

# GREEN TEAMS: UNIVERSITY-NATIONAL PARK ENERGY PARTNERSHIP PROGRAM

## Utah State University & Intermountain Region National Parks

**OVERVIEW.** Utah State University teamed up with a number of National Park Service (NPS) units in Utah and surrounding states to compile utility billing data and develop a utility data tracking system. The tracking system developed by the project team is an effective tool for monitoring energy use and costs, and identifying energy conservation measure opportunities at the parks.

Participating NPS units in Utah included: Timpanogos Cave, Cedar Breaks, Natural Bridges, and Hovenweep National Monuments, and Zion, Capitol Reef, Bryce Canyon, Mesa Verde, Canyonlands, and Arches National Parks. Other units that participated in the partnership Pipe Spring National Monument in Arizona and Dinosaur National Monument in Colorado.

**UTILITY TRACKING.** To facilitate the tracking of energy use and costs, the student member of the project team conducted site visits to compile and audit billing data and to verify meter loads. During the site visits the student accessed energy usage and utility bill histories. Other information was also collected, including facility types, square footages, and utility providers.

**UTILITY DATABASE.** The development of the utility data tracking database was the goal of the partnership. The database will help streamline energy use and reduce costs by helping to identify electric loads that can be disconnected on a seasonal basis, by establishing baselines for evaluation of savings from energy conservation measures, and by facilitating bulk procurement of utilities.

The utility data tracking system also helps in the identification of buildings with unusually high energy consumption per square foot, an important first step towards making such facilities more efficient and cost-effective.

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***- Dr. James Winebrake, UNPEPP Director***

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### Partnership Successes

- Tracking of energy use and costs at several National Parks in the Intermountain Region, including detailed analysis of energy consumption data to pinpoint cost and energy savings opportunities.
- Development and refinement of a utility database that will facilitate and streamline the analysis of energy use and cost data.

**FUTURE PLANS.** The Utah State University – Intermountain Region National Parks Partnership has laid the foundation for two potential future collaborative projects. The first project involves comprehensive energy audits. Utah State would provide an intern (or team of interns) who would gather data, conduct spreadsheet calculations, and develop reports.

The second project would focus on renewable energy opportunities. For example, the National Park Service units of Utah and surrounding states are exploring the use of and installing photovoltaic (PV) systems at park facilities (the Colorado Plateau climate is well-suited for photovoltaic systems). Student interns would monitor the environmental and economic benefits of such systems and identify potential synergies with energy efficiency measures.

**SUMMARY.** The partnership resulted in the compilation of a significant amount of data and the development of a valuable utility data tracking system for several National Parks and National Monuments in the Intermountain Region. Furthermore, the partnership provided a good learning experience for a Utah State University student.

As Dr. James Winebrake, UNPEPP Director, notes: "UNPEPP is fortunate to have excellent on-going projects nationwide. Parks in all regions of the country have benefited from the efforts of university personnel; and university students have benefited by working on real-world energy problems."

**PERSONNEL.** Personnel involved in the partnership included Richard Beard, Department of Agricultural Systems Technology and Education, Utah State University; Steve Butterworth, Regional Energy and Water Program Coordinator, Pacific West Region, National Park Service; Jeff Burks, Director, Utah Office of Energy and Resource Planning; and Todd Nordstrand, Utah State University Electrical Engineering undergraduate.