



Potential Paybacks from Retrofitting Alaska's Public Buildings

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In 2010, Alaska's Legislature passed HB 306 establishing a statewide energy policy including the goal of "decreasing public building energy consumption through...energy-efficient technologies." That year they also passed SB 220 establishing a \$250 million Energy Efficiency Revolving Loan Fund to help fund these retrofits. In 2011, Alaska Housing Finance Corporation used American Recover and Reinvestment funds to conduct energy audits on over 325 public facilities throughout Alaska. At the same time Alaska Native Tribal Health Consortium conducted audits of over 65 health clinics, washaterias, and water treatment facilities. As a result, almost 400 public building owner/operators have received investment grade energy audits on their facilities which include a list of recommended improvements and their estimated paybacks. Cold Climate Housing Research Center (CCHRC) evaluated the potential payback public facility owners could realize from implementing the cost effective energy efficiency measures¹ recommended in the audits. These findings follow.

By implementing only cost effective measures, public building owners could save an average of \$21,800/year in energy savings per building, with an average simple payback of 4.5 years. Should public organizations choose to finance these \$82,000 in improvements through a 15 year loan (at 3.75% interest) from AHFC's Energy Efficiency Revolving Loan program they would pay \$7,200 in annual loan payments. Since annual energy savings are estimated at \$21,800, after deducting loan payments the average public organization will save \$14,700 per year. Once the loan is paid off, assuming no change in energy costs, or usage patterns, they will continue to save an average of \$21,800 per year.

While there is variation between cost savings available per building, in general these audits have shown significant potential for public entities to reduce their energy costs by implementing energy efficiency measures. Table 1 shows the variation in building energy savings potential by building usage type; Table 2 demonstrates the variation by ANCSA region. Additionally, Appendix A lists the estimated potential energy savings and costs identified by the auditors for each of the 357 buildings by ANCSA region, community and building name along with.

On a state level, for an investment of \$29 million, Alaskans would save an estimated \$79 million in energy costs over the life of the energy efficiency investment, resulting in more sustainable communities. This report only addresses the approximately 400 public facilities, out of an estimated 5,000, public facilities in Alaska. While each building is unique and will vary from this average, these findings are illustrative of the savings potential available to the University of Alaska, REAAs, and Alaska municipal, tribal and state agencies. Finally, this suggests that the \$250 million Revolving Loan Fund is sufficient to finance the retrofit of most public buildings in Alaska.

¹ Improvements had a savings-to-investment ratio greater than 1.



In conclusion, almost 400 building owners have detailed lists of energy efficiency measures and payback information to guide their investment decisions and loan programs are available to finance the improvements. Investing in these retrofits would save building owners an average of \$21,000/year in energy costs for a cumulative savings of \$8.7 million per year.