



MORRISON HERSHFIELD



2022

Carbon Footprint
Assessment

Morrison Hershfield 2022 Carbon Footprint Assessment

Executive Summary

Morrison Hershfield conducted this Carbon Footprint Assessment for Calendar Year 2022 (January 1, 2022, to December 31, 2022). This report aims to provide a clear understanding of Morrison Hershfield's environmental impact and greenhouse gas (GHG) emissions. In calculating our carbon footprint, we followed established standards, used industry-leading software, and consulted reputable sources.

This 2022 Carbon Footprint Assessment follows similar reports undertaken in 2009 and 2019, generally following the same methodology while expanding the examination of our emissions. We obtained more actual data for our office consumption of natural gas and electricity thereby sharply reducing the reliance on estimates. We took a more rigorous approach to our employee commuting emissions compared to previous reports, gathering data that will help to shape policies as we seek to reduce our emissions. Likewise, for the first time, we gathered data on emissions related to our business travel and undertook an analysis of our supply chain emissions in the form of purchased goods and services.

We partnered with the technology provider AVARNI Software for tools and guidance in conducting the carbon footprint. The technology includes capabilities to forecast carbon reduction pathways which will prove important as we formally commit to reducing our carbon footprint.

This assessment followed the Greenhouse Gas Protocol (reference: www.ghgprotocol.org), the most commonly used standard for carbon accounting, and consisted of gathering consumption data for Scope 1, Scope 2, and Scope 3 emissions for each office. Emissions were categorized according to the three scopes defined by the Greenhouse Gas Protocol: Scope 1, emissions originating from direct sources; Scope 2, emissions associated with purchased or acquired electricity, steam, heat, and cooling; and Scope 3, indirect emissions from sources such as supply chains, business travel, and employee commuting.

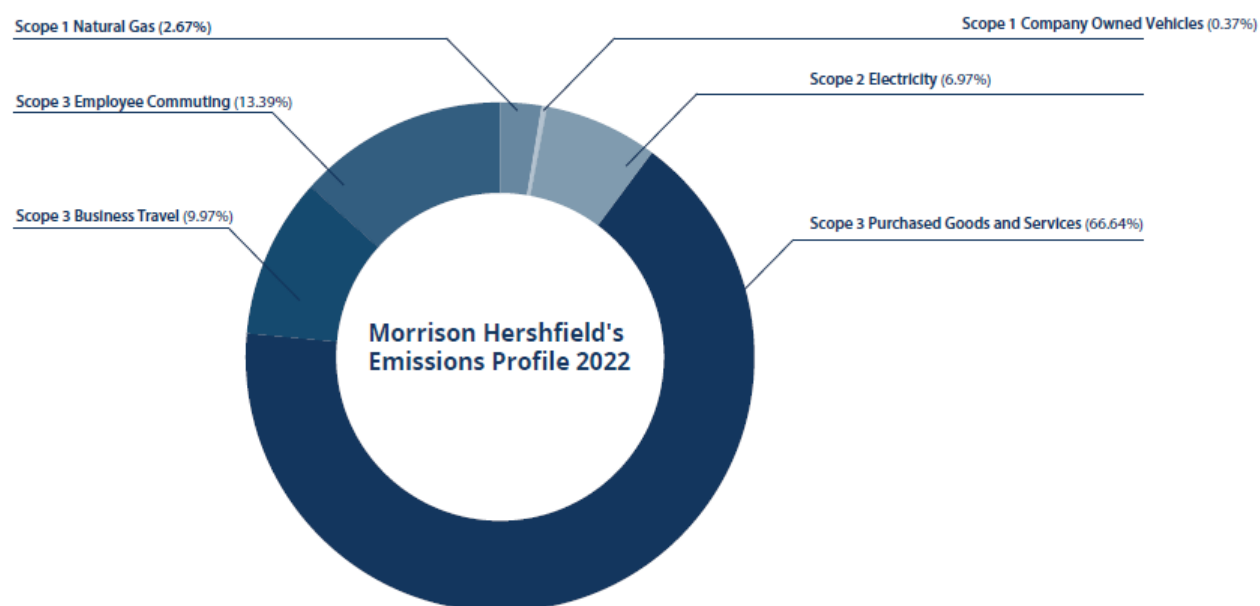
Morrison Hershfield's 2022 Carbon Footprint results for Scope 1, 2 and 3 emissions are shown in Table 1 below:

Table 1: Total Emissions Summary (Scope 1, 2 and 3)

Category	2022 GHG Emissions (t CO ₂ e)
Scope 1 – Owned Vehicles	27.5
Scope 1 – Natural Gas	208
Scope 2 – Electricity	544
Scope 3 – Category 1 Purchased Goods & Services	5,200
Scope 3 – Category 6 Business Travel	778
Scope 3 – Category 7 Employee Commuting	1,045
Total	7,803



Figure 1: Morrison Hershfield 2022



Since our last carbon footprint calculation in 2019, our employee count has increased by 2.7% and we have added four offices. Over the same period, we have reduced our total Scope 1 (natural gas) and Scope 2 (electricity) emissions by 35% which corresponds with a 37% reduction in emissions per employee.

The largest contributor to this decrease is the improved electricity grid emissions factors in our operating markets. While this improvement is beyond our control, we continue to take measures that are having an impact, including improving the energy efficiency of the spaces we lease, relocating to more efficient buildings, investing in technology to support virtual teams and remote work, and promoting hybrid work options.

An analysis of our Scope 3 emissions included Categories 1 (Purchased Goods and Services), 6 (Business Travel), and 7 (Employee Commuting). These are the most critical categories under the GHG Protocol for a professional services firm like ours. Of these categories, only employee commuting emissions were estimated in the 2019 report. Fundamentally different methods were used to derive employee commuting emissions in 2019 and 2022, so a straight comparison is not possible. The employee commuting survey used for our 2022 analysis did reveal a significant shift to a hybrid work environment and reduced commuting.

Scope 3 emissions over categories 1, 6, and 7 comprise 90% of our total emissions as expected for professional services firms like Morrison Hershfield.

1. Introduction

Morrison Hershfield is a market-leading, multi-disciplinary engineering firm contributing to the social well-being and economic prosperity of the communities we serve. As an employee-owned firm, we have the opportunity to set our own priorities, like a focus on environmental sustainability in our project work and internal operations. We understand the importance of reducing our carbon footprint as it contributes to both the state of the environment and poses health risks to individuals around the globe.

We currently employ over 1000 staff and support clients from our 26 offices in Canada, India, and the United States. By understanding the carbon footprint of our operations, active steps can be taken to improve energy efficiency, work environments for employees, and reduce overall consumption. This report outlines Morrison Hershfield's Carbon Footprint Assessment for the 2022 calendar year with comparisons to previous assessments in 2009 and 2019.

1.1 Carbon Footprint

A carbon footprint refers to the total amount of greenhouse gas emissions (GHG) released into the atmosphere due to human activity. These greenhouse gas emissions trap heat in the atmosphere, contributing to global warming and climate change.

Morrison Hershfield produces GHGs through the heating, cooling, and ventilation of offices, lighting, computers, any other electricity, or fuel used in offices, our supply chain, business travel, employee commute, and company-owned vehicles.

1.2 Project Overview

The purpose of this project is to conduct a comprehensive analysis of Morrison Hershfield's Carbon Footprint Assessment for 2022. By measuring and assessing the greenhouse gas emissions associated with various activities, this project aims to provide valuable insights into the environmental impact of our organization, as well as identify opportunities for emission reduction and sustainability improvements.

We partnered with the technology provider AVARNI Software for tools and guidance in conducting the carbon footprint. The technology includes capabilities to forecast carbon reduction pathways which will prove important as we formally commit to reducing our carbon footprint.



2. Methodology

2.1 Data Quality and Emissions Scope

This 2022 Carbon Footprint Assessment follows similar reports undertaken in 2009 and 2019, generally following the same methodology while expanding the examination of our emissions. We obtained more actual data for our office consumption of natural gas and electricity thereby sharply reducing reliance on estimates. We took a more rigorous approach to our employee commuting emissions compared to previous reports, gathering data that will help shape policies as we seek to reduce our emissions. For the first time, we gathered data on emissions related to our business travel and undertook an analysis of our supply chain emissions.

The Carbon Footprint Assessment for 2022 follows the GHG Protocol and considers Morrison Hershfield's Scope 1, 2, and 3 emissions. According to the GHG Protocol, there are several different categories within each of the scopes. The emissions scopes for the assessment of this project are identified in Table 2 below:

Table 2: Emissions Scope

	Scope 1 (Direct)	Scope 2 (Indirect)	Scope 3
	Natural Gas Usage	Electricity Usage	Purchased Goods and Services
2022	Company-Owned Vehicles	-	Business Travel
	-	-	Employee Commuting

Direct and indirect emissions vary depending on the operational boundary of the GHG inventory or project in question. Direct emissions are emissions that occur from sources within the control or that are owned by the company, for example, emissions from combustion in furnaces or boilers within the office building. Indirect emissions are emissions from the electricity or steam consumed by the organization. The emissions from electricity and steam that are associated with combustion occur at the facility where they are generated. Scope 3 emissions are all those not captured in Scope 1 and Scope 2 and represent the emissions from the activities of the company from sources not owned or controlled by it. The Scope 3 categories most relevant to us as a professional services firm are Category 1 Purchased Goods & Services, Category 6 Business Travel, and Category 7 Employee Commuting.

When calculating emissions, an activity-based methodology was preferred. This methodology involves directly identifying and quantifying the GHG emissions produced by specific activities or processes. The activity-based methodology tends to be more accurate, however, where this was not possible, a spend-based methodology was used. This methodology calculates emissions based on the monetary value spent on goods or services associated with emissions. Both activity-based and spend-based methodologies are appropriate and widely accepted approaches under the GHG Protocol that provide valuable insight into emission production. The choice between the two was solely dependent on the data availability.

2.2 Greenhouse Gases Considered

The list below itemizes the GHGs considered in the assessment. All GHG emissions will be denoted as “CO₂e” throughout the report.

GHG’s considered:

- Carbon Dioxide CO₂
- Methane CH₄
- Nitrous Oxide N₂O

The Carbon Dioxide Equivalent is calculated using the Global Warming Potentials (GWP) of each gas and the associated amount of the compound per the emissions factor for each gas.

The GWPs are constant throughout the inventory and found through reputable sources such as the Intergovernmental Panel on Climate Change Global Warming Potentials (IPCC).

The emissions factors vary depending on the source, country, province/state, or sub-region. The emissions factors were used from reputable sources such as EPA (US) or the National Inventory Report (Canada). Emissions factors are discussed in greater detail in Section 2.5.

2.3 Data Collection and Calculation Procedures

2.3.1 Scope 1 and Scope 2 Consumption Data

Reported emissions are based predominately on primary activity/volumetric data with a few estimations made only where data was not available. Actual data received from each of the 26 offices was in the form of invoices or pro-rated data (based on occupied area) received from the landlord. In the limited cases where actual data was not available, estimated data was calculated using nationally available data. Estimations comprised only 2% of our total natural gas consumption and just 1% of our total electricity usage. Table 3 identifies which offices had primary data available and which offices had to be estimated.

Morrison Hershfield owns and operates seven vehicles to support our field activities. For these vehicles we collected actual mileage data in 2022. The associated emissions were included in Scope 1. See Table 12: Company-Owned Vehicles 2022 Emissions for more detailed information.

Table 3: Available Natural Gas and Electricity

Office	Natural Gas	Electricity
Atlanta	Not used	Primary
Baltimore	Not used	Primary
Burlington	Primary	Primary
St John’s	Not used	Primary
Charlotte	Primary	Primary
Calgary	Primary	Primary
Denver	Estimated	Primary

Dallas	Not used	Estimated
Edmonton	Primary	Primary
Florida	Not used	Estimated
Houston	Not used	Primary
Minnesota	Primary	Estimated
Moncton	Primary	Primary
Nanaimo	Estimated	Estimated
Ottawa	Not used	Primary
Portland	Not used	Primary
San Francisco	Primary	Primary
San Diego	Not used	Estimated
Seattle	Not used	Primary
Salt Lake City	Not used	Primary
Toronto	Primary	Primary
Vancouver	Primary	Primary
Victoria	Estimated	Primary
Vizag	Not used	Primary
Whitehorse	Not used	Primary
Winnipeg	Primary	Primary

2.3.2 Scope 3 Data

For Scope 3 Category 1 Purchased Goods & Services we extracted data from our accounting system based on a general ledger categorization. We excluded certain general ledger accounts that were not relevant to the GHG emissions calculations (e.g., taxes) or that were captured in other Scope 3 categories (e.g., airfares).

For Scope 3 Category 6 Business Travel we included flight data, non-commuting employee travel by vehicle, car rental and taxi/ride sharing service data. For flight data we used activity-based data (i.e., point to point distances) and only used spend-based data for limited cases where information was not available. All other business travel emissions were based on a spend-based methodology. Our approach assumed no offsets were purchased as part of the spend on airfares.

For Scope 3 Category 7 Employee Commuting we collected data using a standardized employee commuting questionnaire sent to all employees that recorded the primary office travelled to, method of commute (including multi-mode commutes) and the distance travelled. The survey captured a robust dataset with a response rate of 50% that was extrapolated to the entire company. Table 4 identifies our Scope 3 emissions and the activity data type.



Table 4: Scope 3 Basis for Calculations

GHG Category	Description	Activity Data Type
Purchased Goods and Services	Supply Chain General Ledger Data	Spend-based
Business Travel	Airfares	Activity-based
	Non-commuting Employee-owned Vehicle Travel	Spend-based
	Taxis/Ride-Sharing	Spend-based
	Vehicle Rental	Spend-based
Employee Commute	Employee Survey	Activity-based

2.4 Basis of Estimations for Energy Consumption

Significantly more energy consumption data was collected for the 2022 Carbon Footprint Assessment compared to 2019 and estimations formed a very small component of our reported energy emissions. In 2022 we were able to collect actual data for 23 offices for Scope 1 (natural gas) representing 98% of our total natural gas consumption and 21 offices for Scope 2 (electricity) representing 99% of our electricity consumption. Where required, estimations were made using the procedure described below.

Energy intensity data for 2022 estimations (i.e., annual energy per unit of floor area) was obtained from the same reputable sources as in 2019. In Canada, we used natural gas and electricity intensity factors from the Real Property Association of Canada (REALPAC), Energy Benchmarking Report (2017). For offices in the USA, we used data from the Energy Information Administration (EIA) Commercial Buildings Energy Consumption Survey (CBECS) 2018.

The estimated annual energy consumption was calculated by multiplying the intensity factor by our occupied area.

No energy consumption estimations were required for the Vizag office.

2.5 Emission Factors

An emission factor describes the rate at which a given activity releases GHGs into the atmosphere. Emission factors vary depending on the activity and the location. For example, the emissions factor for electricity varies depending on the typical energy mix used to supply power to a building to enable normal operations. Areas that have a higher renewable energy mix will have a lower emissions factor for electricity. In contrast, areas with a predominately fossil fuel based energy grid will have a higher emissions factor for electricity.

Table 5 summarizes the references used for the emissions factors of the various activities/sources and locations. Commonly referenced sources included: 2022 UNFCCC



National Inventory Report for Canada, Environmental Protection Agency 2022 for the USA, Government of India Ministry of Power 2019, and EXIOBase.

Purchased Goods and Services were calculated using a spend-based method and emissions factors from EXIOBase, a global, detailed Multi-Regional Environmentally Extended Supply-Use Table (MR-SUT). This was developed by detailing supply-use tables for a large number of countries and estimating emissions and resource extractions by industry (reference: www.Exiobase.eu). EXIOBase encapsulates data from 44 countries, 200 products, 163 industries, 417 emission categories, and 662 material and resources categories. EXIOBASE includes factors for North America and India, and is built into the AVARNI software.

Table 5: Emission Factor Reference Sources

GHG Scope and Category	Activity Data Type	Emission Factor Source	Region	Emission Factor Link
Scope 1: Non-Transport Combustion	Natural Gas	Environmental Protection Agency 2022	USA	https://www.epa.gov/climateleadership/ghg-emission-factors-hub
Scope 1: Non-Transport Combustion	Natural Gas	Canada 2022 Natural Inventory Report (NIR)	Canada	https://unfccc.int/documents/461919
Scope 1: Non-Transport Combustion	Natural Gas	India Government	India	https://www.climate-transparency.org/g20-climate-performance/g20report2019
Scope 1: Transport Combustion	Distance Travelled	Environmental Protection Agency 2022	USA, Canada	https://www.epa.gov/climateleadership/ghg-emission-factors-hub
Scope 2	Electricity Consumption	Environmental Protection Agency 2022	USA	https://www.epa.gov/egrid/power-profiler/#/
Scope 2	Electricity Consumption	Canada 2022 National Inventory Report (NIR)	Canada	https://unfccc.int/documents/461919
Scope 2	Electricity Consumption	India Government	India	https://www.climate-transparency.org/g20-climate-performance/g20report2019
Scope 3: Purchased Goods and Services	Spend	EXIOBase	USA, Canada, India	https://zenodo.org/record/5589597#.Yh9_Zi8w1ao
Scope 3: Business Travel	Spend	EXIOBase	USA, Canada, India	https://zenodo.org/record/5589597#.Yh9_Zi8w1ao
Scope 3: Employee Commute	Distance Travelled	UK Government BEIS	USA, Canada, India	https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2022

3. Carbon Footprint Assessment Results

Morrison Hershfield's Carbon Footprint Assessment in 2022 was determined by evaluating natural gas, owned vehicles, electricity, employee commuting, business travel, and purchased goods and services using the methodology described in Section 2. Results are presented in the following report sub-sections and where available results are also shown for our assessments in 2009 and 2019.

3.1 Scope 1 & 2: Operations

Table 6: Scope 1 & 2 Emissions

Category	2009 (tCO ₂ e)	2019 (tCO ₂ e)	2022 (tCO ₂ e)
Employee Count (#)	753	975	1001
Scope 1: Owned Vehicles (t CO ₂ e)	N/A	N/A	27.5
Scope 1: Natural Gas (t CO ₂ e)	220	300	208
Scope 2: Electricity (t CO ₂ e)	1297	859	544
Scope 1 & 2: (t CO ₂ e)	1517	1159	780

Since the last carbon footprint calculation in 2019, our employee count has increased by 2.7% and we have added four offices. Over the same period, we have reduced our total Scope 1 (natural gas) and Scope 2 (electricity) emissions by 35% which corresponds to a 37% reduction in emissions per employee. Table 6 details our Scope 1 and Scope 2 emissions in 2009, 2019, and 2022.

The largest contributor to this decrease is the improved electricity grid emissions factors in our operating markets. The sharp reduction in the reliance on estimates for our consumption also contributed to the decrease as the estimation method generally tends to over-estimate. In 2022, we relied on estimates for 2% of our natural gas usage whereas we used estimates for 40% of our consumption in 2019. For electricity we reduced reliance on estimates from 35% of the total in 2019 to 1% in 2022. Also, we continue to see improvements in our emissions production due to relocating to more efficient buildings, energy efficiency, and space usage improvements in existing facilities. As we accommodate the needs of a hybrid workforce model, Morrison Hershfield has begun to reimagine our workspace needs. Since 2019, we have reduced our company total space requirement per employee by 15%.

While conducting the calculations for this 2022 report, we discovered an apparent error in a conversion factor used in making estimates for natural gas and electricity consumption in the 2019 report. Since the 2019 report relied heavily upon consumption estimates, this discrepancy is material and GHG emissions were over-estimated. When comparing emissions between 2019 to 2022 we calculated that 20% of the year-to-year reduction from natural gas stemmed from this error and 11% of the reduction from electricity was due to this error. We have not restated the 2019 results in this report and instead are highlighting that a material portion of Scope 1 and Scope 2 reductions are due to this issue.



3.2 Scope 3 – Employee Commuting (Category 7)

Table 7: Employee Commuting Emissions

Scope 3 - Category 7 Employee Commuting	2009	2019	2022
Employee Count (#)	753	975	1001
GHG Emissions (t CO2e)	2230	1627	1045
Intensity (t CO2e/employee)	2.96	1.67	1.04

In 2022, GHG emissions associated with employee commuting were assessed based on the results of a staff survey which included multi-mode transportation options. Though figures are shown in Table 7, fundamentally different methods were used to estimate employee commuting emissions in the 2019 and 2009 reports, so straight comparisons must use caution.

The employee commuting survey used for our 2022 analysis did reveal reduced commuting and a significant shift to a hybrid work environment. Approximately 20% of our workforce now works fulltime from home and about 20% chooses to work fulltime from the office. The remaining 60% of staff take a hybrid approach to their work location.

Despite the 2.7% increase in headcount, the trend in employee commuting emissions have declined by 38% on both a total and per employee basis.

About 77% of those who commute to an office use gas powered cars, making this the preferred method of commuting. Electric and hybrid vehicles make up 5.5% of commuting trips. Just over 5% of our staff choose to walk or bike for their commute to work and 3.4% of commuters use public transit.

3.3 Scope 3 – Business Travel (Category 6)

Table 8: Business Travel Emissions

Scope 3 – Category 6 Business Travel	2022 GHG Emissions (t CO2e)
Airfares	309.8
Employee-owned vehicle non-commuting travel	268.9
Taxis/Ride-Sharing	45.5
Vehicle Rental	153.6
Total	778

In 2022 business travel related emissions were assessed according to the methodology in Section 2.5. Comparisons to 2009 and 2019 results are not possible since this category was not included in the previous assessments. Refer to Table 8 for our 2022 Business Travel Emissions.



Of the business travel related emissions, 86% result from project-related travel and 14% from overhead related travel.

3.4 Scope 3 – Purchased Good and Services (Category 1)

In 2022 we assessed our supply chain emissions for the first time so comparison with previous years is not possible. A substantial portion of our emissions (67%) stems from our supply chain, similar to other professional services firms. The primary contributors to emissions within our supply chain are the sub-consultants we engage for our project work (approximately 50% of the emissions in this category). Table 9 shows the breakdown of our Scope 3 Purchased Goods and Services Emissions.

Table 9: Scope 3 Purchased Goods and Services Emissions

Scope 3 – Category 1	2022 GHG Emissions (t CO2e)
Sub Consultants	2,663
Office Rent	767
Software	498
Sub-Contractors	226
Office Expenses	180
Accommodation	156
Staff Expenses	132
Insurance	120
Equipment	89
Online Services	76
Cellular Charges	42
Audit and Tax	38
Conferences/Training	36
Subscriptions and Publications	25
Marketing	21
Client Expenses	21
Delivery and Postage	20
All Other Categories	1,913
Total	7,023

3.5 Total Emissions Summary

The following tables describe Morrison Hershfield's total emissions summary (Table 10), natural gas and electricity emissions by office (Table 11 and 13), a break-down of the emissions from company-owned vehicles (Table 12), and our total Scope 3 emissions by country (Table 14).

Table 10: Total Emissions Summary

Category	2022 GHG Emissions (t CO2e)
Scope 1 – Owned Vehicles	27.5
Scope 1 – Natural Gas	208
Scope 2 – Electricity	544
Scope 3 – Category 1 Purchased Goods & Services	5,200
Scope 3 – Category 6 Business Travel	778
Scope 3 – Category 7 Employee Commuting	1,045
Total	7,803

3.6 Emissions by Office

Scope 1: Natural Gas

Table 11: Natural Gas 2022 Emissions

Country	Office	Consumption (therms)	Emissions (t CO2e)	Emission Factors (kg CO2e/therm)
USA	Atlanta	-	-	-
USA	Baltimore	-	-	-
Canada	Burlington	1,511	8.03	5.31
USA	Charlotte	13.50	0.072	5.31
Canada	Calgary	11,576	61.5	5.31
USA	Denver	79.9	0.424	5.31
USA	Dallas	-	-	-
Canada	Edmonton	6,879	36.5	5.31
USA	Florida	-	-	-
USA	Houston	-	-	-
USA	Minnesota	3,248	17.25	5.31
Canada	Moncton	3.30	0.018	5.31
Canada	Nanaimo	58.7	0.312	5.31
Canada	Ottawa	-	-	-

USA	Portland	-	-	-
USA	San Francisco	643	3.4	5.31
USA	San Diego	-	-	-
USA	Seattle	-	-	-
USA	Salt Lake City	-	-	-
Canada	St. John's	-	-	-
Canada	Toronto	11,267	59.8	5.31
Canada	Vancouver	979	5.20	5.31
Canada	Victoria	582	3.09	5.31
India	Vizag	-	-	-
Canada	Whitehorse	-	-	-
USA	Winnipeg	3,148	16.7	5.31

Scope 1: Company-Owned Vehicles

Table 12: Company-Owned Vehicles 2022 Emissions

Country	Office	Distance (km)	Emissions (t CO2e)
Canada	Edmonton	4,617	1.36
Canada	Vancouver	10,941	3.22
Canada	Vancouver	5,517	1.62
USA	Portland	8,082	2.38
USA	Salt Lake City	12,239	3.60
USA	Portland	9,139	2.69
USA	Seattle	10,145	2.98

Scope 2: Electricity

Table 13: Electricity 2022 Emissions

Country	Office	Consumption (kWh)	Emissions (t CO2e)	Emission Factors (kg CO2e/kWh)
USA	Atlanta	267,93	88.0	0.33
USA	Baltimore	97,852	28.6	0.29
Canada	Burlington	47,104	1.20	0.03

USA	Charlotte	11,466	3.37	0.29
Canada	Calgary	231,326	135.2	0.58
USA	Denver	15,309	8.47	0.55
USA	Dallas	1,925	0.749	0.39
Canada	Edmonton	107,433	62.8	0.58
USA	Florida	7,118	2.72	0.38
USA	Houston	45,029	17.5	0.39
USA	Minnesota	11,217	3.92	0.35
Canada	Moncton	97.2	0.0001	0.29
Canada	Nanaimo	5,916	0.043	0.01
Canada	Ottawa	785,541	20.0	0.03
USA	Portland	118,696	18.4	0.15
USA	San Francisco	12,645	2.60	0.21
USA	San Diego	6,250	1.28	0.21
USA	Seattle	61,693	5.96	0.10
USA	Salt Lake City	27,957	19.85	0.71
Canada	St. John's	36,068	0.866	0.02
Canada	Toronto	750,018	19.1	0.03
Canada	Vancouver	360,274	2.64	0.01
Canada	Victoria	9,968	0.073	0.01
India	Vizag	74,482	52.7	0.71
Canada	Whitehorse	44,736	4.49	0.10
USA	Winnipeg	42,200	0.046	0.0012

Scope 3: Purchased Goods and Services, Business Travel and Employee Commute

Table 14: Scope 3 2022 Emissions by Country

Country	Headcount	Category 1: Purchased Goods and Services Emissions (t CO2e)	Category 6: Business Travel Emissions (t CO2e)	Category 7: Employee Commuting Emissions (t CO2e)
Canada	759	4,095	563	764
USA	175	957	214	150
India	67	148	0.64	131
Total	1,001	5,200	778	1,045

4. Conclusions

Morrison Hershfield's 2022 Carbon Footprint Assessment has provided valuable insights into our organization's environmental impact. By quantifying and assessing greenhouse gas emissions across various scopes and sectors, we have gained a deeper understanding of our contribution to climate change. Our findings have highlighted specific emissions sources and hotspots, enabling us to prioritize and target mitigation efforts accordingly and effectively.

In 2022 we have seen improvements in most indicators. Overall, our Scope 1 (natural gas) and Scope 2 (electricity) emissions have improved since our last report in 2019. While our workforce has increased by 2.7% and we have added four offices, we have reduced our total Scope 1 (natural gas) and Scope 2 (electricity) emissions by 35% which corresponds to a 37% reduction in emissions per employee. These reductions are due to intentional measures to improve the sustainability of our buildings but also due to a cleaner electricity grid in some regions resulting in improved emissions factors.

With our rigour in data collection for natural gas and electricity consumption we relied on estimates for only 2% of our natural gas and 1% of our electricity consumption. This was a significant change from 2019 and since the actual consumption tends to be less than estimated values, this contributed to a portion of the improvement in emissions from these sources.

Since the last report in 2019, we have had several changes in office facilities that have impacted our emissions footprint, driven in some cases by the move to a hybrid work environment. Since 2019 we have reduced our company total space requirement per employee by 15%.

- We moved to new and more energy efficient offices in Ottawa, Baltimore, Whitehorse, and St. John's.
- The Baltimore and St. John's space designs permitted significant reductions in required floor areas, comprising a 60% reduction in leased space for the two offices combined.
- The lease in Burlington was renewed with a 2,400 square foot reduction in floor area.
- The lease in Edmonton was renewed and we reduced our occupancy from two floors to one, reducing our space needs by 45% while accommodating the same staff complement.
- The Salt Lake City and Oakland offices relocated from rental spaces to leased office spaces.
- We renovated our office in Florida.
- Negotiated a Morrison Hershfield designed, landlord-build bike shelter (instead of an additional parking spot) as part of the new Whitehorse Office.

The expanded Scope 3 assessments provided useful data from which we can use to establish a pathway to our long-term GHG reduction goals.

Scope 3, Category 7 Employee Commuting GHG emissions were assessed based on the results of a staff survey which included multi-mode transportation options. The survey confirmed reduced commuting due to shift to a hybrid work environment with approximately 20% of our workforce now working fulltime from home, 20% choosing to work fulltime from the office, and the remaining 60% of staff taking a part-time office/part-time work from home

approach. Despite the 2.7% increase in headcount, the trend in employee commuting emissions have declined by 38% on both a total and per employee basis.

Scope 3, Category 6 Business Travel GHG emissions were assessed for the first time. These emissions accounted for 10% of our total emissions, with the vast majority (86%) stemming from projected-related travel.

Scope 3, Category 1 Purchased Goods and Services GHG emissions were also assessed for the first time. As expected for a professional services firm, 67% of our emissions result from this category. About half of our emissions in this category result from the sub-consultants we utilize on our project work.