



2023 Climate Change Accountability Report

LANGARA COLLEGE

May 2024

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Langara.

Introduction

At Langara College, we are deeply committed to being part of a sustainable society. We understand that the world’s resources are finite and need to be used conservatively and wisely. We know that our choices, both big and small, impact our world and future generations. As an educational institution, we have a responsibility to lead initiatives that positively contribute to our community. Our goal is to foster and provide leadership to create more environmentally sound, socially just, and economically vibrant communities.

Our mission is to provide diverse learners with the academic and experiential foundation for further education, career success, and professional and personal development. This is guided by Langara’s [Strategic Plan 2025 – Weaving a Shared Future](#); this plan includes advancing Sustainable Development Goals (SDGs) throughout the college.

In 2017, Langara College renewed its Sustainability policy to affirm its ongoing commitment to and responsibility for fostering an institutional culture characterized by leadership in environmental, social, and financial sustainability. The College also established a sustainability committee to advise senior leadership and pursue opportunities for all members of the College community to make choices that promote sustainability in the teaching, learning, researching, and working environments in alignment with strategic directions.

Langara College has been reducing, monitoring, and managing greenhouse gases (GHGs) and increasing sustainability since June 2001 when the College’s Environmental Responsibility policy was first established. Since 2010, along with all B.C. public sector organizations (PSOs), as mandated under the Greenhouse Gas Reduction Targets Act, Langara has been reporting their annual GHG emissions and investing in offsets to achieve net-zero emissions. The College is proud of our commitment and successes related to our GHG reduction effort. We will continue to increase environmental, financial, and social sustainability at Langara, in our city, and in our world.

In May 2023, Langara College signed the United Nations Sustainable Development Goals Accord, joining learning institutions around the world in a commitment to advance sustainability and to share achievements, goals, and learnings with one another, nationally and internationally. As part of this commitment, the College will report on how it advances the 17 SDGs annually.

Declaration statement: This PSO Climate Change Accountability Report for the period January 1, 2023 to December 31, 2023 summarizes our greenhouse gas (GHG) emissions profile, the total offsets to reach net-zero emissions, the actions we have taken in 2023 to minimize our GHG emissions, and our plans to continue reducing emissions in 2024 and beyond.

Overview

Langara has been able to reduce our energy usage and emissions on campus while we grow. Since 2001, when Langara established its first Environmental Responsibility policy, the campus area has increased by 48%. In 2017, Langara renewed its Sustainability policy to affirm its ongoing commitment to and responsibility for fostering an institutional culture characterized by leadership in environmental, social, and financial sustainability.

In 2019, our new Sciences and Technology building received LEED Gold certification, making it the fourth LEED Gold building on campus. The construction of this building also included phase one of a renewed central heating plant on campus. Construction for the central heating plant expansion, to serve all buildings on campus, was completed in May of 2023. The new heating plant expansion project has achieved 25% fuel savings in its first year of operation. By centralizing and modernizing our central heating plant, we not only significantly reduce our GHGs immediately – we also create the opportunity to take advantage renewable energy technologies in the future.

Langara College’s GHG emissions for the mandatory reporting categories are summarized in the table below. Comparisons to 2023 calendar year and 2007 (the Ministry base-year for GHG target reduction) are included. The Buildings and Paper emissions are also charted following the table to show how they are trending.

	2023 GHG Emissions (tCO ₂ e)	2023 Results Compared to 2022	2023 Results Compared to 2007 Baseline
Buildings – Natural Gas	1,075.0	19% decrease	42% decrease
Buildings – Electricity	114.0	1% increase	34% decrease
Supplies	9.4*	80% decrease*	Not available
Fleet	1.6	No change	
Total	1,199	19 % decrease	41% decrease

As required by the Greenhouse Gas Reduction Targets Act and Carbon Neutral Government Regulation, the results shown above are based on absolute emissions and have not been corrected for the impact of weather conditions or increasing area of campus.

*Data will require a small “prior year adjustment” in next reporting cycle for data that arrived late from a new supplier.

The total emission offsets applied to become carbon neutral in 2023 was 1,199 tCO₂e; it is noteworthy that almost all of Langara’s emissions are from building energy use.

Langara decreased our overall campus emissions by 41% compared to 2007 levels while increasing the campus area by 23%; this is equivalent to a reduction in building emissions per unit area of 55%!

Other benefits of energy saving initiatives, beyond energy, emissions, and cost savings, include upgrades to aging infrastructure, and occupant comfort from improved controls.

2023 INITIATIVES

Langara College participated in and implemented multiple sustainability projects and initiatives in 2023:

INFRASTRUCTURE

Central Heating Plant Project

Construction for our central heating plant expansion, to serve all buildings on campus, began in October 2022 and is now complete. Data after one year of tracking shows the project is on track to achieve an additional 25% fuel savings compared to the previous year; the project was fully complete in May of 2023 and has achieved 19% savings for calendar year 2023. As we continue to optimize the new system and complete one full year of operation, we expect to get even more savings. By centralizing and modernizing our central heating plant, we not only significantly reduce our GHGs immediately – we also create the opportunity to take advantage of renewable energy technologies in the future, reducing emissions further.

Road To Net Zero – Electrification Roadmap

Canada has committed to achieving net-zero emissions by 2050; at Langara, we are well underway to meeting this target much sooner, with a goal to reach this milestone in 2030. “Net zero” describes a state where greenhouse gas emissions produced are in balance with the greenhouse gas emissions taken out of the atmosphere.

Working with Prism Engineering, Clean BC, and BC Hydro, Langara carried out an Electrification Roadmap study for the campus to support our next steps for campus GHG emissions reduction.

The proposed Electrification Roadmap achieves over 75-95% campus gas reduction by 2027, and full electrification by 2030.

Using this roadmap as a guide, Langara has committed funding and aims to achieve 80% below 2007 GHG emissions levels by 2026.

Electric Vehicle Charging Stations

We added 8 new EV charging stations for a total of 36 stations, this is in addition to electric bicycle plugins available in our cycling facilities.

COMMUNITY ENGAGEMENT

In 2023 our sustainability storytelling strategy focused on three key areas: advancing our external reputation as a sustainability leader; increasing awareness of how our actions contribute to larger provincial, national, and global goals; and strengthening our internal culture around sustainability.

Activities included:

- In May 2023 our president signed the United Nations Sustainable Development Goals Accord (SDG) on behalf of Langara College. The SDG Accord inspires, celebrates, and advances education's critical role in delivering the United Nation's 17 goals. By signing the Accord, Langara College declares steadfast and unwavering commitment towards sustainability.

"We advance sustainability when we value it," said Dr. Paula Burns, President and CEO. "By signing the SDG Accord, Langara answers the call from United Nations to empower economic, social, environmental advancements in sustainability through higher education."
- A social media content marketing campaign aligned with UN SDGs days of observance like World Environment Day, World Oceans Day, and World Food Day.
- A sustainability video series aimed at our student audience. Topics included:
 - LEED building features on campus like solar power, passive heating/cooling, and rainwater management
 - Student-led research project that documented pollinators on campus
 - The environmental, financial, and health benefits of biking to school

- Sustainability was the theme of our Academic Plan Mini-Conference, our largest faculty-focused event of the year. Faculty and staff encountered sustainability topics through 15 workshops including “Art Sustainability Land Back,” “Ecologizing Education,” “Hidden Langara - Sustainability Tour”, and “Sustainability, Circularity, and Emergent Opportunity: Makerspaces and Positive Change.” Some workshop participants contributed directly to our Still Creek monitoring project, donning hip waders and exploring this unique ecosystem, one of the last uncovered natural streams flowing through East Vancouver.
- A seed paper sponsorship for the Academic Plan Mini-Conference. This event earned a Gold Zero-Waste Event designation; the conference documents were printed on seed paper (can be planted to grow non-invasive, pollinator-friendly species) and were the only single-use materials created for this event.
- Participated in two annual Go-by-Bike Week events, encouraging employee engagement and participation in alternative transportation. Go-By-Bike Week activity includes logging kilometers as a college-wide team and a Celebration Station with free tune-ups from a bike mechanic.
- Administered our second biannual Sustainability Culture Assessment survey, which helps us better understand how we as a community think about and behave towards our environment and identify what steps we can take to further our sustainability goals. We received 2,621 responses from employees and students. Highlights include:
 - About half of respondents feel that they are at least somewhat knowledgeable about the United Nations’ Sustainable Development Goals (the survey was conducted prior to Langara signing the UN SDG Accord).
 - 69% of faculty respondents have discussed environmental issues in the classroom.
 - Most faculty respondents are willing to take greater steps in promoting sustainable behaviors and education on campus (an increase from 2021).
 - 90% of respondents felt that it was important for students to gain knowledge of the tools and perspectives needed for sustainable living as part of their education.
 - 73% of respondents think that climate change impacts will be significant and are worried about how these impacts may affect their lives.

POLICY AND PROCEDURES

- Sustainable procurement procedures were updated and communicated to departments.
- Landscaping procedures were updated to require all-electric equipment from our vendors. We also replaced all plants with local, indigenous, and drought tolerant plants. We only water to establish plants.
- For pest control, we use a company called Humane Solutions founded by Langara graduates. They don't use pesticides and follow practices that are as humane as possible.

SUPPORTING ALTERNATIVE TRANSPORTATION

- Administered the 2023 Transportation Survey, with added subcategories about primary modes of transportation to better align with STARS rating system.
 - Key finding: Over 80% of trips to or from Langara are made by sustainable modes: (walking, cycling and transit).

CAMPUS AS A LIVING LAB

- Langara’s Applied Research Centre supplies the Facilities Department with biochar, which is used to amend the soil in new plantings. Biochar is a form of stable carbon and is considered a type of carbon capture, as it is obtained from waste wood that would otherwise decompose into carbon dioxide. Biochar also retains nutrients and water, improving the survival of plants and decreasing the need for water.

2023 SPOTLIGHT

LOCAL FOOD SOURCING

Langara College is proud to be a partner in Feed BC, joining fellow public post-secondary institutions throughout B.C. to ensure local, sustainable food is available now and for future generations. Through its food services provider Chartwells, Langara provides a minimum of 30% B.C.-based food expenditures by buying locally sourced foods and supporting local food providers. In 2023 we achieved 39% local food on campus. Students and employees can access safe, healthy, and diverse food options that not only reflect the global representation on campus, but also the dietary preferences of the population.

In 2023 we hosted a special celebration of World Food Day, a day of awareness and action for a more sustainable food future. Our cafeteria menu was 100% vegetarian for the day, with a special on totally plant-based options.

Langara is also home to many green spaces, including a you-pick fruit garden, an accessible garden, a community garden, and five pollinator gardens that are used for pollinator research. Visitors are welcome to immerse themselves in the environment and encouraged to pick and eat fruits and herbs. Garden plots are open to and cared for by students, employees, and neighbours. One plot is dedicated for use by the Langara Child Development Centre as a way for children to learn about where food comes from at an early age.

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This week we celebrated World Food Day, a day of awareness and action for the future of food, people, and the planet.

Langara marked the occasion by showcasing vegetarian and plant-based options in our cafeteria. And as a Feed BC partner, we are committed to sourcing a minimum 30% of this food locally. Since making this commitment, we've regularly surpassed or exceeded our target for local food sourcing, reaching as high as 50% in one reporting period!

Food systems are about more than what we eat. They reflect the health of our environment, our societies, and our economies. A sustainable food system is one that delivers food security and nutrition for all. Together we can reduce our environmental impact by consuming fewer animal products, eating fresh and seasonal ingredients, and supporting local food producers.

[#LocalFood](#) [#EatLocal](#) [#FeedBC](#)



Emissions Summary

The total emission offsets applied to become carbon neutral in 2023 was 1,199 tCO₂e. The emissions breakdown for the campus is included in the figure below.

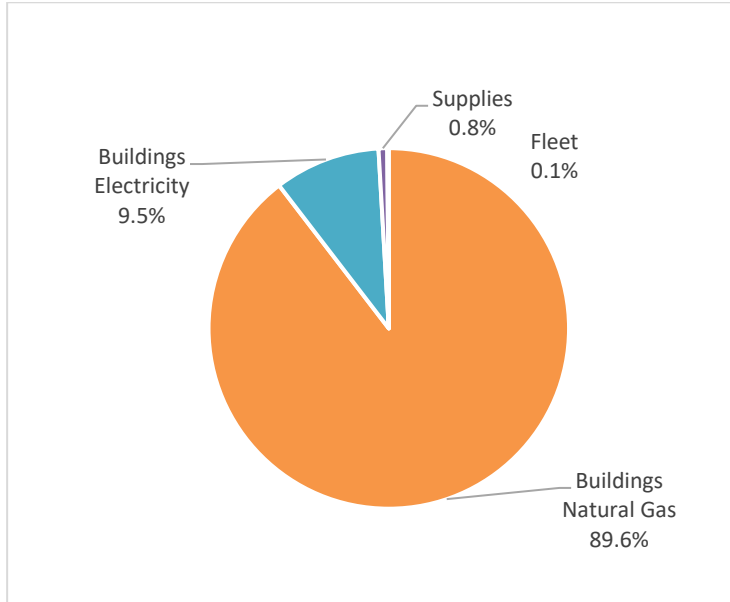


Figure 1: 2023 Estimated Emissions Breakdown

Langara College’s GHG emissions for the mandatory reporting categories are summarized in the table below. Comparisons to 2022 calendar year and 2007 (the Ministry base year for GHG target reduction) are included. The Buildings and Paper emissions are also charted following the table to show how they are trending.

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Langara decreased our overall campus emissions by 41% compared to 2007 levels while increasing the campus area by 23%. If we look at the reduction in building emissions with area adjustment, we have decreased emissions by 55%!

The table below is a summary of the Langara’s emissions data for the 2007 government reporting baseline and 2015–2023 in tCo2e.

	2007	2015	2016	2017	2018	2019	2020	2021	2022	2023
Natural Gas	1,848	994	1,219	1,327	1,174	1,254	1,175	1,414	1,314	1075
Electricity	172	79	103	124	124	120.0	94.0	83.9	113	114
Supplies		114	164	134	124.5	115.0	33.8	27.2	48	9.4
Fleet		1.5	1.7	1.7	1.7	1.7	1.8	1.8	1.6	1.6
Total	2,020	1,189	1,487	1,587	1,425	1,491	1,305	1,527	1,477	1,199

Table 2: Emissions Summary

The chart below (Figure 2) shows the trend in GHG emissions for our buildings in 2022 compared to the base period year of 2007 and the previous nine reporting years.

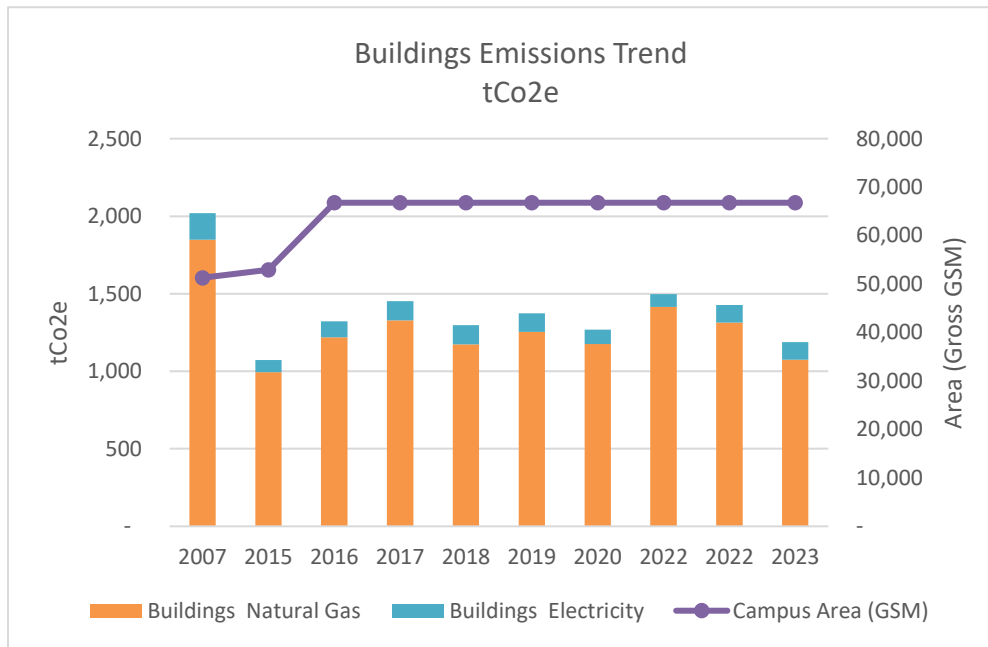


Figure 2: Building Emissions Trend (tCO2e) – Electricity and Natural Gas Emissions Combined

As you can see in the bar graph and summarized in the previous Table 1, the emissions from buildings (natural gas and electricity combined) have increased from 2015 to 2017. This is expected as our new Science and Technology Building opened in September 2016, increasing the campus area by 20%; 2017 is the first full year of occupied operation for this new building.

In 2019, our emissions were trending down as a result of optimizing building operations post-occupancy. COVID-19 resulted in additional decreases in emissions as many buildings were adjusted to save energy with minimal occupancy. When we returned to campus, ventilation rates were increased in response to COVID-19, resulting in increased gas usage and emissions. In 2022 gas usage was trending down again because of adjustments to mechanical systems and ongoing retrofits. This year emissions decreased 19% overall, mainly due to the extension of our central heating plant across campus, with further savings expected the following year as we realize a full year of energy/emissions savings.

2023 GHG Emissions and Offsets Summary Table

Langara College 2023 GHG Emissions and Offsets Summary	
GHG Emissions created in Calendar Year 2023	
Total Emissions (tCO ₂ e)	1,199
Total BioCO ₂	
Total Offsets (tCO ₂ e)	1,199
Adjustments to Offset Required GHG Emissions Reported in Prior Years	
Total Offsets Adjustment (tCO ₂ e)	
Grand Total Offsets for the 2023 Reporting Year	
Grand Total Offsets (tCO ₂ e) to be Retired for 2023 Reporting Year	1,199
Offset Investment (\$25 per tCO ₂ e)	1,199 x \$25
<i>[Grand Total Offsets to be Retired x \$25/tCO₂e]</i>	= \$29,975 + GST @ 5% = \$31,473.75

RETIREMENT OF OFFSETS

In accordance with the requirements of the Climate Change Accountability Act and Carbon Neutral Government Regulation, Langara College (the Organization) is responsible for arranging for the retirement of the offset's obligation reported above for the 2023 calendar year, together with any adjustments reported for past calendar years (if applicable). The Organization hereby agrees that, in exchange for the Ministry of Environment and Climate Change Strategy (the Ministry) ensuring that these offsets are retired on the Organization's behalf, the Organization will pay within 30 days, the associated invoice to be issued by the Ministry in an amount equal to \$25 per tonne of offsets retired on its behalf plus GST.

EXECUTIVE SIGN-OFF



Paula Burns
President and CEO

May 28, 2024

Date