

CONSUMPTION & WASTE

Overview

At SFU, we recognize the opportunities and benefits as a community of improving our environmental and social footprint. Using the circular economy model as a guide, we are committed to becoming a truly Zero Waste university.

Water Use

SFU has taken a number of steps to reduce its water consumption, from installing aerators on sink faucets to using low-water-demand plants in landscaping. The result has been **a reduction in water consumption for the past five years.**¹

21%

Decrease in water
consumption from
2009/10

Waste Per Student

When we talk about waste, it's often in numbers so large it's hard to imagine how we, as an individual, can make a difference. However, if we instead consider how much waste we produce per person each year, things start to look more manageable.²

For **every SFU student**, the
SFU community produces

49kg
(108 lbs)
of waste



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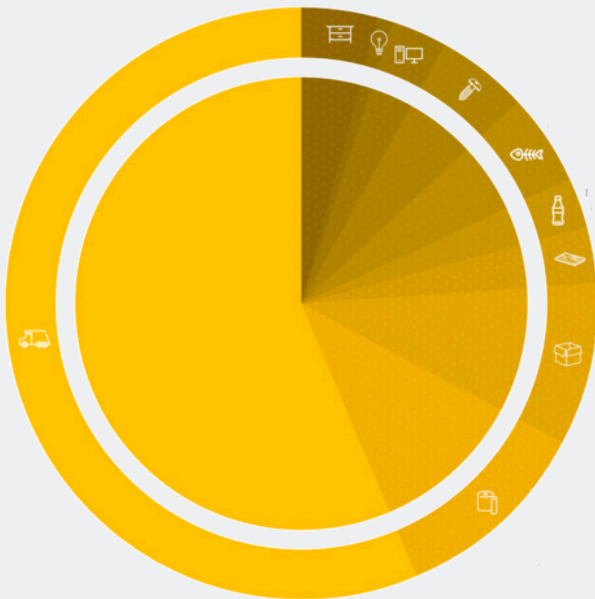
Reducing Our Impact

SFU is working to find ways to reduce the impact of the resources and services we use. Examples of this include:

- Developing a **life-cycle assessment** tool that considers the impact of the item/service's full life cycle in large purchasing decisions.
- Ensuring all of SFU's EPEAT registered electronic equipment is **EPEAT Silver or Gold Certified**.³
- Ensuring all expenditures on cleaning and janitorial products are **GreenSeal or EcoLogo certified**, and SFU's janitorial services at the Burnaby campus meet or exceed LEED-EB and CIMS-GB standards.⁴
- Developing **packaging standards for vendors** on SFU campuses to ensure food packaging given to customers is either recyclable or compostable.

Where Our Waste Goes

In 2014/15, we diverted 41.6 percent of our operational waste from the landfill. Operational waste includes landfill garbage (57%), fibre (11%), cardboard (9%), wood (3%), mixed glass, plastic and tin (3%), organics (5%), metal (5%), e-waste (3%), other one-off disposal items, such as lightbulbs or mattresses (1%), and reconstituted items (4%).



¹ This data only covers the Burnaby campus due to the data limitations of leasing space for the Vancouver and Surrey campuses.

² This number is based on the student full-time equivalency for the 2014/15 year, which is provided by SFU's Institutional Research and Planning. This data is operational waste only and does not include construction or demolition waste.

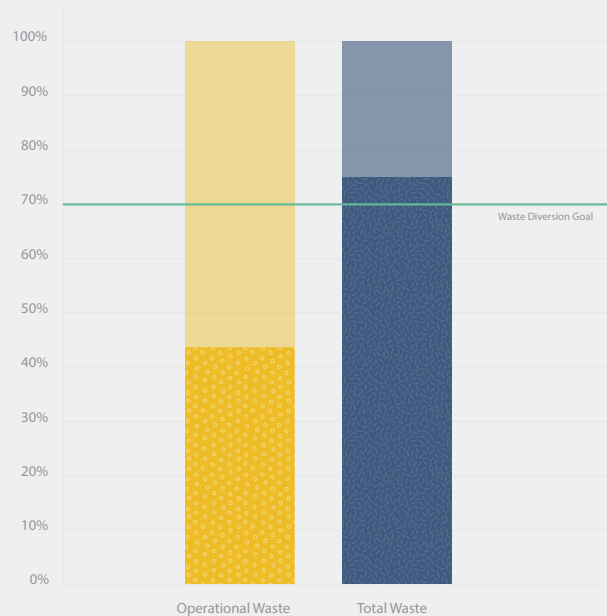
³ EPEAT is a comprehensive global environmental rating system that helps purchasers identify greener computers and other electronics.

⁴ LEED-EB is the Leadership in Energy and Environmental Design rating system for Existing Buildings. CIMS-GB is the Cleaning Industry Management Standard for Green Buildings.

Waste Diversion

As part of the SFU Sustainability Strategic Plan (2013-16), the University set a goal to divert 70 percent of its waste from the landfill into recycling or composting.

We are pleased to say that **we achieved that goal and diverted 75 percent of total waste** from the landfill in 2014/15. When it comes to operational waste (total waste minus that produced by construction and demolition), we achieved a 41.6 percent diversion rate. There is plenty of room for more of SFU's day-to-day waste to be diverted through reuse, recycling or composting.



Waste diverted from landfill in FY 2014-15

“A circular economy is one that is restorative and regenerative by design, and which aims to keep products, components and materials at their highest utility and value at all times, distinguishing between technical and biological cycles.”

— Ellen MacArthur Foundation



ENERGY & EMISSIONS

Overview

SFU is committed to institutional energy savings and reducing its greenhouse gas (GHG) emissions. In order to achieve its goals, the university not only relies on operational changes, but behavioural changes as well.

SFU's Energy Commitments

In 2010, SFU committed itself to institutional energy savings goals as a means to support the Sustainability Policy, GP 38. Since then, the University has been measuring, reporting and offsetting its GHG emissions. SFU's commitments include to:

- **Reduce total energy consumption** by a minimum of 2% per year
- **Support the provincial government's goal** of reducing GHG emissions by 33% below 2007 levels by 2020, with a long-term goal of 80% reduction by 2050
- **Exercise leadership** in engaging the University community to contribute to saving energy through behavioural change and educational events

The Strategic Energy Management Plan 2013/14-2015/16 (SEMP) provides a framework for minimizing energy consumption to meet the University's goals.

University Energy Utilization Policy

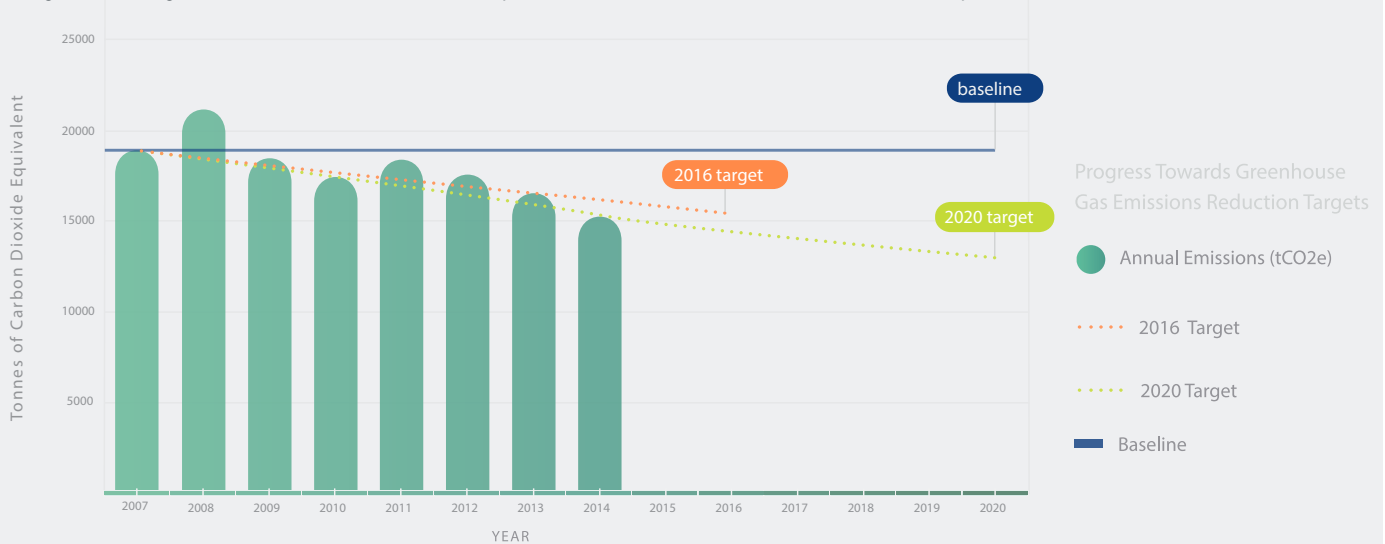
SFU's University Energy Utilization Policy (GP 43) was passed by the Board of Governors in November 2015. **The policy applies to all SFU-owned or -managed space and to all University activities that utilize energy** that SFU directly procures or produces. The policy is intended to drive:

- Reduced energy consumption at SFU
- Optimization of energy use from all sources of energy to reduce environmental impacts and financial costs
- The shift toward more environmentally benign renewable energy sources

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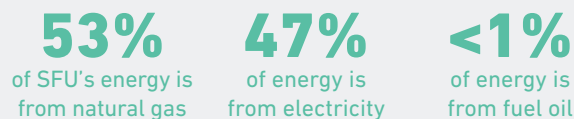
Total Emissions

In addition to the longer term reduction targets, SFU has been working towards a provincial interim target of an 18% reduction in greenhouse gas emissions below 2007 levels by 2016, which it exceeded in the 2014 calendar year.



SFU's Energy Sources

SFU sources its energy from natural gas and electricity, with a very small amount from fuel oil.¹

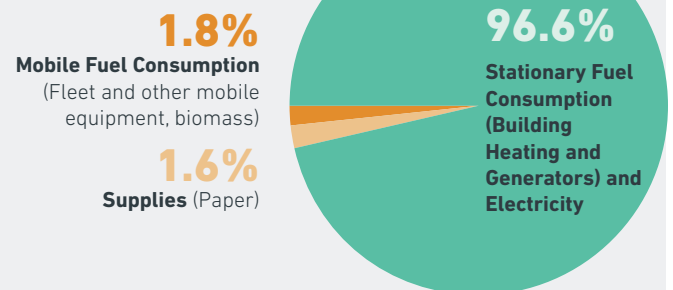


Efficient Buildings

Maintaining efficient buildings is key to managing the University's GHG emissions. SFU manages demand through the systematic "tuning-up" of buildings and by implementing retrofits to older building systems (e.g., HVAC, lighting). **Retrofitting is done in conjunction with expanding and improving behaviour change programs** designed to make students, faculty and staff better 'energy tenants' in campus buildings.

Emissions Breakdown (by source)

Buildings are SFU's greatest source of operational emissions. As such, they provide the greatest possibility for substantial reductions in the university's greenhouse gas emissions.



Engaging the World on Energy and Emissions

SFU is advancing the adoption of a **low carbon, clean and renewable energy future** across the globe, through a number of initiatives and partnerships, including:

- Carbon Talks
- Clean Energy Canada
- Renewable Cities

¹This data only covers the Burnaby campus due to the data limitations of leasing space for the Vancouver and Surrey campuses. It also doesn't include energy use at the water tower building. Energy from electricity is from BC Hydro, of which 90% is hydroelectric generation.



MOBILITY & TRAVEL

Overview

Transportation and mobility are a major contributor to global greenhouse gas emissions and pollution. As such, the development and use of sustainable transportation options are increasingly important to us all.

We are working to encourage the SFU community to consider sustainable transportation and to imagine new ways of working and studying that help ensure a sustainable future.

Transportation Across Three Cities

SFU has three unique campuses in three different municipalities within the Metro Vancouver region: **Burnaby, Surrey and Vancouver**. Each day, thousands of staff, students and faculty commute from their home to one of SFU's campuses.

Both the Surrey and Vancouver campuses are in relatively flat, downtown locations, within less than a five-minute walk from a SkyTrain station. The Burnaby campus sits 370m above sea level, atop Burnaby Mountain, and has regular public-transit service from multiple locations.

All three campuses lie within the Translink boundaries and students have voted to be part of the **Universal Transit Pass (U-Pass) BC system**, receiving discounted transit passes for the region.

Active Transportation Infrastructure/Amenities

SFU provides active transportation infrastructure and amenities that encourage staff, students and faculty to bike, run, or walk, to school. **Bike racks are available at all three campuses** – Vancouver, Surrey, and Burnaby.

Most of the bike racks across the three campuses are located in sheltered areas and both Surrey and Vancouver campuses have shared bike cages available for storage.

Buses in Metro Vancouver include bike racks on the front of the bus, with capacity for two bikes each. There are some SkyTrains with designated bike areas within the trains.

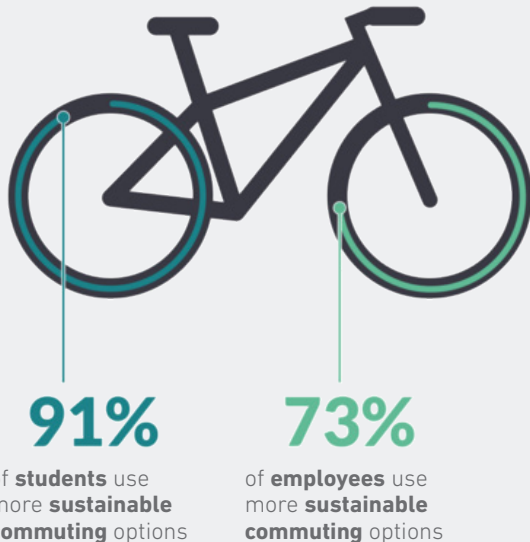


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Sustainable Commuting

In 2014, a survey of the SFU community found that a **strong majority of both students and employees used a sustainable commuting option** to get to an SFU campus. Sustainable commuting options included cycling, skateboarding, walking, other forms of active transportation, taking public transit and carpooling.



About the survey:

- Approximately 25 percent of the population responded (8000 people).
- The survey covered a seven day period.
- Excludes respondents who indicated they did not come to an SFU campus in the past seven days and respondents who did not provide an answer to the questions asking what mode they used to commute to campus.
- Respondents who are both employees and students are included in both categories.

Videoconferencing

SFU works to reduce student, staff, faculty and community commuting travel through the use of videoconferencing services.

189,411
minutes of videoconferencing
used by SFU users in 2015

SFU Vehicle Fleet

SFU reports on greenhouse gas (GHG) emissions related to its Facilities Services vehicle fleet and vehicles owned and operated by Safety and Risk Services. These emissions have remained relatively steady in the past five years. In the 2015 Calendar Year, emissions from fleet amounted to 1.8 per cent of total operational GHG emissions for the university as a whole. Fleet vehicles are regularly maintained to optimize fuel economy.

1.8%
of SFU's total operational
GHG emissions come from its
vehicle fleet

Electric Vehicle Plug-in Ports

Electric vehicles produce 80 to 90 per cent less greenhouse gas emissions than gasoline vehicles, making them a more sustainable option than their gas-powered counterparts.

For individuals who choose to drive electric vehicles, **SFU provides charging stations at three of its Burnaby parking lots:** Discovery Park, the E parking lot and the B parking lot. Additional charging stations are also available at the Cornerstone parking lot, bringing the total available chargers to 10 at Burnaby campus.

Both **Vancouver and Surrey campuses also have electric vehicle chargers close-by**, with a plug available in the Harbour Centre West Impark Lot 123 and two plugs in the Central City parking lot P3 west of SFU P3.





LEARNING & DISCOVERY

Overview

From the classroom to the community, the lab to the field, SFU provides students, staff and faculty with a wide-range of opportunities to learn, discover and innovate.



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Sustainability Programs

SFU offers a range of undergraduate and graduate programs with a specific sustainability focus, including:

- Bachelor of Environmental Science
- Bachelor of Arts, Geography
- Minor in Development and Sustainability
- Master's degree (M.R.M.) in Resource and Environmental Management
- Master's in Urban Studies
- Ph.D. degree in Resource and Environmental Management
- Graduate Diploma in Quantitative Methods in Fisheries Management

In addition, a number of certificates allow students to complement other programs with a sustainability expertise:

- Corporate Environmental and Social Sustainability
- Cultural Resource Management
- Environmental Literacy
- Sustainable Community Development
- Urban Studies
- Spatial Information Systems
- Development and Sustainability (graduate certificate)

Of course, **sustainability learning opportunities permeate many other programs**, from **biology and economics, to business and education**. These learning opportunities provide students with the tools to develop strategies and inform policies that create a more sustainable future.

Sustainability Courses

SFU offers sustainability-related courses across the university.

254

Undergraduate courses
that include sustainability

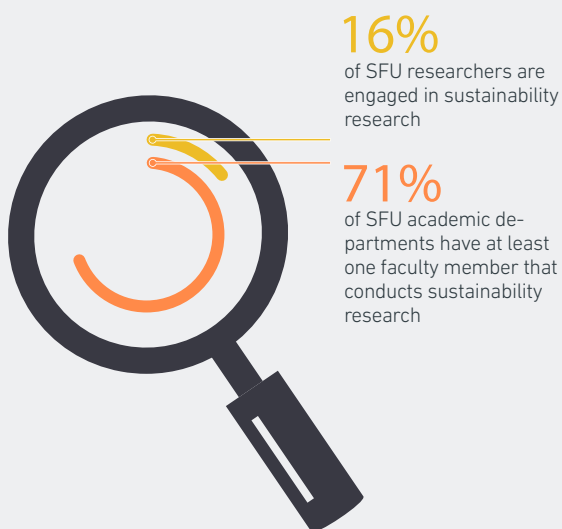
119

Graduate courses that
include sustainability

Research

Researchers at SFU are engaged in many different areas of sustainability-related research, from climate change, low carbon energy solutions and sustainable communities, to social equity, environmental justice and corporate social/environmental responsibility, among others. **Over 70 percent of the departments at SFU** have at least one faculty member whose work contributes toward the understanding of environmental, economic, or social sustainability issues.

A large number of sustainability researchers work in science, applied science, health sciences, environment, economics, education, business and public policy.



Student Engagement

The Sustainability Peer Program, which is jointly managed by SFU's Sustainability Office and Embark, supports the larger SFU community through student peer-to-peer engagement, while providing a structured personal and professional development program for its volunteers.

19

Sustainability Peer
Educators in 2014/15

Sustainability Peer Educators are provided with in-depth training on sustainability planning and delivery at SFU, as well as on the tools to help them lead and participate in planning, initiatives and outreach activities.

Staff Engagement

Partnerships between SFU departments and with the broader community help to support a number of staff engagement opportunities. Through the associated programs, SFU staff serve as educators and advocates, while also exemplifying best practice.

48

Sustainability
Ambassadors across the
university

19

Certified Green Offices
and Labs, with 19 more
registered to become
certified



Immersive Programs

SFU offers multiple programs that enable students to explore sustainability concepts in an immersive environment, including:

- Semester in Dialogue
- City Studio
- ChangeLab
- RADIUS



RISK & RESILIENCY

Overview

SFU is working to not only identify potential institutional risks associated with sustainability issues (e.g., climate change impacts) but to also look for opportunities to build the university's capacity to absorb and thrive during a time of major global shocks, stresses and shifts.

Green Building Guidelines

SFU subscribes to two green building certification systems: Leadership in Energy Efficiency and Design (LEED) and the Building Owners and Managers Association's Building Environmental Standards (BOMA BEST).

In 2014, **SFU's Surrey Podium 2 project achieved LEED CI Silver** for Commercial Interiors. A number of other buildings, across all SFU campuses, have adopted green building practices in their design and renewal, including Shrum Chemistry, which is targeting LEED Gold certification.

Sustainable Landscape Management

SFU's Burnaby campus has a total campus area of 370 acres, of which approximately 40 acres are the footprint of the buildings and 190 acres are undeveloped land. The remaining acreage, approximately 139 acres, is managed landscape. In this managed landscape, **SFU uses native and ecologically appropriate plants** to support the network of relationships between naturally-occurring wildlife and plants on Burnaby mountain.

Native planting areas are located throughout campus and it is practice to use native plant material in new planting programs - especially when the area is near or adjacent to naturalized areas, such as forest edges, swales, creeks etc.

100% of SFU's managed landscape is managed in accordance with a sustainable landscape management program or managed organically.



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Landscape Features for Water Management

Surfaces such as asphalt, concrete sidewalks and roofs can prevent rainwater from soaking naturally into the earth, which can lead to flooding and can carry pollutants from roads or sidewalks into nearby waterways, impacting wildlife and plants that use this water. These are some of the techniques SFU uses to reduce the amount of these surfaces on the Burnaby campus:

- Creating living roofs: Burnaby campus currently has more than **10,000 square metres of living roofs**
- Employing swales and natural attenuation across campus and especially adjacent to roads
- Using crushed granite or mulch for walkways and trails through forests, while using permeable paving in court-yards
- Building **underground cisterns to manage water release** into natural water courses, as well as to store rainwater for landscape irrigation and to top up water lost through evaporation in the AQ pond
- Detaining stormwater in detention ponds and underground detention tanks, such as the **Gagliardi detention pond**, which serves the residence towers, and the underground detention tanks at Field 4.

This form of water management is particularly important at SFU's Burnaby campus due to its adjacency to the **Burnaby Mountain Conservation Area and Stoney Creek, a salmon-bearing stream**.



Global Planning and Research on Adaptation

SFU not only considers risk and resilience at its campuses, but also at a provincial and global scale. For example:

- ACT, the **Adaptation to Climate Change Team**, is the only university-based think tank initiative in North America dedicated to climate change adaptation. ACT studies nine climate change areas – biodiversity, extreme weather, energy, water security, crops and food supply, sea level rise, health risks, population displacement and new technologies – and considers ways to protect environmental, economic and social well-being.
- SFU is also part of the **Pacific Institute for Climate Solutions** (PICS), along with the University of Victoria, the University of British Columbia, and the University of Northern British Columbia. PICS brings together researchers from across British Columbia and around the world to study the impacts of climate change and develop positive approaches to mitigation and adaptation.

Current Sustainability-Related Investments

Guided by SFU's Sustainability Strategic Plan 2013-2016, SFU became a signatory to the **UN Principles for Responsible Investment** in 2014, making it only the second Canadian university to do so.

\$4,500,000

in sustainability investment funds (e.g. a renewable energy or impact investment fund)

\$11,500,000

in social responsible mutual funds with positive screens

\$1,000,000

Sustainable Utilities Revolving Fund (SURF)



SOCIETY & EQUITY

Overview

While sustainability is often correlated with environmental issues, SFU considers sustainability to be the interrelationships between the ecological, economic and social aspects of life, all of which need to be considered for a truly sustainable future.

Sustainability-Related Continuing Education

Education is the heart of every university. SFU extends its reach into the community by offering sustainability-related education opportunities for individuals looking for more nontraditional learning opportunities. In 2014/15, SFU's Continuing Studies offered a range of continuing education opportunities that integrated sustainability-focused themes.

5%

of continuing education courses addressed sustainability

2500

People from the community came to free lectures on sustainability-focused themes



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Fair Trade Campus

SFU holds a Fair Trade Campus designation, which it first earned in 2012. The designation recognizes the university's adherence to fair trade objectives and practices such as **decent working conditions, local sustainability and improved terms of trade** for farmers and workers in the developing world.

In 2014, SFU won Fairtrade Canada's award in the Campus of the Year category.

Alternative Learning Pathways

SFU offers a range of learning opportunities that enable students to tailor their education to their needs. Examples include:

- **SFU NOW: Nights or Weekends** was developed for students working over 30 hours a week. Students can earn a Bachelor's degree through evening and weekend courses at the Vancouver and Surrey campuses.
- The **Aboriginal Bridge Programs** are programs designed for all students of First Nation, Métis and Inuit heritage to prepare to excel in their undergraduate studies and earn transfer credits to SFU.
- **SFU's English Language and Culture Program (ELC)** offers a full-time program that allows students to move directly from ELC into the University Transfer Program at Fraser International College, and then into the second year of an undergraduate degree at SFU.



Community Partnerships and Dialogues

SFU's vision "to be the leading engaged university defined by its dynamic integration of innovative education, cutting-edge research and far-reaching community engagement" has resulted in a number of unique programs that work on issues critical to social sustainability. These programs include **SFU's Vancity Office of Community Engagement**, **SFU's Public Square**, the **Centre for Dialogue** and a wide-range of other programs offered on all three campus.

Through events, workshops, public talks, dialogues, partnerships and presentations, programs are currently exploring topics that include sustainability, social justice, arts and culture, health care, economy, the urban environment and more.

Growing Our Understanding

Defining what social sustainability looks like at a postsecondary institution is challenging. As SFU enters into the development of its next sustainability strategic plan, **we are looking into more and better ways to consider social sustainability at the University.** We welcome your thoughts and ideas. SFU's STARS report (<https://stars.aashe.org/institutions/simon-fraser-university-bc/report/2014-10-29/>) provides further details and information that look at the social side of sustainability.



Ethical Procurement

SFU's Ethical Procurement Policy and Guidelines articulate how the University is seeking to do business with organizations that manage their affairs in a manner consistent with the University's values and commitments.