



Bernice A. Ray School

SAU 70 Climate Action Plan Annex C

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1 BERNICE A. RAY SCHOOL GREENHOUSE GAS EMISSIONS

The Ray School 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. 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 the Ray School's operations generated 655 MTCO₂e. The Ray School's GHG inventory is broken down into seven sectors, which are described in more detail in the SAU 70 CAP.

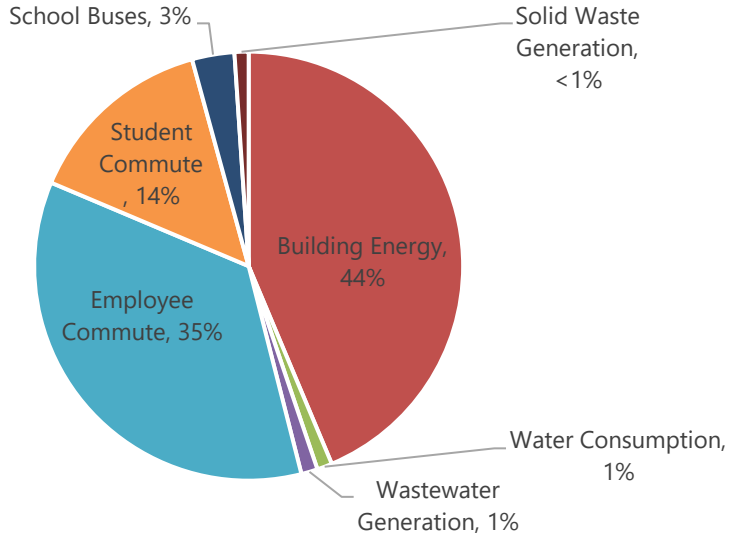
Table C-1 shows the breakdown of RMS's GHG emissions in the 2022-2023 school year.

Table C-1. Ray School 2022-2023 School Year Greenhouse Gas Emissions Inventory

Emissions Sector	Greenhouse Gas Emissions (MTCO ₂ e)	Percent of Total
Building Energy	286	44%
<i>Electricity</i>	47	7%
<i>Propane</i>	149	23%
<i>#2 Fuel Oil</i>	90	14%
Employee Commute	231	35%
Student Commute	94	14%
School Buses	21	3%
Wastewater Generation	8	1%
Solid Waste Generation	7	1%
Water Consumption	7	1%
Total	655	100%

Figure C-1 shows that the greatest source of emissions stems from building energy and represents 44 percent of the total emissions. Employee commute represents the second highest emission sector at 35 percent and building energy represents 14 percent of total emissions. GHG reduction measures can be found in section 5 of the SAU CAP.

Figure C-1. Ray School 2022-2023 School Year Greenhouse Gas Emissions Inventory



1.2 PROJECTED GREENHOUSE GAS EMISSIONS

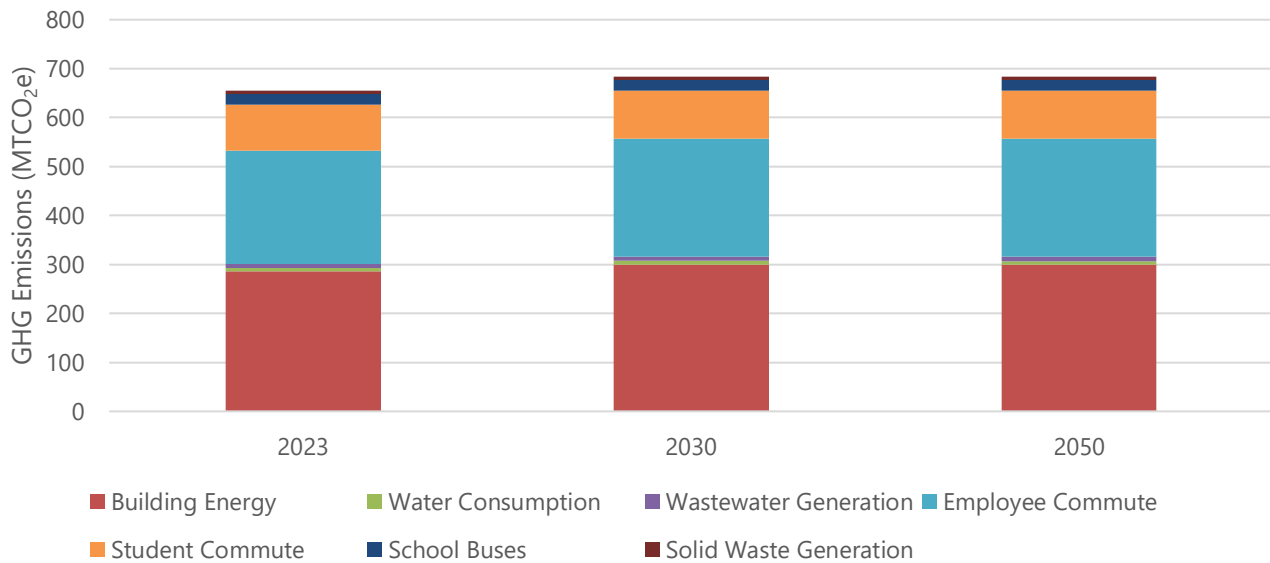
The Ray School GHG emissions for 2023 and projected emissions for the years 2030 and 2050 are shown in Table C-2. The forecasted emissions are a “business-as-usual” scenario. Growth projections in emissions are based on anticipated population growth in the town of Hanover as provided by the SAU 70 administration.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

Table C-2. Ray School Greenhouse Gas Emissions Inventory and Forecasts by Sector

Emissions Sector	Greenhouse Gas Emissions (MTCO ₂ e)		
	2023	2030	2050
Building Energy	286	300	299
<i>Electricity</i>	47	50	50
<i>Propane</i>	149	155	155
<i>#2 Fuel Oil</i>	90	94	94
Employee Commute	231	240	242
Student Commute	94	98	98
School Buses	21	22	22
Wastewater Generation	8	9	9
Solid Waste Generation	7	7	7
Water Consumption	7	8	8
Total	655	684	684

Figure C-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 C-2. Ray School 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.

Table C-3 shows the Ray School’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 574 MTCO₂e in 2030 and 171 MTCO₂e in 2050. This is the maximum amount of annual GHG emissions allowable while achieving the reduction targets.

Table C-3. Ray School Greenhouse Gas Emissions Forecasts and Reduction Targets

	2030	2050
Forecasted Emissions (MTCO ₂ e)	684	684
Target Reduction (Percent)	16%	75%
Emissions Limit (MTCO ₂ e)	574	171
Emissions to be Reduced by CAP Measures to Meet Target (MTCO ₂ e)	109	513

Figure C-3 shows the trajectory of the Ray School’s GHG emissions in a BAU scenario in comparison to the GHG reduction targets established.

Figure C-3. Ray School Greenhouse Gas Emissions Forecasts and Reduction Targets

