Humber College GHG Emissions Inventory 2022-23

Executive Summary

Introduction

Humber College's greenhouse gas (GHG) emissions inventory was compiled for the 2022/23 reporting year following the reporting requirements of The Climate Registry (TCR) General Reporting Protocol (Version 2.1, January 2016) and the TCR Local Government Operations (LGO) Protocol for the Quantification and Reporting of Greenhouse Gas Emissions Inventories (Version 1.1, May 2010).

In the 2022/23 reporting year, the College's corporate GHG emissions totaled **28,449 tonnes** of carbon dioxide equivalent (tCO2e).

Results

Table ES-1. GHG Emissions by Scope

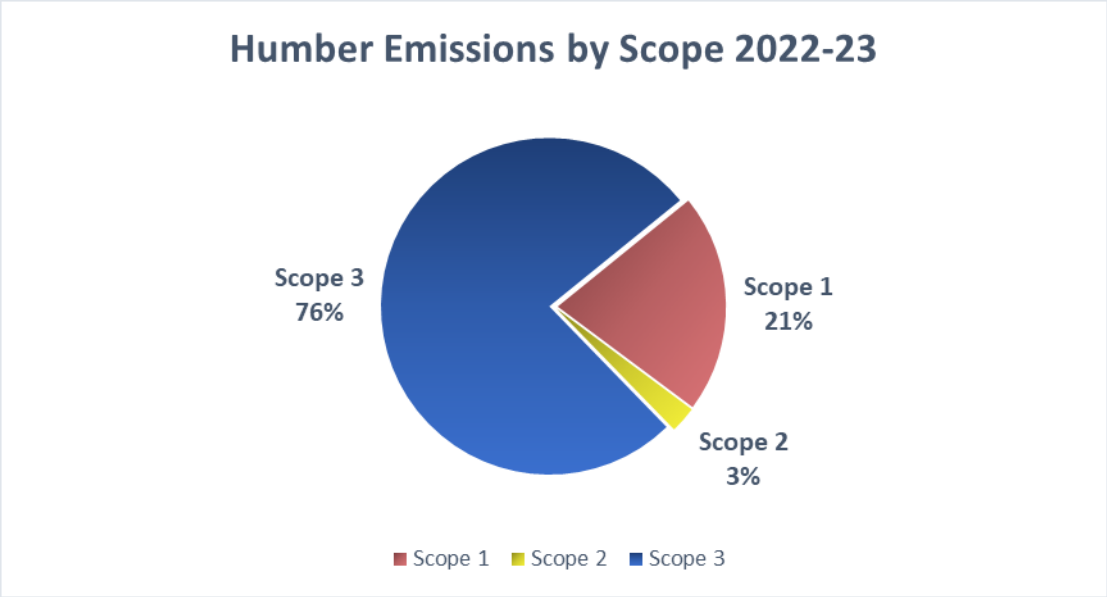
Activity Type	2014/15 GHG Emissions (tCO2e)	2019/20 GHG Emissions (tCO2e)	2021/22 GHG Emissions (tCO2e)	2022/23 GHG Emissions (tCO2e)	Change (From reporting year to baseline)
Scope 1 Emissions	**7,132**	**6,509**	**5,570**	**5,980**	**-16.1%**
Building Natural Gas Use	7,002	6,326	5,405	5,514	-21.2%
Building Fuel Use	14	18	21	19	36.1%
Fleet Fuel Use	115	165	143	447	287.4%
Scope 2 Emissions	**1,207**	**636**	**658**	**720**	**-40.3%**
Electricity Use	1,207	636	658	720	-40.3%
Scope 3 Emissions	**21,762**	**27,133**	**6,791**	**21,744**	**-0.1%**
Staff/Faculty Travel	1,513	1,640	437	1,123	-25.7%
Paper Use	395	131	16	11	-95.9%
Waste	443	458	129	230	-48.0%
Food	6,574[1]	6,574[1]	1,352	2,201	-66.5%
Student/Staff Commuting	12,839	18,329	4,857	18,179	41.6%
Total GHG Emissions	**30,100**	**34,278**	**13,019**	**28,449**	**-5.5%**
GHG Emissions Per Student	1.15	1.07	0.42	0.99	-13.5%

Note [1]: Food Emissions were not incorporated in the GHG calculator until 2019 and as such, the values in 2014 are the same in 2019.

Analysis

Total emissions for 2022/23 are 28,449 tCO2e, having decreased by 5.5% since the baseline year

- Scope 1 Emissions are 5,980 tCO2e (-16.1%)
- Scope 2 Emissions are 720 tCO2e (-40.3%)
- Scope 3 Emissions are 21,744 tCO2e (-0.1%)



In the fiscal year 2022/23, Humber College has made significant progress in reducing its Scope 1,2 and 3 Emissions showcasing a 5.5% decrease from the baseline year of 2014-2015. The detailed breakdown indicates significant improvements in both Scope 1 and Scope 2 emissions. However, there was only a slight 0.1% reduction in Scope 3 emissions for this year.

Scope 3 emissions played a predominant role in the emissions profile this reporting year, accounting for an estimated 76.5% of the overall greenhouse gas emissions. The primary factors contributing to this increase were:

Staff/Faculty Travel

This category describes the transportation by Humber staff, faculty and students that is paid-for/covered by the college. With return to the business-as-usual post-pandemic norms, in-person meetings, conferences and Humber-paid work travel increased this year, all of which contributes to the increase in Scope 3 emissions.

Waste

Waste-related emissions are quantified by the total waste generated and the total waste diverted from landfills. With increased footfall on campus this year, more emissions related to waste are seen. Nevertheless, when compared to the baseline year, these emissions remain at a substantially lower level as the Food Emporium, Humber's largest food court, remained closed through the reporting year resulting in drastically lower amounts of waste.

Food

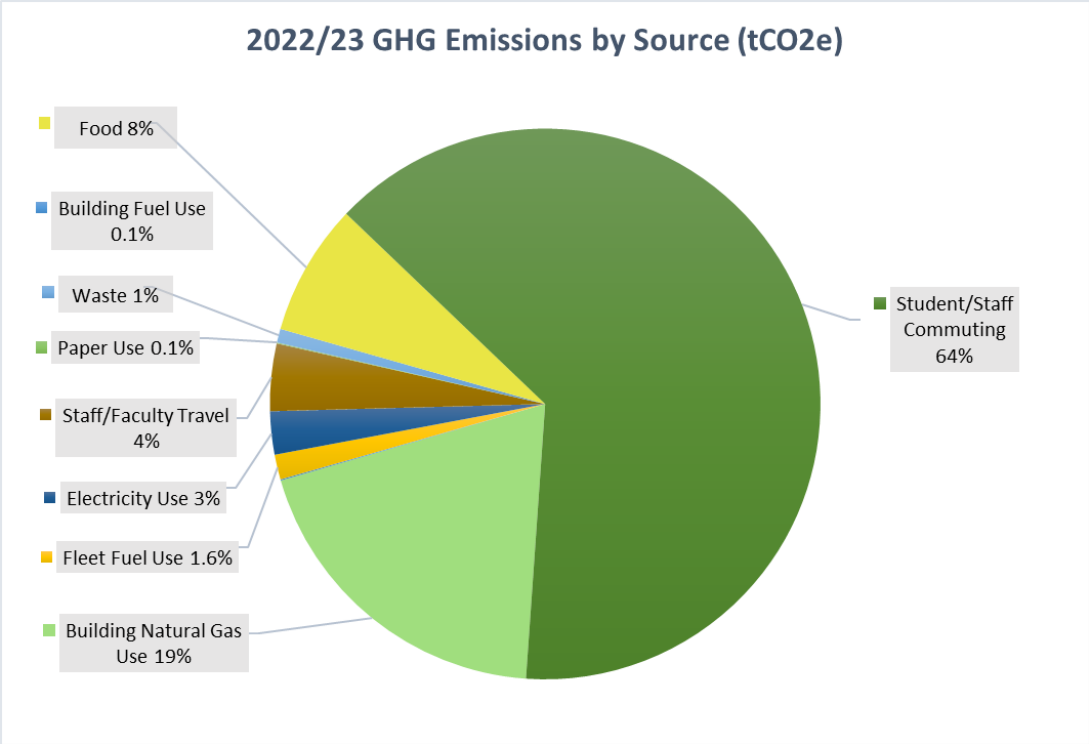
This category quantifies the emissions related to Humber purchased goods and services. A significant surge, as compared to last reporting year, is due to the community's return to campus and the increase in food and beverage purchases from Humber's main food service providers, Chartwells and Longo Faculty of Business.

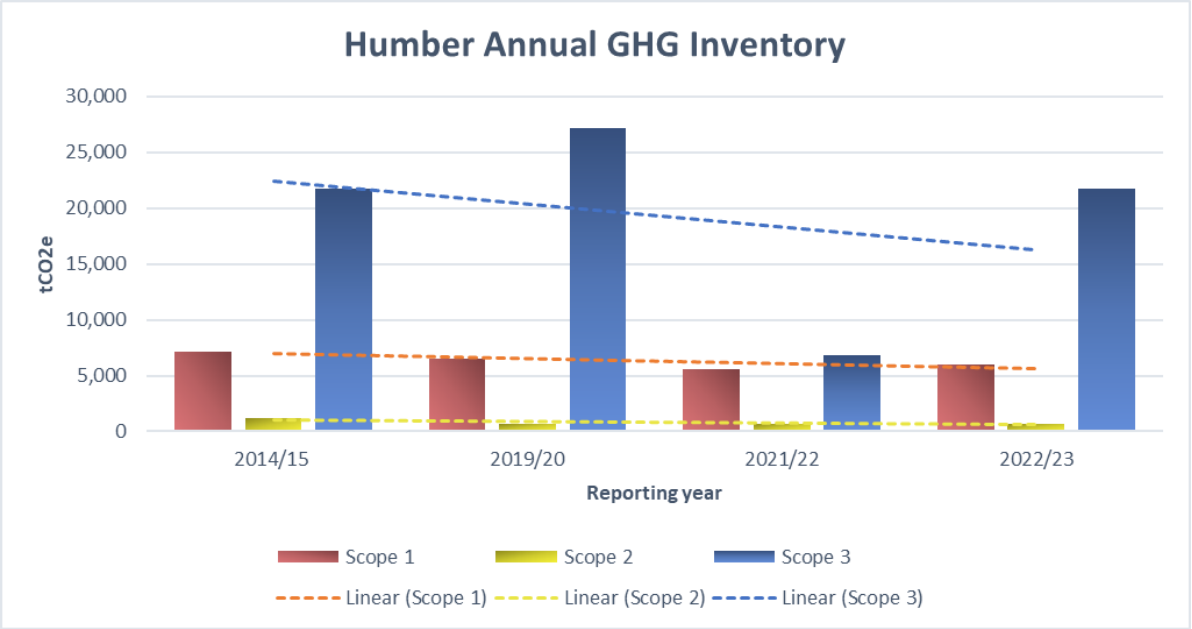
Student/Staff commuting

This category is based on emissions from student/employees commuting to campus by car or other forms of transit. A notable increase of 41.6% from the baseline year is evident, primarily linked to the continuous growth in student enrollment through the years. Additionally, the return to pre-pandemic operational norms in the college serves as a significant factor to this surge when compared to previous year's emissions.

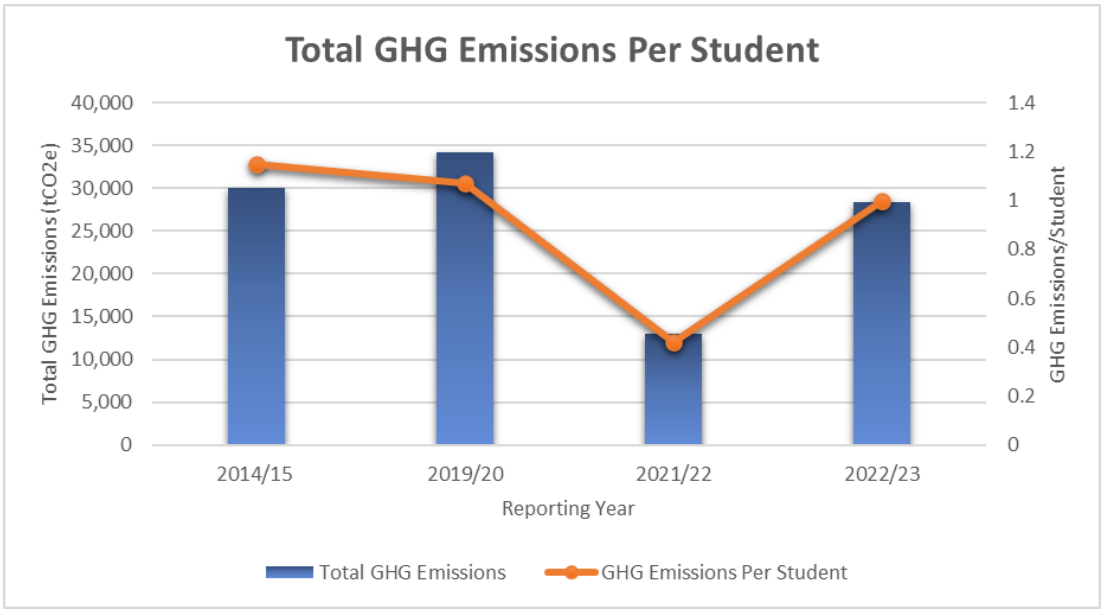
Vehicle Fleet

Apart from the indirect emissions, it is noteworthy to highlight a rise in the direct emissions associated with Humber's vehicle fleet accounted in the Scope 1 emissions. These emissions are quantified by the total kilometers travelled by the vehicle type and the fuel type (Gas/Diesel). An increase is observed as we included 7 new departments and the Humber Shuttle Services running year-round in the annual vehicle fleet tracking process, as opposed to the previous reporting years where only one department's vehicle fleet was assessed.



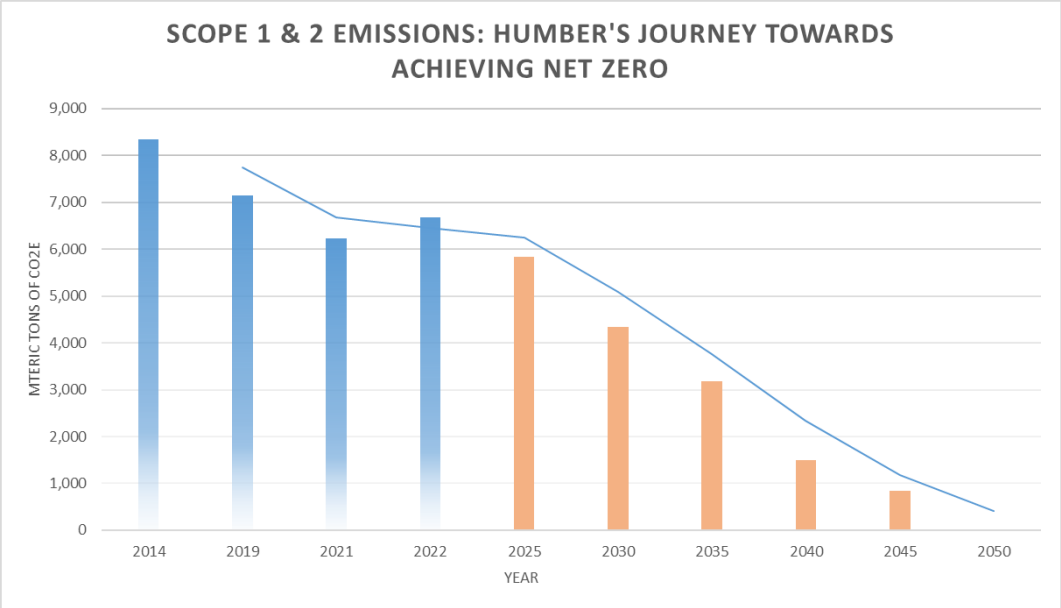


Graph displaying Humber's Annual GHG Inventory results through the reporting years. The baseline reporting year is 2014-2015



Note[2]: The GHG Inventory data could not be collected and analyzed for the years 2015/16, 2016/17, 2017/18, 2018/19, and 2020/21.

In the short-term, future GHG emissions are expected to increase as these are driven by enrollment and the number of buildings Humber owns and operates. This growth will be tempered somewhat by natural and regulated efficiency improvements including building code improvements (Provincial jurisdiction) and vehicle fuel efficiency standards (Federal jurisdiction), and the addition of energy efficient buildings. Over the long-term, Scope 1 and 2 emissions are expected to decrease with the implementation of the **Integrated Energy Master Plan** and **Climate Action Plan**.



Note[3]: Forecasted data is taken from the emissions reduction targets set by Humber in the Integrated Energy Master Plan.

The above graph illustrates Humber College's Scope 1 & 2 Greenhouse Gas (GHG) Emissions, showcasing a planned reduction to zero by the year 2050, marking a significant 100% decrease from the baseline levels in 2014. This commitment aligns with Humber's Climate Action Plan, which strategically outlines the college's path toward achieving net-zero emissions by 2050. To realize this ambitious goal, Humber is set to implement various strategies. These include the ongoing deployment of innovative energy-efficient initiatives, exemplified by projects like the North Campus District Energy Project, SWITCH, which seeks to transition from a steam-based system to a contemporary hot water system predominantly powered by electricity. Additional strategies involve the replacement of natural gas heating equipment with decarbonized alternatives, ensuring that new constructions, such as the Humber Cultural Hub, adhere to stringent energy-efficient and zero-carbon standards, and exploring possibilities for on-campus renewable energy generation and storage. These multifaceted approaches underscore Humber College's commitment to environmental sustainability and align with broader efforts to achieve Net Zero.