

Developing  
Opportunities for  
Sustainable Operations



**2018/2019 UFV  
Report on  
Environmental  
Sustainability**

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## Acknowledgement

The University of the Fraser Valley (UFV) acknowledges that its campuses are located on unceded, traditional Stó:lō territory. The Stó:lō people have been present in their traditional territory - which includes modern New Westminster near the mouth of the Fraser River in the west, and extends up the Fraser River past Hope into the Fraser Canyon in the east - since time immemorial.

This territory has been rich in resources and the Stó:lō people have moved throughout the territory to fish, hunt, trap, and gather. In return for this abundance, the Stó:lō people were – and still are – the keepers of the lands and waters that sustain them. Today, the Stó:lō people still use many of these resources for economic and traditional purposes.

UFV is dedicated to learning from local Indigenous peoples, and within the context of environmental sustainability, there is much more to be learned.

Originating from Sxwóxwiyám (history of a distant past) and Sqwelqel (news, recent history): *“S’ólh Téméxw te íkw’élò. Xólhmet te mekw’ stám ít kwelát.* This is our land. We have to look after everything that belongs to us” (Stó:lō Research and Resource Management Centre, 2016).



# Letter of Commitment to Sustainability



*Letter of Commitment to Sustainability*  
*April 20, 2017*

Globally, there is an overwhelming consensus that climate change poses a serious threat to our environment today and into our future. The University of the Fraser Valley (UFV) intends to mitigate its negative environmental impact that contributes to climate change, and the degradation of our natural environment.

Each member of the UFV community has a role to play in this effort.

We must continue to encourage dialogue, develop ideas, and increase innovation aimed at the discovery of solutions to the environmental problems we face, and in some instances, the problems we continue to create.

UFV is committed to modelling a more sustainable campus and broadcasting leadership in environmental sustainability for our students, staff and faculty. UFV further engages-in and fosters sustainable development within its local communities. We are committed to harnessing creativity in the development of a healthier campus life which supports the well-being of all our students, staff and faculty. UFV does this by:

1. Prioritizing learning everywhere
2. Committing to flexibility and responsiveness in the face of rapidly changing challenges
3. Collaborating with various people and places
4. Developing local and global citizenship
5. Integrating experiential learning

UFV has made significant strides in recent years to reduce its operational impact on the environment, a few impactful initiatives include, but are not limited to: a dedication to green building design and construction, energy efficiency upgrades, monitoring of environmental metrics, reduction of CO<sub>2</sub> emissions, reduction of paper consumption, and the development of a more streamlined approach to waste management. UFV will continue to expand its scope and detail of work dedicated to improving sustainability on its campuses.

Sustainability at UFV is a critical and necessary focus for a more sustainable future; a future in which UFV's examples and teachings provide solutions to problems on its campuses and within its communities. Students, faculty and staff will over time develop a greater understanding of the complex challenges related to sustainability, and they will have the ability to take these learnings with them into the different communities their lives may take them to.

Together, we are creating that future. I am proud of UFV's commitment to sustainability, the strides UFV has taken, and the path ahead that we are developing. I look forward to supporting an increased dedication to sustainability and environmental stewardship and to work diligently with a variety of diverse stakeholders to solidify UFV's position as a green community leader.

A handwritten signature in blue ink, appearing to read "Mark Goudsblom".

Mark Goudsblom  
Director of Facilities and Project Management

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## Who We Are

The Centre for Sustainability coordinates SustainableUFV, the action group that carries out sustainability projects, programs, events, and initiatives at the University of the Fraser Valley (UFV) with a particular focus on the environment.

The Centre is a coordination of both applied and academic activities that collaborate to improve sustainability both at UFV and within the broader community. An advisory committee within the Centre meets multiple times a year to coordinate key stakeholders and attain guidance and support. Additionally, two times per year students, staff, and faculty are invited to a SustainableUFV luncheon to discuss current and future programs.

The applied portion of the Centre's responsibilities is headed by the Campus Planning and Facilities Management department, which employs a Student Sustainability Coordinator who is tasked with developing project ideas, increasing efficiencies, and decreasing waste throughout the university. This position is key in promoting sustainability awareness and behavioural changes, which in turn encourages more responsible operations in the Fraser Valley.

The academic portion of the Centre, which is coordinated by the Chair, Patrick Harrison, includes various departments within UFV including the Faculties of Science, Biology, and Geography. Guest lecturers are often brought in to address a wide range of topics surrounding environmental and social sustainability, from climate change to Indigenous issues.

## The Mission

SustainableUFV aims to guide UFV in how to conduct all university activities in manners that demonstrate leadership, accountability, and promotion of responsible stewardship regarding social, economic, and environmental issues. This will be achieved by:

1. Helping to define sustainability in the vision, values, and actions at UFV and integrate sustainability into the valued motives of UFV.
2. Offering recommendations to various departments with regards to sustainability, based on best practices.
3. Providing seminars and forums for discussion on sustainability across the institute, as well as information on future trends and options for the University to consider.
4. Collaborating with Facilities, Ancillary Services, Campus Planning, and key student groups on campus to promote sustainability initiatives.
5. Consolidating all departmental and organizational plans into a summary report to create awareness of how UFV is advancing sustainability.
6. Promoting involvement in and commitment to sustainability as core values of UFV.

## Overview

This report on sustainability is intended to be a transparent description of the environmental footprint created by the daily operations of UFV. It includes the work being done within the core campuses of Abbotsford, Chilliwack, and Aerospace (to the west of Abbotsford).

This report is intended to help educate the executive leadership group, staff, and students – both current and prospective – so that they can better understand the University’s operational impacts. It also allows UFV to reach out to the general public to increase awareness in regards to the work the University is undertaking to become a regional leader in sustainability.

## 2018/2019 Goals

The goals set in 2018/2019 were as follows:

- Improve waste management using the results of the Waste Audit as a guide to pinpoint key areas.
- Reduce energy consumption through behavioural campaigns.
- Increase the recognition and involvement of SustainableUFV on campus.

## Culture Change

Over the last 10 years, the University has grown significantly when compared to its beginnings as a regional college. Over the course of these years, UFV has increased instructional hours by 33%, created 22% more floor space, and welcomed 18% more full-time students. While the University itself has expanded, so too has its environmental footprint. In an effort to become a regional leader in environmental sustainability, the University created the Energy Manager position in 2016 to drive positive change and growth in the areas of energy efficiency, sustainability, and outreach. With a full-time position dedicated to sustainability, the University has a consistent figurehead to push forward the campaigns, initiatives, projects, and visions of the SustainableUFV team and the Facilities Department.

Efforts to change cultural and habitual behaviours within the institution are constant and ongoing. Throughout this document, the reader will find a number of ways in which UFV has gained traction in employing sustainable and environmentally responsible operations, which have been supported by students, employees, and individuals within executive leadership groups.

Cultural change is difficult to quantify, so in the absence of numbers, SustainableUFV and the Facilities Department welcome you to explore UFV’s campuses and provide us with your feedback. Where are we now? Where are we going? Where will you, the reader, take us?



## Communications

### Sign Up Form Accessibility

Having people join SustainableUFV was once an arduous process of hand-written email addresses and timid participants. Last year, however, an online form was created as a way to expedite the sign-up process and ensure consistency in data collection. This streamlined sign-up – the results of which include updates, articles, and volunteer opportunities – has resulted in a significant boost in interested individuals. SustainableUFV's community has grown to 281 members as of March 31, 2019.

The Centre for Sustainability website was completely overhauled in 2018 to provide a more functional and informative platform for all things sustainability.

### Social Media and Sustainability Communications

Social media is a powerful communication platform for SustainableUFV, as it is used to promote contests and participant engagement, provide insight into projects, events, and initiatives, and is useful for connecting with those that are interested in sustainability. It takes a lot of dedication, however, to use social media as a medium for maintaining and providing positive, interactive, and informational spaces. SustainableUFV looks to take social media to the next level with the help of a new Student Sustainability Coordinator who will provide a fresh perspective on communications in 2019/2020.

SustainableUFV currently uses three social media platforms:

- Facebook: [www.facebook.com/SustainableUFV](https://www.facebook.com/SustainableUFV) (212 likes)
- Instagram: [www.instagram.com/sustainableufv](https://www.instagram.com/sustainableufv) (420 followers)
- Twitter: [www.twitter.com/sustainableufv](https://www.twitter.com/sustainableufv) (279 followers)

Other information on topics related to campus sustainability can be found at:

- [www.ufv.ca/sustainability](http://www.ufv.ca/sustainability)
- [www.ufv.ca/energy](http://www.ufv.ca/energy)
- SustainableUFV blog: [www.blogs.ufv.ca/sustainability](http://www.blogs.ufv.ca/sustainability)
- Science Department blog: [www.blogs.ufv.ca/science](http://www.blogs.ufv.ca/science)
- The Cascade: [www.ufvcascade.ca](http://www.ufvcascade.ca)
- *UFV Now* online staff magazine
- *UFV Today* online staff newsletter

## Student Positions

### Student Sustainability Coordinator

Former Student Sustainability Coordinator (SSC), Travis Gingerich, graduated and began his quest into a Master's program at Simon Fraser University. Sharisse Birk, BBA student, stepped into the role of the SSC and brought her passion for zero-waste living to the forefront. Sharisse held the role through the academic year and made significant strides on landfill diversion rates, awareness of single-use plastics on campus, and drastically improved communications on behalf of SustainableUFV.



## Work Study Positions

### Resource Reduction and Recovery Analyst

Mani Dhillon developed a report outlining areas of waste and how the Campus Planning and Facilities Management department could address those issues. Key findings identified that the locations of large outdoor waste bins were inefficient and insufficient, and noted inefficiencies in paper use and recycling habits. A number of Mani's suggestions have been escalated or implemented.

### Sustainable Transportation Feasibility Coordinator

Mary Miller provided research and findings on the inefficiencies of moving students and staff between campuses, and what riders/occupants valued in their transportation choices. Through Mary's work, she identified that improving the Campus Connector service, introducing a car share/car pool system, working with BC Transit/Translink to better service UFV students (specifically Route 66: Fraser Valley Express), adding new transportation alternatives like Zipcar, E-bikes, and purchasing electric cars for facilities maintenance trips would address most concerns or barriers of single-occupant vehicle drivers at UFV.

## Events, Campaigns, Initiatives & Projects

### Waste Management

#### Waste Audit

On October 16, 2018 SustainableUFV and the Facilities Department conducted the fourth annual Waste Audit, "Garbage on the Green." Similar to 2017, this year's waste audit analyzed not only the gross amount of waste produced, but also the specific waste within each of the four waste streams (Organics, Landfill, Mixed Recycling, and Refundables). To begin the event, two days' worth of waste from Abbotsford's buildings A and B was collected and transported to an area on the green where the group of volunteers would record the weights of each waste stream.

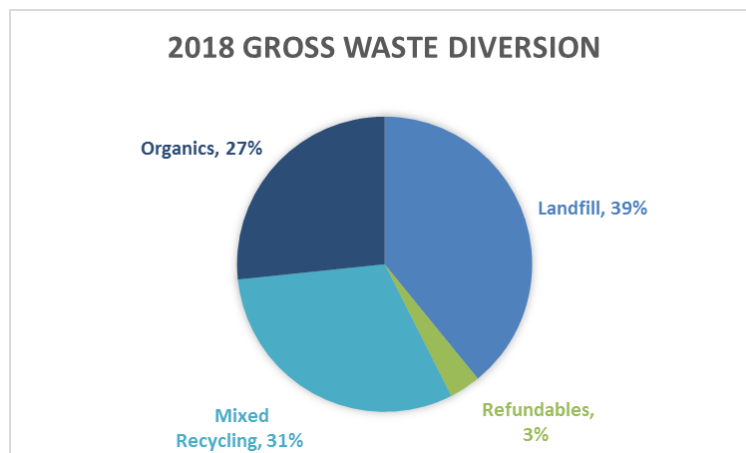


Figure 1. 2018 composition of waste

Figure 1 shows a diversion rate of 61%. In other words, 61% of the total waste generated at UFV is separated into more sustainable waste streams (Organics, Mixed Recycling, and Refundables) and is therefore not piling up in the landfill. Through waste audits, we are able to track the rate at which streams are being utilized and, by extension, formulate initiatives to change behaviours in regards to how people are discarding their waste. In future years we are hoping to see a significant rise in waste diverted from the landfill. The landfill diversion rate improved 10% over 2017's figure.

The charts below, Figures 2, 3, 4, & 5, break down the composition of each of the waste streams. Remember, sustainable waste stations are comprised of four waste streams and the charts below reveal how much waste is being correctly sorted. For example, Figure 2 reveals that in the Organics waste stream, 96.8% of the waste collected was indeed organic waste, while 1.5% of the overall waste belonged in the Landfill stream.

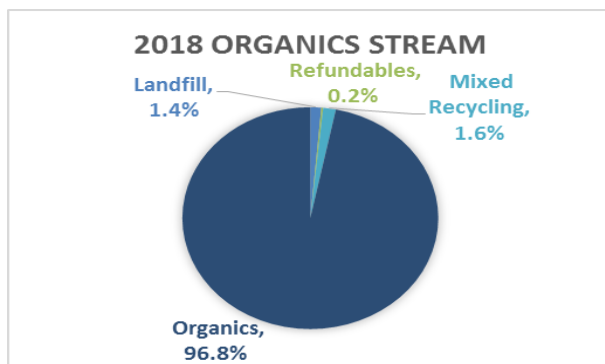


Figure 2. Composition of Organics waste stream

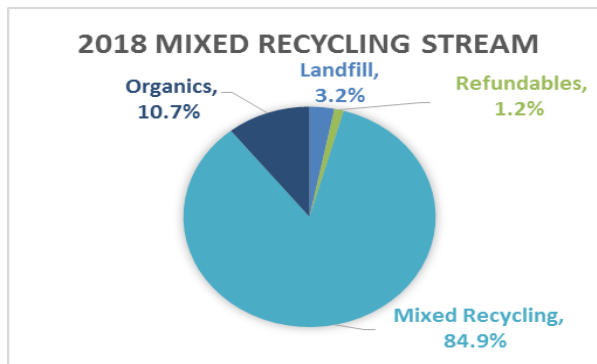


Figure 3. Composition of Mixed Recycling waste stream

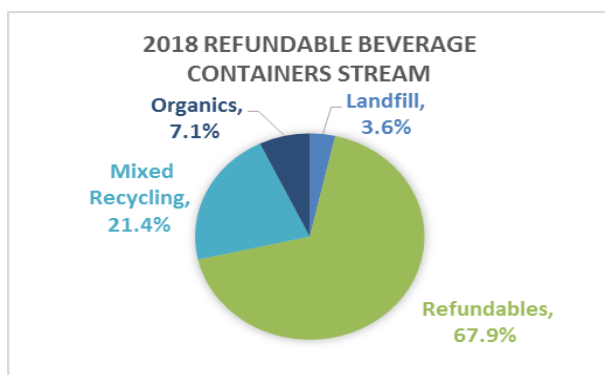


Figure 4. Composition of Refundables waste stream

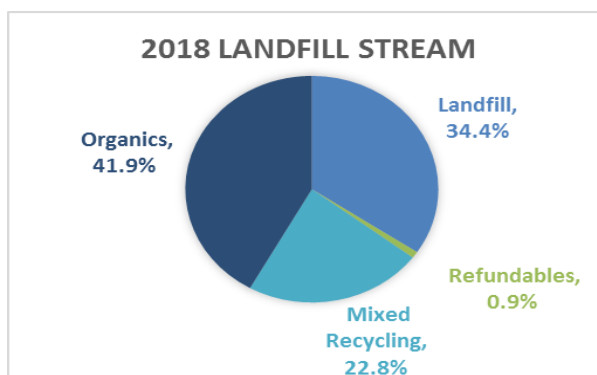


Figure 5. Composition of Landfill waste stream

To summarize, compliance with separating waste correctly into each of the sustainable streams (figures 2, 3, and 4) is acceptable, though there is room for improvement: 96.8%, 84.9%, and 67.9%. Within these streams we have identified ways to improve compliance and remove barriers for students and staff to conveniently be a part of the waste solution. The landfill stream, however, continues to be filled with items that could otherwise be placed in sustainable streams.

The full report can be read at:

[www.ufv.ca/sustainability/waste-management](http://www.ufv.ca/sustainability/waste-management)

### Washroom Paper Towel Disposal

The 2017 Waste Audit highlighted the need to improve paper towel disposal. It was found that paper towels accounted for nearly 30% of all waste headed to the landfill. Paper towel is a very low quality paper that is at the end of its recycling life and should be disposed of with organic materials.



In 2018 a simple operational shift in how paper towels were collected and disposed of was put into action: washroom bins would no longer be sent to the landfill, rather the liner was changed to a compostable bag, signage was installed, and paper towels were then sent to the composting facility. The 2018 Waste Audit found that paper towels accounted for only 7.8% of waste in the landfill stream by weight, a 22% improvement from the previous year.

### Green Events Standard

As an individual, making more environmentally responsible choices is often challenging for a number of reasons, including: personal barriers, unfamiliarity with new options, or being provided with too many familiar options. The developing Green Events Standard aims to facilitate the delivery of high-quality events that UFV students, employees, and guests have become accustomed to, while being more conscious of the events' environmental footprint. The Standard will provide event organizers with a checklist of sustainable actions and options, which the organizer will acknowledge by checking off the appropriate items from the list. Topics that will be included: décor, transportation, vegetarian/vegan options, digitizing, presence of waste disposal infrastructure, reduced reliance on single-use plastics, reduced amount of items destined for the landfill. Organizers will not only have a template to work from to help guide their event planning process, but will also have their events certified as *Sustainable*.

### New Student Orientations & Student Resource Fairs

In order to better connect with the student body on campus, SustainableUFV partnered with both Student Life and the Student Union Society. These partnerships led to involvement in student-centered events such as New Student Orientation (NSO), U-Join, and some Student Resource Fairs. SustainableUFV had three goals for these events:

1. To connect with students and engage in dialogue regarding responsible waste disposal.
2. To have students get involved with SustainableUFV by having them sign up for the email list and hear about future events.
3. To ensure no single-use water bottles were distributed.

After the transition to Sustainable Waste Stations was completed, the efforts of SustainableUFV turned to educating individuals on how to responsibly dispose of their waste within the four-bin system. At student events, like those listed above, all of the waste stations were removed from the area and one was placed in front of the SustainableUFV booth. This funneled all of the waste to the one remaining station, thereby enabling SustainableUFV members to engage with people who were throwing out their waste, encourage them to sort it, and provide them with detailed information on material composition and proper waste disposal of some of the most common waste items generated on campus.

The culture of sustainability on campus is driven by engaged and informed students. SustainableUFV will continue to harness students' skills, knowledge, and drive to further promote and pursue low-impact operations at UFV.

The May 2018 New Student Orientation events were water-bottle-free events with students and volunteers encouraged to bring their own personal re-useable water bottles.



### Mobile Waste Stations & Room Bookings

Transportable sustainable waste stations were developed to ensure groups and events could properly sort and dispose of their waste while in classrooms or areas on campus that do not have waste disposal units. Dana Hospitality, the on-campus caterer, now includes a link from their food ordering form in the Facilities work-request form to ensure that hosts could request sustainable waste stations to be delivered to their event. Similarly, the Room Bookings portal also prompts users to submit a work request to Facilities to have a waste station delivered when hosting large groups that generate waste.

### Staff Welcome Back BBQ Waste Reduction

One of the well-attended social events of the year, the Staff Welcome Back Barbeque, saw a reduced environmental footprint at the 2018 barbeque. The Faculty Staff Association (FSA) acknowledged SustainableUFV's request to provide alternatives to Styrofoam bowls and promptly made the change at their ever-popular ice-cream station.

The organizing committee forewent the rental of a dunk tank in 2018, which reduced a significant use of fresh water at the event.

### Clothing and Textile Recycling

The fashion industry is one of the largest polluters in the world. In 2016, SustainableUFV, in a partnership with the Fashion department, developed an informational campaign to spread awareness of the detrimental environmental and societal impacts of 'fast fashion'; a term used to describe the rapid and repeated cycle of purchasing and discarding clothing as seasonal fashion trends change. To further support this campaign, the Facilities department also partnered with Diabetes Canada to have two clothing donation bins located at UFV, one on the Abbotsford campus in parking lot 10 and one next to Canada Education Park Building A in Lot 6. Between April 2018 and January 2019, the Abbotsford bin collected 2190kg of clothing and the CEP bin amassed 2981kg.

Due to on-going safety concerns, the bins have been removed from UFV campuses until suitable alternatives are available.

### Energy Wise Network

SustainableUFV joined the Energy Wise Network in 2016. The Energy Wise Network is a collaborative network made up of Advanced Education, Government, Schools (K-12), Hospitality, Municipalities, Property Management, and Retail sectors. This network supplanted the Workplace Conservation Awareness program and was initiated by BC Hydro and Fortis BC. It provides campaign tool kits, professional coaching hours, networking opportunities, and training webinars, as well as hosts two summits per year, which collectively provides the framework for many of the energy-efficiency-focused initiatives throughout 2018/19.

### Energy Efficient Housing:

In the effort to increase awareness of sustainability on campus, who better to involve than those that live on campus? The Energy Efficient Housing campaign was designed to start to connect students to the campus and to have them participate in the increasing sustainability culture that is being developed. In coordination with the Housing Operations staff and management, there was an immediate enthusiasm and commitment to participate in the campaign. They provided valuable insight not only into how to communicate with the residence, but also the particular behaviours that have been observed. The Energy Wise Network was instrumental in developing a framework with which to approach the



residence staff, thereby providing them with an idea of what success looks like and options for how to get there. The staff enabled and set in motion the *action* portion of the project to take place in 2019/20 and beyond.

### Energy & Sustainability Contest

The primary focus of the contest was to encourage energy-efficient behaviour change at UFV, and provide incentives to improve sustainable living at home too! The contest outlined 9 attainable actions that most people could participate in with a slight modification or two to their lifestyle, and a little nudge from the potential to win prizes.

During the two-week contest, participants could submit pictures via email, or post photos of their energy-efficient and sustainable actions to social media and tag @sustainableUFV to ensure that their post was visible.

The grand prize was handed out to the participant that engaged in the highest number of actions. Two runner-up prizes were also provided. The remaining prizes were distributed through a random draw.

### Sweater Week

The annual Sweater Week event is conducted in winter in order to promote warm workplace attire. In 2019 this event ran from the 11 to the 15 of February, and built on the successes from the 2016 and 2017 events. On an operational level, it was decided that this year the temperatures would be lowered by 2°C (to a minimum of 19.5°C instead of the previous year's minimum of 21.5°C). These reductions would be realized across all buildings – academic spaces and offices, except laboratories – at both of the main campuses in Abbotsford and Chilliwack. This decrease would be in full effect for the entire week, rather than administering a progressive reduction of temperatures, as was done in 2016. This new action reduced GHG emissions more significantly than by using the previous strategy, as well as created more talking points, which afforded more opportunities for participation.

The main source of engagement was a social media contest, in which students, staff, and faculty were encouraged to either post Sweater Week selfies on various platforms (Facebook, Twitter, and/or Instagram) or email selfies to the Student Sustainability Coordinator. Furthermore, volunteers formed the “Sustainable Selfie Squad,” which involved setting up a daily station, an info and photo booth, in the cafeteria during the coffee and lunch time rushes to further drive engagement and get people talking about greenhouse gas emissions and sustainable practices as a whole.

Sweater Week was effectively cancelled this year due to campus closures and a lack of resources for managing the building automation system with other competing priorities related to the historic cold, snow removal, and campus closures.



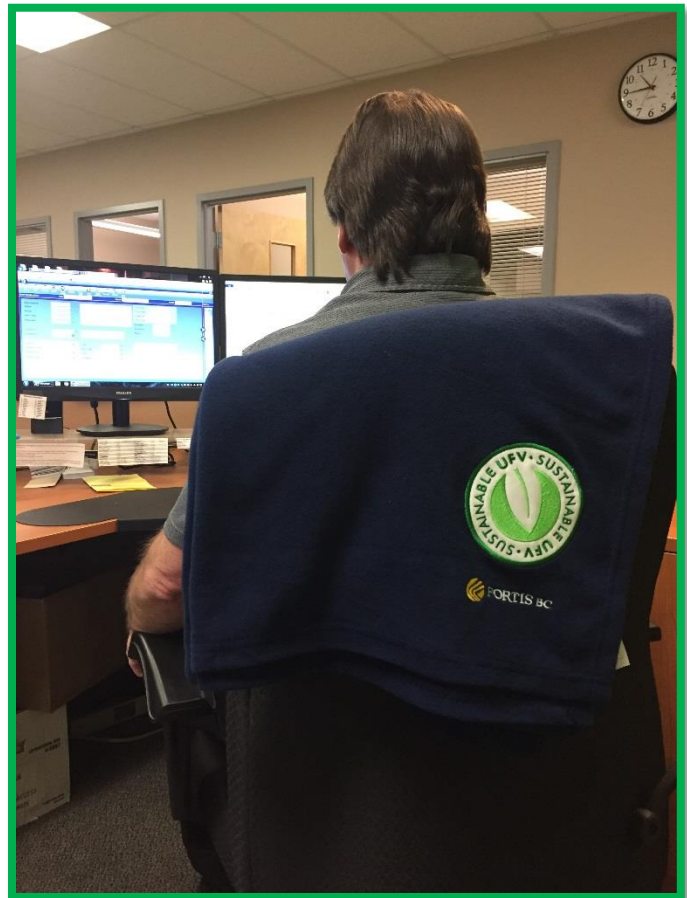


### Get Your Fleece On 3.0:

FortisBC supported UFV's Get Your Fleece On! by delivering 100 fleece blankets to the UFV in February, 2019 and sponsored the embroidery of the SustainableUFV emblem onto each blanket. The logo is a constant visual reminder of why we have blankets to distribute and communicates to users that we are striving to reduce our environmental impacts and be responsible in our energy use.

Similarly to the previous year, fleece blankets were provided to employees who were feeling consistently chilly in their workspace; however, this was only after they had provided evidence that they had made efforts to have the HVAC system in their area assessed for any deficiencies that may have been causing the cooler temperatures. Additionally, a standard was set that those who were requesting blankets must also have been consistently ensuring windows and doors were closed in their areas, and that they had been dressed appropriately for the season or weather.

Participants of the program were given insight on the adverse effects of space heaters and asked to sign a pledge that stated they would either use such devices less frequently or would remove them entirely from campus.



As energy efficiency, carbon emissions reduction, and sustainability are increasingly promoted and supported at UFV, students, staff, and faculty are much more understanding of the pressing nature of these issues and welcome any sustainable solutions – in this case, passive personal temperature regulation.

The feedback that was provided by uncomfortable staff members clearly indicated appreciation at having their concerns heard and at having actions taken to improve their comfort at work; the latter being stated even more enthusiastically.

### GreenSPEAK Lecture Series

The GreenSPEAK series is an opportunity for students and employees to connect with faculty and community stakeholders to learn more about environmental concerns within our region. 2018/2019 lectures included the following:

November 15, 2018 – Tim Cooper – Climate Change & Global Warming

December 5, 2018 – Dr. Lucy Lee – Cellular Agriculture

February – Dieter Geesing – The Effects of Climate Change on Farming in the Lower Mainland

April 4, 2019 – John Vissers – The Hydrogen Train from Surrey to Chilliwack

Patrick Harrison, Biology Professor, has championed the GreenSPEAK lecture series for a number of years with plans to increase the frequency in which they are delivered.

## Goats

Utilizing goats in place of gas-powered tools can play a role in de-carbonizing operations at UFV. Over the last four years, Renee Prasad, Assistant Professor in the Agriculture department, has been championing the use of goats to remove invasive plant species. To achieve this, goats are herded into an area wherein the targeted species is growing and the goats are then allowed to graze freely. Goats are powerful and resilient eaters that make quick work of thick stems, chutes, and thorns; however, Renee mentioned that some plant species, such as blackberries, can be stubborn and may require the goats for a couple of seasons before the plant is permanently removed. Another animal-friendly aspect of Renee's vision is the replacement of the blackberry bushes on campus with pollinating plants that are bee-friendly.



## Water Fill Station Installations

An additional four water fill stations were installed in 2018/2019. Abbotsford B building had two installations, one on the third floor and one on the ground floor. A building on the second level, and G building on the ground level also received installations. Students and employees immediately provided the Campus Planning and Facilities Management Department and SustainableUFV with their positive feedback for the convenient locations of the new installations.

UFV has 26 water fill stations to ensure students and staff can access convenient, high-quality, cost-free, and plastic-free water.

## 2016 Teamwork Award

The Green Team, as SustainableUFV was formerly known, won the UFV Teamwork award in 2016. This award came with plaques for key stakeholders, as well as a grant of \$3,000 for future initiatives. This grant was utilized in 2018/2019 with projects as follows:

### Bike Repair Stations

Two bike repair stations were purchased for installation at Abbotsford Building E (north side), and CEP Building A (south side). To ensure the durability of the stations, students in the UFV welding program created custom stands to which the tools were affixed.

### Trike Sharing Program

The framework for a Trike Sharing Program was developed in 2018. It is expected that the program will be available to students and staff in 2019.

### Student Project: Stationary Charging Station

The 2016 Teamwork Award will in-part support student experiential learning by financing a stationary charging station project. This project aims to deliver a station whereby students and staff can pedal a modified stationary bike that will charge small personal devices (mobile phones, tablets) when pedalled. The project is expected to be completed in 2019/2020.

## Food Insecurity Committee

The UFV Food Insecurity Committee is a task oriented representation of the UFV community. The group was formed in November, 2018 and exists to;

- Identify issues of food insecurity within the UFV community as they exist and interact with the larger Fraser Valley community and beyond,
- Measure the depth, breadth, and scope of the issues identified, and
- Facilitate programmatic response within the UFV context to address the issues identified.

Community and pollinator gardens were discussed at great length with plans to develop such projects in 2019/2020.

## School of Business

### Sustainability Case Competition (SCC)

The SCC was a one-day competition for all UFV students wherein teams of three or four got to spend the day solving a real problem that is currently being faced by the Fraser Valley. In the morning, each team was presented with this problem and they had three hours to analyze it, provide recommendations, and develop an implementation plan. The analysis needed to be based on the concepts of sustainability (economic, environmental, and social) as well as tied to the UN Sustainable Development Goals and Strategies outlined in the City of Abbotsford's Official Community Plan\*



Students from many different programs across UFV participated in this competition. Having interdisciplinary teams as participants added considerable value to the presentations, as different ideas and viewpoints could be expressed on a common problem.

The winning team analyzed the supplied problem statement with equal consideration for the three concepts of sustainability. This approach provided a balanced assessment that effectively considered both the UN Sustainability Development Goals and the specific strategies outlined in the City of Abbotsford's Official Community Plan. Team Birch, the winning team, analyzed ways in which UFV could pave a path to becoming a zero-waste organization. The key suggestions were to imbed a culture of sustainability within the organization and make it socially appealing to engage in an environmentally responsible lifestyle. Commercially, UFV, it was suggested, should strive to reduce impacts in their commercial outlets, in particular the bookstore and the cafeteria. Operationally, UFV should make strides to reduce waste from paper towel sources and construction projects.

\* [https://www.abbotsford.ca/business\\_and\\_development/community\\_plans\\_and\\_studies/official\\_community\\_plan.htm](https://www.abbotsford.ca/business_and_development/community_plans_and_studies/official_community_plan.htm)

## Baker House

Baker House, UFV's only housing facility, houses up to 200 students at any time. Baker House staff and a supporting cast of Housing Assistants (HAs) have been busy reducing the environmental impact of the housing facility. In particular, at the end of semester when students are moving out, Baker House staff have continued to evolve their waste reduction and recycling processes. This involves encouraging students to donate gently used items and to drop-off useful items to the re-use store at Baker House for students to buy and utilize. Baker House staff coordinates with the Facilities

department to ensure that the garbage and recycling bins are serviced frequently enough to offset the volume of discarded items from those moving out.

Throughout the Fall and Winter semesters, students are encouraged to allocate their waste into the provided waste stations in communal areas, and to be conscious of energy consumption within their units.

In 2018/2019, Baker House HAs are incorporating sustainability into their welcome week events. Disguised as a fun and friendly competition, a team-building exercise includes sorting waste into the appropriate bins. Increasing familiarity and knowledge of waste allocation practices at the beginning of the semester is important in setting the precedent early for sustainable living as a resident at Baker House.

## Energy, Carbon Emissions, and Sustainability Metrics

### Energy Management

In addition to the energy saving behavioural campaigns listed in the Events & Campaigns section of this report, there were also numerous mechanical and systematic upgrades aimed at increasing energy efficiency and comfort for building occupants, as follows:

- Aerospace Campus: Hangar LED Upgrade
- Abbotsford Campus Building B: Carbon Capture Pilot
- Abbotsford Campus Building C: Boiler Upgrade
- Abbotsford Campus Building D: Chiller Upgrade
- Abbotsford Campus Building D: Classroom LED Upgrade
- Abbotsford Campus Building FH: President's Residence LED Upgrade
- Abbotsford Campus Building G: Efficient Boiler Purchase
- Abbotsford Campus Building H: Water, Energy Upgrades & Study
- Abbotsford Campus Building H: Corridor LED Upgrades
- Abbotsford Campus Building E: Solar Wall Study
- Abbotsford Campus: Interruptible Rate Change
- CEP Campus Building H: Greenhouse Thermal Curtain Study
- CEP Campus Building T: Interior Lighting LED Upgrade
- CEP Campus: Parking Lot Lighting LED Upgrade
- Abbotsford and CEP Campuses: EndoTherm installations
- FortisBC Energy Specialist Funding
- Fleece Blanket Program
- DDC Programming Adjustments

Energy management continues to play a pivotal role within UFV, in part due to an increased reliance on technology (computers, scanners/printers, laptops, tablets, projectors, etc.) in classrooms and offices, which in turn increases the demand for electricity. With an increased utilization of energy-requiring technology coupled with an abnormally cold winter, there has been an amplified onus on the Facilities department to optimize major energy consuming systems such as boilers, chillers, and the HVAC system that brings conditioned air to campus.

As UFV increases both floor space – with new construction, renovations, and acquisitions of buildings – and programming hours, lowering energy consumption is a significant challenge. It is important to track both the overall energy use and the amount of energy being used per square meter of floor space. A useful tool is the Building Energy Utilization Index (BEPI) shown in Figure 7. BEPIs help determine the degree of efficiency under which buildings are operating annually, regardless of variations in gross floor space.

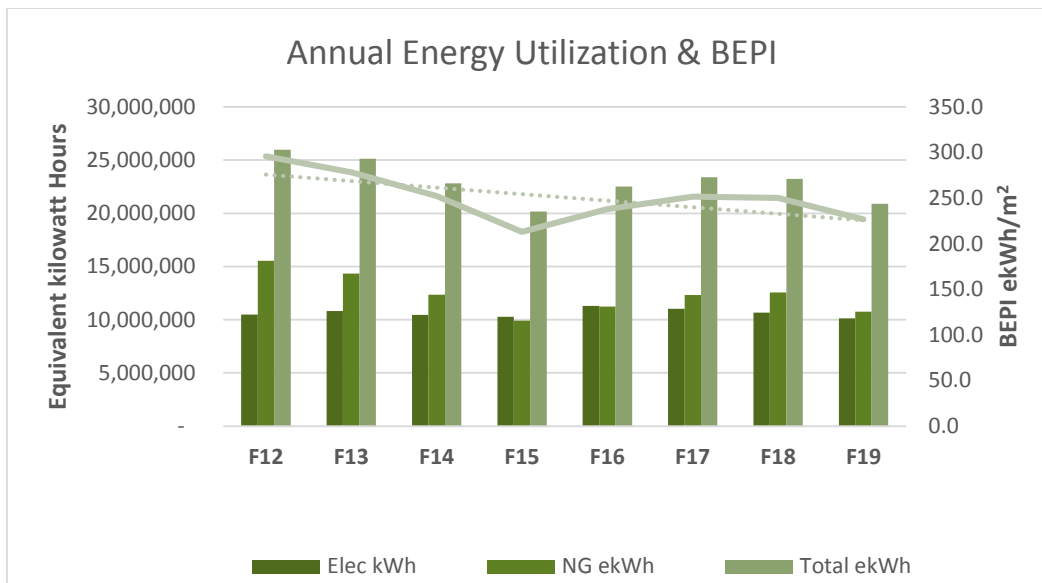


Figure 6. Annual energy utilization per m² at UFV

The Sustainable Energy Management (SEMP) Report provides full details and analyses of energy management at UFV. This report can be read at [www.ufv.ca/energy/energy-reports/](http://www.ufv.ca/energy/energy-reports/).

## Carbon Emissions

Carbon emissions at UFV have been significantly reduced since detailed tracking began in 2009. In fact, there has been a 33% overall reduction between 2009 and 2018, and a further 74% reduction in tonnes of carbon per square meter (tCO<sub>2</sub>e/m²) within the building portfolio during that same time frame. The dramatic reduction in gross carbon emissions in 2018 compared to 2017 is due to three key factors: A warmer winter, improved energy management, and FortisBC's force majeure at the Abbotsford campus restricting natural gas use periodically throughout the winter months.

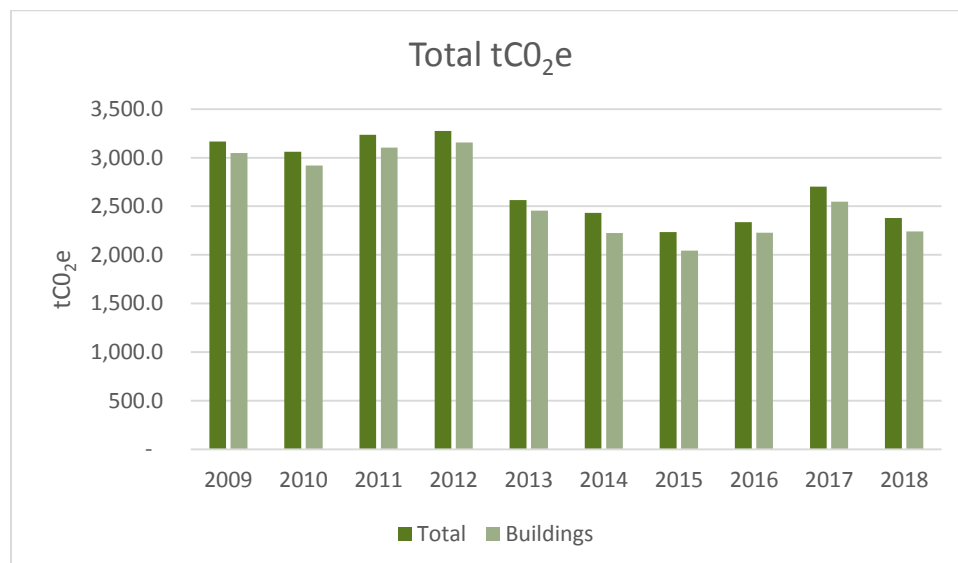


Figure 7. Carbon emissions per calendar year

The Carbon Neutral Action Report (CNAR) provides full details and analysis of carbon emissions management at UFV and can be read at [www.ufv.ca/energy/energy-reports/](http://www.ufv.ca/energy/energy-reports/).



## Electric Vehicle (EV) Charging Stations

UFV has installed five Level 2 stations capable of charging up to 10 vehicles simultaneously. Additionally, a Level 3 DC Fast Charging Station was installed in Lot 6 on the Abbotsford campus. The energy for the Level 2 stations is available to all students, staff, and faculty free of charge for the first four hours. Level 2 stations provide vehicles with a full charge in 4-8 hours. The first stations were installed in 2012/2013 at the Aerospace Campus (1), Abbotsford Campus (2), and CEP Campus (1). 2018/2019 marked an update to those existing stations, with the addition of two new installations. There has been significant year-over-year increases in charging sessions, - or, the number of times a vehicle has plugged in to charge - energy provided for cost-free charging, and emissions reductions compared to traditional combustion engine vehicles.

As of March 31, 2019 UFV is capable of simultaneously charging 11 vehicles.

The data from 2018/2019 supports the commentary from EV drivers that the stations are frequently utilized during the day and that the campuses could use more charging infrastructures.

	# of Stations	Sessions	Energy (kWh)	Community GHG Savings (t)
2013/2014	4	51	227.5	0.096
2014/2015	4	459	3,150	1.325
2015/2016	4	971	9,830	4.13
2016/2017	3	1,357	13,928	5.85
2017/2018	3	1,396	13,076	5.49
2018/2019	6	3,608	33,241	13.961

Figure 8. Electric vehicle charging frequency and impact

## Water

Water consumption throughout the 24 core buildings and associated grounds of UFV has remained relatively consistent per m<sup>2</sup> over the course of the past four years. Data collected from the City of Abbotsford and City of Chilliwack in 2018/2019 show a 3.8% decline in overall water consumption at UFV. The Abbotsford Campus led the reduction in water consumption by using 734,416L compared to the previous year.

UFV has shown a commitment to reducing the amount of plastic bottles that end up in the landfill by facilitating convenient water bottle filling stations throughout the campuses. 21 bottle fill stations can be found in nine buildings throughout the Abbotsford and CEP campuses.

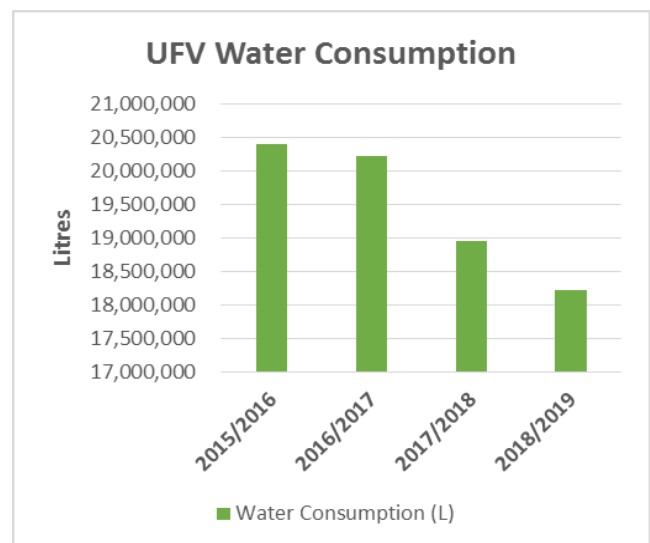


Figure 9. Annual water consumption totals

## Grounds Crew Hand-Tool Transition to Low-Carbon

Christine Jones, Grounds Supervisor, championed the transition from traditional gasoline-powered tools to electric battery pack tools. A leaf blower and two hedge trimmers are operational on campus and are no longer a significant source of noise or atmospheric pollution. A full transition off of gas powered tools is planned.

## Potential Projects/Initiatives for 2019/2020

### Waste Management

Campus Planning & Facilities Management and SustainableUFV will look for new ways to increase the landfill diversion rate, and reduce the overall volume of solid waste produced at UFV. Of particular importance is the reduction in volume, and reliance on single-use beverage containers.

### Sustainable Events

A group of SustainableUFV champions will continue to develop green event guidelines and incentives, so that even more events are increasingly sustainable. Green events will be primarily focussed on reducing single-use plastics; finding alternatives to plastics; reducing packaging waste; encouraging convenient and effective responsible waste disposal; introducing more reusable wares; utilizing environmentally friendly decorations; providing plant-based menus; and promoting digital conferencing.

### Get Your Fleece On 4.0

The success of Get Your Fleece On in 2016/2017 was abundantly clear, with the demand for fleece blankets exceeding the available inventory, as was stated on page 10. Over the previous two years, there have been fewer requests for blankets; however, there was still a high volume of complaints from staff that their spaces were uncomfortably cold. Continued education on how space heaters adversely affect the HVAC system will ideally increase passive personal temperature regulation in 2019/2020. Those who are feel chillier than the majority can rely on the Energy Manager to look for ways to get them easier access to blankets and increase participation in the program.

### Sweater Week 2019/2020

A popular framework for Sweater Week was developed by the Student Sustainability Coordinator in 2016. The new Student Sustainability Coordinators will continue to build upon that success and increase participation in the event, while ensuring that the foundational education components are being broadcasted campus-wide to increase interest and active participation in carbon-reducing behaviours on campus and in the community.

### Gone With the Wind

The Energy Manager is committed to increasing comfort of office staff, and reducing energy loss by educating employees on how open windows can adversely affect their thermal comfort and that of those around them. Working with SecuriGuard, the program aims to deliver efficient and effective heating and cooling while providing a safe and secure workplace.

## Final Words on Environmental Sustainability

Environmental sustainability at UFV involves reducing negative impacts on the environment in a fiscally responsible manner. UFV is committed to increasing the prevalence of action pertaining to environmental sustainability, both regionally and globally, and recognizes the impact it can functionally have as an educational facility. To encourage

environmental consciousness, SustainableUFV seeks to consistently provide opportunities for different groups to connect, collaborate, and improve their learning and working spaces in sustainable ways. Sustainability at UFV, for many, facilitates an environmentally-responsible consciousness. The hope is that these values will be transported with many students and staff as they move on to their next endeavors outside of UFV.

UFV also recognizes that achieving sustainable operations within such a diverse institution can be challenging. In terms of recognizing progress, it can be difficult to determine when or at what point efforts have paid off. Furthermore, a challenge also lies in deciding what constitutes a successful campaign. Further success lies in UFV's ability to increase energy efficiency and provide numerous opportunities for students and employees to participate in sustainability projects, initiatives, and events. For instance, unique and innovative alternatives were used to mitigate the use of traditional, high-pollution tools and systems, which resulted in reduced carbon emissions. These alternatives are not only beneficial to the environment, but they also form a connection between sustainability at UFV and the agricultural roots of the region's economy. Despite the challenges, there is a growing number of SustainableUFV members, higher quality interactions, and more poignant goals within projects.

As the culture of environmental responsibility continues to grow, so too will the impacts of sustainability projects on campus and within the local communities. This consciousness will continue to develop until the culture of environmental accountability is a global one.

With your help, UFV in 2019/2020 will continue to strive to reduce waste and carbon emissions, lower negative environmental impacts, and increase energy efficiency. We thank you for your participation and support in this endeavor.

