WHY YOU SHOULD WEATHERIZE YOUR HOME

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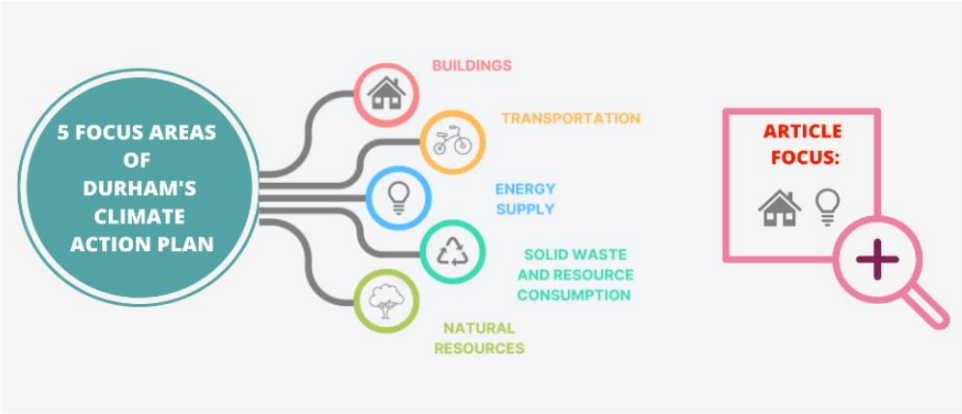

Durham is a member of the Global Covenant of Mayors, the largest global alliance for city leadership focused on addressing climate change. As part of that commitment, the Town has adopted a Climate Action Plan (CAP) to reduce greenhouse gas emissions. The plan is organized into five focus areas, each specifying actions for reducing emissions and/or enhancing resilience to climate change.

92.7% of Durham's emissions come from the built environment and transportation, and one of the most significant actions in the CAP is to increase energy efficiency in homes and businesses to reduce emissions. Achieving this depends on Durham's residents and businesses taking action. This is another in a series of articles in Durham's campaign to engage citizens in climate change action.

This second article focuses on weatherization, which is a tremendous opportunity to maintain the comfort in our homes and offices and to reduce our energy bills and carbon footprint.

WHY WEATHERIZING YOUR HOMES IS A WORTHWHILE FINANCIAL INVESTMENT

Frank Melanson, Supervisor of Energy Efficiency at Eversource, and Durham Energy Committee member Nat Balch, spoke about the importance of weatherization before installing a heat pump. They noted that the building heating load is reduced when a house is properly weatherized. Lowering the heat load lets the owner select a smaller heat pump to adequately serve the house, which in turn lowers the annual energy consumption and energy costs. Weatherizing your home or business pays for itself over time, and saves you money in the long-term.

Nearly half of Durham's single-family homes were constructed prior to 1970, when wall and attic insulation were not required. Heat loss through attics and walls with minimal or no insulation are common concerns among homeowners with older homes. Weatherization can, however, be an opportunity to increase a home's comfort and value while reducing its carbon footprint and energy costs. Your reduced energy costs will depend on how well your home is currently insulated and on its characteristics.

Durham also has numerous homes scattered throughout the town built before 1900 that were rarely constructed with insulation. Adding spray foam insulation with an R-value of 15 to uninsulated walls and blown-in insulation with an R-value of 30 to a poorly insulated attic will reduce an 1,800 square-foot home's greenhouse gas emissions by over 15,000 pounds a year and save almost 700 gallons of oil every heating season. The question is, however, whether the homeowner will be able to recoup their investment in insulation. Figures 1 and 2 show that the answer is yes!

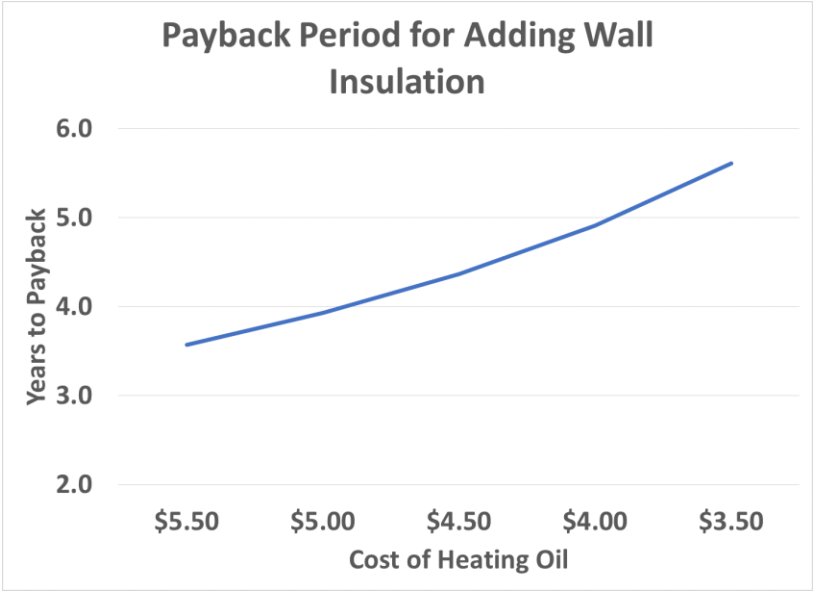

Figure 1: Payback Period for Adding Wall Insulation

Assumptions:

- Initial Wall Insulation R Value of 3 (No Insulation)
- Ending Wall Insulation R-Value of 18 (Foam Insulation)
- Installation cost of $7.50 per square foot
- Oil Furnace Efficiency of 85%

The payback period for improved insulation is dependent on the price of oil, the cost of installing the insulation, and the home's existing insulation. The cost of installing spray foam to existing walls is much more expensive than adding insulation to an attic, but it has a remarkably short payback period. Figures 1 and 2 are applicable to any home with similar insulation in the attic or walls to our example.

Many homes in Durham can benefit from additional insulation and weatherization. Contact a qualified contractor if you think your home can benefit. The contractor can calculate the costs and energy savings for your specific situation. Contractors can also identify any areas that require special attention, such as asbestos remediation.

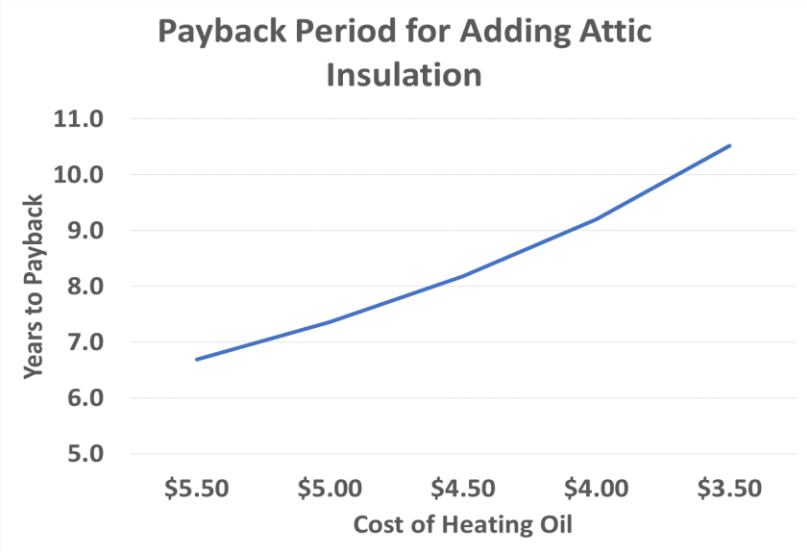

Figure 2: Payback Period for Adding Attic Insulation

Assumptions:

- Initial Attic Insulation R Value of 15
- Ending Attic Insulation R-Value of 45 (Blown-In Insulation)
- Installation cost of $2.25 per square foot
- Oil Furnace Efficiency of 85%

FINANCING AND TAX REBATES FOR ENERGY EFFICIENCY

Specific rebates and financial incentives are offered by NH saves for weatherization.

a. Utility provider, based on income:

Home energy assistance: The Home Energy Assistance (HEA) Program serves New Hampshire's income-eligible homeowners and renters to help reduce their energy costs, optimize their homes' energy performance, and make their homes safer, healthier, and more comfortable. The program covers 100% of the cost to weatherize the homes of income-eligible homeowners and renters and replace inefficient equipment. Eligibility is determined by total household income and the number of household members. It covers everything up to $15,000.

Income eligibility guidelines can be viewed here.

b. Federal Weatherization assistance program (WAP):

Weatherization Assistance Program (WAP): The State of New Hampshire's Weatherization Assistance Program (WAP), a federally funded program, is designed to reduce household energy use and costs in the homes of low-income persons throughout the state by installing energy efficiency improvements. If a household needs more than $15,000, they can use the WAP money to offset the cost. Although weatherization is similar to HEA, if a household needs more than $15,000, they can use the WAP money to offset the cost.

Additional information about WAP can be viewed here.

TO SUM IT ALL UP

Regardless of whether your focus is to reduce costs or reduce your carbon footprint, weatherization and improving your home efficiency is a winning proposition.

Figure 3 below illustrates how to prioritize weatherization when upgrading your home for energy efficiency. Start at the bottom of the pyramid and **GET AN AUDIT** that will help guide you to the best investments as you move up the weatherization pyramid to better comfort, energy savings, and a reduced carbon footprint.

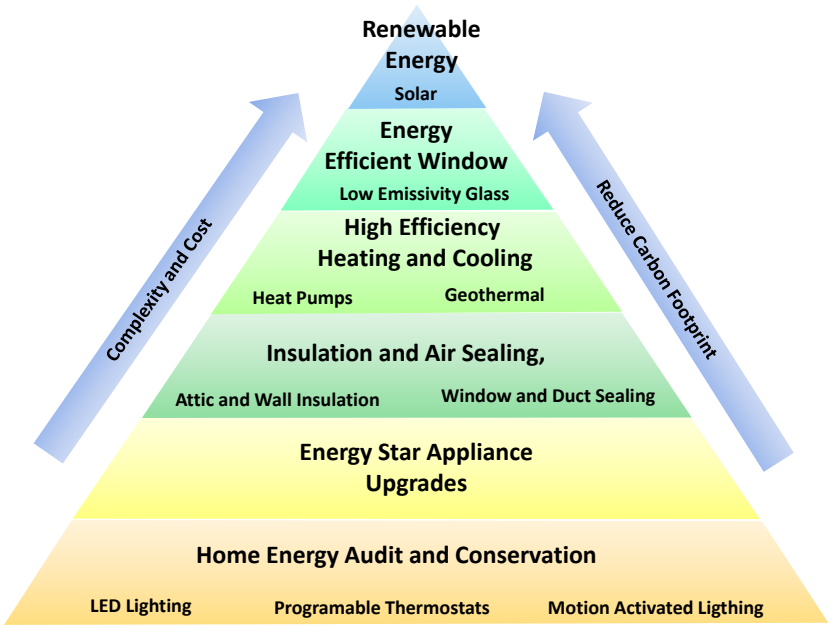

Figure 3: Pyramid of Energy Conservation & Carbon Reduction.

FINANCING AND TAX REBATES FOR ENERGY EFFICIENCY

c. **Home performance with Energy Star:** Home Performance with ENERGY STAR® is a comprehensive, whole-house approach to improving energy efficiency and comfort at home while reducing your energy costs and helping the environment.

   Qualification is based on how much heating fuel one uses per square foot. NHSaves utility partners offer meaningful incentives for 75% of the cost of the weatherization up to a maximum of $6,000. Low-interest financing is also available for more than $6,000.

d. **The Inflation Reduction Act:** This bipartisan Federal Act offers direct savings, tax credits and rebates to owners that invest in energy efficiency and clean energy.

   These benefits are more extensive than past benefits and will be available until 2030. A summary of the program can be found at this Clean Energy for All site from The White House.