

New Hartford School Facilities Study

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ENERGY USE INTENSITY REPORT



Silver Petrucelli + Associates
3190 Whitney Avenue | Hamden CT 06518
311 State Street | New London CT 06320
203 230 9007 silverpetrucelli.com

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INTRODUCTION

SP+A was tasked with using an annual sample of energy bills between April 2025 and April 2026 of three (3) New Hartford schools to determine their current energy use intensities (EUI). The task also included completing a high level comparison of them with other schools of similar types in the nation and local region. The benchmark data collected is from the Commercial Buildings Energy Consumption Survey (CBECS) 2022 data set which is the latest complete set. Though of a different year than the utility data set, the values are not expected to vary significantly enough to be unusable for comparison. The data therefore can be reasonably used as an estimate to benchmark the schools.

The EUI gives an idea of the energy performance of the buildings. It is the ratio of the energy consumption of the building with the gross square footage (kbtu/sqft). The “lower” or closer to median the EUI for the school is demonstrates a school that is performing close to the expected energy use for its same type. It shows that the school is using an expected amount of energy. A “higher”, or further from the median, EUI for the school is worse because it shows a gap in energy use where there is room for improvement to be closer to the national median.

RESULTS

Table 1: New Hartford Schools’ Existing EUI National Benchmark

School	Square Footage	EUI (kBtu/sqft)	National Median EUI*	National 75 th Percentile EUI*
Bakerville Consolidated	18,428	76.49	45.2	59.8
New Hartford Elementary	23,405	99.79		
Ann Antolini School	58,177	68.05		

*Based on CBECS 2022 Data Set

Bakerville and New Hartford Elementary are above the national median and 75th percentile energy use intensities which shows that there is room for improvement for better energy performance. From an energy use standpoint, Ann Antolini is closest to the national 75th percentile values for schools.

Table 2: New Hartford Schools’ Existing EUI Regional Benchmark

School	Square Footage	EUI (kBtu/sqft)	Regional Education EUI*
Bakerville Consolidated	18,428	76.49	73.2
New Hartford Elementary	23,405	99.79	
Ann Antolini School	58,177	68.05	

*Based on CBECS 2022 Data Set

New Hartford is in the Association of Heating Refrigerating, and Air Conditioning Engineers (ASHRAE) 5A climate zone which is a region with cold winters and warm, humid summers. This

factors in a varied energy use for conditioning outdoor air and having higher air infiltration than other areas. The corrected value incorporated all educational building K-University.

This value shows that Ann Antolini is well below the regional average value and Bakerville is only slightly above. The heating systems for both schools are hot water systems (as opposed to steam) and they have some efficient cooling as opposed to just window air conditioners. That said, there are always areas for improvement. New Hartford Elementary is much higher than the national average even compared to the other schools possibly because of its documented building envelope issues as well as the steam system and lack of insulation in the condensate recovery system. The primary incentive for seeking to be closer to the national and regional average energy use intensities is lower energy costs due to greater efficiencies of equipment and the building envelope.

RECOMMENDATIONS

There are several recommendations that can reduce the schools' EUIs and provide better overall energy performance which can reduce energy costs. These include:

- Lighting Upgrades
- Replacing the Boilers with Condensing Boilers
- Building Envelope Improvements
- Exhaust Fan Motor Replacements
- Energy Recovery Ventilators
- Variable Refrigerant Flow Heat Pumps
- Renewable Energy – Solar

An example of the potential energy savings that some of these improvements can provide is the savings associated with a full lighting upgrade including LED lamps, ballasts and controls, combined with the use of gas fired condensing boilers. SP+A estimated the savings based on common consumption improvements with these better efficiencies.

Table 3: Lighting Upgrades and Condensing Boilers

School	Square Footage	EUI (kBtu/sqft)	National Median EUI*	National 75 th Percentile EUI*	Regional Education EUI*
Bakerville Consolidated	18,428	67.76	45.2	59.8	73.2
New Hartford Elementary	23,405	87.05			
Ann Antolini School	58,177	59.65			

*Based on CBECS 2022 Data Set

As shown in Table 3, these improvements can decrease all the schools' EUIs. These improvements can potentially bring Bakerville and Ann Antolini below the regional average (showing a better energy use than the expected regional value) EUI and can potentially even bring Ann Antolini close to or even below the national 75th percentile EUI. These are estimations

but they demonstrate the savings trend behind making energy conscious improvements to all existing and or future buildings.

CONCLUSION

SP+A identified several areas in the schools where equipment and envelope can be improved to increase the energy efficiencies of the schools. The current energy use intensities show that all schools are above the national median and 75th percentile which emphasizes the room for improvement in these areas.

GRAPHICS



