

LAVA HOT SPRINGS  
GEOTHERMAL ENERGY TEAM

## **STRATEGIC PLAN**

# **Lava Hot Springs, Idaho Geothermal Resources**

Prepared by Lava Hot Springs Geothermal Energy Team  
Published by the Idaho Department of Water Resources  
December 2004

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# Lava Hot Springs Geothermal Energy Team

## STRATEGIC PLAN

*prepared by*

Lava Hot Springs Geothermal Energy Team  
Lava Hot Springs, Idaho

*published by the*

Idaho Department of Water Resources  
P.O. Box 83720  
Boise, Idaho

December 2004

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## **Mission Statement**

The mission of the Lava Hot Springs Geothermal Energy Team is:

**“To develop a long-range plan for utilization of the geothermal resources to benefit the community”**

The Lava Hot Springs Geothermal Energy Team has a strong guiding principle that local geothermal resources should be used to benefit the community as a whole. The geothermal resource has a huge economic value. The local economy is in good shape in part through the individual businesses that use the geothermal resource to bring in tourist visitation.

Future planning for the utilization of the resources for community-wide benefits is critical for successful management and use of the resource. Long-range planning must be based on a solid understanding of the physical environment of the geothermal resource and the impacts that might occur if changes happen to the current system.

## **History and Background**

The City of Lava Hot Springs is located in Bannock County approximately 30 miles southeast of Pocatello. One of Idaho’s truly historic resort areas, Lava Hot Springs centers around the renowned geothermal soaking pools that were used for centuries by Native Americans and which were deeded to the state in 1902 as a health and recreation facility. The State of Idaho, through the Lava Hot Springs Foundation, owns and operates the springs. These soaking pools, along with the geothermally-heated Olympic swimming pool complex (also operated by the Lava Hot Springs Foundation), are the basis for the town’s resort status. A geothermal source located between the soaking pools and the Olympic pool complex supplies geothermal water to heat exchangers that are used to heat the Olympic and lap pools. The water is discharged into the Portneuf River after it is used.

Local businesses, primarily hotels and motels, divert geothermal water from hot springs, and from one deep and several shallow (less than 100 feet) wells for space heating and for soaking tubs and pools for their guests. The majority of these sites are located within approximately 200 feet of the Portneuf River.

At one time, the City of Lava Hot Springs piped geothermal water from the Chicken Soup Springs located east of the city on the banks of the Portneuf River. The springs discharge from the riverbank with an estimated flow of 1.5 cfs (673 gpm). The temperature of the water was 47° C in August, 2002. The hydrogeology of the geothermal system in the Lava Hot Springs area has not been studied in detail and is poorly understood. Research indicates that the geothermal water moves along north-south trending faults (Summarized from St. Marie et al, 2002.)

## Needs and Barriers

The Lava Hot Springs Geothermal Energy Team identified various needs and barriers facing development and use of geothermal resources. These are:

- Need for better scientific understanding of the resource
- Quantify the resource for protection against over-development
- Protection of existing water rights
- Unclear status of ownership and water right status
- Availability of funding for research and project development
- Availability of technology
- Need for education
- Regulatory restrictions hindering development
- Potential Native American issues

## Strategic Objectives and Action Plans

The Lava Hot Springs Geothermal Energy Team developed a framework of strategic objectives and actions. Some are attainable if the needs or barriers can be overcome. Other objectives and actions are based on ideas that would benefit the community but may far exceed practical reality. In combination, these objectives and actions illustrate the forward-thinking visions of the community. They provide a framework for future activities when funds are available from internal or external sources or opportunities arise to implement the objectives.

### Strategic Objective 1

#### **Increase technical knowledge of the geothermal resource**

Lava Hot Springs is economically dependent on the geothermal resources currently in use. Injury or damage to the existing resource uses would harm the local community. A better understanding of the geothermal resource, the subsurface environment, and the limits of the resources are the keys to the planning for future development.

- Actions:*
- a. Work with Idaho State University
  - b. Obtain grants to fund research and investigations

## Strategic Objective 2

### **Improve quality of life for citizens of Lava Hot Springs through the use of geothermal resources**

The geothermal resources in the Lava Hot Springs area can be used for the benefit of the community by planning infrastructure changes.

- Actions:*
- a. Heating sidewalks
  - b. Heating a local medical clinic
  - c. Facilitate low-income housing using geothermal heat
  - d. Home heating accessibility for all citizens

## Strategic Objective 3

### **Expand economic vitality of Lava Hot Springs using geothermal resources**

The geothermal resources could be used for expanded tourist facilities or business opportunities.

- Actions:*
- a. Construct botanical gardens
  - b. Expand commercial facilities

## Strategic Objective 4

### **Increase community understanding of potential uses for geothermal resources**

Citizens in the community need more information about the geothermal resource and its value and opportunities for the community

- Actions:*
- a. Develop public information materials
  - b. Compile lists and links for information, grants, loans
  - c. Develop network of resources and information for citizens and businesses

## Strategic Objective 5

### **Take steps to reactivate public use of Chicken Soup Springs**

The loss of hydraulic head in Chicken Soup Springs eliminated several economic and community benefits: melting snow on city sidewalks and district space heating. Recovering the use of Chicken Soup Springs would help improve the downtown as a more user-friendly environment during the winter and possibly save money through district heating.

- Actions:*
- a. Conduct feasibility study, examine technology, alternatives
  - b. Prepare engineering design
  - c. Obtain Funding

### Strategic Objective 6

#### **Promote policies, rules and laws that support and encourage development of geothermal resources**

The policies, rules and laws that regulate the use of water in the Lava Hot Springs area are confusing to some and restrictive to others.

- Actions:* a. Work with the Idaho Department of Water Resources and other regulatory agencies to develop a beneficial environment for developing geothermal resources

## **Summary**

There are two primary barriers to future development and use of the geothermal resources in Lava Hot Springs. The first is the lack of knowledge about the resource itself. A geologic investigation should be undertaken to fully understand the characteristics, availability, and limits of the geothermal resource. The second barrier is a lack of available funds to support research or, once the research is done, to use that knowledge for future development.

Some ideas discussed in this plan may not currently meet the test of cost-benefit analyses or be feasible at this time. However, changes in energy costs, economy, and public attitudes may alter the analyses in the future.

## **APPENDIX 1 – Lava Hot Springs Geothermal Energy Team Membership**

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Mayor Raymond Bailey  
City of Lava Hot Springs  
208-776-5820  
[www.lavahotsprings.org/government](http://www.lavahotsprings.org/government)

Canda Dimick  
City Clerk, City of Lava Hot Springs  
208-776-5820  
[www.lavahotsprings.org/government](http://www.lavahotsprings.org/government)

Dan Dimick, local citizen

Scott Gerwe, local citizen

Evelee Hill, local citizen

George W. Katsilometes, local citizen

Janie Linford  
City Council member  
City of Lava Hot Springs  
[www.lavahotsprings.org/government](http://www.lavahotsprings.org/government)

Mark Lowe  
Executive Director, Lava Hot Springs Foundation  
430 E. Main St., PO Box 669  
Lava Hot Springs, Id 83246  
208-776-5221  
mlowe@lhs.idaho.gov



## APPENDIX 2 – Links and Contacts

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### Information/Education

Idaho Department of Water Resources  
Idaho Energy Division  
PO Box 83720  
Boise, ID 83720-0098  
208-287-4800 or 1-800-344-SAVE (7283)  
[www.energy.idaho.gov](http://www.energy.idaho.gov)  
Geothermal Energy Program  
[www.idahogeothermal.org](http://www.idahogeothermal.org)  
E-mail: [geothermalinfo@idwr.state.id.us](mailto:geothermalinfo@idwr.state.id.us)

US Department of Energy  
Energy Efficiency and Renewable Energy Network  
Geothermal Energy Program  
[www.eere.energy.gov/geothermal](http://www.eere.energy.gov/geothermal)  
GeoPowering the West  
[www.eere.energy.gov/geopoweringthewest](http://www.eere.energy.gov/geopoweringthewest)

Geothermal Education Office  
664 Hilary Drive  
Tiburon, CA 94920  
415-435-4574 or 1-800-866-4436  
[www.geothermal.marin.org](http://www.geothermal.marin.org)  
E-mail: [geo@marin.org](mailto:geo@marin.org)

Geo-Heat Center  
Oregon Institute of Technology  
3201 Campus Drive  
Klamath Falls, OR 97601-8801  
541-885-1750  
[www.geoheat.oit.edu](http://www.geoheat.oit.edu)

### Technical/Science Support

Idaho National Engineering and Environmental Laboratory  
Energy Efficiency and Renewable Energy Network  
Dr. Bob Neilson, Jr.  
PO Box 1625 MS 3830  
Idaho Falls, ID 83415  
208-526-8274  
<http://geothermal.id.doe.gov>  
E-mail: [rmn@inel.gov](mailto:rmn@inel.gov)

Idaho State University  
Dr. Jay Kunze  
Campus Box 8080  
Pocatello, ID 83209  
208-282-2902

Idaho Geological Survey  
Dr. John Welhan  
Idaho State University  
Campus Box 8072  
Pocatello, ID 83209-8071  
208-282-4254 or 208-282-3365  
E-mail: [weljohn@isu.edu](mailto:weljohn@isu.edu)

Boise State University  
Center for Geophysical Investigation of the Shallow Subsurface (CGISS)  
Dr. John Bradford  
Dr. Mitchell Lyle  
1910 University Drive  
Boise, ID 83726  
208-426-1011

Geo-Heat Center  
Oregon Institute of Technology  
Dr. John Lund, P.E.  
3201 Campus Drive  
Klamath Falls, OR 97601-8801  
541-885-1750  
[www.geoheat.oit.edu](http://www.geoheat.oit.edu)

## **Financial Assistance**

US Department of Energy  
Energy Efficiency and Renewable Energy Network  
Geothermal Energy Program  
[www.eere.energy.gov/geothermal](http://www.eere.energy.gov/geothermal)  
GeoPowering the West  
[www.eere.energy.gov/geopoweringthewest](http://www.eere.energy.gov/geopoweringthewest)

US Department of Agriculture  
Rural Business-Cooperative Service (RBS)  
Dale Lish, Rural Energy Coordinator  
725 Jensen Grove Drive, Suite 1  
Blackfoot, Idaho 83221  
208-785-5840, ext. 118  
[dale.lish@id.usda.gov](mailto:dale.lish@id.usda.gov)

Idaho Energy Division  
Low Interest Energy Loan Program  
PO Box 83720  
Boise, Idaho 83720-0098  
208 287-4800 or  
Idaho Energy Hotline 1-800-334-SAVE (7283)  
[www.energy.idaho.gov/loans](http://www.energy.idaho.gov/loans)

## **Other Contacts**

Idaho Department of Water Resources

- Gerry Galinato, Principal Energy Specialist  
208-287-4897  
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- K. T. Hanna, Energy Division  
208-287-4898  
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- Ken Neely, Hydrology Section  
208-287-4852  
ken.neely@idwr.idaho.gov
- Helen Harrington  
208-287-4848  
helen.harrington@idwr.idaho.gov
- Eastern Regional Office (water rights)  
208-525-7161

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College of Agricultural and Life Sciences, Agricultural Economics and Rural Sociology  
University of Idaho  
Moscow, ID 83844-2334  
208-885-2083  
jnelson@uidaho.edu

## **APPENDIX 3 – Documents and Reports**

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1. Examination and Evaluation of Geothermal Sites in the State of Idaho with Emphasis Given to Potential for Electric Generation or Direct Use, by Jim St. Marie, Leland L. "Roy" Mink, and Kenneth W. Neely, September, 2002
2. Economic Analysis of Plans to Further Utilize Local Geothermal Resources in Lava Hot Springs, Idaho, by Lindy Widner, Kevin Rafferty, Steven Peterson, James R. Nelson, November 3, 2003
3. Estimated Impacts of Proposed Idaho Geothermal Energy Projects, by Steven Peterson, Lindy Widner, and James R. Nelson, March 1, 2004