

Resource Conservation Manager Brian Goldstein: Keeping his eyes on the stars and his feet on the ground

By Melinda Thiessen Spencer, WSU Energy Program

WSU Energy Program

Mission

To advance environmental and economic well-being by providing unmatched energy services, products, education and information based on world-class research.

Overview

Our staff of over 100 people (energy engineers, energy specialists, technical experts, software developers, energy research librarians and more) works out of our Olympia, Spokane and other satellite offices. Operating similar to a consulting firm, the WSU Energy Program is a self-supported department within the University.

Our customers include large and small businesses, public and private utilities, local and state governments, tribes, federal agencies and facilities, manufacturing plants, professional and trade associations, schools, universities, national laboratories, and consumers.

For more information, visit our website, www.energy.wsu.edu.



Brian Goldstein taking measurements at a Jefferson County facility.

A person needs a special set of skills to navigate the archipelago of 134 sites owned or managed by five public agencies to assess the resources used at each site. Add occasional challenges such as budget shortfalls and very busy staff, and you have mapped the daily journey of **Brian Goldstein**, Shared Resource Conservation Manager (RCM) for the Chimacum School District, City of Port Townsend, Fort Worden State Park, Jefferson County and Port Townsend School District.

Key to Goldstein's success is his knack for keeping track of details without losing site of the big picture: to help the partner agencies reduce energy and water use by 10 percent by the end of his three-year RCM contract. Goldstein is one of those people who, as Theodore Roosevelt would say, is good at "keeping his eyes on the stars and his feet on the ground" – and he makes it look easy.

Goldstein explains, "I think like an engineer, so it's natural for me to keep track of progress, challenges and tasks in lists and spreadsheets," which he shares with the agency partners each month.

Goldstein's first task as a Shared RCM was to build a database so he could evaluate energy and water use at the partner agencies' 134 sites. This information then helped him:

- Prioritize which sites he should visit first,

- Identify resource-saving strategies, and
- Measure progress toward the agencies' resource reduction goals.

Successes in Year 1

1. With help from the RCM interns, Goldstein removed 1,000 fluorescent lamps from overlit areas in the Port Townsend and Chimacum school districts, saving \$3,500 in electricity each year while still maintaining standards for lighting defined by the Washington Office of the Superintendent of Public Instruction.
2. By aligning heating schedules with occupancy, Chimacum Primary School reduced its energy use by 15 percent.
3. Goldstein proposed an energy-saving strategy for off-season rental consolidation at Fort Worden State Park. By shutting down expensive rental properties and assigning guests to properties that were less expensive to heat, Fort Worden could save \$18,000 in energy costs each year.
4. Energy Interval Service was instrumental in showing high energy use at night in Port Townsend's newly remodeled Cotton Building. This helped determine that the public restroom setpoints were not turned down properly at night.
5. A number of utility billing errors surfaced in the data analysis, saving the partners nearly \$7,000 in Year 1.

Building a utility database

Goldstein worked with the utilities that serve the partner agencies to obtain billing data for all 134 sites. Using Utility Manager and other software applications, Goldstein entered this data into a database so he could monitor energy and water use at each site.

With this information in hand, Goldstein looked for billing problems. "With a centralized database of utility bills in place, RCMs are in a unique position to discover billing issues," Goldstein says. For example, an audit of the electric demand charges for Chimacum schools uncovered a billing error during the last quarter of 2010 that resulted in a \$5,500 credit to the school district.

The database also enabled Goldstein to calculate the energy use intensity (EUI) for each site, which told him which sites were using the most energy per square foot.

Prioritizing sites with high energy use

Of the 94 sites that required an on-site assessment, Goldstein visited the sites with the highest EUI first. And, he had to get these assessments done as quickly as possible so he could then begin the meaty task of identifying strategies to reduce resource use. Goldstein hired two part-time summer interns from The Evergreen State College to help out. Together, the interns and Goldstein assessed all of the sites



No-cost actions with the greatest impact

Shared RCM Brian Goldstein lists the no-cost actions that have had the greatest impact on resource use for his partner agencies.

Energy use:

1. Optimize building heating schedules by reducing heating during unoccupied periods and adjusting zone heating schedules to reduce demand charges.
2. Minimize fresh air intake while maintaining adequate ventilation.
3. Remove lamps in overlit areas while maintaining state standards for light levels.

Water use and solid waste disposal:

1. Review water meter readings to detect leaks or issues related to overuse, such as inefficient watering schedules.
2. Increase recycling so it becomes feasible to reduce the number of garbage pickups per week.

by the end of Year 1. At each site they identified the types of equipment and lights in use and evaluated if resources were being used efficiently.

Referring to on-site observations and the data and trends evident from the database, Goldstein prepared facility action plans that specify resource-saving strategies for each of these 94 sites. He also wrote a comprehensive Resource Management Plan for each of the five partner agencies.

Identifying resource-saving strategies

These strategies aim to reduce operating costs by optimizing building systems and inspiring occupants to make small behavior changes. Goldstein's recommendations emphasize no-cost and low-cost actions that net immediate payback with minimal investment. He also includes projects that require investment of capital funds, which he hopes to achieve later.

His no-cost/low-cost recommendations include:

- **HVAC:** Adjust temperature setpoints to align with occupancy and reduce outside air when in heating mode.
- **Lighting:** Replace energy-intensive lights with compact fluorescent lights and use occupancy sensors.
- **Electrical appliances:** Replace worn-out appliances with ENERGY STAR-rated appliances and turn off equipment (like computers) when not in use.
- **Water management:** Use drought-tolerant plants, irrigation timers and low-flow fixtures.



Brian Goldstein, center, shown here with Russ Hendricks (left), facilities manager at Fort Worden State Park, and Rich Prill (right), WSU Energy Program building science and indoor environmental quality specialist, assess resource use at Fort Worden.

- **Solid waste management:** Use less and recycle what is left.

However, Goldstein is quick to emphasize that presenting recommendations in a report is just the first step; before a recommendation can be implemented, it must be integrated into the agency workflow. "This ensures that someone 'owns' each change and is responsible for producing results," Goldstein says.

"If the Jefferson County partners implement the recommendations presented in these action plans, the agencies together could save nearly \$120,000 each year," which represents six percent of the baseline (2010) utility bills, Goldstein adds. "The agencies will be well on their way to meet the overall goal of ten percent utility savings if they aggressively address the high-impact changes."

Measuring progress

RCMs know that it can take a while to implement changes and inspire people to use resources differently. But as Goldstein hits the mid-point in his three-year contract, he has a lot of good news to share with the partner agencies.

Using the database to track savings as resource-saving strategies are implemented, Goldstein reports that simple changes have already saved Jefferson County residents tens of thousands of dollars. "The partners will be close to meeting the goal of reducing energy by five percent in Year 2, and will easily

“
Our RCM program has been an eye opener for Fort Worden. We have learned a tremendous amount from the RCM about what we should and can do to reduce utility costs.

– Jill DeCianne
Administrative Assistant
Fort Worden State Park
Port Townsend

meet the five percent water reduction goal.”

Challenges

With five agencies to answer to and so many sites in his partnership, Goldstein relies on his linear logic and attention to detail, which help him organize masses of information and keep tabs on progress.

Does anything slow him down? Goldstein names two primary challenges he is facing at the mid-point of his three-year position:

1. Getting action plan recommendations into agency work flow processes. To make sure this happens, Goldstein regularly meets with management and operations staff at each agency to discuss how the recommendations will be implemented.



Leveraging PSE rebates for lighting, Chimacum schools began replacing inefficient fluorescent lights with more efficient models in their high school portables and district office. This project will save the school around \$600 per year in electricity and provide better light for the occupants.

Thanks to PSE rebates and the efficiency of staff electricians, the return on this investment is less than one year.

“

Brian Goldstein and the RCM program have helped Chimacum School District identify energy savings in all four of our schools. The RCM recommendations have resulted in significant reductions in our utility costs.

– Steve Brown
Director of Facilities and Maintenance
Chimacum School District #49

”

2. Convincing agencies that low-cost changes are worth the investment, even in a cash-strapped economy. To accomplish this, Goldstein reminds the agencies that utilities can provide financial assistance to make improvements, and these improvements can help the agencies save money year after year.

More information about RCM

WSU Energy Program provides technical and program support.

WSU Energy Program RCM Network website:

www.energy.wsu.edu/PublicFacilitiesSupport/ResourceConservation.aspx

Puget Sound Energy (PSE) provides training, resource accounting software, incentives and outreach.

PSE's RCM Program website:

www.pse.com/savingsandenergycenter/ForBusinesses/Pages/Resource-Conservation-Manager.aspx

Contacts:

Brian Goldstein

Resource Conservation Manager
360-385-9164
bgoldstein@co.jefferson.wa.us

Karen Messmer

RCM Program Manager
WSU Energy Program
360-956-2090
messmerk@energy.wsu.edu

© 2012 Washington State
University Energy Program

This publication contains material written and produced for public distribution. You may reprint this written material, provided you do not use it to endorse a commercial product. Please reference by title and credit the Washington State University Energy Program.

WSUEP12-029 • June 2012

Acknowledgement

This project is funded in whole or in part by funds made available through the American Recovery and Reinvestment Act (ARRA). This funding was awarded by the U.S. Department of Energy through the Energy Policy Division of the Washington State Department of Commerce under Energy Efficiency and Conservation Block Grant No.DE-EE0000849

Disclaimer

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.