



Hanover High School

SAU 70 Climate Action Plan Annex A

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1 HANOVER HIGH SCHOOL GREENHOUSE GAS EMISSIONS

The HHS CAP Annex shows the 2022-2023 school year greenhouse gas (GHG) inventory by emission sector and forecasted emissions for 2030 and 2050. The emission sectors include building energy use, tons of solid waste generated, gallons of wastewater generated, gallons of water consumed, and energy use for transportation which includes school bus routes, employee commute and student commute. A sector labeled "Other Travel" includes data relevant only to the high school. This data was used to calculate the GHG emissions from each sector in metric tons of CO₂ equivalents (MTCO₂e).

1.1 2022-2023 SCHOOL YEAR GREENHOUSE GAS EMISSIONS

The 2022-2023 school year inventory shows that HHS's operations generated 1,473 MTCO₂e. HHS's GHG inventory is broken down into eight sectors, which are described in more detail in the SAU 70 CAP.

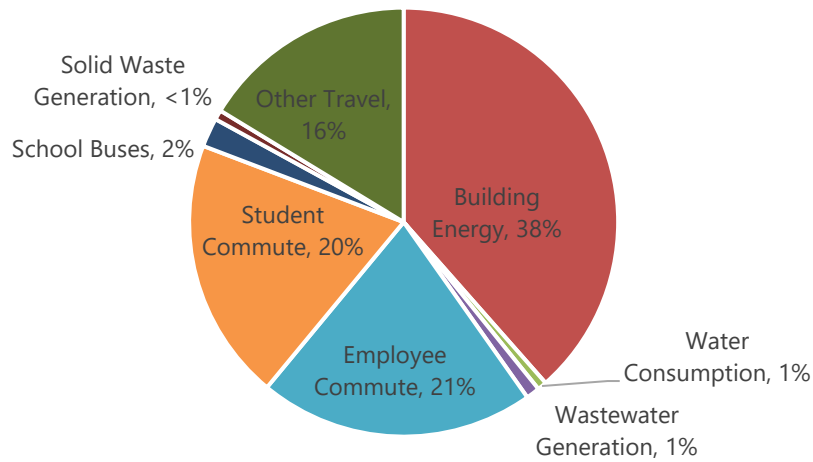
Table A-1 shows the breakdown of HHS's GHG emissions in the 2022-2023 school year.

Table A-1. HHS 2022-2023 School Year Greenhouse Gas Emissions Inventory

Emissions Sector	Greenhouse Gas Emissions (MTCO ₂ e)	Percent of Total
Building Energy	567	38%
<i>Electricity</i>	115	8%
<i>Propane</i>	12	<1%
<i>#2 Fuel Oil</i>	130	9%
<i>Wood Chips (Transport Only)</i>	311	21%
Employee Commute	306	21%
Student Commute	291	20%
Other Travel	240	16%
<i>Staff Development (Cars)</i>	3	<1%
<i>Staff Development (Air Travel)</i>	18	1%
<i>March Intensive</i>	154	10%
<i>Field Trips (Cars)</i>	0.5	<1%
<i>Field Trips (Buses)</i>	6	<1%
<i>Field Trips (Air Travel)</i>	7	<1%
<i>Athletics (Buses)</i>	47	3%
<i>Maintenance Vehicles</i>	4	<1%
School Buses	32	2%
Wastewater Generation	15	1%
Solid Waste Generation	11	1%
Water Consumption	10	1%
Total	1,473	100%

Figure A-1 shows that the greatest source of emissions stems from building energy and represents 38 percent of the total emissions. Employee commute represents the second highest emission sector at 21 percent and student commute represents 20 percent of total emissions. March Intensive emissions are also notable, representing 10 percent of the total annual emissions from HHS. GHG reduction measures can be found in section 5 of the SAU 70 CAP.

Figure A-1. HHS 2022-2023 School Year Greenhouse Gas Emissions Inventory



1.2 PROJECTED GREENHOUSE GAS EMISSIONS

The HHS GHG emissions for 2023 and projected emissions for the years 2030 and 2050 are shown in Table A-2. The forecasted emissions are a “business-as-usual” scenario. Growth projections in emissions are based on anticipated population growth in the towns of Hanover and Norwich as provided by the SAU 70 administration. The forecast indicates that if Hanover High School does not take action, GHG emissions will continue to increase.

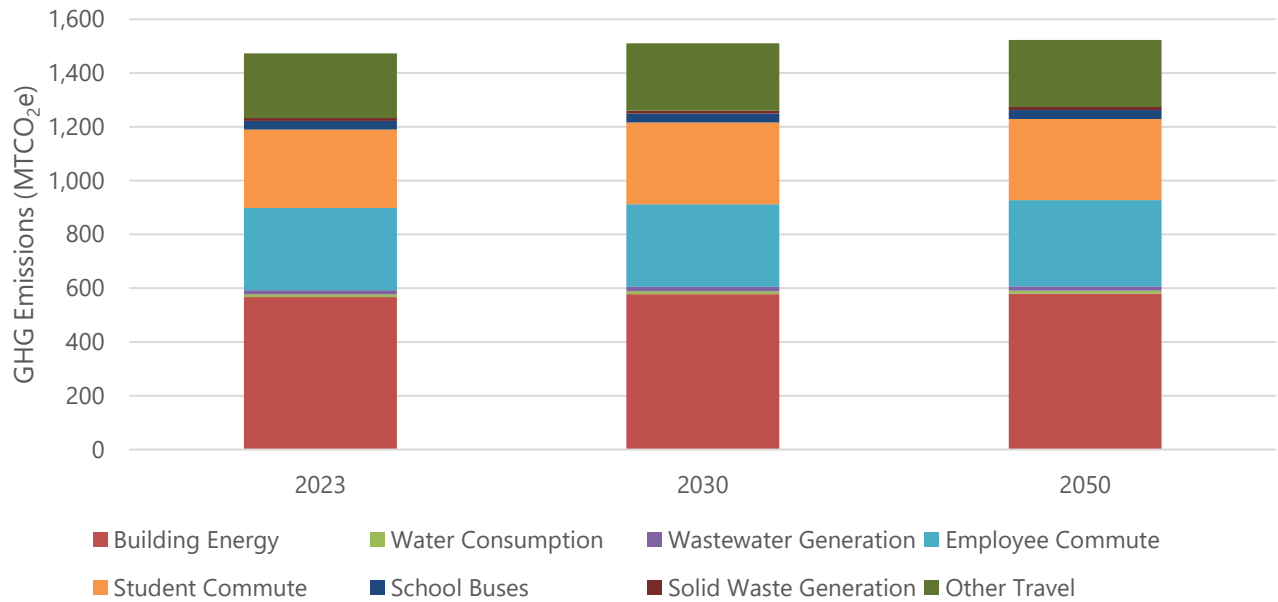
Table A-2. HHS Greenhouse Gas Emissions Inventory and Forecasts by Sector

Emissions Sector	Greenhouse Gas Emissions (MTCO ₂ e)		
	2023	2030	2050
Building Energy	567	578	580
<i>Electricity</i>	115	120	121
<i>Propane</i>	12	13	13
<i>#2 Fuel Oil</i>	128	134	135
<i>Wood Chips (Transport Only)</i>	311	311	311
Employee Commute	306	307	321
Student Commute	291	304	302
Other Travel	240	250	250
<i>Staff Development (Cars)</i>	3	4	4
<i>Staff Development (Air Travel)</i>	18	18	19
<i>March Intensive</i>	154	160	160
<i>Field Trips (Cars)</i>	0.5	0.5	0.5
<i>Field Trips (Buses)</i>	6	7	7
<i>Field Trips (Air Travel)</i>	7	7	7
<i>Athletics (Buses)</i>	47	49	49
<i>Maintenance Vehicles</i>	4	4	4
School Buses	32	34	33

Wastewater Generation	15	16	16
Solid Waste Generation	11	11	11
Water Consumption	10	11	11
Total	1,473	1,511	1,526

Figure A-2 shows that the relative proportions of emissions from each sector are predicted to remain consistent in a BAU scenario through the year 2050.

Figure A-2. HHS Greenhouse Gas Emissions Inventory and Forecasts by Sector



For complete information regarding the emissions inventory and forecast, including methodology and supporting data, refer to the Emissions Data and Calculations located in Appendix A.

1.3 GREENHOUSE GAS REDUCTION TARGETS

The State of New Hampshire aims to reduce its GHG emissions by 20 percent from 1990 levels by 2025 and 80 percent below 1990 levels by 2050 (DES 2009:24-25). Almost all scientific sources recommend a reduction of 80 percent by 2050, which is the amount of GHG reduction deemed necessary by the United Nations’ Intergovernmental Panel on Climate Change to keep temperatures from exceeding a 2-degree Celsius (°C) increase above pre-industrial levels. The HHS CAP aims to align with these recommendations.

Table A-3 shows HHS’s GHG emission forecasts and reduction targets for 2030 and 2050 relative to the baseline 2022-2023 school year data. This level of reduction corresponds to an annual emissions limit of 1,269 MTCO₂e in 2030 and 382 MTCO₂e in 2050. This is the maximum amount of annual GHG emissions allowable while achieving the reduction targets.

Table A-3. HHS Greenhouse Gas Emissions Forecasts and Reduction Targets

	2030	2050
Forecasted Emissions (MTCO ₂ e)	1,511	1,526
Target Reduction (Percent)	16%	75%
Emissions Limit (MTCO ₂ e)	1,269	382
Emissions to be Reduced by CAP Measures to Meet Target (MTCO ₂ e)	242	1,145

Figure A-3 shows the trajectory of HHS's GHG emissions in a BAU scenario in comparison to the GHG reduction targets established.

Figure A-3. HHS Greenhouse Gas Emissions Forecasts and Reduction Targets

