



Richmond Middle School

SAU 70 Climate Action Plan Annex B

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1 RICHMOND MIDDLE SCHOOL GREENHOUSE GAS EMISSIONS

The Richmond Middle School (RMS) 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 RMS's operations generated 523 MTCO₂e. RMS's GHG inventory is broken down into seven sectors, which are described in more detail in the SAU 70 CAP.

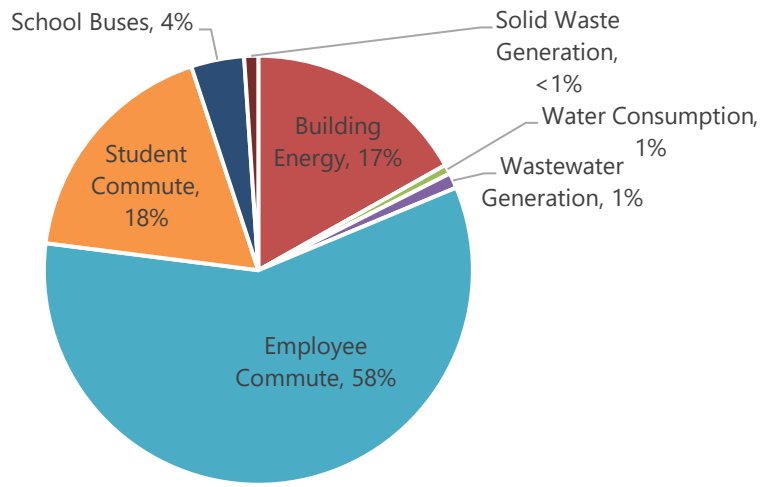
Table B-1 shows the breakdown of RMS's GHG emissions in the 2022-2023 school year.

Table B-1. RMS 2022-2023 School Year Greenhouse Gas Emissions Inventory

Emissions Sector	Greenhouse Gas Emissions (MTCO ₂ e)	Percent of Total
Employee Commute	305	58%
Student Commute	94	18%
Building Energy	88	17%
<i>Electricity</i>	49	9%
<i>Propane</i>	4	<1%
<i>#2 Fuel Oil</i>	36	7%
School Buses	21	4%
Wastewater Generation	6	1%
Solid Waste Generation	6	1%
Water Consumption	4	1%
Total	523	100%

Figure B-1 shows that the greatest source of emissions stems from employee commute and represents 58 percent of the total emissions. Student commute represents the second highest emission sector at 18 percent and building energy represents 17 percent of total emissions. GHG reduction measures can be found in section 5 of the SAU CAP.

Figure B-1. RMS 2022-2023 School Year Greenhouse Gas Emissions Inventory



1.2 PROJECTED GREENHOUSE GAS EMISSIONS

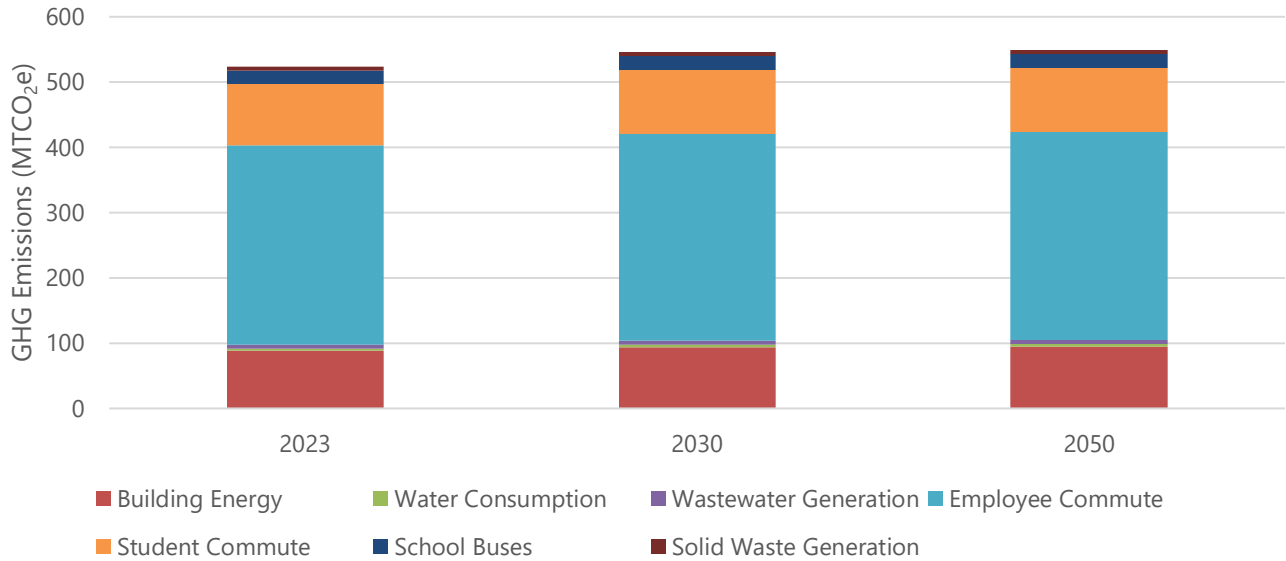
The RMS GHG emissions for 2023 and projected emissions for the years 2030 and 2050 are shown in Table B-2. The forecasted emissions are a “business-as-usual” scenario. Growth projections in emissions are based on anticipated population growth in the town of Hanover and Norwich as provided by the SAU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

Table B-2. RMS Greenhouse Gas Emissions Inventory and Forecasts by Sector

Emissions Sector	Greenhouse Gas Emissions (MTCO ₂ e)		
	2023	2030	2050
Employee Commute	305	53	53
Student Commute	94	98	97
Building Energy	88	94	94
<i>Electricity</i>	49	53	53
<i>Propane</i>	4	4	4
<i>#2 Fuel Oil</i>	36	37	38
School Buses	21	22	22
Wastewater Generation	6	6	6
Solid Waste Generation	6	6	6
Water Consumption	4	4	4
Total	523	546	549

Figure B-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 B-2. RMS 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 B-3 shows RMS’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 459 MTCO₂e in 2030 and 137 MTCO₂e in 2050. This is the maximum amount of annual GHG emissions allowable while achieving the reduction targets.

Table B-3. RMS Greenhouse Gas Emissions Forecasts and Reduction Targets

	2030	2050
Forecasted Emissions (MTCO ₂ e)	546	549
Target Reduction (Percent)	16%	75%
Emissions Limit (MTCO ₂ e)	459	137
Emissions to be Reduced by CAP Measures to Meet Target (MTCO ₂ e)	87	412

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

Figure B-3. RMS Greenhouse Gas Emissions Forecasts and Reduction Targets

