



## District Wide Geothermal Heating Conversion Blaine County School District

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Principal Investigator:  
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**Presenter:**  
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Ground Source Heat Pump Demonstration Project

- **Timeline:**
  - Project Start Date: March 30, 2010
  - Project End Date: May 30, 2011
  - Project Percent Complete: 4%
- **Budget:**
  - Total Project Cost: \$15,585,773
  - DOE Funding Level: \$4,000,000
  - Awardee Cost Share: \$11,585,773
  - FY09 Funding: \$0
  - FY10 Funding: \$4,000,000

- Reduction of the overall operating costs of the Blaine County School District facilities by utilizing the available natural resources of the area while stimulating the local economy by providing a showcase project for qualified local employers.
- This project will impact the geothermal energy development market by showing that ground source heat pump systems using production and re-injection wells has the lowest total cost of ownership of available HVAC replacement options.
- The project will utilize ground water as the heat sink through production and re-injection wells. In spaces that require high outside air loads, the use of water-to-water ground source heat pumps will be used to replace tradition boiler applications.

- **Feasibility Study and Engineering Design**
  - Total Cost of Ownership Analysis of Ground Source Options – Complete
  - Energy Modeling – Ongoing
  - Design and Cost Estimating - Ongoing
- **Installation and Commissioning of Equipment**
  - Bellevue Elementary – Summer 2010
  - Carey Campus – Summer 2010 thru Spring 2011
  - Hailey Elementary – Summer 2010 thru Spring 2011
  - Hailey Campus – Fall 2010 thru Summer 2011
- **Operation, Data Collection, and Marketing**
  - Develop Measurement & Verification Plan – Ongoing
  - Report to All Interested Parties – Spring 2011 thru Spring 2014

- Total Cost of Ownership of Available Ground Source Options
  - Analyzed Production/Re-injection Option against Horizontal “Slinky” and Vertical Borehole Options
  - Determined the lowest Total Cost of Ownership (including first costs, maintenance/repair costs, and energy costs) is the production/re-injection Option.

- The use of an integrated design/build approach is being implemented. The design is primarily utilizing consultants from the Blaine County area.
- Subcontractor selections will be completed by May 28, 2010 and those firms will join the integrated design/build team.
- Water rights permit applications for the production and re-injection wells at Bellevue Elementary, Carey Campus, and Hailey Elementary have all been submitted to the Idaho Department of Water Resources. Water rights permits are expected in July 2010. Remaining facility water rights permits are in progress.
- McKinstry's Knowledge Response Center will be used to remotely monitor the operating costs of the proposed system. Quarterly reports will be distributed to the National Geothermal Data System.

- **FY10 Steps**
  - Completion of Design for all facilities
  - Installation and Commissioning for all of Bellevue Elementary and for the production/re-injection wells at all sites. Installation and Commissioning work will begin for Hailey Elementary and Carey Campus.
- **FY11 Steps**
  - Completion of the Installation and Commissioning work at all remaining facilities.
  - Start Operation, Data Collection, and Marketing efforts.

- Through this project, the Blaine County School District will reduce their annual operating costs, create more than 173 jobs in rural Idaho, and replace traditional heating and ventilation systems with roughly 350 ground source heat pumps.