



VANCOUVER COMMUNITY COLLEGE

VCC PSO Climate Change Accountability Report



2022 REPORTING CYCLE

LAND ACKNOWLEDGEMENT

We acknowledge with deep respect and appreciation that this report was produced on the traditional and unceded territories of the x^wməθk^wəyəḿ (Musqueam), Sḵw̓x̓wú7mesh Úxwumixw (Squamish), and səlilw'ətaʔt (Tseil-Waututh) Nations.





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ABOUT VCC

Located in the heart of the city, Vancouver Community College (VCC) offers academic, cultural, and social environments that inspire relevant real-world training. Our on-campus facilities - including gourmet restaurants, an auto shop, and salon and spa - allow students to hone their skills and training while providing high-quality lower-cost services to the Downtown and East Vancouver communities.

OUR VISION STATEMENT

VCC – the first choice for innovative, experiential learning for life.

STRATEGIC INNOVATION PLAN

VCC's Strategic Innovation Plan outlines our commitment to becoming an innovative center of learning within the next 10 years. The plan brings our vision statement to life, and commits us to deliver bold new initiatives, build infrastructure, and explore new technologies for the benefit our students, employees, and wider community. It also presents new ways of doing things, changing business models, and evolving educational needs to ensure that we create optimal, accessible environments for learning success now and in the future.

Our values

Student success: We create an accessible environment where students build the skills, develop the attributes, and gain the experience in the classroom, industry, and community needed for success now and in the future.

Excellence: We are committed to the highest educational quality, student support, and college operations that are responsive, innovative, and relevant.

Reconciliation and Diversity: We respect and celebrate our differences, and are committed to the work of decolonization, accessibility, and inclusivity for all.

Stewardship: We are responsible for overseeing the resources that are entrusted to us and are focused on working in the best interests of the college community as a whole.

DECLARATION STATEMENT

This PSO Climate Change Accountability Report for the period January 1, 2022, to December 31, 2022, summarizes our greenhouse gas (GHG) emissions profile, the total offsets to reach net-zero emissions, the actions we have taken in 2022 to minimize our GHG emissions, and our plans to continue reducing emissions in 2023 and beyond.

By June 30, 2023, VCC's final 2022 Climate Change Accountability Report will be posted to our website at www.vcc.ca.



EXECUTIVE SUMMARY

Vancouver Community College (VCC) recognizes the importance of a healthy environment for both present and future generations. We have been dedicated to protecting the natural environment by minimizing our daily impacts and fostering a more sustainable community through our program offerings. Our goal is to demonstrate leadership and accountability in environmentally conscious decision-making across all our operations, inspiring our students, staff, and graduates to extend these sustainable practices beyond the classroom, thereby motivating others in their homes, communities, and workplaces.

Over the past twelve years, VCC has participated in BC Hydro's Energy Management Program and has made great strides in achieving our environmental sustainability goals. In an effort to continue our energy reduction achievements, VCC has developed a three-year Strategic Energy Management Plan (SEMP) to identify opportunities to further reduce our energy consumption.

As part of our annual Strategic Energy Management Plan, VCC commits to seeking innovative and improved practices to reduce our greenhouse gas (GHG) emissions. In 2022, we aimed to achieve 50% reduction in energy use and a 60% reduction in GHG emissions compared to the levels in 2010/2011 by March 2025.

By December 2022, VCC had made significant progress towards its goals, achieving a 44% reduction in energy use and a 55% reduction in GHG emissions. This demonstrates our ongoing commitment to environmental sustainability and aligns with the targets set in our Strategic Management Plan.

Working across our college campuses with the direct support and participation of our staff, faculty, and students, we have achieved the following major milestones as of December 2022:

- Over \$4,900,000 in energy cost avoidance from 2010 to the end of the calendar year 2022.
- Over 78,682,000 kWh in energy savings, equivalent to the annual energy use of 3,533 BC households.
- A total reduction of 55% in GHG emissions compared to 2010/11 levels.

To celebrate surpassing \$5 million in energy cost avoidance since 2010, in February 2023, a case study (featured at the end of this report) has been produced to effectively communicate and showcase our success in meeting and exceeding our energy cost avoidance and GHG reduction targets.

More information about our 2022 Strategic Energy Management Plan (SEMP) has been posted to our website at www.vcc.ca.

VCC is a carbon neutral institution. Following the Carbon Neutral Government Regulation of BC's Greenhouse Gas Reduction Targets Act, VCC measures and reports GHG emissions to the BC Climate Action Secretariat, and purchases credits to offset all remaining GHG emissions that cannot be reduced through our implemented energy conservation initiatives. In addition to these requirements, the PSO Climate Change Accountability Report is prepared each year by VCC.



ACTIONS TAKEN TO REDUCE GHG EMISSIONS IN 2022

Since 2013, VCC has partnered with BC Hydro through their Energy Manager Program to develop and implement our Strategic Energy Management Plan (SEMP). The SEMP supports VCC's commitment to increase energy efficiency and conservation by providing a framework for reducing energy consumption and its associated environmental impacts.

Having successfully reached our initial GHG reduction target in March 2021, VCC's SEMP includes a new energy reduction target and an action plan to continue advancing our efforts to reduce GHG emissions. Through the implementation of cost-effective management initiatives identified in the SEMP, VCC has worked towards reducing campus energy intensities in existing buildings. VCC has made significant progress in reducing energy intensities across existing campus buildings, achieving a 44% reduction in energy consumption as of December 2022.

During the last fiscal year, VCC completed the following projects to reduce energy use and GHG emissions:

DOWNTOWN CAMPUS

Direct Digital Control (DDC) System: In order to enhance the performance of our systems, we have implemented several important updates. Firstly, we have introduced a graphic update to our DDC system. This update incorporates control capabilities for the new cooling unit and exhaust system in the mechanical room, by integrating them into the DDC system. Moreover, we recognized the need to replace the old and obsolete main hardware panel at both campuses. This upgrade was essential to ensure optimal operation and compatibility with our systems, guaranteeing efficient functionality across the board.

Heat Pumps: Our yearly replacement of 13 ozone-friendly heat pumps not only demonstrates our commitment to staying current with technology and prioritizing energy efficiency but also allows us to replace obsolete heat pumps. By identifying and replacing outdated models, we ensure that our end users benefit from the most advanced and efficient heating and cooling technology available. This proactive approach guarantees optimal performance while minimizing our environmental impact and contributing to a sustainable future.

BROADWAY CAMPUS

Domestic Hot Water (DHW) Heat Pump Electrification, Building A: After the successful implementation of the DHW heat pump electrification project in Broadway Campus Building B, we decided to expand the project to Building A. This expansion allowed us to save more energy by heating the water through electrification. In case the demand exceeds the capacity, the boiler will automatically start operating.

Exterior lighting was added to the DDC system to enhance control over our systems. We incorporated an astronomical clock into the system, which automatically follows a sunrise-sunset schedule. This integration enables synchronization with natural light patterns, ensuring optimal utilization of our exterior lighting. It is worth noting that all our exterior lighting fixtures are LED-based, guaranteeing energy efficiency and longevity. By implementing these enhancements, we have significantly improved the functionality, convenience, and sustainability of our exterior lighting system.

AC Upgrades: To enhance functionality and improve the user experience, we have identified a more efficient heat pump that is specifically designed to meet the cooling needs of two specific areas in the college. By implementing this system, our goal is to provide optimal comfort for the occupants by utilizing the heat pumps instead of the building system. This targeted approach enables us to customize the cooling settings and create a pleasant environment for students, faculty, and staff.

Direct Digital Control (DDC) System: In order to enhance the performance of our systems, we have upgraded 13 controllers to the BWY model, which improves functionality and efficiency.

Electric Vehicle (EV) Charging Station: In addition to the downtown campus EV charging station, VCC's Broadway campus parking lot has successfully installed a level 2 EV charging station with two ports. This project highlights the college dedication to sustainability and clean transportation, effectively addressing the increasing demand for electric vehicles. The addition of the EV charging station provides convenience for students and staff. To incentivize the use of EV cars, our charging stations offer the first 2 hours free of charge.

PAPER CONSUMPTION

Since 2010, VCC has achieved a remarkable reduction of over 80% in paper consumption. In 2019 VCC switched from traditional copy paper to sugar sheet copy paper to further decrease our GHG footprint. Some exceptions have been applied for different departments based on operational needs, but Sugar Sheet copy paper has become our primary paper source.

Sugar sheet copy paper is produced using the residual waste of sugar cane and is a 100% forest-free product. Throughout its entire life cycle, from sourcing and transportation to end-of-life disposal, it emits only 1.3kg of CO₂e per kg. This represents a significant 29% to 55% reduction in emissions compared to uncoated wood-derived paper.

In the years 2020, 2021, and 2022, VCC experienced a notable 56% decrease in 8.5 x 11 paper consumption compared to 2019. This reduction can be partially attributed to the COVID-19 pandemic, as well as the implementation of new systems, processes, and software at VCC. These measures have encouraged students, staff, and faculty to embrace the printing habits they have developed over the past years.

ENERGY CONSERVATION AND AWARENESS CAMPAIGNS

As an active participant in the BC Hydro Energy Wise Network (EWN) Program, VCC remains dedicated to engaging both staff and students through behavior change campaigns centered around energy conservation. Since our inception in 2017, VCC has successfully executed multiple impactful campaigns, including:

- Lights Off, Green On
- Covid-19 Vampire Power
- Holiday Shutdown
- Take the Stairs, if possible
- Space Heater Replacement
- Bundle Up

With the support of funding and coaching from the EWN, VCC accomplished the implementation of two behavior change campaigns in 2022. These campaigns resulted in a 5% reduction in VCC's total annual energy consumption this past year.

The Great Annual Holiday Shutdown Campaign

Our initial behavioural change campaign, "Holiday Shutdown," was conducted in early December 2022, prior to winter break. This campaign specifically targeted VCC staff members, urging departments to minimize phantom power consumption during the holidays by unplugging unnecessary equipment, cords, and appliances. A handy checklist was provided to assist staff in identifying opportunities, and participants were requested to submit a completed checklist as confirmation of their efforts. Additionally, to further reduce energy usage, we also ask end users to close the blinds and turn off the lights before leaving for the holidays. By implementing these simple steps, we can make a significant impact on our energy consumption and contribute to a greener environment.

Over 32 staff members participate across eleven different departments, and six prizes were awarded to celebrate their commitment to taking action.



**SWITCH
OFF
ELECTRONICS**



**TURN
OFF
THE LIGHTS**



**UNPLUG
SMALL
APPLIANCES**



**CLOSE
WINDOWS
& BLINDS**

Bundle Up + Space Heaters

Our second behaviour change campaign, “Bundle Up + Space Heaters,” began in November 2022 and concluded in February 2023. This campaign specifically targeted VCC’s students and staff, utilizing communication materials to encourage individuals to bundle up before requesting to increase the room temperatures or using a personal space heater. Digital and print signage was posted throughout both campuses to enhance awareness regarding staying warm, remaining active, and implementing layered clothing as a means of combating the cold.

Over the last eight years, VCC's Facilities Team has been providing energy-efficient space heaters that consume 86% less electricity. To date, nearly 180 of these units have been distributed, leading to a significant decrease in electricity usage from 1440kWh to 1920 kWh.*

By conserving 1440kWh of electricity each year, the environmental impact of this initiative is equivalent to the CO2 emissions generated from driving over 4000km.**

These energy savings have inspired the creation of VCC's first Facilities Management Operational Standard FM-01 Space Heaters, which strive to maximize energy efficiency, minimize costs, reduce emissions, and enhance the safety of building occupants.

Bundle Up 

Did you know heating comprises 42% of VCC's carbon footprint?!

If everyone turned their heat down by just 1°C, we could reduce our GHG emissions by 10%!

Heat your body, before you heat the room to save energy and reduce emissions!

- Drink a warm beverage
- Keep a sweater or vest in the office
- Use a blanket
- Go for a walk
- Wear heated socks
- Wear fingerless gloves
- Do 25x jumping jacks

*Assuming space heaters are used for 8 hours per day, 120 days per year.

**USEPA Greenhouse Gas Equivalencies Calculator

PLANS TO CONTINUE REDUCING EMISSIONS IN 2023 AND BEYOND

Expanding upon our accomplishments in energy reduction projects and behavior change campaigns, VCC remains committed to actively involving staff, students, and faculty in upcoming initiatives on both campuses. Our focus for the coming years is to implement additional energy reduction projects and conduct behavior change campaigns that will contribute to further reducing our annual greenhouse gas (GHG) emissions.

The future initiatives we have planned encompass a wide range of activities, some of which include:

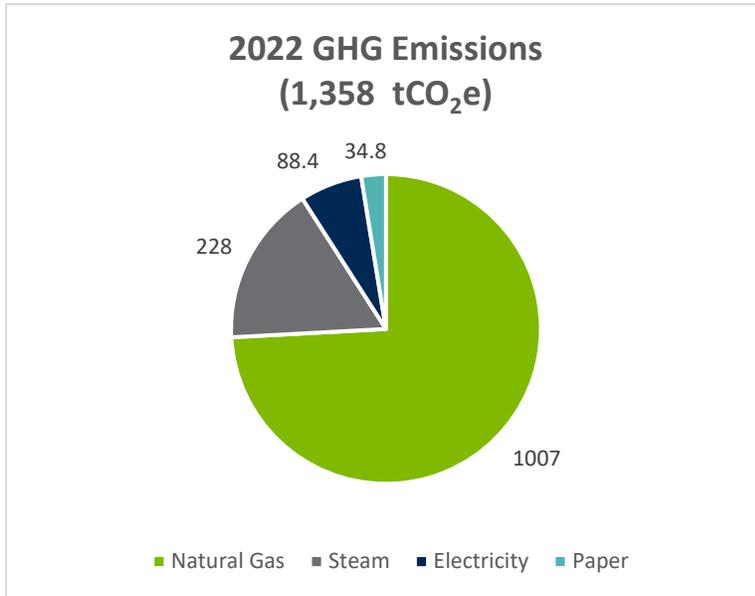
BROADWAY CAMPUS

- Replace standard efficiency motors of pumps and fans with premium efficiency types.
- Install dimming controls for corridor and classroom lighting systems.
- Recommission the HVAC equipment under the BC Hydro Continuous Optimization Program (Phase 2).
- Install flush valves for washrooms.
- Conduct behavioral change campaigns.
- Install a photocell sensor in the lighting of the bridge that connects building A and B, and Receiving Canopy.
- Upgrade lighting in the flagpole area from incandescent to LED.
- Increase the number of EV charging stations.

DOWNTOWN CAMPUS

- Replace standard efficiency motors of pumps and fans with premium efficiency types.
- Recommission the HVAC equipment under the BC Hydro Continuous Optimization Program (Phase 2).
- Electrify the Culinary School kitchen with induction units.
- Install flush valves for washrooms.
- Replace condensate tank.
- Upgrade transformers.
- Increase the number of EV charging stations.
- Purchase electric cargo van.
- Replace kitchens make up air units with heat pumps.

EMISSIONS SUMMARY



In 2022, a total of 1,358 tCO₂e. of greenhouse gas (GHG) emissions were reported and offset. Energy usage within VCC's buildings accounts for over 97% of the reported GHG emissions, encompassing natural gas, steam, and electricity. The remaining 3% of emissions are attributed to VCC's paper consumption.

Figure 1: 2022 Emissions Breakdown

Compared to 2021 levels, VCC has decreased total organizational emissions by 20% year-over-year and has achieved a 56% reduction in emissions compared to our 2011 baseline.

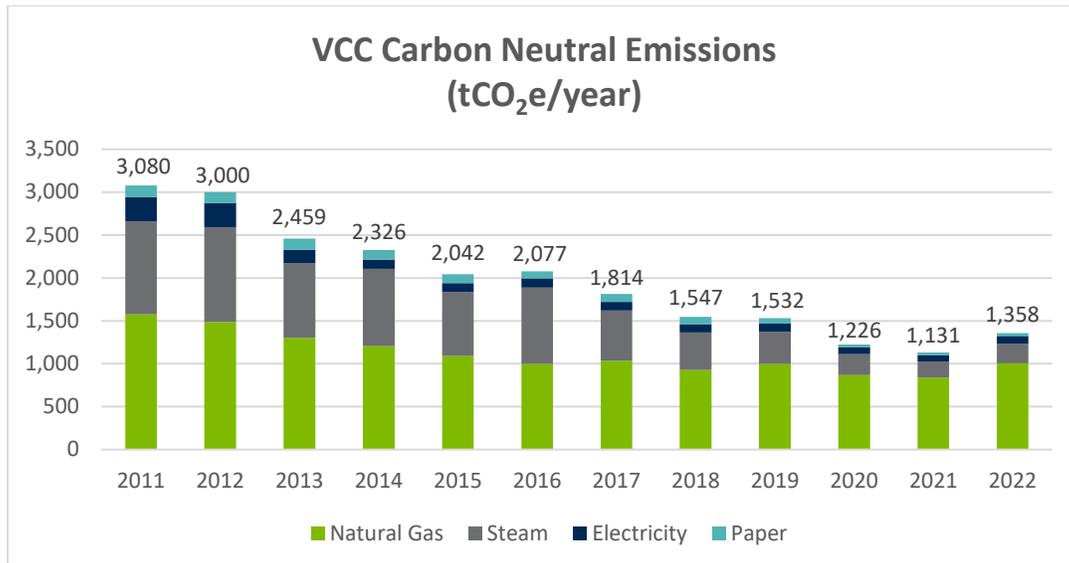


Figure 2: Historical Annual Emissions 2011-2022

Fugitive emissions from cooling systems and mobile fuel emissions from fleet vehicles are estimated to contribute less than 0.01% to the annual GHG emissions. These emission levels fall below the materiality threshold required for inclusion in the annual data collection and reporting.

EMISSIONS AND OFFSET SUMMARY TABLE

Vancouver Community College 2022 GHG Emissions and Offsets Summary	
GHG emissions for the period January 1 - December 31, 2022	
Total BioCO ₂	<i>0</i>
Total Emissions (tCO ₂ e)	<i>1358</i>
Total Offsets (tCO ₂ e)	<i>1358</i>
Adjustments to Offset Required GHG Emissions Reported in Prior Years	
Total Offsets Adjustment (tCO ₂ e)	<i>0</i>
Grand Total Offsets for the 2022 Reporting Year	
Grand Total Offsets to be Retired for 2022 Reporting Year (tCO ₂ e)	<i>1358 + 0</i>
Offset Investment (\$)	<i>1358 x \$25</i>

RETIREMENT OF OFFSETS

In accordance with the requirements of the Climate Change Accountability Act and Carbon Neutral Government Regulation, Vancouver Community College (the Organization) is responsible for arranging for the retirement of the offsets obligation reported above for the 2022 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.

PUBLIC SECTOR LEADERSHIP

The energy team convenes monthly to examine commitments, guidelines, procedures, and budgets. This regular gathering ensures that VCC remains on course to achieve its greenhouse gas (GHG) reduction targets. Furthermore, discussions during these meetings are increasingly centered around climate adaptation initiatives, which aim to mitigate risks associated with climate change.

Our future initiatives encompass a diverse range of activities, such as implementing energy-efficient measures, upgrading equipment, promoting behavioral change, and electrifying the Culinary School at the Downtown Campus, as well as improving DDC systems, and optimizing HVAC equipment.

In order to minimize our GHG footprint, we will persist in implementing various measures, including capital planning investment (CNCIP Funding; renewals of clean energy-related projects) and the development of policies and processes. Moreover, we will actively engage in behavioral campaigns to promote sustainable practices.

CLIMATE RISK MANAGEMENT

According to climatologists, British Columbia (BC) and Canada broke multiple weather records in 2021. For instance, 59 communities in BC surpassed their previous record elevated temperatures in a single day. This extreme heat led to the cancellation of culinary instruction in the kitchen labs at VCC's downtown campus in 2021 and 2022. It is evident that heatwaves are now more frequent, and by 2050, Vancouver is projected to experience twice as many hot days as it did in 1980, with even higher temperatures.

The safety of our students and staff is a top priority. That is why we have developed the Heat Stress Exposure Control Plan (HSECP) to address the excessive heat stress observed in the kitchens at VCC's downtown campus. The plan, scheduled to be finalized in 2023, aims to safeguard the health and well-being of VCC employees and visitors by effectively controlling and minimizing their exposure to heat stress. It aligns with the requirements of the WorkSafeBC Occupational Health and Safety Regulation and incorporates measures to prevent heat-related illnesses.

Since 2019, VCC has been running a Mason bee pollinators program at the Broadway campus, which has been significantly affected by climate change. The heat waves have had a noticeable impact, allowing us to include Leafcutter bees during the summer season. In response to the challenges faced by bee populations as a result of climate change, we have introduced a climate risk initiative. This initiative is centered around two key goals: diminishing bee mortality rates and augmenting the quantity of bee eggs produced in each season.

This initiative takes into account factors such as temperature fluctuations and extreme weather events. By utilizing historical data, climate change projections, and a likelihood rating scale, the initiative aims to assess climate risks and implement effective measures to protect and support bee populations. The goal of the initiative is to enhance bee resilience and mitigate the adverse impacts of climate change on their survival.

Currently, VCC does not have an official Climate Risk Management strategy. However, discussions regarding this matter are ongoing through a recurrent and collaborative process. These discussions will guide the prioritization of VCC's adaptation and risk mitigation plans.

OTHER SUSTAINABILITY INITIATIVES

Environmental Advisory Group

In 2022 the Environmental Sustainability Advisory Group (ESAG) is an official VCC 'green team', with a mandate to support VCC's commitment to environmental sustainability through the expansion of existing, and the introduction of new initiatives for climate justice and emergency management. Through the Chair, VP Administration and International Development, the ESAG advises the College's Senior Leadership team on matters of environmental responsibility and generates ideas for initiatives that promote and support environmental responsibility within the college and college community. Environmental Community Action Team (ECAT) was an official 'green team' of the college, with a mandate to act as an advisory group of Operations Council. To create a direct pathway with the Senior Leadership team, ECAT was dissolved and ESAG re-established in 2022.

Environment and Sustainability Strategy

The new Environment and Sustainability Strategy will serve a roadmap for positioning VCC as a leader in environmental stewardship within the advanced education sector. We recognize our accountability for environmental impacts and, through this strategy, aim to embed environmental sustainability values and practices throughout the organization over the next 5 years. To complement the strategy, VCC has also developed the Environmental Sustainability Strategy Implementation Workbook, which serves as a tool to plan and implement efforts towards achieving the goals outlined in the Strategy 2023-2028.

2018 Environmental Policy

Since 1998, VCC has maintained an environmental policy to ensure that all activities are conducted in a manner that promotes responsible stewardship of the environment. The policy emphasizes considering environmental factors in all planning and decision-making activities, supporting VCC green team, and taking prompt action to address environmental risks and concerns.

In door Air Quality Assessment.

In 2022, VCC enlisted the services of a consultant to conduct an indoor air quality (IAQ) audit for both campus locations. The objective was to identify potential IAQ issues and provide recommendations to improve and optimize IAQ levels within each building. Additionally, VCC installed thermostats with CO2 readers at both campuses to measure air quality, especially during periods of smoke caused by wildfires. By conducting this assessment and incorporating CO2 readers, VCC can more accurately monitor and assess air quality, promote sustainable building practices, reduce energy consumption, and improve the health and well-being of occupants during challenging situations like wildfires.

Re-Use and Re-Upholstery Program

VCC has taken steps to promote sustainable and fiscally responsible practices through its Furniture Re-Use and Re-Upholstery Program. By partnering with local reupholstery service providers, VCC can extend the life of its existing furniture inventory while reducing landfill waste and minimizing its impact on the environment. Refurbishing existing furniture allows VCC to create high-quality, customizable pieces. In addition to the environmental benefits, refurbishing existing furniture is a much quicker process than ordering new, which means less disruption and impact on academic and administrative operations.

E-bike charging stations

As part of its commitment to promoting sustainable transportation, VCC has implemented a range of initiatives to encourage cycling as a means of transportation on campus. Among these initiatives is VCC's first-of-its-kind e-bike storage and charging station, along with bike racks and other end-user services. These services include a commercial-sized air pump for tire inflation and a fix-it bike station equipped with tools for on-campus repairs and tune-ups.

Recycle & Waste Reduction Initiatives.

VCC has over 160 waste stations across all buildings. Students, staff, faculty, and the public discard their waste in the receptacles provided, where it is then consolidated into larger bins and collected by our primary waste hauler, Maple Leaf Disposal. Their services include the collection of VCC's garbage, organics, mixed paper, plastics, clean wood, and metal recycling streams. Once sorted, materials are baled and distributed to different companies for further processing.

VCC has also implemented an operational procedure for the disposal of surplus assets to ensure assets that are no longer of use are disposed properly and in a way that minimizes risks to the environment.

Non-recyclable Waste

Waste generated at VCC that cannot be recycled is sent to Covanta, the City of Burnaby's waste to energy facility or to the Metro Vancouver Transfer station. Every year Covanta facility generates enough electricity to power 16,000 homes and recovers nearly 7,000 tonnes of metal for recycling through their incineration processes.

Cardboard & Paper

Cardboard and paper waste generated at VCC is sent to Urban Impact Recycling in New Westminster where it is sold to both domestic and international processors for recycling. Cardboard is often recycled into new cardboard boxes, paper-based plant pots, drywall liners and brown paper products like paper towels. Office paper is often recycled into tissue paper and writing paper, or in some cases, it is used to increase the recycling quality of other paper streams.

Construction Waste

Mixed construction waste generated at VCC is efficiently managed by Eagle Disposal or Ecowaste Industries Ltd, both located in the city of Richmond. Ecowaste Industries Ltd offers soil bioremediation, custom soil manufacturing, and wood recycling services. In line with VCC's commitment to sustainability, Eagle Disposal adheres to the Canadian government's ZERO WASTE

2040 strategic vision for Vancouver. Furthermore, VCC's Contractor's Guide stipulates that contractors are responsible for disposing of their generated waste in accordance with VCC guidelines, ensuring proper waste management practices.

Organics

Organic waste generated at VCC is processed by Anaconda Systems or Surrey Biofuels at their composting facilities where it is turned into high quality soil supplements that are utilized in agricultural production.

Metals

Metal waste generated at VCC is sent to ABC Recycling in the City of Burnaby where it is either sold to larger processors for recycling. This waste stream typically results from our different schools, renovation projects, and/or obsolete items.

Plastics

Hard plastics, styrofoam and polyethylene waste generated at VCC is sent to PMD Recycling Centre (Pacific Mobile Depots Ltd). PMD melts the styrofoam and polyethylene into bricks which are then sold to different processors for recycling. Hard plastics are also sold to different processors where they are recycled into pellets that can be re-molded into new products.

Batteries

Nickel, lithium, lead, and alkaline battery waste generated at VCC is collected by our Facilities, Security, Receiving, and Library departments, and sent to Call2Recycle for safe processing and recovery in accordance with industry and regulatory standards. In 2022, we were able to add one more collection box, bringing the total to six collection boxes spread across both campuses. From January 2022 to March 2023, VCC recycled over 40 kg of batteries.

Lights & Filters

Light bulbs, light tubes, air filters and drywall waste generated by VCC are managed by VCC's facilities manager service provider, Angus Consulting Management Limited (ACML).

Tonner

The toner cartridge generated at VCC is sent to Ricoh for proper recycling. A toner recycling box has been placed in the Receiving department of both campuses. Ricoh will receive any type of toner.

Medical Waste:

Manage all regulated substances such as medical waste, sharps, pharmaceuticals, and hazardous waste is managed using STERICYCLE, a recycle company.

Departmental Sustainability Initiatives

Facilities Management Spring Cleaning:

The Facilities Management department carries out an annual asset removal spring clean campaign to showcase the college's commitment to responsible waste management and sustainability. Through this event, the team ensures that outdated assets are disposed of in a cost-effective and environmentally friendly manner. Despite the challenges posed by the COVID-19 pandemic, the Facilities Team managed to get seven departments to participate in the 2022 campaign. This was an improvement from the previous year when six departments participated, and in 2019, a record-breaking sixteen departments took part. The spring clean campaign serves as an excellent example of how a dedicated effort can have a positive impact on sustainability and waste management within an organization.

Procurement Department, Surplus Assets

VCC has implemented an operational procedure for the disposal of surplus assets. Assets that require external disposal or have residual value are managed through Asset Investment Recovery (AIR) and BC Auction. This procedure involves assessing the condition of the assets, determining their potential for repurposing or recycling, and identifying any hazardous materials that need to be disposed of in compliance with regulations.

Procurement Department, Green Purchasing Guidelines

To encourage environmentally responsible purchasing decisions, VCC has developed guidelines for the procurement of eco-friendly products and services. These guidelines define environmentally responsible products as those that reduce waste, improve energy efficiency, limit toxic by-products, contain recycled content, or are reusable. Similarly, environmentally responsible services are defined as those that prioritize environmental responsibility in their delivery.

Information Technology (IT)

To encourage environmentally responsible purchasing decisions, VCC has developed guidelines for the procurement of eco-friendly products and services. These guidelines define environmentally responsible products as those that reduce waste, improve energy efficiency, limit toxic by-products, contain recycled content, or are reusable. Similarly, environmentally responsible services are defined as those that prioritize environmental responsibility in their delivery.

Safety Security & Risk Management

VCC's Safety, Security & Risk Management department organizes an annual student locker clean-out to clean and maintain lockers. As part of this initiative, they have established a procedure to repurpose any collected items that are still in reusable condition. This approach has proven highly effective in reusing professional items left behind by students, such as professional styling heads for hairdressers and knives from the culinary department.

Transportation Trades program

With industries shifting to adopt more sustainable, eco-friendly practices, education must undergo a similar transformation. For decades, VCC's Transportation Trades program has taught students how to service and repair vehicles and heavy-duty equipment. But if one thing is certain, it is that electric vehicle (EVs), and fuel cell electric vehicles (FCEVs) are the future of transportation as they reduce carbon emissions and air pollution. In 2022 the college acquired the Volvo ECR25 compact electric digger for student training. Students receive hands-on instruction in the operation, repair, and maintenance of FCEVs and EVs in addition to fossil fuel powered vehicles, as reported in the valuable, real-world training for the jobs of today and tomorrow.

Culinary and Commercial Services departments

These departments have successfully incorporated several sustainable practices and initiatives in the areas of water, electricity, and energy management. In terms of food services and sales, they actively prioritize the use of recyclable take-away packaging products. To enhance efficiency, timers have been installed on all hood vents in the kitchens. Furthermore, the dish room now follows water conservation practices and undergoes regular audits, supported by a new management system. To reduce paper usage, most instructional materials have been shifted online. Additionally, the gaskets on all refrigeration units are diligently maintained to conserve costs and electricity.

SUCCESS STORIES

The following pages provide highlights from some of our favourite success stories that occurred during 2022.

Executive Sign-Off:



Signature

Date: May 31, 2023

Ian Humphreys

VP Administration & International Development

VCC BEES

A CLIMATE ADAPTATION PROJECT

To enhance the survival rate and egg production of Mason and Leaf Cutter bees.

Did you know that VCC has had a program in place to support Bees since 2019!

THE PROGRAM

VCC has four bee hotels that can be found in the courtyard of the Broadway campus. During the Spring, Summer and Fall, these hotels provide bees with a safe and secure space to lay their eggs, and during the winter, the hotels filled with thousands of cocoons are moved to a secure location so they can hibernate safely. We also clean the hotels annually to prevent the spread of disease.

Without bees,
our food system
would be severely
impacted

THE CHALLENGES

Bees are sensitive to their changes within their local environments. Temperature fluctuations, predators, the spread of disease and the lack of food and water sources are all challenges that are affecting our bee populations. In many ways, climate change is increasing the frequency and intensity of these challenges, making it more difficult for our local bees to survive.

For example, in 2021 Vancouver experienced an unprecedented heat dome which led to a significant decline in bee populations. In addition to the immediate losses, the heatwave also caused all the nearby flowers to die, decreasing food sources and creating additional challenges.

The following year VCC took action to reduce the impacts of extreme heat on our bees. We ensured there was an abundance of flowers readily available, we implemented predator controls to improve survival chances, and we improved our irrigation systems, only this year the challenge was extreme heat, but rather a lack of heat. Cold & rainy summer days delayed the arrival of warm temperatures and created additional stress during the hatching process.

THE SOLUTIONS

Our current solutions to reduce the impacts of climate change on our local bee populations include:

- Relocating our current bee hotels to a more sheltered area that provides better protection against the elements.
- Monitoring outdoor temperatures and environments during the spring and moving bee hotels into a temperature controlled dark room if needed to extend hibernation until outdoor weather conditions provide optimal conditions for survival
- Conducting a Climate Risk Assessment and understanding adaptations that can be applied if needed (see pg 2).



The following table demonstrates the likelihood of an extreme weather event occurring in Spring, Summer and Fall, and will be used to ensure solutions for each are readily available.



Weather event	Spring	Summer	Fall	Adaptation
Rain	Expected, Normal weather condition	Likely	Expected, Normal weather condition	The existing bee hotel has a rain shelter. If rain occurs during the summer, a custom-made roof extension is required at the entrance of the hotel.
Extreme precipitation	Likely	Likely	Likely	Same adaptation action as rain.
Temperature increase	Almost Certain	Almost Certain	Almost Certain	Installation of a bee water station near their hotels. Plant more trees that will provide shade next to their hotels.
Heat dome	Likely	Likely	Possible	Same adaptation action as rain and temperature increase.
Low Temperature	Likely	Likely	Likely	Minimize frequency, length, and depth of inspections at all times to prevent heat loss.
Freezing temperatures	Possible	Unlikely	Possible	The rain wood shelter seems to be a great option for this weather event. However, more insulation will be required on all sides of the hotels, except the entrance.
Water shortage	Possible	Almost Certain	Possible	Same adapting action as the temperature increases and the heat dome.
Air Quality - Smoke	Possible	Almost Certain	Almost Certain	No adaptation known yet.
High Humidity	Almost Certain	Possible	Almost Certain	Unknown how much humidity can affect native bees.
Wind	Possible	Possible	Possible	Same adaptation action as freezing temperatures.
Flower availability (Low)	Likely	Almost Certain	Likely	Water sugar supply may provide energy to the bees while the flowers bloom. If possible, buy flowers. In the case of weather events that can interrupt the flowers' life cycle sown every four weeks to provide food availability until the winter.
Flower availability (High)	Likely	Possible	Likely	Perfect flower outcome for the bees.





VCC achieves five million dollars in energy cost avoidance

Vancouver Community College (VCC) is the oldest community college in British Columbia. With over 140 certificate and diploma programs, it is also the largest public community college, serving over 26,000 students each year at their Broadway and Downtown campuses.

As of February 2023, VCC has proudly exceeded five million dollars in energy cost avoidance in existing buildings since 2010. The actual cumulative energy savings of approximately 79,000,000 kWh, enough energy to power over 3,500 BC households for an entire year. VCC has set a goal of 60% reduction in greenhouse gas emissions by March 2025 compared to 2010 greenhouse gas emissions. Currently, VCC has already cut greenhouse gas emissions from both Broadway and Downtown campuses by nearly 56% since 2010.

Reducing carbon footprint through innovative practices

As part of their most recent Strategic Plan, VCC committed to seeking innovative and improved practices that reduce their carbon footprint. VCC has since undertaken significant projects to change the way energy is used on campuses. Major upgrades include LED lighting installation for exterior and parking lights at both campuses, adding occupancy sensors and digital controls at Downtown campus classrooms, and implementing energy saving measures from continuous optimization programs for heating and cooling systems at both campuses. These projects have, in part, helped keep VCC's campuses well below median in terms of energy intensity when compared with similar post-secondary institutions in BC.

VCC ENERGY SAVINGS

VCC's campuses are now well below median in terms of energy intensity when compared with similar post-secondary institutions in BC.



Creating a culture of energy conservation

VCC has also worked to integrate energy conservation and sustainability into the culture on campus. VCC is part of BC Hydro and FortisBC's Energy Wise Network program, which consists of both public and private sector organizations committed to saving energy through behaviour change and engagement.

Over the years, VCC's energy team has collaborated with IT staff to update computer settings to switch to energy saving modes while the user is away. VCC's "Take the Stairs" campaign encouraged people on campus to skip the elevator, thereby saving energy and staying active. In early 2018, VCC's Facilities Management Team launched an Energy Saving Ideas Competition inviting staff to submit their ideas for saving energy on their campuses. Since 2016, annual "Holiday Shutdown" campaigns have encouraged staff to turn off electrical equipment during the December break.

A greener future

Today, with the achievement of over five million dollars of energy cost avoidance and with the college approaching their energy reduction targets, VCC is proud to be making progress towards a greener future.



Bundle Up

Did you know heating comprises 42% of VCC's carbon footprint?!

If everyone turned their heat down by just 1°C, we could reduce our GHG emissions by 10%!

VCC's 'Bundle Up' campaign encourages staff to "heat your body before heating the room", to help avoid increasing indoor air temperatures above 21°C during the colder months. Unfortunately, this doesn't always work, as some workspaces are cooler than others due to the building's heating systems. Shared workspaces also present a challenge, as individuals often have different comfort levels which can make finding an ideal temperature for everyone a bit tricky!

In the past, this led some individuals to purchase personal space heaters, but traditional space heaters consume a huge amount of electricity and work against the college's energy and emission reduction targets.

For the past 8 years, the Facilities Team at VCC has been providing staff with energy-efficient space heaters that consume 86% less electricity. To date, they've provided nearly 180 units, which has reduced electricity consumption from 1440kWh to 1920kWh.*

These energy savings inspired the creation of the first Facilities Management Operational Standard FM-01 Space Heaters, which aim to maximize energy efficiency, minimize costs, reduce emissions, and increase the safety of building inhabitants.

BY SAVING 1440KWH OF ELECTRICITY EVERY YEAR, THE AMOUNT OF CARBON EMISSIONS AVOIDED FROM THIS INITIATIVE IS EQUIVALENT TO THE CO2 EMISSIONS PRODUCED FROM DRIVING OVER 4000KM!**

*Assuming space heaters are used for 8 hours per day, 120 days per year.
**USEPA Greenhouse Gas Equivalencies Calculator

Traditional space heaters are one of the highest energy consuming appliances around and are often left running throughout the entire day (...and sometimes overnight if they forget to get switched off)!



The Great Annual Holiday Shutdown



In 2023, VCC continued our annual tradition of getting staff to 'shut down' for the holidays. This campaign helps save energy and raise awareness about energy saving opportunities such as turning off monitors, unplugging small appliances and closing the blinds!

At the same time, the Facilities Team reduced heating and ventilation to all the buildings. These systems consume a large portion of energy and turning them off for the holidays has a significant impact on reducing VCC's carbon emissions!

THIS YEAR, WE HAD OVER 32 STAFF MEMBERS PARTICIPATE ACROSS 11 DIFFERENT DEPARTMENTS!



Spring Cleaning



yearly opportunity to properly dispose of assets that are no longer needed!



The VCC asset removal spring clean campaign demonstrates the college's commitment to responsible waste management and sustainability. By organizing this annual event, the team ensures that obsolete assets are disposed of in the most cost-effective and environmentally friendly-manner possible.

Thanks to the hard work and dedication of the Facilities Team, seven departments participated in the 2022 campaign, despite the challenges posed by the COVID-19 pandemic. In the previous year, six departments participated, and in 2019, a record-breaking 16 departments took part.

Overall, the spring clean campaign is a shining example of how a dedicated team can positively impact sustainability and waste management within an organization. Thanks to their efforts, VCC can continue to operate responsibly and environmentally conscious for years to come.

of participating departments in previous years

