University of Manitoba – FY2019/20 Greenhouse Gas Emissions Inventory

Scope	Description	Component		Usage Data	GHG Emissions
Scope 1 - Direct	Emissions from stationary combustion	Buildings [a]	Heating - Natural Gas	534,716 GJ	28,138 tCO2e
			Heating - Fuel Oil	0	0 tCO2e
		Transportation	Fleet Operations		637 tCO2e
	Emissions from other sources	Agriculture	Livestock		1,332 tCO2e
		Industrial Processes	Nitrous Oxide	22 Tonnes	6,556 tCO2e
			Sulfur Oxide	0.13 Tonnes	
Scope 2 - Indirect	Emissions from purchased electricity	Centers [b]	Electricity	386,293 GJ	47 tCO2e
	Emissions from other sources	Buildings [c]	Cooling - Chilled Water	32,318 GJ	1 tCO2e
			Heating - Steam	133,263 GJ	8,462 tCO2e
Scope 3 - Optional	Waste generated in operations	Waste	Solid Waste Disposal	1,475 t	2,201 tCO2e
	Business travel	Transportation	Business - Air Travel		3,880 tCO2e
	Commuting		All Commuting		12,395 tCO2e
Total Campus GHG Emissions for 2019/2020 [d] [e]					63,649 tCO2e

[a] Buildings for Direct Energy calculations included LGS Powerhouse, LGS Campus, LGS Max Bell, 1 Research Road, LGS Campus Day Care, Southwood Lands, 78 Innovation Drive, 37 Kings Drive, Bannatyne Campus, and The Point.

[b] Centres for Electricity calculations included Fort Garry Campus, Richardson Centre, Crop Technology, Strawbale House, Bannatyne Campus, Glenlea, Delta Marsh, Carman, and Norrie Centre.

[c] Buildings for Indirect Energy calculations included Basic Medical Sciences, Apotex Centre, and Brodie Centre.

[d] These emissions have been estimated based on methodology from the Canada - National Inventory Report 1990 - 2014 Part 1. Table 1-1.

[e] Values may not sum precisely due to rounding and conversions

University of Manitoba - Utility Usage FY2019/20

Utility	Consumption	
Electricity	107,299,276 kWh	366,120 mmBtu
Steam	117,625,093 lbm	126,303 mmBtu
Chilled Water	2,552,551 tonh	30,631 mmBtu
Natural Gas	14,356,310 m^3	506,792 mmBtu
Water	479,119 m^3	126,569,850 US Gallons