

## **TOWN OF LEVERETT SCHOOL, LIBRARY AND TOWN HALL INSULATION AND AIR/DUCT SEALING PROJECT NARRATIVE**

### **I. Existing Conditions**

According to Leverett's Green Communities Annual Report, Leverett's total energy consumption in FY23 was 4,894 MMBTU. The Elementary School utilized 60% of that total (2,947 MMBTU), the Town Hall 4% (175 MMBTU), and the Library 2% (74 MMBTU).

For MTCO<sub>2</sub>e, the Town's annual total was 351 MTCO<sub>2</sub>e emitted due to municipal operations in FY 23. The Elementary School generated 61% of that total (214 MTCO<sub>2</sub>e), the Town Hall 4% (13 MTCO<sub>2</sub>e), and the Library 1% (5 MTCO<sub>2</sub>e).

In native units, the Mass Energy Insight Table 3a shows the following numbers: the Town used a total of 248,597 kWh of electricity in FY23, with the School using 73% of that total (183,075 kWh), the Town Hall using 4.5% (11,250 kWh) and the Library using 8.7% of the total (21,649 kWh). For heating oil, the Town used a total of 20,247 gallons in FY 23. The School used 80% of that total (16,259 gallons), the Town hall used 4.8% (984 gallons), and the Library did not use any oil. The Town also used 4,621 gallons of gasoline, 3,834 gallons of diesel fuel, 706 gallons of propane and 17,861 kWh generated by solar energy in FY 23.

### **The Municipal Facilities involved:**

The three municipal buildings involved in this project are very different. The School was originally built in the 1950's with several additions and renovations occurring over the years. The most recent renovation was completed in 2001. The building is 36,400 square feet. The School has had a window and roof efficiency project completed; lighting efficiency upgrades; and an HVAC project to install a monitoring system. The school has a brick exterior with part slate and part asphalt roof.

The Town Hall was originally built in 1894 and also has had multiple additions and renovations. The building was lifted up 50 years after construction with a kitchen and dining room added as a first floor, and several additions during the 1900s added offices, a stage, and bathrooms. The building holds meeting space and administrative offices for the town and is 5,604 square feet. In 2002 an accessibility project was completed that added a lift, ramps, accessible bathrooms and signage. The building has had efficient lighting projects completed and efficient oil furnaces installed. The Town Hall has had new clapboards, insulation and a metal roof installed in the past 20 years.

The Library was built in 2003 and, due to its new construction, has seen the least renovations of the three buildings. The Library is 4,680 square feet. Expensive and unsuccessful upgrades to its electric-boosted geothermal heating system resulted in a removal of that heating system with efficient heat pumps last year through Green Communities and Eversource funding. The building has had efficient lighting upgrades completed. The Library also is currently working on an outside revisioning that will improve its yard and develop park space. The Library has a board and clapboard exterior and asphalt roof.

The Town's long term plans for all three buildings is for their use to not change.

## **II. Proposed Project**

The Town of Leverett proposes to utilize Green Communities funds to complete insulation, air sealing, duct sealing and other building efficiency projects with this grant as outlined in the Leverett Comprehensive Report attached. While completing the HVAC upgrade at the Library last summer, contractors noticed that some of the insulation at the Library was moldy and wet. That problem prompted the town to reach out to a contractor to review all of the municipal buildings for places where the insulation and air sealing is failing or could be reinforced and several locations for improvement were found. This project includes most of the trouble spots found in the buildings where the opportunity for energy savings were found. Additional insulation for the School's gym was not included as it is too complicated due to the sprinkler system. This may be a future project.

As seen from the attachments, the majority of the project will take place at the Leverett Elementary School, where several locations were found to be uninsulated and under insulated.

### **Benefits**

Reducing the energy consumption and air loss in these buildings is the primary benefit of this project. At the school, where there is a sprinkler system, the project has the added benefit of assisting in preventing additional sprinkler system failures, of which the building has already had two.

In addition, this project will increase the comfort of the facilities regardless of the weather, allowing the buildings to be warmer, dryer and cooler when appropriate. In the School's case, because it has generator emergency power, the project also will improve the comfort of the building when it serves as a public warming shelter during extended power outages. The School also has the biggest and oldest boiler and heating system of the three buildings and added insulation and sealing will reduce the work that this aging system has to do, allowing it to run less and consume less energy each year, which will extend its life, slow down costly repairs, and prolong the time before it must be replaced.

For the Library, in particular, these improvements will ensure that there is no mold affecting air quality and the additional insulation will prevent ice dams and the building damage ice dams cause.

## Timeline

If awarded, Leverett would begin the contracting needed for the project immediately to get a contract in place and the equipment ordered as soon as possible so that the new insulation and air/duct sealing can be completed in before winter fully sets in. The project will be totally complete by the end of January 2025.

<u>Action Item</u>	<u>Completion Date</u>
Grant Award	July 2024
Contracting complete	August 31, 2024
Equipment ordered	September 30, 2024
Permits secured	September 30, 2024
Equipment delivered	October 31, 2024
Installation complete	November 30, 2024
Project complete	January 31, 2025

## Procurement Required

Leverett plans to utilize an approved Eversource project expeditor to complete the retrofit. The threshold for these types of projects to fall under the MGL Chapter 25A, Section 14 exemption has increased to cover projects costing up to \$300,000 so no additional procurement is required.

## Anticipated Impact, Qualitatively and Quantitively

### Supporting Leverett's five-year Energy Reduction Goal

This project will support Leverett's continued efforts to reduce municipal energy use by 20% from its baseline year of FY09. The Town applied for and was awarded a Competitive Grant in FY2017 to complete LED retrofits at Leverett Library, Public Safety Complex, and Elementary School. In 2020, the town applied for and was awarded a Competitive Grant to complete a LED retrofit at the Town hall and to purchase the streetlights in town and install LED lamps in them. In 2023, Leverett completed a Library HVAC replacement project. This project will continue to support Leverett's efforts to reduce its energy consumption.

The School project as proposed will reduce the building's annual oil use by an estimated 1,236.6 gallons, or 171.9 MMBTU. This will generate a savings of 310.3 less tons of CO2 emitted by the building over the lifetime of the project (Comprehensive Report, page 7).

The Town Hall's portion of the project will reduce the building's annual oil use by 288.1 gallons, or 40.2 MMBTU. This portion will remove a total of 69.2 less tons of CO2 emitted by the building over the lifetime of the project (Comprehensive Report, page 11).

The Library's portion of the project will reduce the building's annual electricity use by 7,760.2 kWh, or 26.46 MMBTU. This will remove a total of 68.9 less tons of CO2 emitted by the building over the lifetime of the project (Comprehensive Report, page 3).

Added together, this project is projected to reduce the town's total energy use by 238.56 MMBTUs per year, which is 4.9% of the FY 23 total of 4,894 MMBTU.

The project will result in an estimated annual energy cost savings of \$7,870.37, with a payback period of 14.5 years (GC Grant Table Summary).

The change in R value for the insulation projects proposed is shown in an attached excel spreadsheet and in the Comprehensive Report.

### **Why grant funding is required to complete the project**

Green Communities grant funds are needed because the Town of Leverett is unable to complete this project without assistance. The three buildings involved have ongoing maintenance accounts which do not include funds for large projects. In FY 24, the Town Hall has \$21,462 budgeted, the Library has \$23,870 budgeted, and the School has \$192,138 budgeted for their utilities, maintenance, and small repairs. None of these appropriations have extra funds to cover the expense of the insulation and air/duct sealing work proposed in this project.

This project was prioritized over others that could be initiated because of the wet and moldy insulation found in the Library building at the conclusion of the HVAC project. This insulation pointed to a systemic problem with the air flow in the attic space that needs to be addressed. When an audit was completed of all the buildings, additional un- and under-insulated areas at the School and Town Hall also were found so they were combined together for this project.

### **Required Permits**

The project will require building permits. A permit will be applied for through the Franklin County Cooperative Inspection Program. The chosen installation contractor will be responsible for applying for and obtaining the necessary permits and inspections. This process will be initiated if the grant is awarded.

### **Additional Approvals**

No additional approval will be needed for this project.

### **Education and outreach**

As community gathering spaces, staff in all three buildings are poised to provide both formal and informal information about this grant, its funding sources and its benefits. This outreach would take the form of informational signs in the buildings, answering questions from students and parents at the School, patrons at the Library and the residents at the Town Hall who stop in and ask about the project, written information on our three websites as well as more formal exhibits and speakers. As this community is eager to understand and embrace environmentally sound practices and technologies, it is anticipated that these would be well attended.

Websites used to publish information include the School's website at <http://www.leverettschool.org/>, the Library's webpage at <https://leverettlibrary.org/> and the "Town News" section of the Town's website at <https://leverett.ma.us/>. Full project documents will be made available on the Energy Committee webpage at <https://leverett.ma.us/g/45/Energy-Committee>.

### **Benefit to Environmental Justice Populations**

All three buildings involved are public buildings, and anyone is welcome to use their services, programs or technology. The Library is also a member of the CW Mars resource sharing network, which means that it offers services and materials to any CW Mars Library card holder. Four of our neighboring towns have Environmental Justice populations including Wendell, Sunderland, Montague and Amherst. Having comfortable and reliable facilities in Leverett could benefit these populations who also use the Leverett Municipal Buildings for services and facilities.

Another environmentally vulnerable population that Leverett has in large numbers is elders. As the number of projected days over 90 degrees F increases with time (as predicted by the Mass Dept of Public Health Bureau of Environmental Health), the elder residents of town will experience a much higher risk exposure. According to the September 2022 Discovery Report Needs Assessment for the Elder Population of Leverett, MA, 47% of Leverett residents currently are over age 50 (page 37), and trends show that this number is growing. The Mass DPH report notes that "Older adults, especially those living alone, are more vulnerable to health impacts during extreme heat events." ([https://dphanalytics.hhs.mass.gov/ibmcognos/bi/?perspective=authoring&pathRef=.public\\_folders%2FMEPHTN%2Fcommunity%2Fcommunity-profile](https://dphanalytics.hhs.mass.gov/ibmcognos/bi/?perspective=authoring&pathRef=.public_folders%2FMEPHTN%2Fcommunity%2Fcommunity-profile)). Elders use the Library in great numbers and the Library provides a welcoming environment for elders to seek assistance with technology and connecting with support services. The Town Hall hosts elder activities and Council on Aging meetings. Both buildings maintain resources and information to support elders and staff are educated on where to refer elders for services. Increasing the efficiency of these buildings and keeping them at a comfortable temperature during extreme heat events will help this vulnerable population.

### **III. Cost/Budget**

The total project cost for the conversion as priced by the Center for Ecological Technology (CET) is \$200,862.50. An estimated utility incentive will provide \$86,474.87, which is 43% of the total cost of the project. The Town requests Green Communities funds in the amount of \$114,387.63. Eversource applications for incentives are attached.

### **Other Funding Sources**

No other funding sources are expected for this project.

#### **IV. Personnel**

##### **Applicant and Project Team**

The Leverett Town Administrator will prepare quarterly reports and provide general project coordination and oversight. The Town Administrator, Library Director, Town and Elementary School Facilities Managers will coordinate project work with the contractor.

The Town Administrator has worked for the Town since 2003 and has managed several grant projects in that time. The Library Director has worked for the town since 2021 and has managed a number of small grants and the Green Communities Library HVAC project. The Town Facilities Manager has worked in that capacity for three years and has engaged in several building construction projects in that time and previously when he worked full time for the Town as the Highway Superintendent prior to the Facilities Manager position's establishment. The School Facilities Manager has worked for the School for eleven years and has participated in and managed multiple projects in that large and complicated building.

The Town has partnered with the Center for Ecological Technology (CET) for the scope and needs of this project. CET staff will manage any subcontractors on the project and will be the Town's contractor if awarded.

Each person in charge of their building will oversee the individual activities in that building along with staff at CET.

No other partners have been identified.

##### **Additional Materials are attached:**

Grant Table  
Certificate of Application  
Leverett Elementary School - Existing condition Report (includes photos)  
Leverett Comprehensive Report  
Photos of Library  
Photos of Town hall  
Excel spreadsheet of R values  
Town Hall and Library retrofit utility application  
School utility application