



University
of Victoria

2019 FINAL REPORT

SUSTAINABILITY ACTION PLAN: CAMPUS OPERATIONS 2014 - 2019

December 2019

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EXECUTIVE SUMMARY

In 2014, the *Sustainability Action Plan: Campus Operations 2014 – 2019* was prepared to guide the University of Victoria (UVic) in efforts toward greater sustainability in its operations. The plan built on the achievements of the 2009 – 2014 Action Plan and was developed with input from students, staff and faculty, as well as community members. It outlined a set of actions for UVic and members of the campus community to undertake to advance sustainability in campus operations. This report reviews the status of the plan's goals and indicates the progress that has been made.

The university has made significant progress in several areas. Addressing climate change through natural gas and emissions reductions projects remains a key objective. The university has reduced greenhouse gas (GHG) emissions by 25% below the 2010 baseline. Natural gas consumption intensity on campus has also decreased by 22% below 2010 levels. This goal was reached through operational improvements and investment in new technology, such as the installation of a geothermal heat exchange system in the Centre for Athletics, Recreation and Special Abilities (CARSA), which opened in 2015.

The university has also increased awareness and engagement on sustainability across campus. For example, the Campus Sustainability Fund empowers members of the university community to create stakeholder-driven projects that further the Sustainability Action Plan and advance leadership in sustainability. The fund contributed to 23 projects, including a waste reduction video series pertaining to recycling sorting stations. This form of engagement contributed to achieving a waste diversion rate of 76%. These are just a few examples of how the university has made headway across all areas of the Action Plan.

The plan included 32 goals in eleven sections. This report indicates that eighteen goals have been achieved, nine are in progress, two require re-examination, and three goals have not been achieved. This report identifies nine goals as "in progress," which reflects the interest among campus sustainability stakeholders to continue work toward these goals. Goals not achieved are generally a result of resource limitation and will be carried forward to the interim plan.

A new Sustainability Action Plan, guided by the university's Strategic Framework, will extend our commitment to campus development and operations to meet the highest standards of sustainability. It is expected that more significant engagement will be required with the campus community and that a renewed Action Plan will be completed in 2021. Through engagement with operational departments, the Office of Campus Planning and Sustainability has developed a 2020-2021 interim Sustainability Action Plan that builds on and carries the momentum of this plan to guide the university during this period of plan renewal.

INTRODUCTION





This report outlines progress that has been made toward the goals in the *Sustainability Action Plan: Campus Operations 2014-2019*. The plan is the university's second five-year sustainability plan and has built on the success of the 2009-2014 plan and the adoption of the university's Sustainability Policy (GV0800).

In 2013, the Office of Campus Planning and Sustainability (OCPS) engaged with the campus community to create the 2014-2019 Action Plan. The plan included 32 goals in eleven sections. This report indicates that eighteen goals have been achieved, nine are in progress, two require re-examination, and three goals have not been achieved. The report's format for each section includes a summary of the progress toward each goal, and a goal indicator. Table 1 provides a description of the goal indicators used to identify the progress achieved toward the 32 goals outlined in the Action Plan.

A new Sustainability Action Plan, guided by the university's Strategic Framework, will extend our commitment to campus development and operations to meet the highest standards of sustainability. It is expected that more significant engagement will be required with the campus community and that a renewed Action Plan will be completed in 2021. Through engagement with operational departments, the Office of Campus Planning and Sustainability has developed a 2020-2021 interim Sustainability Action Plan that builds on and carries the momentum of this plan to guide the university during this period of plan renewal.

In addition to the progress made toward goals in the Action Plan, the university achieved the Association for the Advancement of Sustainability in Higher Education's (AASHE) Gold rating in Sustainability, Tracking, Assessment and Rating System (STARS) in 2014. In 2017, the university renewed and improved upon its STARS Gold rating. STARS is an independent, standardized framework developed to measure the sustainability performance in the operations, teaching, research, planning, administration, engagement and investments of post-secondary institutions.

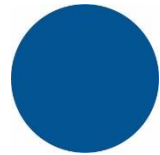
TABLE 1: GOAL INDICATORS AND DESCRIPTIONS

COMPLETED		Goal has been achieved.
IN PROGRESS		Work has been undertaken; however, the goal has not yet been achieved.
REQUIRES RE-EXAMINATION		Work has been undertaken and it has been determined that the goal requires re-examination.
NOT COMPLETED		Goal has not been achieved.

1.0 PLANNING, COORDINATION AND ADMINISTRATION

Mission: *To create a campus culture that provides for sustainability to be integrated into operational, administrative and planning processes, and advanced through collaboration and coordinated decision-making across the university.*

Goal 1.1: Integrate sustainability criteria into annual service and strategic plans for operational and service departments and review on a regular basis throughout the year.



Each service unit within the Vice-President Finance and Operations (VPFO) portfolio now integrates sustainability criteria into the goals and actions within annual service plans. While this goal was completed, the resulting integration of sustainability initiatives across the portfolio was limited.

Goal 1.2: Provide regular reports to the campus community on sustainability initiatives and Action Plan progress.



The Carbon Neutral Action Report (CNAR) communicates the university's annual greenhouse gas emissions profile and progress toward new mitigation and reduction measures. The CNAR is a key reporting mechanism in tracking the university's progress towards addressing climate change.

The 2016 Progress Report on the *Sustainability Action Plan Campus Operations: 2014-2019* provided a thorough review of the progress made toward the Action Plan goals. This report represents the completion of this goal and the close out of the 2014-2019 Action Plan.

Goal 1.3: Enhance responsible investment policies to reflect industry best practices.



The University of Victoria Foundation Board has adopted investment industry best practices. These include:

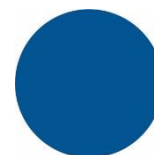
- Establishing an investment belief that responsible investing—taking environmental, social and governance (ESG) factors into consideration—can have a positive effect on long-term financial performance and investment returns.
- Completing the United Nations-supported Principles for Responsible Investing (PRI) reporting.
- Reviewing the landscape of asset owner best practices in implementing responsible investing.
- Reviewing the responsible investment practices of its investment managers and their commitments to ESG.
- Requiring the Foundation's external investment managers to report proxy-voting activities and to report quarterly on ESG integration.
- Updating the Foundation's annual responsible investing report including:
 - Key ESG disclosures made from each external investment manager.
 - Providing portfolio holdings annually on the University Secretary's website.
 - Providing responsible investing transparency reports annually on the university's website.

The Board continues to review its responsible investment practices annually and in 2019 is exploring other opportunities with respect to ESG.

2.0 ENGAGEMENT

Mission: *To provide opportunities for students, staff, faculty and community members to learn, share knowledge and collaborate through coordinated programs of engagement, events, training, education and celebration.*

Goal 2.1: Develop and implement programs and activities that assist the campus community in contributing to the achievement of sustainability goals.



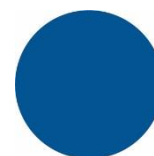
In February 2016, the Campus Sustainability Fund (\$100,000) was created to empower university community members to develop stakeholder-driven projects that further the goals of the Action Plan and advance leadership in sustainability, whether providing a direct financial payback or not.

The fund provides one-time funding allocations to projects that focus on energy or water savings, sustainability awareness or learning opportunities. To date, 24 projects have received funding of approximately \$72,000.

In the fall of 2018, Facilities Management funded an invasive species management program with the Greater Victoria Green Team (see Goal 3.5.2). During the 2018/2019 academic year, the Greater Victoria Green Team hosted seven invasive species removal events and engaged with 265 volunteers, of which 54% were UVic students.

The biannual Love-a-Mug week, a waste reduction campaign targeting the reduction of paper cup use on campus, engaged with 867 students and achieved the targeted 5% reduction in paper cup sales.

Goal 2.2: Work with campus partners to increase the awareness of local and global sustainability issues within the campus population and the surrounding community.



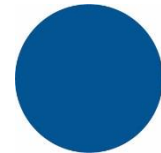
The OCPS continues to work in partnership with Communications + Marketing and other departments to raise awareness of sustainability issues across campus. The following projects have been completed:

- A communications plan was developed in 2015 to inform students, staff, faculty and the general public of sustainability news and information using social media and the OCPS website.
- A *Sustainability in Action at UVic* video was developed in 2016. The video profiled various campus partners through engaging web content.
- A waste reduction video series was developed in 2017 to educate the campus community about appropriately sorting recyclable material at waste diversion stations.
- Coordination of social media messaging through the UVic enterprise Hootsuite and Instagram stories, which typically reach 2,500 people and approximately 150-200 link clicks per campaign. This collaboration has extended the office's reach from hundreds/post to more than 1000/post.
- Continuous updating of the OCPS website including an upgrade to the current web template and content prioritization.

Since 2014, the OCPS has worked with the Division of Student Affairs to further integrate sustainability into new student orientation. The OCPS has contributed several sustainability-themed events for New Student Orientation Week, an event that engages hundreds of students. Events include:

- The President's BBQ waste reduction program. The event attracts nearly 3,000 students and achieves a waste diversion rate of approximately 90%.
- The Project Serve Day ivy pull in conjunction with the Greater Victoria Green Team.
- The Residence Move-in day volunteer waste reduction team engages with 500 new students and parents.
- Travel Choices and other sustainability promotions during numerous events, which engaged almost 3,000 students, staff and faculty between September 2018 and July 2019.
- The office has also continued to work with various other partners including but not limited to:
 - UVic Human Resources to highlight campus sustainability efforts for new employees at orientation sessions.
 - Engineers Without Borders to develop and communicate the Fair Trade Campus Designation. The Fair Trade Campus Week engaged with 500 staff, faculty and students over a series of events to educate and inform the campus community of Fair Trade products.
 - The Community Cabbage, the Campus Community Garden and other student groups, to promote sustainable food and food security on campus.
 - Food Services to promote the 2019 Break Up With Your Paper Cup day. The group engaged with over 300 students, staff and faculty. In addition, the event was featured in Oak Bay News, extending the reach of the event to the neighbouring community.

Goal 2.3: Create new programming for the Sustainability Action Team program with offices, labs and residences.



Student Residence Green Team: Launched in 2015, the Res Green Team provides support for students living in UVic residence by engaging and connecting students across campus in a variety of sustainability-related volunteer activities.

Green Labs program: Launched in early 2014, the Green Labs program encourages lab users to shut the fume hood sashes, and toggle the hoods to “setback” mode when they leave for the day to reduce the demand on building ventilation and heating systems.

Staff Sustainability Network: The Network brings together more than 40 staff leaders who are passionate about sustainability from over 20 different departments on campus. The Network's campaigns have included:

- 21 Days to Green Your Routine challenge during the summer of 2016.
- Shake and Fold paper towel initiative.
- Lights-off power saving initiative.
- 2019 Residence Dump-and-Run and Move-in Thrift Store, which diverted an estimated two tonnes of material from the landfill.

Goal 2.4: Engage the local community in the university's sustainability initiatives and develop programs to work collaboratively on issues of mutual interest and benefit.



The university contributes to a number of sustainability-related community engagement events including:

- Bike-to-Work Week, to which the university provides a minimum sponsorship of \$8,000 each year to support events on campus and in the community to mobilize new participants in commuter cycling and those already commuting by bicycle.
- The Capital Regional District's (CRD) 2016 Ready, Set, Solve! program, which connects interdisciplinary teams of students from post-secondary institutions with local government, non-profit organizations and institutions to address climate-related challenges and provide real solutions for the region.
- The university also hosts Ideafest, the annual week-long festival of research, art and innovation, at which 50 sustainability-related events have been held since 2014, engaging thousands of community members.
- The OCPS participates in the Community Association Liaison Committee, which engages community members on campus planning projects such as the Campus Cycling Plan and the student housing and dining project. The Committee is also engaged on operational programs and practices to advance sustainability on campus.
- The OCPS staff participate as committee members on the Saanich Active Transportation Advisory Committee, which advises Council and recommends policies on cycling and pedestrian mobility, and road, sidewalk and trail designs.

3.0 OPERATIONS, FACILITIES AND SERVICES

3.1 Buildings

Mission: To construct, renovate, maintain and operate campus buildings to green building standards and practices.

Goal 3.1.1: Ensure all new buildings and major renovation projects achieve the standard of LEED Gold or equivalent certification.



All new academic and administrative buildings constructed since 2007 have been designed to the LEED Gold building standard. Since 2014 the following LEED Gold designed (or certified) buildings have been constructed on campus:

- Centre for Athletics, Recreation and Special Abilities (Certified - 2014).
- Facilities Management Service Building (Certified - 2018).
- District Energy Plant (Certification in Progress - 2019).

The new student housing and dining project will commence construction in 2020, and both buildings are targeting LEED V4.1 Gold and Passive House Certification. This project will be one of the largest Passive House projects in North America and demonstrates global leadership in sustainability.

While the above outlines success in the delivery of new buildings, major renovations have proved more challenging. The Action Plan defines a “major renovation” as a renovation that exceeds 75% of the original building cost. This was tested during the Continuing Studies Building renovation and addition. The initial cost of the building in 2004 was \$13.8 million, and the renovation cost of the 2016 addition was \$13.25 million. Although the construction of the addition utilized green building techniques and materials, the project was not LEED certified because of technical and budgetary challenges in redesigning and retrofitting the existing building’s envelope, mechanical and ventilation systems. Addressing the sustainability and energy performance of existing buildings is recognized as a significant challenge. Future goals will need to more effectively address this challenge to align the university’s operational goals with new provincial emissions reduction legislation.

Other major building renovation/addition projects in the design phase are the Fraser Building expansion and an addition to the Engineering Computer Science Building.

Goal 3.1.2: Utilize sustainable green building practices for all renovation and building construction projects that are below the threshold for mandatory LEED Gold or equivalent certification.



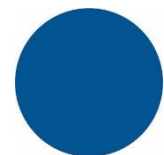
In 2015, Facilities Management renewed its Facilities and Infrastructure Technical Standards (FITS). FITS provides the design and construction guidelines for all UVic construction projects. This is a living document that enables updates and feedback from Facilities staff, UVic partners, consultants, contractors and suppliers.

Moving forward, greater focus and clarity is needed in GHG emissions reductions and developing priorities for energy efficiency improvements in renovations to existing buildings. To this end, Facilities Management has developed a:

- Civil Engineering expansion sustainability approach document; and,
- Capital Projects sustainability approach document.

These documents demonstrate further progress toward the goal above; however additional efforts are needed to develop policies and guiding principles for energy efficiency and green building practices in renovation and construction projects that do not meet the LEED threshold.

Goal 3.1.3: Utilize sustainable operational and building maintenance practices in all campus buildings and facilities.



The Customer Service and Program Integration unit within the Facilities Management department formalized its commitment to green cleaning through the preparation of a Green Cleaning Policy. The policy was developed based on the Green Seal CS-42 Environmental Standard for Cleaning Services and the LEED Canada for Existing Buildings: Operations and Maintenance Rating System 2009. The policy includes:

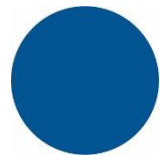
- Purchasing of sustainable cleaning equipment and products.
- Applying Standard Operating Procedures for cleaning techniques, routines and frequencies.
- Consideration for building occupants with sensitivities.
- Promotion and improvement of hand hygiene.
- Protocols for the storage, safe handling and spill response for cleaning chemicals.
- Staff training for the proper disposal and recycling of cleaning chemicals, and packaging.
- Process for program evaluation and improvement.

The Maintenance and Operation unit in the Facilities Management department maintains and improves the efficiency of building systems. These systems include the:

- Energy Management program, which provides data monitoring, analysis and continual re-commissioning of buildings.
- Modernization of campus lighting systems.
- Facilities shop that respond to thermal comfort requests.
- Grounds shop that manages the building landscapes according to Integrated Pest Management principles.
- Building water conservation program.

Building maintenance at UVic also includes the ongoing expansion of waste reduction and recycling services, and building air quality management through collaborations with other UVic units.

Goal 3.1.4: Develop systems that provide for the reduction, measurement and reporting of construction and demolition waste.



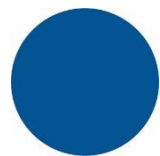
Construction waste is tracked for all LEED-certified building projects, which typically achieve a waste diversion rate greater than 90%.

Facilities and Infrastructure Technical Standards (FITS) were updated in 2018 to include a requirement for submitting waste tracking information for all construction projects over \$200,000. Project officers are now required to collect copies of weight bills for the disposal of construction waste, including approximations of recycled content provided by transfer stations. This information is used to better understand the types and amount of waste generated by these projects and to examine waste diversion opportunities in smaller contracts.

3.2 Computing

Mission: *To deliver computing services and infrastructure that meets the teaching, research and administrative needs of the campus community, while advancing the sustainability goals of responsible procurement, energy management and waste reduction.*

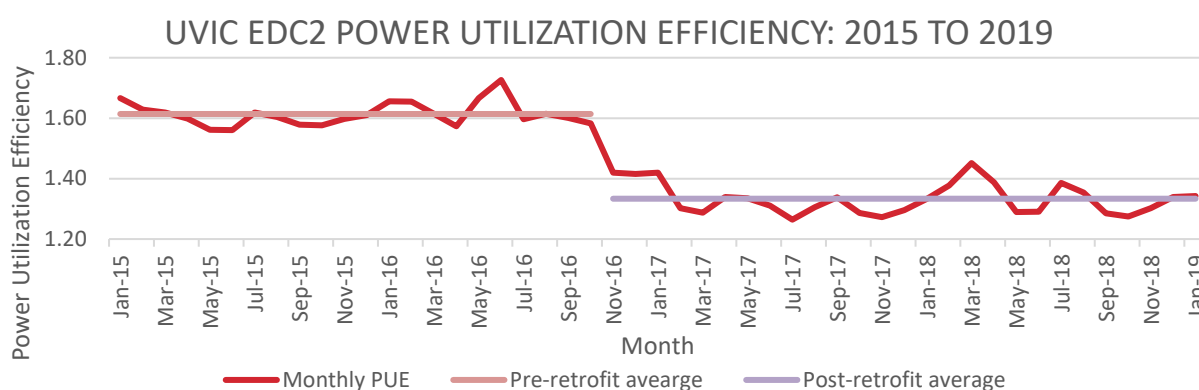
Goal 3.2.1: Maximize the energy efficiency of information systems infrastructure across campus.



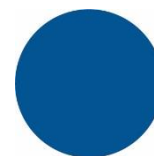
Power Usage Effectiveness (PUE) is the industry standard for measuring data centre efficiency. PUE is calculated by dividing the total energy use of the Enterprise Data Centre (EDC2) facility (including lights, the battery backup and the energy used to control the climate in the facility) by the energy use of the servers and other computing devices used in the EDC2. As a result, PUE is a ratio that will not be less than one. For reference, the global average is approximately 1.67.

Figure 1 illustrates a decrease in PUE as a result of funding from the Canada Foundation for Innovation (CFI). This funding allowed the university to upgrade and expand research computing while increasing the EDC2 efficiency. The goal of the project was to achieve a PUE of between 1.2 and 1.4. The project upgrades resulted in a decreased PUE from approximately 1.60 to 1.33.

FIGURE 1: DATA CENTRE POWER UTILIZATION EFFICIENCY

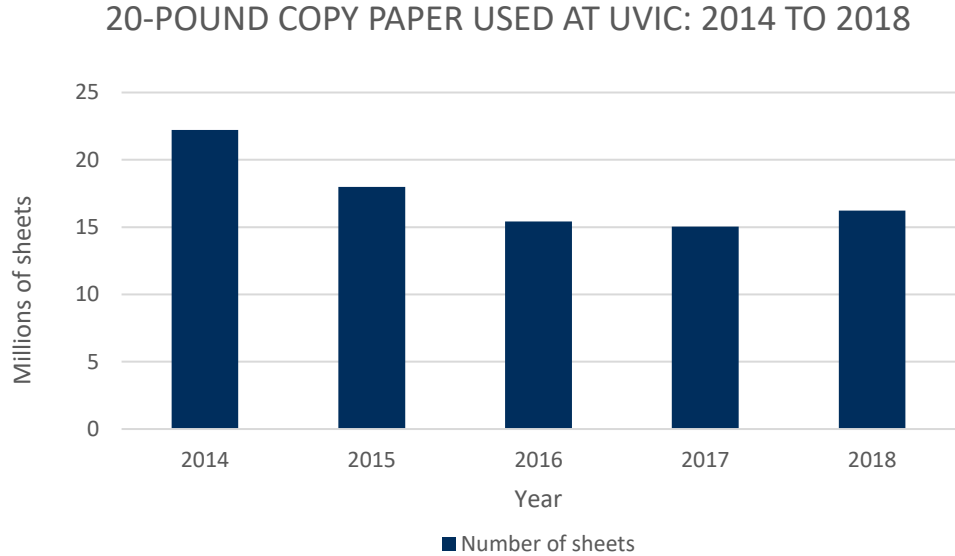


Goal 3.2.2: Develop systems and procedures that help reduce paper use in computer labs, offices and administrative procedures across the university.



The majority of the paper used on campus is 20-pound copy paper. Since 2014 the university has decreased the use of 20-pound copy paper by 27%. Despite the increase in use from 2017 to 2018, the overall downward trend since 2011 is strongly indicative of paper use trends overall. No specific action was taken to reduce paper use during the tenure of the Action Plan. The decrease in paper use is likely a result of the increase in use of digital and web-based material.

FIGURE 2: 20-POUND PAPER USE



Goal 3.2.3: Ensure that green manufacturing standards and energy saving criteria are applied to all computing services purchasing decisions (EPEAT Gold and Energy Star rated).



The university purchases the majority of its computers from Microserve Inc. and Apple Inc. Between May and July 2019, 358 and 125 Microserve and Apple computers were purchased, respectively. Neither company provided sufficient data on EPEAT Gold certifications for these purchases.

Since EPEAT no longer provides a sufficient tracking metric, the establishment of a new system to evaluate the sustainability of purchased electronics is recommended.

3.3 Dining services

Mission: *To be an institutional model of sustainability, leading the way through innovative local purchasing initiatives and operational sustainable practices that minimize our carbon footprint and provide high quality, ethically sourced, nutritious and diverse food options that sustain the health and well-being of our community.*

Goal 3.3.1: Benchmark and increase the number of local food producers and suppliers and maintain an active preference for Island-produced products.



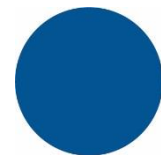
An inventory and benchmark of local producers was not created. Since 2014, Food Services has undergone substantial changes, including the opening of Mystic Market, operational changes and the upcoming transition to a modular dining facility in place of the Cadboro Commons dining facility. With

these operational changes, benchmarking and maintaining the active preference for Island local products was challenging.

In 2018 University Food Services, with support from the Campus Sustainability Fund, conducted a Good Food Challenge Audit, which rates food purchased on six pillars: community based, socially just, ecologically sound, humane, sustainable seafood, and food sovereignty. The audit of 2017 purchases found that 12% of Mystic Market's and only 6% of Cadboro Commons' products qualified under one of the pillars of the Good Food Challenge. North American post-secondary institutions typically rate less than 10%.

Moving forward, it is recommended that the university explore revised goals that incorporate standardized rating systems recognized by AASHE, such as the Meal Exchange's Good Food Calculator.

Goal 3.3.2: Enhance waste reduction and diversion practices in campus food outlets.



UVic Food Services maintains an exemplary waste diversion rate. At 84%, the Food Services diversion rate translates into approximately 260 tonnes of waste diverted from landfills annually. These figures are largely the result of the Food Services operations taking responsibility for sorting the waste by removing waste bins from dining rooms and paying staff to sort the post-consumer waste.

Initiatives such as Love-A-Mug (promoting reusable cup use) and Break up With Your Paper Cup (eliminating the sale of to-go coffee cups for a four-hour period in BiblioCafé), and the elimination of plastic straw sales, are examples of programs that aim to reduce the amount of waste, compost and recycling produced by consumers.

Areas of focus for future waste reduction and diversion practices include to-go coffee cups, single-use plastics, consumer education, inventory tracking and to-go containers. It is recommended that this goal be carried forward in the next Action Plan.

3.4 Energy

Mission: *To maintain a campus that fosters an energy conservation culture that utilizes innovative technologies and promotes occupant engagement to continually improve building performance, as well as providing a comfortable learning and work environment.*

Goal 3.4.1: Achieve a total institutional greenhouse gas emissions reduction of 30% by 2019, relative to 2010 as the baseline year.

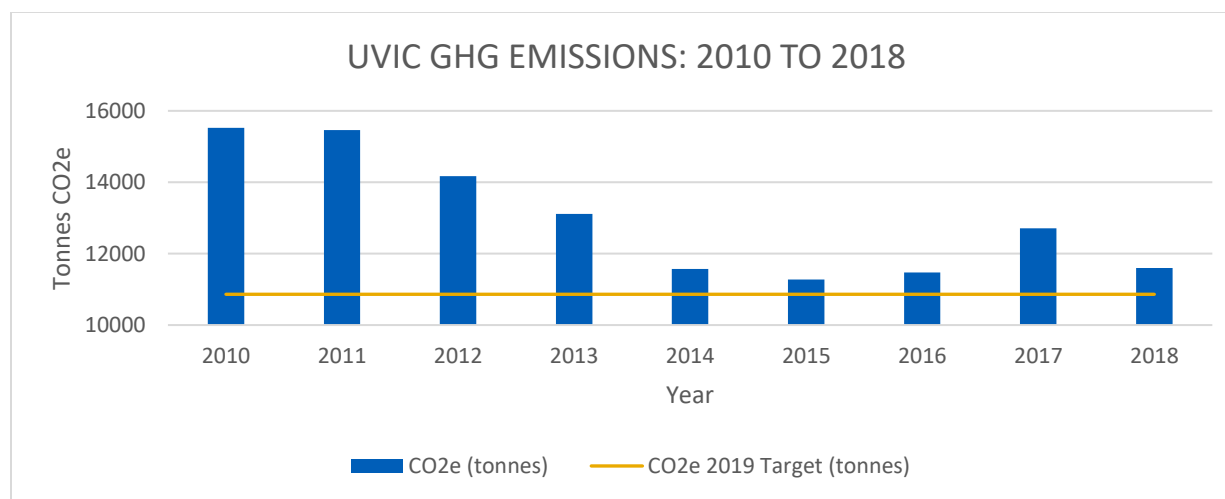


The university tracks emissions resulting from buildings, fleet vehicles and office paper. In 2018, the university's greenhouse gas (GHG) emissions had decreased by 25% below the 2010 baseline. Emissions are largely dependent on heating demand during the winter months. In 2017 and 2018, the university experienced higher emissions due to colder winter temperatures than in the previous three years. The university is not expected to meet the goal of 30% emissions reduction by 2019.

Moving forward, the university should continue to invest in energy efficiency studies and renovations to improve building performance. Moreover, new green building goals should explore high performance building envelopes, passive design strategies and the extent to which electrification of building systems is feasible.

Emissions reductions strategies, including the completion of the District Energy Plant and the continuation of campus wide building re-commissioning, will carry forward. Facilities Management will also be moving forward with developing an Energy Master Plan for the campus in 2020.

FIGURE 3: GHG EMISSIONS



Goal 3.4.2: Reduce campus electricity consumption intensity by 8% by 2019, relative to 2010 as the baseline year.

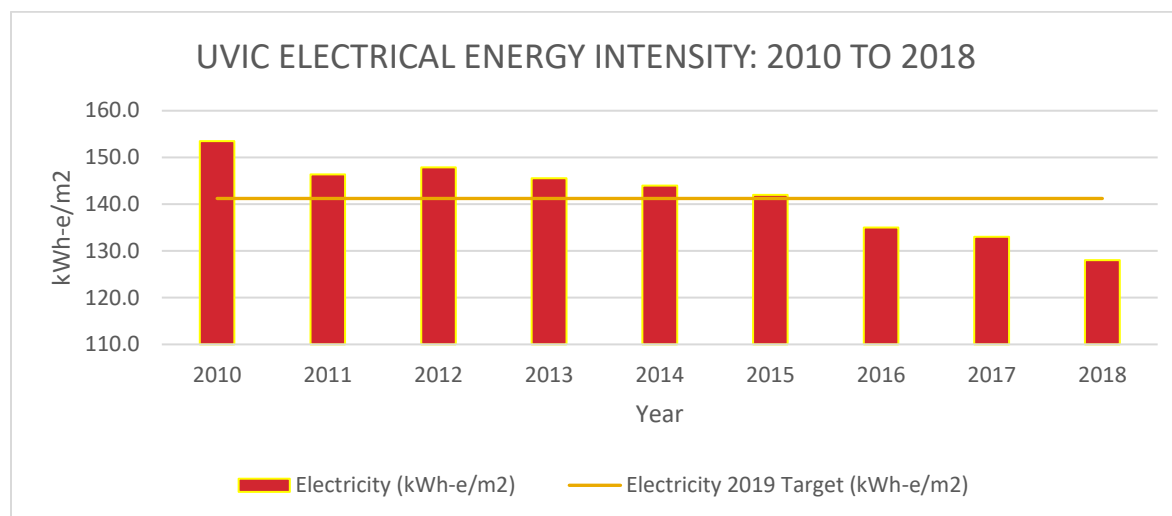


Electrical energy intensity is measured as the number of kilowatt hours consumed per year to power a square meter of campus. Figure 4 demonstrates the university's downward trend in hydro electric energy intensity.

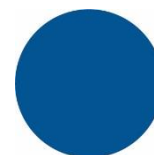
The electricity consumption intensity reported in Figure 4 is not weather corrected, as only 12% of the university's building portfolio utilizes electricity for space heating. Seasonal weather variation, therefore, has a marginal effect on UVic's overall electricity consumption.

The Action Plan goal was achieved in 2015 when the campus electricity consumption intensity was reduced by 9%, relative to 2010. This downward trend continued with the university achieving a 13% reduction by 2018.

FIGURE 4: ELECTRICAL ENERGY INTENSITY

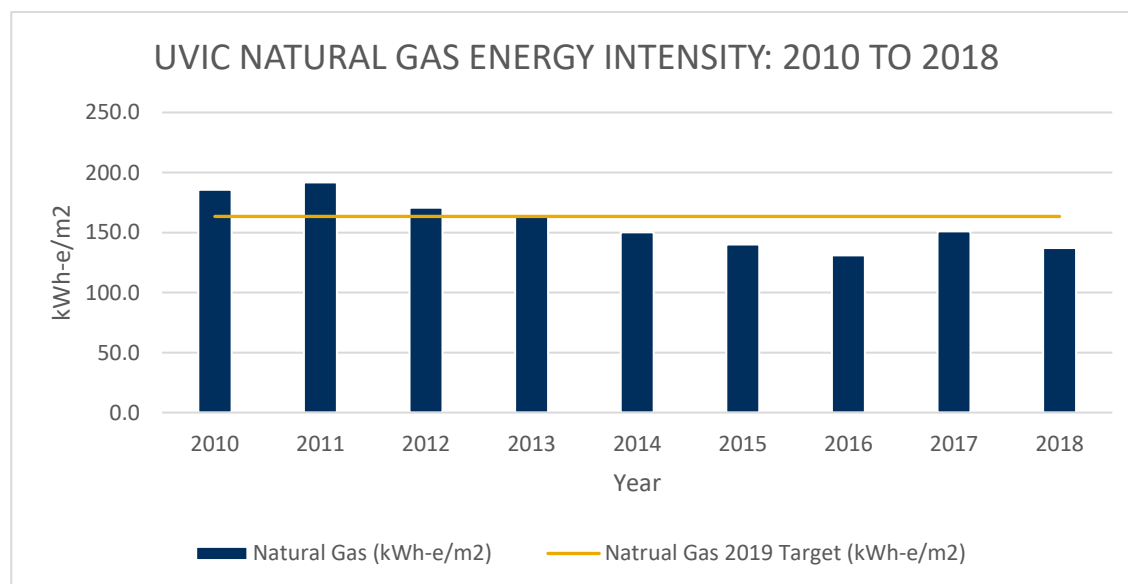


Goal 3.4.3: Reduce campus natural gas consumption intensity by 12% by 2019, relative to 2010 as the baseline year.



Natural gas consumption intensity is measured as the number of kilowatt hours consumed per year to power a square meter of building on campus. Figure 5 demonstrates the university's decreasing natural gas energy intensity since 2011. The data is not weather corrected, though the figures are affected by weather as natural gas is the main source of heating on campus. In 2014, the campus natural gas consumption intensity was reduced by 19%, relative to 2010. This downward trend continued up to 2018, when the natural gas intensity reached 22% below 2010 levels. With the completion of the new District Energy Plant in 2019, it is expected that natural gas consumption will continue to decrease as new more efficient gas boilers are brought online.

FIGURE 5: NATURAL GAS ENERGY INTENSITY



Goal 3.4.4: Implement renewable energy demonstration projects on campus that help reduce greenhouse gas emissions and overall energy use.



The Centre for Athletics, Recreation and Special Abilities (CASRA) opened in May 2015. The facility is LEED Gold certified and includes a geothermal heat exchange system. Geothermal heat exchange systems are considered as hybrid renewable energy by using the ground as a thermal battery, transferring heat from the building in the summer and extracting heat from the ground in the winter. This system has lowered the university's GHG emissions by reducing the fossil fuel heating demand of the facility.

Solar renewable energy installations were deemed a lower priority relative to other energy demand reduction projects, which result in a better return on investment. The pursuit of on-campus renewable energy installations will need to be re-examined through the next plan development cycle.

3.5 Grounds

Mission: *To create and maintain a campus landscape that minimizes environmental impacts, enhances biodiversity and maintains aesthetic values.*

Goal 3.5.1: Reduce the quantity and improve the water quality of stormwater on campus that enters the local drainage and stream networks.



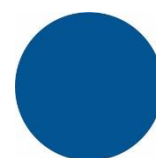
The university continued to participate in the Bowker Creek Initiative and provide support for the *Bowker Creek Blueprint: a 100-year Action Plan*. Bowker Creek is the largest watershed on campus.

In 2017, Kerr Wood Leidel Consulting Engineers were retained to identify key watershed issues and provide recommendations for actions to prevent further degradation of Hobbs Creek, the second largest watershed on campus encompassing Mystic Vale, South Woods and the Cedar Hill Corner property. The report identified that improvements in the management of upstream stormwater flows from Oak Bay neighbourhoods are required prior to the university investing in further restoration efforts.

New buildings on campus continue to follow LEED requirements for stormwater volume control. CARSA, the Facilities Management Services Building and the District Energy Plant all include stormwater management features in their design.

Work has been initiated to update the 2004 Integrated Stormwater Management Plan, which is the main mechanism by which the university will affect stormwater quality and quantity across all UVic watersheds. However, the plan is not expected to be updated until 2021.

Goal 3.5.2: Protect and manage the ecological diversity of the natural areas on campus and enhance the use of native species in campus landscape management.



The Campus Plan was renewed in 2016 and identifies large areas of the campus as protected areas, as

well as expanded natural areas that form a green ring around the campus. New buildings on campus also continue to focus on the use of native species in their landscape design.

The Restoration of Natural Systems program has created the following documents, which focus on UVic's protected areas including Bowker Creek, Finnerty Gardens, South Woods, Cunningham Woods and Mystic Vale:

- Invasive Species Management Plan: identifies priority areas for action, including sensitive ecosystems on campus where eradication of invasive species is advisable, and management practices for other areas where invasive species will be managed.
- Sustaining Sensitive Ecosystems on Campus: individual management plans for the priority sensitive ecosystems on campus.

In the fall of 2018, Facilities Management funded an invasive species management pilot program. The program engaged the Greater Victoria Green Team, a non-profit organization that provides volunteer coordination and restoration guidance. In total, 681 volunteer hours were dedicated to restoring Mystic Vale, and 1850m² of area was cleared of 60m³ of invasive plant species between September 2018 and May 2019. This program will be expanded and extended through to 2021. Restoration projects have been augmented by native plantings. Continued restoration of the campus will facilitate regrowth of native species from existing seed banks in the soil.

While this goal is considered complete, there are many more opportunities to enhance and restore natural areas on campus and it is recommended that this goal be carried forward to a renewed Action Plan.

Goal 3.5.3: Develop a formalized Integrated Pest Management Plan as part of the overall grounds management system.



The university strictly controls the use of pesticides on its grounds and reports the use of chemicals as per the *BC Integrated Pest Management Act*. The university developed a draft Pest Management Plan in 2018. The draft plan is under review by a consultant and is expected to be finalized and implemented in 2020.

3.6 Purchasing

Mission: *To provide purchasing and supply management services to the campus community that achieve best value and apply triple bottom line principles to procurement initiatives, incorporating financial, social and environmental considerations to supply management decisions.*

Goal 3.6.1: Review purchasing procedures and develop refinements that assist in furthering the incorporation and formal application of triple bottom line sustainability criteria in procurement decisions.



In 2017 the OCPS worked with UVic Purchasing Services to provide exploratory background research on sustainable procurement policies at other post-secondary institutions. This research was to assist

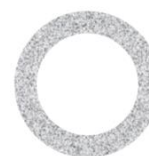
Purchasing Services in developing policies that incorporate triple bottom line considerations into public procurement competition, supplier selection and contract award processes.

A Supplier Code of Conduct was developed by Purchasing Services and is currently under review by the university Executive. It is targeted for implementation in early 2020.

Numerous other initiatives were also completed, including:

- University Food Services works to be a leader in procuring food products that are FairTrade, Organic and Oceanwise certified.
- The UVic Bookstore “UVic Gear” is made out of bamboo and/or organic cotton, and bookstore staff monitor suppliers to ensure clothing is sweatshop free.
- The UVic Interior Design Unit approved furniture suppliers that offer furniture made from renewable resources, such as wood certified by the Sustainable Forestry Initiative (SFI) or recycled materials.

Goal 3.6.2: Further develop reporting systems that include information on the source and environmental footprint of goods and services purchased by the university.



Information regarding the environmental footprint of various products is available within the consumer market as many products such as paper, natural gas and fleet vehicles have industry-supported reporting mechanisms. The OCPS reports on some aspects of UVic’s environmental footprint through the annual Carbon Neutral Action Report (CNAR), which covers only the emissions produced by UVic buildings, paper and fleet vehicles.

However, the university obtains a broad range of products and services from a diverse range of vendors. As a result, obtaining information pertaining to the environmental footprint of these goods and services is very difficult. This goal will require re-examination in the next Action Plan.

3.7 Transportation

Mission: *To offer sustainable travel options for every campus community member and visitors, and to act as a hub in a regional sustainable transportation network.*

Goal 3.7.1: Increase the use of transit, cycling, walking and carpooling to 70% of the transportation modal split by 2019.



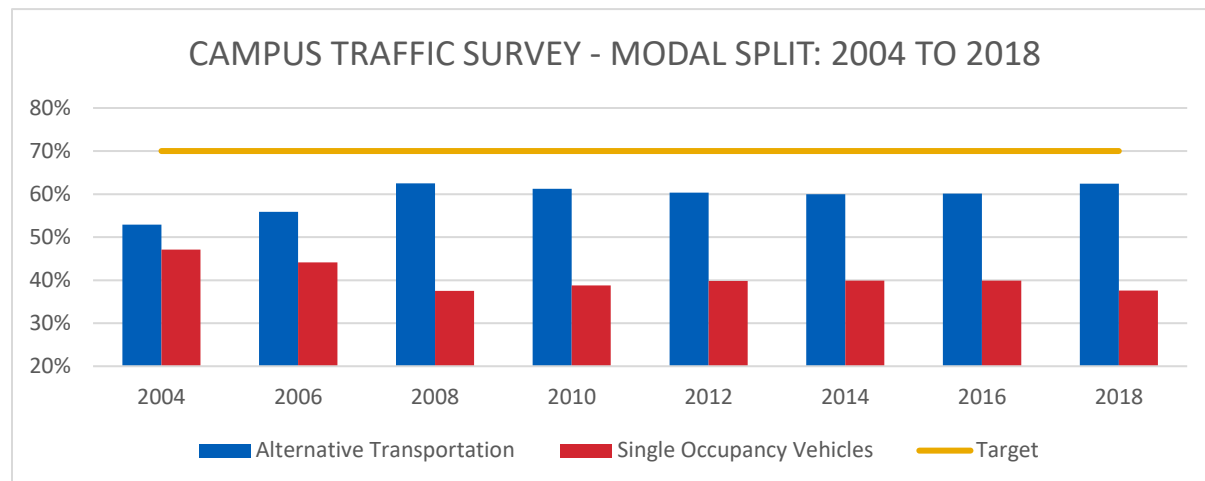
The transportation modal split of approximately 60:40 (non-auto drivers: single-occupancy auto drivers) stabilized between 2010 and 2016. Figure 6 provides a summary of the modal split for 2018 and a comparison to previous years’ survey results illustrates a 2% increase in sustainable travel modes in 2018. The increase in sustainable transportation was a result of an increase in pedestrian and cyclist travel.

In 2019 the OCPS completed the Campus Cycling Plan. The Plan proposes to develop an All Ages and Abilities (AAA) cycling network on campus, and numerous pedestrian pathway improvements. The university commenced the implementation of the plan in 2019.

In 2019, the university also developed a one-year bicycle sharing pilot program with U-Bicycle Canada.

The program provides 30 bicycles at six drop zones across campus.

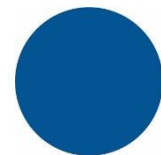
FIGURE 6: MODAL SPLIT



The Travel Choices program continues to provide:

- A subsidized Employee Bus Pass program with an average 750 employees participating each month.
- Over 4,000 bike parking spots available for use, among other cycling amenities.
- The SPOKES bike loan program with more than 600 bikes in circulation.
- The UVic Carshare program (in partnership with Modo) and access to Zipcar on campus.
- Promotional events such as Bike-to-Work Week, Lighten Up, and Don't Smash Your Pumpkin.

Goal 3.7.2: Improve the sustainability of the campus fleet by reducing fuel consumption by 10% through staff training and gradual replacement of vehicles with the most fuel-efficient versions on the market.



Between 2014 and 2019, campus fleet diesel consumption decreased by more than 28% and fleet gasoline consumption by almost 9%. Gradual replacement of fleet vehicles with more fuel-efficient vehicles is in progress, with Nissan Leaf electric vehicles acquired for tool and trade transport. UVic currently utilizes 10 Nissan Leafs and there are plans to further electrify our fleet.

It is important to note that these figures do not reflect academic fleet consumption, which has increased by 67% since 2014.

3.8 Waste

Mission: *To provide services and infrastructure that advance the university as a Zero Waste campus.*

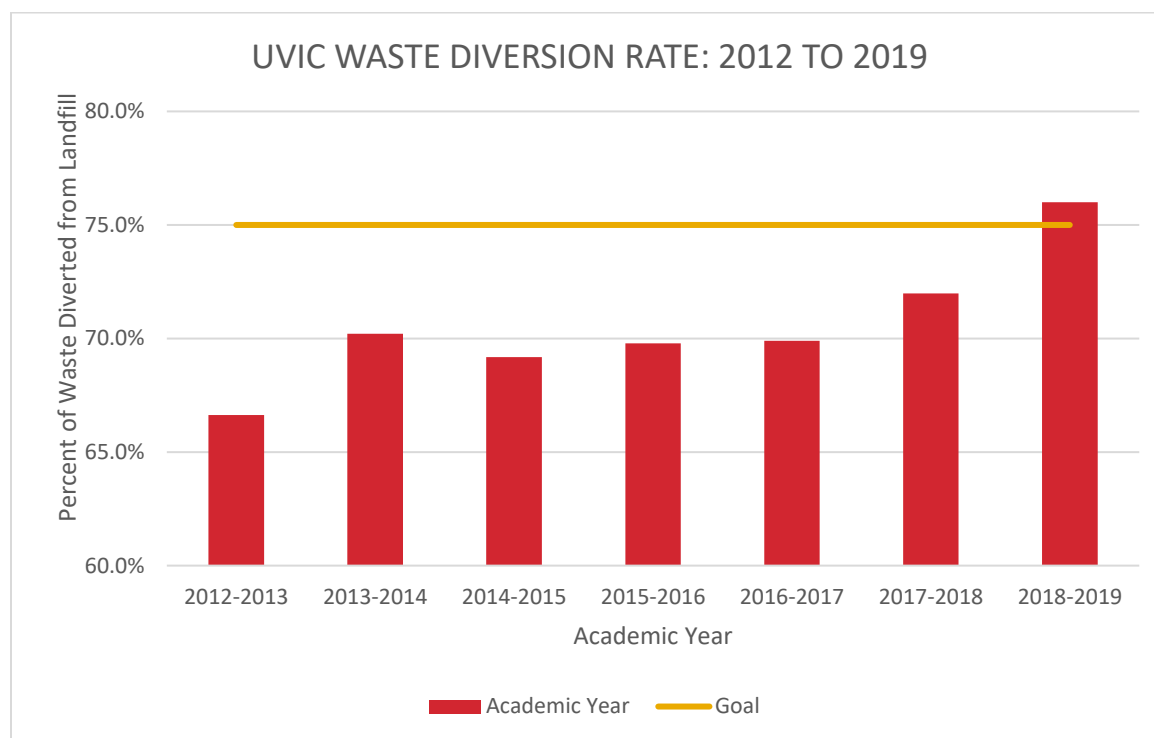
Goal 3.8.1: Increase the waste diversion rate to 75% by 2019.



The Waste Reduction Unit was established in 2009 and has helped the university increase its waste diversion rate. Rates have continued to improve between 2016 and 2019, and the university has achieved a waste diversion rate of 76%.

In February 2016, more than 300 UVic standard three-bin stations were installed inside campus buildings, making recycling more accessible. The program was further improved in August 2017 when hundreds of compost bins were added to the three-bin recycling stations. In 2018/2019, 51% of all waste diverted from the landfill was composted. In August 2019, all outdoor waste bins were removed and replaced with eight Sort-It-Out stations, which include mixed container, compost and landfill waste bins. The diversion rate of 76% excludes the new Sort-It-Out containers.

FIGURE 7: WASTE DIVERSION RATE

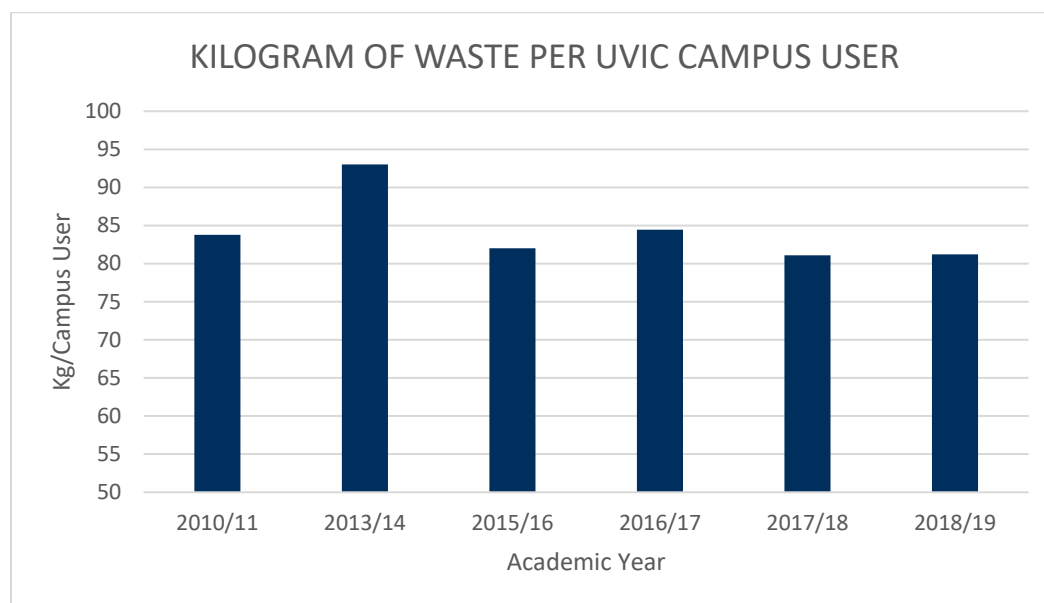


Goal 3.8.2: Reduce the total amount of waste produced as measured in kilograms per campus user (students, staff and faculty) by 2019, relative to 2010 as the baseline year.



Figure 8 demonstrates that there has been a minimal change in the waste produced per campus user. The global recycling market has changed substantially since the National Sword Policy was implemented in China, limiting the import of solid waste and recyclables. This has resulted in increased costs for recycling and a decrease in the university's ability to recycle plastics and paper.

FIGURE 8: WASTE PER CAMPUS USER



Goal 3.8.3: Provide for responsible hazardous waste management on campus and reduce where possible the use of hazardous materials.



Occupational Health, Safety and Environment (OHSE) implemented a multi-phase hazardous waste optimization plan to review hazardous waste disposal practices across campus and identify opportunities for reduction and/or minimization. As a result, certain biological waste can now undergo Safe Sink Disposal following treatment. Lab users are also encouraged to reduce, where possible, the use of hazardous materials and replace or substitute with less toxic materials, where feasible.

A lab glassware recycling protocol is now in place, and lab users are encouraged to replace Ethidium Bromide (a known mutagen) with a safer alternative. An initiative to optimize the use of both the animate and inanimate biological waste disposal pails was also implemented. On an ongoing basis, labs are also encouraged to use only non-mercury thermometers.

3.9 Water

Mission: *To be an innovator in water use reduction, recovery, reuse and stewardship practices.*

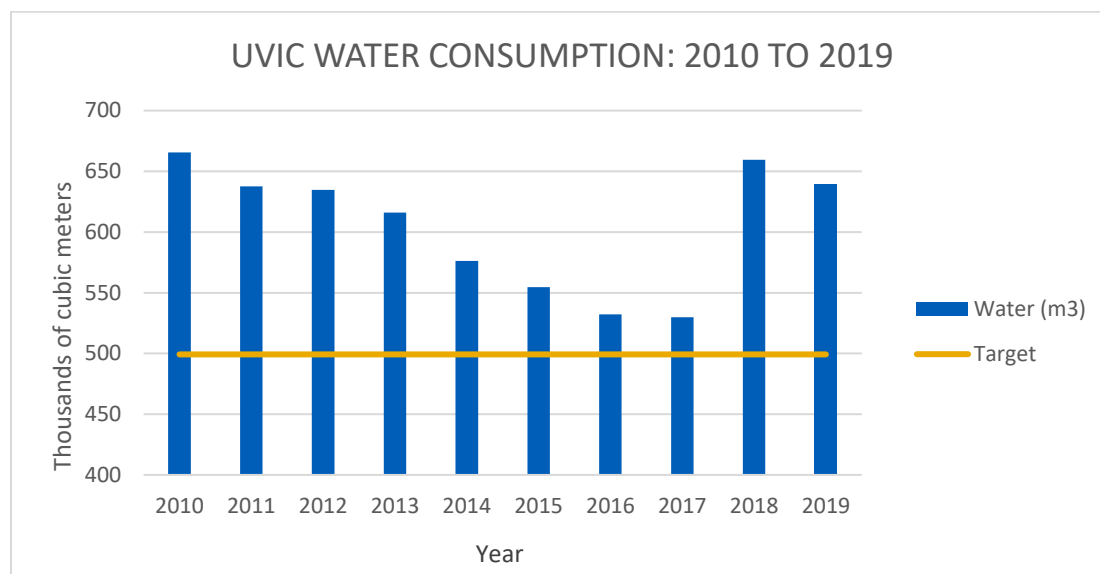
Goal 3.9.1: Reduce campus water consumption by 25% by 2019, relative to 2010 as the baseline year.



Figure 9 illustrates that the university's water consumption goal has not been achieved. As of 2017, the university had achieved a 20% reduction in water consumption. The university continues to install low-flow fixtures in buildings and has replaced many once-through cooling (OCT) units. The

increase in consumption in 2018 was, in part, a result of a significant water leak that was not detected for several months. This has since been repaired; however, water consumption remains higher than anticipated. Facilities Management continues to investigate the cause.

FIGURE 9: WATER CONSUMPTION



The UVic Outdoor Aquatics Unit, which formerly housed a large-scale research project under the control of Pfizer Canada Inc., continues to operate but at a decreased capacity.

Facilities Management has completed numerous projects to improve water efficiency, including:

- The replacement of the once-through-cooling units with air-cooled systems, and the completion of other water saving retrofits across campus.
- The installation of low-flow fixtures in university residences.
- The installation of low-flow toilets in the UVic Child Care Centres.

Goal 3.9.2: Retrofit 25 water fountains in campus buildings for easy refilling of personal water bottles.



The OCPS worked with Vikes to develop a funding request for several new fountain improvements; however, matching funding was not found. Outdoor spaces in the summer continue to be serviced by the mobile water filling station (Waterfillz), and demand for the Waterfillz remains high. This goal did not move forward due to other funding priorities across campus but will be pursued in the future.

CONCLUSION

Of the plan's 32 goals, 18 goals have been achieved, nine are in progress, two require re-examination, and three goals have not been achieved. The initiatives and actions undertaken since 2014 represent significant progress in achieving the goals outlined in the *Sustainability Action Plan: Campus Operations 2014–2019*, and progress in all relevant areas of the university operations.

The university has made significant progress in several areas. Addressing climate change through natural gas and emissions reductions projects remains a key objective. The university has reduced greenhouse gas (GHG) emissions by 25% below the 2010 baseline. Natural gas consumption intensity on campus has also decreased by 22% below 2010 levels. This goal was reached through operational improvements and investment in new technology, such as the installation of a geothermal heat exchange system in the Centre for Athletics, Recreation and Special Abilities (CARSA), which opened in 2015.

The university has also increased awareness and engagement on sustainability across campus. For example, the Campus Sustainability Fund empowers members of the university community to create stakeholder-driven projects that further the Sustainability Action Plan and advance leadership in sustainability. The fund contributed to 23 projects, including a waste reduction video series pertaining to recycling sorting stations. This form of engagement contributed to achieving a waste diversion rate of 76%. These are just a few examples of how the university has made headway across all areas of the Action Plan.

UVic is committed to renewing the Sustainability Action Plan by 2021 and in doing so, extending our commitment to campus development and operations to meet the highest standards of sustainability. The renewal process will take an estimated eighteen months. In the intervening months, a 2020-2021 Sustainability Action Plan will guide the University of Victoria on its path of sustainability.