when some of our society's members are vulnerable, we are all vulnerable. Working towards climate change mitigation, adaptation and resilience, as well as our important work on equity, diversity, inclusion and belonging, and Reconciliation with Indigenous People, will ensure that we are all less vulnerable when the next societal shock occurs, whether it is the effects of climate change, or the next pandemic.

Shayne Ramsay
CEO
BC Housing

2020 Greenhouse Gas Emissions and Offsets Overview

Emissions and Offset Summary Table:

BC HOUSING 2020 GHG EMISSIONS AND OFFSETS	
GHG Emissions created in Calendar Year 2020	
Total Emissions (tCO ₂ e)	28,291
Total BioCO ₂	16
Total Offsets (tCO ₂ e)	28,274
Adjustments to Offset Required GHG Emissions Reported in Prior Years	
Total Offsets Adjustment (tCO ₂ e)	4,275
Grand Total Offsets for the 2020 Reporting Year	
Grand Total Offsets (tCO ₂ e) to be Retired for 2020 Reporting Year	32,549
Offset Investment (\$25 per tCO ₂ e)	\$813,725

Total Emissions for Offsets for the 2020 Reporting Year

BC Housing purchased carbon offsets from the Government of B.C. for the equivalent of 32,549 tonnes of CO₂e to obtain carbon neutral status for 2020.

Sixteen tonnes of CO₂e emissions from the combustion of biomass and biomass-based fuels were reported as part of our greenhouse gas emissions profile in 2020. However, while CO₂e emissions from these sources must be reported, they do not require offsets.

Retirement of Offsets:

In accordance with the requirements of the Climate Change Accountability Act and Carbon Neutral Government Regulation, BC Housing (the Organization) is responsible for arranging for the retirement of the offsets obligation reported above for the 2020 calendar year, together with any adjustments reported for past calendar years (if applicable). The Organization hereby agrees that, in exchange for the Ministry of Environment and Climate Change Strategy (the Ministry) ensuring that these offsets are retired on the Organization's behalf, the Organization will pay within 30 days, the associated invoice to be issued by the Ministry in an amount equal to \$25 per tonne of offsets retired on its behalf plus GST.

Abbas Barodawalla

Chief Financial Officer

BC Housing

May 10, 2021



Rosethorn House, a supportive housing development in Kamloops.

Actions Taken to Reduce Greenhouse Gas Emissions in 2020

Buildings

BC Housing reports on energy use and related greenhouse gas emissions from all the buildings that we own or lease as required by the Carbon Neutral Government Regulation. With the exception of our offices, our building inventory is made up of various types of affordable housing and includes the following building types:

- ▶ Residential towers (high-rise buildings)
- ▶ Low- and mid-rise buildings
- ▶ Single-room-occupancy hotels (SROs)
- ▶ Townhouses
- ▶ Group homes

Some of these buildings are managed directly by BC Housing, while others are operated by non-profit housing providers.

In 2020, this portfolio included 723 social housing sites, totaling over one million square metres of floor area. During the year, we added 38 new sites to our greenhouse gas reporting inventory through new construction or purchase of existing buildings.

Greenhouse Gas Results for Buildings

In 2020, our greenhouse gas emissions related to energy used to provide heat, water and electricity for our buildings totaled 27,973 tonnes of CO₂ equivalent¹. Since 2010, we have seen a 15 per cent decrease in emissions from our buildings, and a seven per cent increase in emissions from 2019².

2020 Buildings GHG Emissions *Compared with 2010 baseline and 2019 results*

EMISSION SOURCE	2020 GHG EMISSIONS (Tonnes of CO ₂ e)	2020 RESULTS COMPARED WITH THE 2010 BASELINE	2020 RESULTS COMPARED WITH 2019
Buildings (Stationary combustion)	27,973	15% decrease	7% increase

Greenhouse gas emission reductions compared with our baseline are mainly a result of our energy conservation efforts since 2010, such as multi-year building upgrades, fuel switching, and energy programs, increasing energy efficiency standards for new construction, and ongoing improvements in energy management in our portfolio. These initiatives are further described in the following section of this report.

Although our emissions have decreased compared to our baseline year, 2020 saw less of a decrease than previous years. We also saw an increase in emissions compared to 2019. Factors related to the COVID-19 pandemic (such as tenants using more energy while staying home during the pandemic) have increased our emissions compared to previous years. Cooler weather in 2020 also had a slight impact, as buildings required more fuel and electricity for heating compared to our

baseline year. However, organic growth in our portfolio, the purchase of existing properties that are not energy efficient, and new construction and renovations that do not meet our energy targets or did not pursue fuel switching also had an impact.

For the 2020 reporting year, FortisBC natural gas consumption data (accounting for approximately 22 per cent of our total emissions) was estimated for private accounts for all or varying portion of individual buildings. We are estimating consumption of these accounts based on similar building types to ensure consistency year-to-year. This is a significant issue which has limited our ability to conduct accurate data analysis and checks that would result in a high level of confidence in this data.

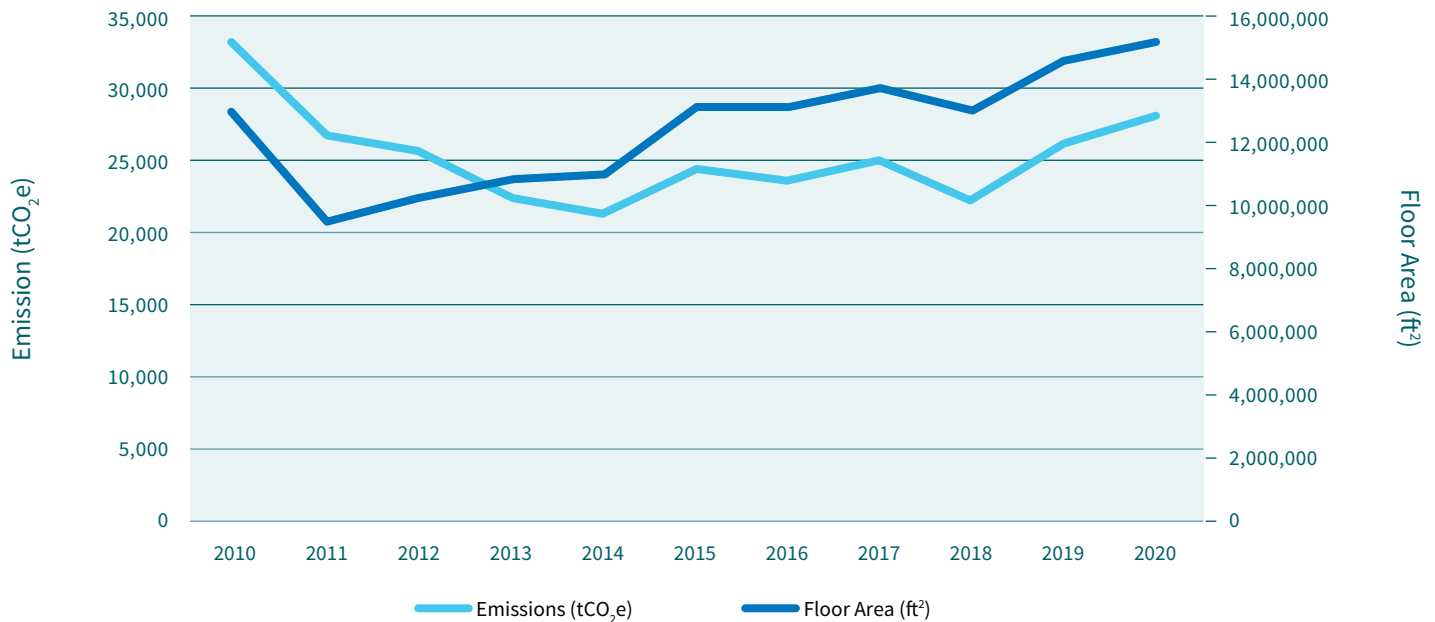


1 Stationary fugitive emissions from air conditioning at BC Housing offices do not comprise more than 0.01 per cent of total emissions and have been deemed out of scope and are not included in the total greenhouse gas profile.
 2 As of the 2019 reporting year, BC Housing has changed from a 2005 baseline to a 2010 baseline to align with other Public Sector Organizations, based on direction by the Climate Action Secretariat. For the comparison of 2020 results and 2010 baseline, the baseline was recalculated as per the greenhouse gas protocols.

Floor Area Comparison

Our emissions have decreased relative to our floor area since 2010. However, our portfolio has increased by almost 100 buildings since 2018, resulting in increasing greenhouse gas emissions over the past two years. The following graph represents this trend:

Floor Area and GHG Emissions Change (2010 - 2020)



Actions Taken in 2020

In 2020, BC Housing worked with our partners, staff, and tenants to ensure lasting energy performance in our existing building stock, as well as in our new housing developments. As a licensing body for the residential building sector, we helped guide this industry towards higher energy efficiency. Through the year, despite the challenges of the COVID-19 pandemic, we worked towards enabling innovation and housing excellence.

We undertook initiatives related to buildings in the following areas:

- ▶ Energy conservation initiatives for existing affordable housing buildings
- ▶ Energy conservation training and education in the social housing sector
- ▶ Energy efficiency in new affordable housing construction

- ▶ Technical research and education in the residential construction sector
- ▶ Mobilizing Building Adaptation and Resilience (MBAR)
- ▶ Asset management capacity building for Indigenous communities

Specific actions taken last year within each of these areas are described below.

ENERGY CONSERVATION INITIATIVES FOR EXISTING SOCIAL HOUSING BUILDINGS

- ▶ BC Housing administers or supports a range of energy efficiency programs for social housing providers, in collaboration with our partners. In 2020, these programs included:
 - The **CleanBC: Social Housing Incentive Program (SHIP)** in partnership with the BC Non-Profit Housing Association (BCNPHA). This provincial program launched in 2018 and is intended to help affordable housing owners and operators reduce greenhouse gas emissions. It supports natural gas and fuel switching measures (and other electrification opportunities) that result in significant reduction in current fossil fuel use. In 2020, 11 projects were completed with an estimated annual GHG reduction of 426 tCO₂e.
 - The **Energy Conservation Assistance Program (ECAP)** in collaboration with BC Hydro and FortisBC. Through this program, tenants receive free energy evaluation and free installation of energy saving products. In some instances, they also receive free fridge or furnace replacement or additional insulation. In 2020, participation in this program was put on hold, due to the restrictions to accessing tenants' suites during the COVID-19 pandemic.
 - The **Energy Efficiency Retrofit Program (EERP)**, along with our partners the BC Non-Profit Housing Association (BCNPHA), BC Hydro, and FortisBC. This program enabled approximately 12 electric and 15 gas-focused energy retrofit projects, for a total estimated savings of 112,850 kWh and 13,850 GJ respectively in 2020. The program offers non-profit housing providers additional funding to complete small-scale, energy saving retrofits of items such as light fixtures and boilers.
 - In partnership with the Columbia Basin Trust (CBT) and BCNPHA, we assisted non-profit housing providers with the costs of increasing energy efficiency. Through an agreement with the CBT, we supported and provided subsequent funding to non-profit housing providers for energy retrofits during 2018 and 2019. In 2020, we signed a new Contribution Agreement for a third phase of this programming, starting in 2021.
- ▶ In 2020, BC Housing worked with consultants to conduct 28 energy audits on high-, mid- and low-rise housing buildings to determine details of current energy consumption patterns and opportunities for savings. This will allow for energy conservation measures in future fiscal years. Funding for audits and repairs will come from the Capital Renewal Fund.
 - ▶ Several large energy retrofits were completed at BC Housing directly managed sites in 2020. These retrofits are expected to result in significant energy savings.

RENOVATIONS AT BATTIN FIELDING

Our seniors at Battin Fielding apartments in Victoria are feeling warmer and safer this year after upgrades recently completed at their building.

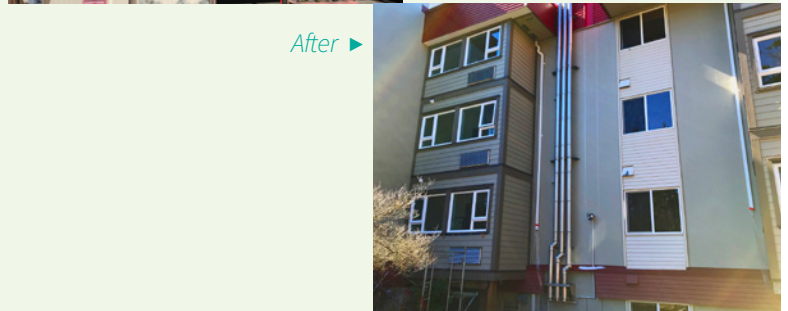
The 10-month renovation project included roof, window, cladding, balcony, and railing replacements with structural and exterior lighting upgrades.

While replacing the components of the building was necessary due to their age and performance, one of the key goals of the project was to improve life for the residents. Ensuring increased thermal performance of the building means that residents are warmer in winter and cooler in summer. Upgrades for thermal comfort included adding insulation and energy efficient windows that are easy to operate.

As a result of improvements in energy performance, the project has achieved the reduction of 17 tonnes of GHG emissions annually and diverted 80 per cent of the construction waste from the landfill. The service life of the building has been extended by a further eight years.



◀ Before



After ▶

SEVEN MAPLES UPGRADES

The Seven Maples building in Vancouver was recently renovated to upgrade the building envelope and mechanical system. This includes new air source heat pumps to supplement the existing solar system on site. This renovation project will provide significant energy savings and reduce GHG emissions.



ENERGY CONSERVATION TRAINING AND EDUCATION IN THE SOCIAL HOUSING SECTOR

- ▶ In 2020, BC Housing’s energy management team continued to work with BC Housing staff across all departments to raise the level of energy literacy within the organization and to enhance a culture of energy conservation at BC Housing. Their expertise was essential in guiding the development of new housing to highly energy efficient standards such as Passive House and high levels of the BC Energy Step Code.
 - ▶ In 2019, BC Housing hired a new Commissioning Manager who will help BC Housing staff and societies to incorporate commissioning and recommissioning into their projects. In 2020, the Commissioning Manager continued developing new policies and incorporating commissioning as a requirement in our Design Guidelines and Construction Standards. It is estimated that proper commissioning can save 13 per cent for new construction buildings, and 16 per cent for existing buildings.
 - ▶ In 2020, BC Housing continued to support the BCNPHA in the delivery of their Operations and Maintenance program which aims to build energy management capacity in the housing sector, enhance energy and greenhouse gas savings, and get tenant buy-in and engagement.
- Courses offered through the Operations and Maintenance program include:
 - Asset Management Foundations
 - Building Systems
 - New Construction and Redevelopment
 - Green Asset Management
 - And others

ENERGY EFFICIENCY IN NEW AFFORDABLE HOUSING CONSTRUCTION

- ▶ BC Housing encourages our project partners to achieve energy efficient standards in the development of new social housing:
 - In 2020, we completed 22 projects that have achieved Step Code levels three or higher. The BC Housing Design and Construction Guidelines have been revised to align with the BC Energy Step Code. Since 2018, our projects have targeted high levels of this code, a performance-based approach that will result in energy savings over base building code in new buildings constructed through our programs.
 - To date, BC Housing and our non-profit housing partners have more than 60 buildings registered with the Canadian Green Building Council. Fifty buildings have received Leadership in Energy and Environmental Design (LEED) certification (mostly LEED Gold with a few LEED Silver and LEED Certified).
 - We have also been working with our partners to construct buildings that achieve the Passive House standard. In 2020, several Passive House projects were in the Design Development Stage.
 - We also introduced an amendment to our BC Housing Design Guidelines and Construction Standards to include a Greenhouse Gas Intensity target for all New Construction projects. The new requirements became effective as of April 2020.



Orca Place, a supportive housing development in Parksville, B.C.

TECHNICAL RESEARCH AND EDUCATION IN THE RESIDENTIAL CONSTRUCTION SECTOR

Under the Homeowner Protection Act, BC Housing is mandated to improve the quality of residential construction in B.C. through industry research and education. In 2020, we undertook the following initiatives which contributed to improved quality of residential construction and better building energy efficiency:

- ▶ BC Housing is helping the residential construction sector learn a new approach to early design planning: the Integrated Design Process (IDP). The power of the IDP is in engaging builders, project owners, and their teams of designers, mechanical contractors, and energy advisors at the conceptual design stage. By bringing everyone in early to collaborate, the team can identify key goals and ensure all expectations are met easily and efficiently, including higher energy performance targets. BC Housing and our partners are promoting IDP across the industry by offering free virtual IDP facilitation to higher-performance builders in B.C., as well as developing IDP facilitator training for Energy Advisors through the Canadian Association of Consulting Energy Advisors (CACEA).
- ▶ BC Housing is a partner in the Local Energy Efficiency Partnerships (LEEP) program. The LEEP program supports builders to construct higher-performance homes better, faster and more affordably by reducing the time and risk involved in finding the right new technologies and building approaches. Through 2020, BC Housing recruited builders to participate in the LEEP Field Trials, which documents real-world higher performance home construction to identify lessons learned for future industry education.
- ▶ BC Housing is also a partner in the LEEP for Renovations program, a new phase of LEEP focusing on home renovations rather than new construction. In 2020, BC Housing and NRCan began preparations and recruitment for the industry planning workshops, involving renovators, building officials and building owners. It is expected that these workshops will lead to renovator forums in Summer 2021, followed by subsequent renovation field trials.
- ▶ BC Housing conducts technical research and provides education to help improve the quality of residential construction and increase building energy efficiency. In 2020, we published several reports, including:
 - [Design Guide Supplement on Overheating and Air Quality Guide](#) – This guide provides information on the key strategies and approaches necessary to reduce the impacts of a warmer climate on mid- and high-rise (Part 3) wood-frame and noncombustible residential buildings within British Columbia.

- [Builder Insight Bulletin No. 19 – Modelling the Future Climate in Passively Cooled Buildings](#) – This bulletin provides an overview of how designers can improve building resilience by considering the risk of overheating and meeting the BC Energy Step Code. It includes a methodology for analyzing and reporting the potential for passively cooled buildings to overheat under future climate scenarios. This technical bulletin is intended for readers with an understanding of energy modelling and supports a consistent standard for use across the building industry.
- [Best Practice Guide for Air Sealing and Insulation Retrofits for Single Family Homes \(2020 Revised Edition\)](#) – This guide consolidates best practices for air sealing and insulation retrofits (i.e. building enclosure weatherization) for British Columbia homes. The Air Sealing and Retrofits guide is intended to be a reference tool for construction industry professionals and can help contractors learn how to perform weatherization work.
- [Building Envelope Thermal Bridging Guide 1.4 – Digital Version](#) – This guide aims to help the B.C. construction sector realize more energy-efficient buildings by looking at current obstacles and showing opportunities to improve building envelope thermal performance.

These reports are available online from [BC Housing’s Research Centre](#).

- ▶ In collaboration with industry partners, BC Housing’s Building Smart seminar series provides up-to-date building code information and best practices for the construction and design of homes in B.C. These practical and informative sessions give licensed residential builders, contractors, building officials, architects, engineers, trades, and others involved in the home building industry access to the latest research and technology. In 2020, the Building Smart series focused on skills and knowledge necessary for the BC building industry to reach the lower steps of the BC Energy Step Code, including air tightness testing, mitigating thermal bridging, evaluating thermal comfort, and key considerations for high performance walls and roofs. The Building Smart seminars are available on demand as e-learning modules on the [BC Housing website](#).
- ▶ Now in its seventh year, BC Housing’s Building Excellence Research & Education Grants program encourages research and education to improve the quality of residential construction, as well as strengthening consumer protection for buyers of new homes in B.C. Projects funded in 2020 included:
 - Developing a course on Retrofitting Buildings for Energy Efficiency in line with the CleanBC initiative.
 - Identifying the technical, economic and environmental challenges of simultaneous energy and seismic upgrade of existing buildings.

Developing standard protocols to address these through case studies.

- Delivering workshops aimed at equipping South Asian contractors with information on how to save energy and manage energy costs of homes.

For a complete list of projects funded in 2020 or for more information about the grant, please visit:

<https://www.bchousing.org/research-centre/research-education-grants>



CLIMATE CHANGE ADAPTATION

- ▶ In 2020 BC Housing continued our collaboration with the BC Non-profit Housing Association (BCNPHA), the City of Vancouver and other partners, and offered a series of three recorded webinars related to addressing extreme heat and poor air quality due to wildfire smoke. Topics included: Retrofits for Overheating Buildings and Poor Indoor Air Quality, Addressing COVID-19 and Overheating in Non-profit Housing, and Building Overheating and Air Quality: Considerations in New Construction. They are available on our website: <https://www.bchousing.org/projects-partners/extreme-heat/resources-webinars>
- ▶ We have developed new tools and resources for the non-profit housing providers, related to addressing the risk of extreme heat and wildfire smoke and COVID-19. They're available on our website and provide information on communication, education, planning, space cooling guides, and more. <https://www.bchousing.org/projects-partners/extreme-heat>
- ▶ BC Housing presented several sessions at the national Adaptation Canada 2020 Conference: Costing climate change adaptation, Building adaptive, resilient housing - lessons from the field, Green roofs and infrastructure, The overheating and air quality design guide, MBAR training and capacity building for the construction sector.
- ▶ Several of BC Housing's new and existing projects participated in the MBAR pilot project. This included building assessment, detailed analysis for specific climate adaptation considerations and implementation of some of the measures.

MOBILIZING BUILDING ADAPTATION AND RESILIENCE (MBAR)

Building homes that can better withstand the effects of climate change and natural disasters makes our communities safer and more durable. That is why BC Housing is leading the Mobilizing Building Adaptation and Resilience (MBAR) initiative.

Working in partnership with over 30 organizations, the project is developing new ideas, innovative techniques, and forward-thinking solutions for the residential construction industry. Building owners, construction experts, and design professionals who are delivering low-carbon resiliency projects that meet the higher steps of the BC Energy Step Code are invited to join MBAR and participate as pilot projects.

The initiative is using real-life examples and scenarios to develop solutions and identify where there are barriers that make changes difficult. MBAR pilot projects are generating knowledge that will be shared via case study reports. All the information and research will be gathered and made available in the BC Housing Research Centre Digital Library.

The knowledge and skills learned from MBAR pilot projects are also building capacity within the residential building sector. Workshops are offered to participants and BC Housing is also engaging an expert panel to identify and address any existing gaps in the research.

Addressing climate and seismic resiliency early in the design process is much easier than tackling these issues once a home is built. The intention of MBAR is to engage the industry to design homes now that will meet the demands placed on them into the future.

Key resources that have been developed so far, include:

- ▶ [Discussion primers](#)
- ▶ [Integrated Building Adaptation Mitigation Assessment Framework](#)
- ▶ [Builder Insight on Modelling the Future Climate in Passively Cooled Buildings](#)

Watch the [MBAR video: Introducing the Mobilizing Building Adaptation and Resilience Initiative](#).

If you have any questions or would like to get involved in the Mobilizing Building Adaptation and Resilience (MBAR) program email mbar@bchousing.org



Fleet

In 2020, our vehicle fleet consisted of 61 fleet vehicles, primarily trucks and vans used by grounds and building maintenance staff. Office pool vehicles included Smart Cars and hybrid vehicles. Ten per cent of our fleet vehicles in 2020 were fuel-efficient.

We also have a corporate account with Modo, a car-sharing cooperative, for staff use in the Vancouver Coastal and Fraser regions. Our Modo account gives our staff access to a wider range of vehicles and provides flexibility on where to get them. Starting in 2016, emissions from staff trips in Modo vehicles were calculated and reported alongside BC Housing’s own fleet. Almost 50 per cent of kilometres driven in Modo cars in 2020 were taken in hybrid vehicles, resulting in greenhouse gas savings.

Greenhouse Gas Results for Fleet

In 2020, our greenhouse gas emissions from mobile sources (fleet vehicles, Modo vehicles, and grounds equipment) totaled 283 tonnes. Greenhouse gas emissions decreased by 15 per cent compared to 2019.



2020 Fleet and Equipment GHG Emissions

EMISSION SOURCE	2020 GHG EMISSIONS (Tonnes of CO ₂ e)	2020 RESULTS COMPARED WITH THE 2010 BASELINE	2020 RESULTS COMPARED WITH 2019
Fleet (Mobile combustion)	283	45% increase	15% decrease

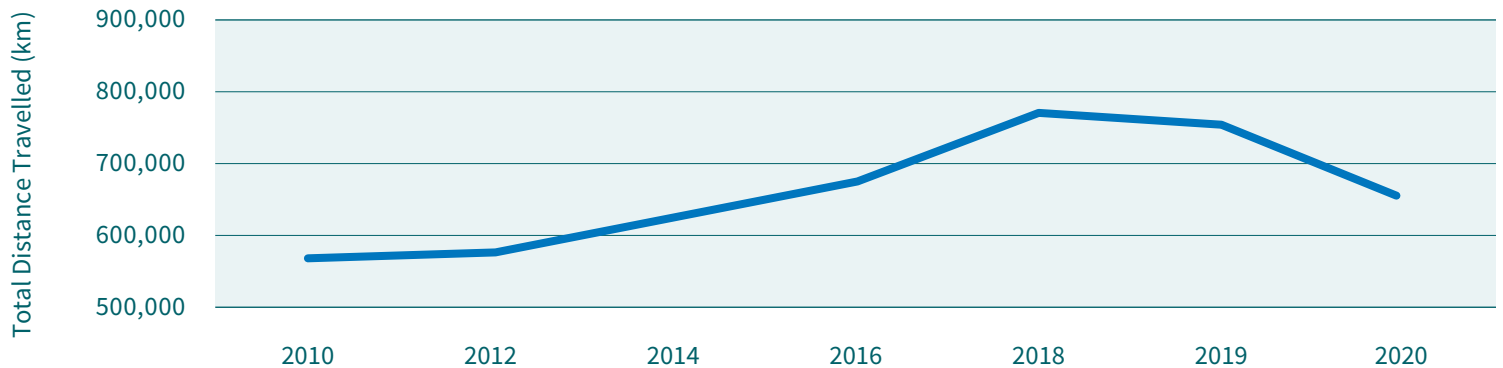
There was a 13 per cent decrease in kilometres travelled in 2020 compared to 2019, as many of our staff worked remotely due to the COVID-19 pandemic and did not use the office pool vehicles as frequently. However, our building maintenance and ground crews continued to use vehicles for their work. Due to the reduction in kilometres travelled, we also consumed fewer litres of gasoline and diesel in 2020 compared to 2019. Our greenhouse gas intensity (greenhouse gas emissions per kilometre travelled) remained the same between 2019 and 2020.

When compared to our 2010 baseline, we have seen an increase in emissions from our fleet, as our organization has grown. Our fleet itself

has grown, from 43 vehicles in 2010, to 61 vehicles in 2020 (a 42 per cent increase). As our building portfolio and responsibilities have expanded since 2010, so too have the number of kilometres travelled in the BC Housing fleet.

Greenhouse gas emissions for the 2020 reporting year were calculated using reported fuel consumption data, as well as estimation when fuel consumption data was not available. Ninety-eight per cent of fleet fuel consumption was recorded in our accounting system, resulting in a high level of confidence in this data.

Kilometres Driven by BC Housing Fleet, 2010-2020



Actions Taken in 2020

- ▶ Due to the COVID-19 pandemic, we replaced many in-person meetings with virtual meetings, reducing our work-related travel significantly.
- ▶ We performed regular maintenance on all fleet vehicles to ensure that they are operating as efficiently as possible. When required, we replace older vehicles with newer, more efficient models.
- ▶ The Lower Mainland grounds and maintenance fleet continued to use a GPS fleet tracking system to reduce fleet mileage. This allowed fleet managers to reduce kilometres driven by allocating resources more efficiently and monitoring idling behaviours.
- ▶ Due to a shift to teleworking during the pandemic, average carbon emissions due to commuter trips per employee dropped almost 65 per cent in 2020 compared to our baseline year.
- ▶ The annual employee sustainability survey showed that the trend of BC Housing employees choosing hybrid and fully electric vehicles continued in 2020. While the automobiles used by employees to commute to and from work in 2020 still run primarily on gasoline, 2020 saw the highest ever share of hybrid and fully electric vehicles at over eight per cent.



Paper

In 2020, our greenhouse gas emissions for office paper totaled 18 tonnes of CO₂e.

Since 2010, we have seen a 40 per cent decrease in our annual greenhouse gas emissions resulting from paper consumption. In the past, this was mainly due to efforts to promote a paperless organizational culture, an increase in paper with 100 per cent recycled content, and changes to our procurement practices. In 2020, due to a shift to teleworking, the organization purchased significantly less paper (27 per cent less) than in 2019. We saw a corresponding decrease in greenhouse gas emissions due to paper use between 2020 and 2019.

Our greenhouse gas emissions per employee due to paper use decreased 57 per cent compared to our baseline year.



2020 Paper GHG Emissions

In 2020, 80 per cent of all the paper purchased was 100 per cent recycled paper, a 10 per cent decrease compared to 2019.

PAPER	2020 GHG EMISSIONS (TONNES OF CO ₂ e)	2020 RESULTS COMPARED WITH THE 2010 BASELINE	2020 RESULTS COMPARED WITH 2019	2020 RESULTS COMPARED WITH THE 2010 BASELINE, PER EMPLOYEE
	25	40% decrease	25% decrease	57% decrease

Actions Taken in 2020

- ▶ We encouraged staff to reduce printed materials by promoting paperless meetings and giving our printers a default setting of double-sided. As many of our employees switched to remote work in 2020, they used electronic documents instead of printing as frequently.
- ▶ Our office services staff made every effort to buy 100 per cent recycled paper and only purchased paper with a lower recycled content if 100 per cent recycled content was not available for the required paper type.
- ▶ BC Housing’s Records and Information Centre championed paper reduction in 2020. The COVID-19 pandemic sped up some work with departments to move various file series completely electronic, particularly as large sections of staff began working at home exclusively and still required access to materials.
- ▶ The Human Resources Information Systems team has been digitizing HR processes and moving all systems away from paper-based processes to automated, digitized and in some cases application-based processes. To date, this has included:
 - COVID-19 Employee Health Check
 - Teleworking Agreement
 - Employee Change Form
 - Payroll Change Form
 - And many others.
- ▶ The IT Department is also undertaking an IT Modernization project, strengthening systems and putting tools in place to support great flexibility in remote and teleworking, enabling secure digital signatures and secure data collection, and supporting digitized systems throughout the organization.

Other Actions

BC Housing has been guided in our sustainability efforts by our *livegreen* Sustainability Plan. The *livegreen* Sustainability plan is integrated with our corporate and branch plans to ensure we are considering sustainability in all of our business practices, including employee engagement, procurement, and community connections. BC Housing conducted a review of our sustainability priorities and activities in 2019. This included an in-depth review of BC Housing's current approach to sustainability policy, governance, and decision-making. The review was followed by engagement with nearly 25 per cent of staff, including an advisory group and the executive committee. The assessment and engagement culminated in recommendations to inform future sustainability work which we began implementing in 2020.



BC Housing is engaged in process of rethinking our definition of sustainability. This includes broadening our efforts to include Reconciliation with Indigenous People as well as the pursuit of Equity, Diversity, Inclusion and Belonging in our programs and operations. Our new sustainability direction will be communicated through a Sustainability and Resilience Strategy, guiding our sustainability efforts in the coming years.



Hives for Humanity working on a beehive at a BC Housing directly managed building.

Employee Engagement

Employee engagement was particularly important in 2020, as many employees were working from home and outside of their regular routines. Our employee green team, the *livegreen* Council, plays a key role to encourage sustainable employee behaviour both in the workplace and at home, helping to establish sustainable lifestyles for employees, families and communities. This committed and corporately-sponsored council represents every branch of BC Housing. Council members work to a strategic plan that is informed by the findings of our annual sustainability survey.

In 2020, our *livegreen* council gave employees a chance to engage on sustainability initiatives. With so many employees working from home, the events provided employees with an opportunity to connect socially with their colleagues, improving moods and fostering connections. The importance of nature was also highlighted for many around the province, as we found ways to explore safely outdoors and connect with nature.

In 2020, our *livegreen* events included:

- ▶ **7x7 “Adapting to Change” Challenge**
In this time of uncertainty and rapid change, we wanted to encourage employees who are finding themselves in different circumstances to get into a normal routine. As part of this challenge, we encouraged teams of 2-4 employees to pledge to adapt, embrace and participate in tasks for seven consecutive days of any given week in the month of April.
- ▶ **Go By Bike Week**
Commuting by bike is a great way to get some exercise and limit greenhouse gas emissions from vehicle use. BC Housing’s *livegreen* Council encourages staff to participate in the Bike to Work Week (BTWW) commuting campaign semi-annually. During the pandemic, the Spring 2020 BTWW campaign moved online with a new name: ‘Go by Bike Week’. We also held “Bike to Shop Week” in July.
- ▶ **“Shoreline” Cleanup**
Our popular shoreline cleanup event was back, but with a socially-distanced spin. Instead of meeting as a group to cleanup a local shoreline, employees were encouraged to pick up garbage in their own neighbourhoods. With everyone staying local during the pandemic, it was a great way to give back and beautify their neighbourhoods.
- ▶ **30 x 30 Nature Challenge**
Connecting to nature was especially important to our employees during the pandemic as so many other activities were cancelled. Our annual 30 x 30 Nature Challenge encouraged employees to commit to spending 30 minutes outside, every day for a month.
- ▶ **Virtual Lunch and Learns** on various topics

Due in part to our employee engagement practices, Canada’s Top 100 Employers project has named BC Housing one of Canada’s Greenest Employers for seven consecutive years and we have been recognized as a Transformational Company by Canadian Business for Social Responsibility.

Procurement

A significant portion of our public tenders include evaluation criteria that focus on sustainable product specifications, waste reduction and diversion, efficiency, and positive contributions to local communities. Last year, 63 per cent of tenders included such sustainability factors.

Community Connections

BC Housing’s employee-led community investment program, Community Connections had a record-year in 2020, with staff raising over \$300,000 for 102 different charities. Since the start of the program in 2008, \$2 million has been raised for local charities contributing to environmental, social, and economic sustainability programs in local communities in tangible ways. While the program’s Employer Supported Volunteerism component was limited by COVID-19 restrictions this year, BC Housing staff participated in the Homeless Count, Coldest Night of the Year, Shoreline Cleanup and other volunteerism that could be done remotely or within COVID-19 protocols.



Plans to Continue Reducing Greenhouse Gas Emissions in 2020

BC Housing's Sustainability Plan

- ▶ BC Housing will build on the work undertaken in 2019 to review our sustainability practices. We will engage staff and our stakeholders on our Strategic Framework and prepare for the launch of a new Sustainability and Resilience Strategy.
- ▶ This Sustainability and Resilience Strategy will help shape our sustainability initiatives over the coming years.

Energy Conservation Initiatives and New Construction in the Social Housing Sector

- ▶ The British Columbia government has invested \$1.1 billion over ten years to make B.C.'s social housing stock more energy efficient, less polluting and safer, while significantly reducing heating and cooling costs for residents. Of this Capital Renewal Fund, \$10 Million annually has been dedicated to the incremental cost of energy savings measures on our own and our non-profit partner's projects. Other retrofits include fuel switching, building envelope upgrades, and other energy efficiency measures.
- ▶ In 2021, the Energy Efficiency Retrofit Program (EERP) will continue to address the energy efficiency of social housing.
- ▶ In 2021, BC Housing will ensure most of our renovation projects perform comprehensive energy audits and include Energy Conservation Measures (ECMs) in the design phase that lead to at least 50 per cent greenhouse gas reductions.
- ▶ BC Housing will continue to provide residential construction industry education by developing and delivering at least 10 Building Smart workshops, seminars, and webinars across B.C. Topics will include information on intermediate steps of the BC Energy Step Code and innovative and best construction practices to comply with these requirements.

- ▶ Sustainability, energy conservation, and decarbonization will continue to be integrated in our community development programs. Due to social distancing measures required during the COVID-19 pandemic, we will find innovative ways to continue this programming.

The Residential Construction Sector

- ▶ We will continue to take action to facilitate the implementation of the BC Energy Step Code, including:
 - Performance monitoring of high-performance social housing buildings meeting high levels of the BC Energy Step Code.
 - Engaging with the design teams early on to establish sustainability target and conduct peer review process to ensure efficient building design.
 - Developing other educational materials including a series of customized seminars and webinars, videos, animation, online interactive guidance tools, and tool kits for hands-on training that are useful and accessible to builders and designers in both urban and remote regions of B.C.
 - Administering a local government survey to gauge the barriers and successes in adoption of the BC Energy Step Code.
- ▶ BC Housing will continue to partner on the Local Energy Efficiency Partnerships (LEEP) project, including the LEEP for Renovations program.
- ▶ In partnership with our research partners, BC Housing will publish the following reports in 2021:
 - Exterior Air Barrier Research for Highly Insulated Deep Wall Assemblies in Cold Climates
 - Best Practice Guide – Accessory Dwelling Units
 - Introduction to Prefabrication of Wood Buildings
 - Heat Pumps in Multi-unit Residential Buildings
 - And others



Climate Change Adaptation

- ▶ In 2021, BC Housing will continue to train the non-profit housing sector on managing extreme heat and poor air quality due to wildfire smoke in affordable housing. We will do this with our partners the BC Non-profit Housing Association (BCNPHA), health authorities, local government and communities, and others. This training will cover asset management, leadership, and operational aspects.
- ▶ In 2021, BC Housing will lead the development of a Provincial Extreme Heat and Wildfire Smoke Response Plan. This will ensure individuals accessing shelters and transition homes, and those who are unsheltered, are protected against the health impacts of heat and wildfire smoke.
- ▶ Mobilizing Building Adaptation and Resilience (MBAR) initiative will continue growing the new body of knowledge and offer learning opportunities related to barriers and benefits of implementing specific resiliency measures. BC Housing will continue working with the existing and new MBAR pilot projects, academic, industry and other partners, in order to share the best practices.
- ▶ The BC Housing Design Guideline and Construction Standards require our buildings to be future proofed to meet stringent overheating hours and address a warming climate across B.C.

Fleet

- ▶ In 2021, BC Housing will examine the lessons learned from the COVID-19 pandemic around the impact of virtual meetings and telecommuting on our greenhouse gas emissions and evaluate how this might change our policies moving forward.
- ▶ We will also explore the trends in BC Housing commuting data and will look at possible incentives and other policy adjustments to allow for more telecommuting and to uncover possible options for reducing Single Occupancy Vehicle driving.
- ▶ Although a large percentage of our fleet is trucks and vans that do not yet have electric equivalents available in the North American market, we have started research on electric vehicles to ensure we are ready to act when the appropriate technology is available.

Paper

- ▶ In 2021, BC Housing will aim at sourcing a higher percentage of our paper with 100 per cent recycled content. We will reach out to regional staff who make paper purchases to ensure that paper with lower recycled content is not purchased by mistake.
- ▶ The *livegreen* Council will promote the idea of paperless meetings through information bulletins in the BC Housing weekly e-newsletter and signage in meeting rooms. The *livegreen* Council will continue to encourage employees to make more sustainable decisions at work, home, and in our communities.
- ▶ We will continue to explore the digitization of our processes so we can transition away from printed documents and use of paper.

Other Actions

- ▶ The Employee *livegreen* Council will continue its focus on encouraging BC Housing employees to make more sustainable decisions at work, home and in their communities. The focus will also be on connecting employees virtually until physical distancing is no longer necessary. Activities are planned in four focus areas:
 - **Food:** promoting sustainable food choices such as: growing your own food, buying local and organic food, promoting a meatless diet, etc.
 - **Commuting:** creating awareness of environmentally friendly commuting and personal travel choices amongst employees and others.
 - **Home:** inspiring employees to reduce their environmental footprint at home, make informed choices, and reduce existing barriers to purchasing responsible products.
 - **Work:** encouraging employees to make sustainable decisions at work that lead to cost savings, higher efficiencies, and healthier lifestyles.



A BC Housing employee participates in Bike to Work Week.

Further resources

For information about our actions and plans in other sustainability areas, please visit:

<https://www.bchousing.org/about/sustainability>

<https://www.bchousing.org/research-centre>



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