


Testimony for the Oregon Ways and Means Committee

February 20, 2013

In Support of the Governor's Cool Schools Initiative

 By Tim Thompson, PE, Energy Manager, Klamath County School District

Greg Thede, Superintendent

Klamath County School District is a very strong supporter of the Oregon Dept. of Energy and the Cool Schools Initiative. We have benefited tremendously from the technical and financial support that ODOE and others have provided to make our school buildings more energy efficient. The money saved on utilities has been put to good use directly improving the education of our students.

Klamath County School District is a public school district serving Klamath County. Communities in our district include Bly, Bonanza, Chiloquin, Gilchrist, Keno, Klamath Falls, Malin, and Merrill. We have 10 Elementary Schools, 2 Middle Schools, and 6 High Schools. Our total enrollment is nearly 6,300 students.

As Energy Manager, I am responsible to assess the energy efficiency of our facilities, procure funding for energy conservation measures and promote an energy awareness culture in all District employees. The SB 1149 program has been invaluable to us by providing funding for energy audits so that we can target projects that will have the best returns on our investments. It also has helped fund some very exciting projects.

The Henley High School Geothermal Heating project completed in 2010 is our first major success story. It took a combination of funds from ODOE, Recovery Act stimulus money, zero interest loans and a generous grant from Avista to save over \$90,000 per year in energy costs. Natural gas use has been reduced by nearly 80,000 therms a year by using the 128 degree water to heat the building. The learning environment is better too. Teachers have better control of classroom temperatures and fresh air is now circulated throughout the building. It is a model of energy efficiency.

In 2011, when ODOE called for projects to apply for the State Energy Loan Program (SELP), Klamath County jumped on the opportunity to borrow low interest money to finance new energy efficient lighting in 3 schools. Retrofitting the ancient T12 fluorescent lamps to low wattage T8 lamps has saved our District over \$38,000 in 2012. The teachers are so pleased with the higher quality light that doesn't hum or cause some students to become agitated by the flickering of the old lighting. The collaboration between ODOE and the Energy Trust of Oregon was awesome. We are optimistic that we can continue our retro fit programs this summer for the 11 schools remaining that still have the energy wasting T12's - especially since those tubes are no longer manufactured and starting to become scarce.

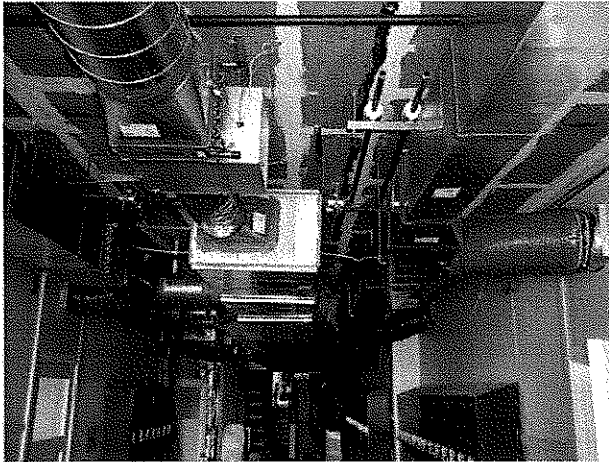
SELP, SB 1149 and Clean Energy Works of Oregon funds also made the difference for our latest and greatest energy saving project, Bonanza K12 Geothermal Heat Pump System. This is one for the record books. From mid-October to mid-January, we have already saved over \$90,000 in energy costs. We expect that annual savings will top \$150,000. The secret is to replace diesel fired steam boilers with highly efficient groundwater source heat pumps. Groundwater at 58°F is used as a heat source for the water to water heat pumps to produce 115°F heating water. The building heating system has been upgraded with new air handling equipment, new heating coils and controls. Other benefits, besides air conditioning in the summer, include eliminating the noise of the old equipment, consistently comfortable temperatures in all rooms and fresh air per building code standards.

Klamath County School District would not have been able to accomplish these things without Cool Schools and all of the programs that ODOE creates and facilitates. The staff there has been very helpful and a pleasure to work with. Our District is very grateful to them and you, our elected representatives, who know the importance of creating better communities by supporting education and energy efficiency. This May, we will have a bond measure for 31 million dollars with the intention of helping ourselves to fix our schools. Saving energy will be a key part of the construction program and we look forward to continuing our relationship with ODOE to get the most from our energy dollars. Thank you.

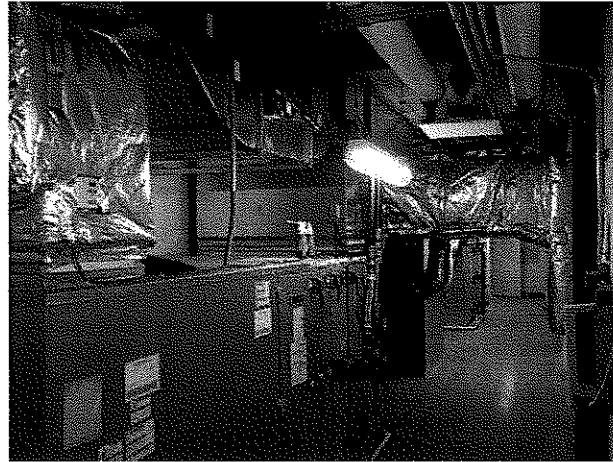
BONANZA SCHOOL HEAT PUMP HVAC RETROFIT

This summer an energy efficient heating-ventilation-air conditioning (HVAC) system was installed in Bonanza School. Using groundwater, a state-of-the-art heat pump will both warm and cool all of the buildings and replace the diesel fired steam boilers that were nearly 75 years old. New and retrofitted air handling units will provide fresh air that can be controlled in each classroom. Spaces that were uncomfortable before will now provide a much better learning environment for students, staff and the community.

In the old system, heated water or steam was circulated in piping to heaters that were aged and worn. Ventilation air was spotty or nonexistent. Complaints of rooms being too stuffy or too chilly – on the same day – were common. With more pipes leaking and the boilers on the verge of failure, the decision was made to remove most of this old system and retrofit some newer equipment in the High School.



Middle School – 1st Floor (above ceiling)

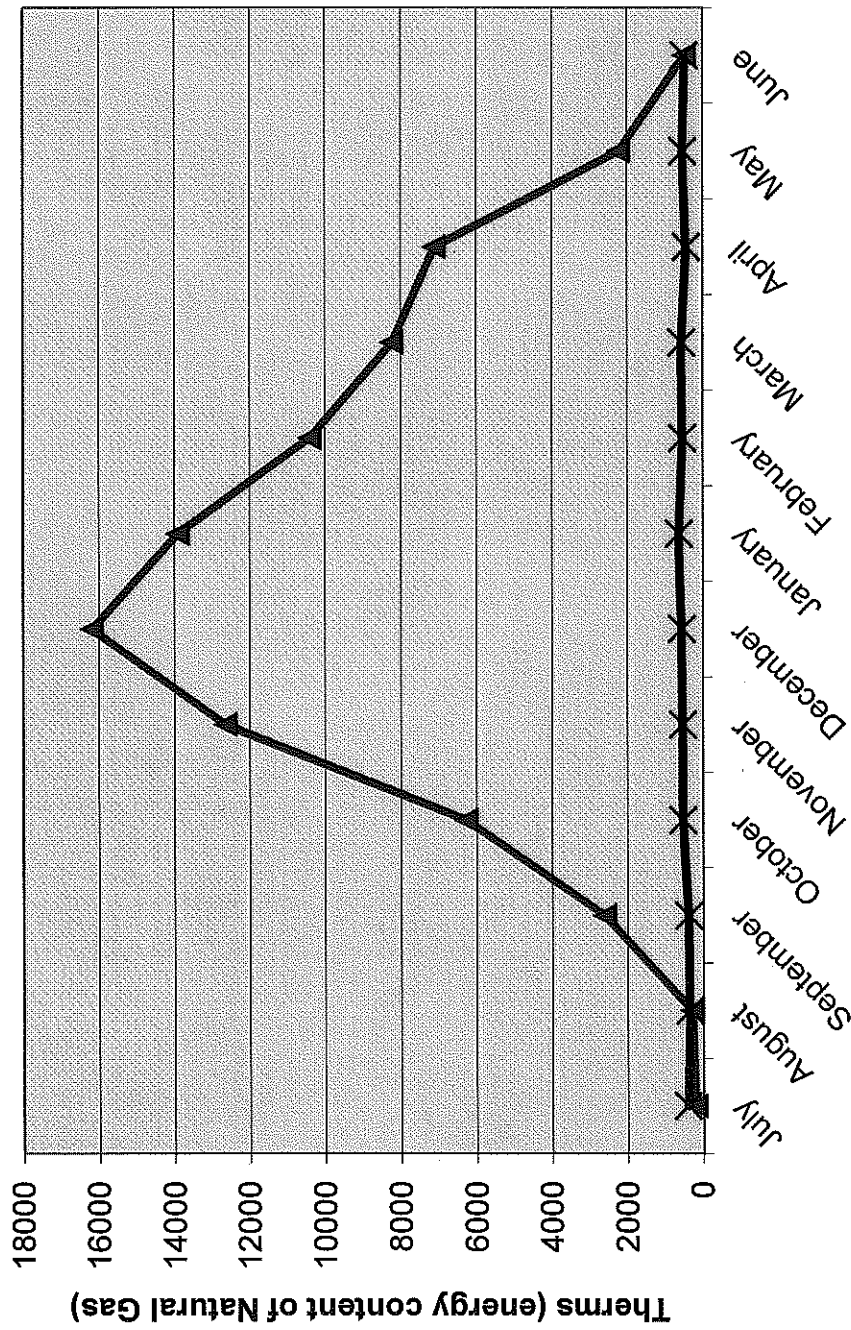


Mechanical Room above front entrance

The new system will circulate water that is either heated or chilled by the heat pumps after passing through a water to water heat exchanger. A new water well provides the system with 58°F groundwater and is used as the heating/cooling source. A new injection water well was also drilled to return all of the water back into the ground. There will be no impact to the local groundwater from this process.

Electricity is the energy source used for the heat pumps and fans in this HVAC system. It is so much more energy efficient than using diesel that savings of over \$150,000 per year are easily expected. Other benefits include fresher air, reduced noise and consistently comfortable temperatures throughout. This project also upgraded the fire sprinkler system in the Elementary/Middle school, installed ceilings, and provided a new propane fired back-up boiler should it ever be needed. Funding was provided in part by the Oregon Department of Energy Cool Schools program and Clean Energy Works of Oregon. And the energy savings cover the cost of the loan payments!

Henley High Natural Gas Use After Retrofit 2011 -2012



3-year average

BONANZA K12 UTILITIES COST COMPARISON

