

A Warwick Building & Energy Committee proposal to offset the cost of needed energy-saving capital improvements at the Warwick Community School. Janice Kurkoski, Chair

The problem: A disincentive to make needed changes. In accord with the Pioneer District Agreement, Warwick pays for all capital improvements at the school, including those that save energy and it must share the actual savings with the other towns in the district. 90% of the operating costs of the school, including identified inefficiencies, are not paid for by Warwick but instead by other member Towns. Every operational dollar wasted costs Warwick only a dime.

The history: 5-year records show that the Warwick school burns on average .56 gallons/sq. ft., whereas the combined average of all the other schools is .38 gal./sq. ft. That is almost 50% more and occurs in a relatively new school. This overconsumption can be corrected.

The solution: We propose a voluntary performance contract between the District and the Town, which will cost the other Towns nothing and will, after several years, actually save money in each Town.

In February 2011 the Town hired a consultant, Keith Abbott, who completed a thorough energy audit of the Warwick Community School. This included tests and modeling and was done at a cost to the Town of \$5,000.

In a follow-up letter to the study, he emphasized: "The fact is that the school has the potential to be very efficient. As stated in the audit, the design was intended to be efficient. Just look at the wall construction and window selection and compare that to other schools. The only real, but major hole in the thermal boundary is in the roof/ceiling, and this problem is exacerbated by the fact that the vast majority of the heating distribution system is outside..."

"There are other considerations (relative to the cost of the improvements) such as reduced maintenance costs, better indoor air quality, and reduced carbon emissions, which should also count for something. ...What I can tell you in a more general sense is that there is significant efficiency opportunity at the Warwick School. The numbers clearly indicate that the proposed work will pay for itself in saving over time, and the amount of time is greatly dependent upon future fuel price and occupant behavior."

The history of dangerous ice dam build up is also related to the poor attic air sealing and insulation levels.

Keith presented two options for remediation (the difference being how the attic was to be treated), and he recommended Option A.

Option A – Insulate and vent the underside of the roof over the main building. Insulate exposed gable walls.

Option B – Remove attic floor insulation, air seal with foam, re-install more cellulose, air seal and insulate the mechanical room and the gable wall of the gym in the attic.

Both options include these additional measures:

Heat and fresh air distribution system improvements – after the thermal boundary issues are resolved.

Air seal gym and stage roofs – this is to be done at the time of re-roofing.

Air seal the gymnasium exterior walls.

Implement an electrical consumption reduction and conservation awareness campaign.

The cost:

Option A - \$230,000, estimated savings = \$34,706 per year @ \$5.60 per gallon, payback = 6.62 years

Option B - \$126,000, estimated savings = \$26,368 per year @ \$5.60 per gallon, payback = 4.8 years

The plan: The existing Mass Energy Insight web-based energy information program has already established an energy consumption baseline and can be used to calculate savings going forward. Warwick proposes to pay for the above improvements up front through borrowing. PVRSD, with the consent of the towns in the district by a vote of their respective Town Meetings, will reimburse Warwick annually based on realized savings. Warwick will apply all the savings to amortize the borrowing. When reimbursed in full for the cost of the energy-related improvements, all the towns will share in the energy savings going forward creating a win-win situation.

Conclusion: During the five (+/-) years during which the cost of the improvements are amortized or paid off, it won't cost any member Town any more than it would if Warwick did nothing to correct the problem. After the project is paid for the benefits accrue to all member Towns.