

RCMProfile

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A Day in the Life of a Resource Conservation Manager: A Successful Approach in the Northwest

Ray Burton, RCM Snohomish County PUD

By Erin Hamernyik, Energy Specialist, WSU Energy Program

Resource Conservation Manager Ray Burton earned his keys to the Marysville School District buildings.



Ray Burton, left, and John Bingham, the Marysville School District capital projects director, go over some figures.

Photo by Erin Hamernyik

Sometimes a contractor gets temporary access for a specific project, says the school district's Capital Projects Director John Bingham, but the RCM has repeatedly proven his worth on the inside. "Burton was helping us find so many ways to save energy that we welcomed the outcomes on-site data collection would have on future savings."

An RCM program is a coordinated effort to track and reduce the cost of electricity, natural gas, water, sewer and solid waste disposal at schools and other government and non-government facilities. An RCM works

with maintenance and operations staff along with building occupants to promote practical, cost-effective efficiencies.

For almost five years, the Snohomish County Public Utility District has contracted RCM services with three Western Washington school districts: Marysville, Everett and Snohomish. A utility employee, Burton recently agreed to let me accompany him during a typical day on the job.

10:00 a.m.

Dressed in khakis and a casual shirt, Burton greets me with a smile and a handshake at his Snohomish PUD office. An energy manage-

ment engineer for utilities since the early 1980s, he is engaging and enthusiastic.

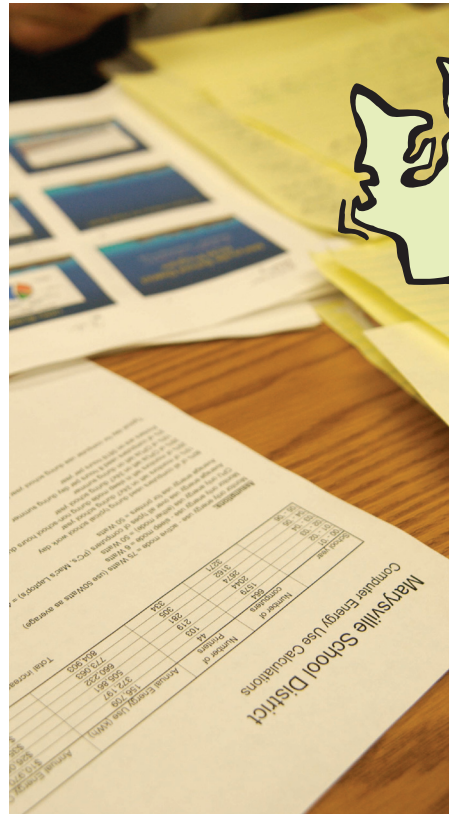
As we drive up to the Marysville School District maintenance and operations office, Burton points to various buildings he has monitored over the past few years, including the administration building. "Over there, I was able to check nighttime setback temperatures," he says. "Without access to buildings at any time of day, the data I gather could be skewed or inaccurate."

The district believed in energy conservation even before the utility's RCM program came on line in 2000. Marysville and Snohomish were the first school districts to jump at the opportunity, and that eagerness has paid off, says Burton, who credits a combination of teamwork and technology. "It is the people that make these programs go; without participation I can't do my job."

Burton greets the office secretary and jokes with Bingham and a member of his maintenance staff before they get down to business. The group meets every Wednesday and the focus is always the same: How to save the district more money through energy-efficiency. Topics range from lighting retrofits, to fan drive replacements, to preparing school board presentations. Going over energy usage graphs, Burton highlights certain schools within the district that still need help achieving significant energy savings. They discuss possible barriers in each case. "If you don't measure it, you can't

manage it," says Bingham. Most RCMs experience some resistance to implementing energy saving measures and Burton is no exception. But overall the school district has given him the access he needs to make accurate usage assessments and recommendations.

The issue under discussion today is the addition of an adjustable



speed drive to Marysville-Pilchuck High School's swimming pool circulation pump. The district asked Burton to help set things up with the contractor.

The pump motor runs twenty-four/seven, and by cutting the motor speed in half, it will use an eighth of the energy, making the adjustable speed drive a cost-effective control. In addition, the school district uses a pool cover five to six hours a

night and plans to reduce water circulated by half during those times.

The discussion moves on to the upcoming RCM conference in Wenatchee, Washington. Burton and Bingham, who will be presenting information about the RCM program, go over savings graphs for the past four and a half years. Since Burton came on as RCM, the school district has

saved a total of \$1 million on natural gas and electricity. There is still room for improvement, but Burton knows he has not yet

exhausted all avenues.

Bingham says he is grateful for the savings opportunities as the district plans for an estimated 15,000 additional students in the next five years. To accommodate the growth, the district is considering modular constructed units and consulting with Burton on the energy implications.

12:30 p.m.

Today's schedule does not include a visit to Snohomish School District offices, so instead of his usual lunchtime swim Burton brings me up to speed over brownbag lunches at the PUD café.

Dutch Hill Elementary is one Snohomish school that is benefiting from a variety of RCM efforts. Burton's load profile analysis on the school revealed that the brand new heat pumps

and their controls were not working properly. A hundred percent outside air was coming in in for ventilation day and night. Burton helped automate damper settings to re-circulate warm indoor air.

"The controls were also set up to use its electric resistance coils (electric heaters) as a primary source of heat rather than the more efficient heat pumps," says Burton. "To correct these problems, we brought on the heat pump as the primary source of heat and lowered the level of outside air coming into the school. We also scheduled heating units to come on closer to the time that staff arrived at Dutch Hill, rather than having units start in the middle of the night several hours before anyone was in the school."

It was the lead maintenance technician Bob Isaacson's idea to insulate thermostats from an outside wall and adjust hot water tanks to prevent spikes in energy use during peak demand times, when utility rates are highest. All of these efforts have saved the school about \$13,000 annually.

The district's Valley View Middle School was having similar problems with its new controls. Successful changes there have resulted in \$17,500 in annual savings.

"It's really about taking ownership of energy issues and understanding that we all can do things to reduce costs," says Burton. "Because, like any other business expense, energy use has a direct impact on our overall budgets."

1:00 p.m.

After lunch, we walk a block to meet with Scott Sherwood, a heating, ventilation and air-conditioning technician at the Everett School District. "Scott has really grown in his position at the school district since I've known him," says Burton as we approach the administrative building. "He's branched out from controls to other aspects of energy saving. He is seeing the school's energy usage as a system."

We wind our way through the corridors to Sherwood's office, a room full of computers and mechanical parts. The walls are covered with graphs depicting energy use, baseline data and school savings. It is a high-tech workshop with a clear energy agenda.

As we are introduced, discussion is already beginning about the data Burton has brought to assess possibilities for summer savings. School vacations are a good time to reap savings, but the trend toward community use has created a smaller window for capitalizing on building vacancies.

Burton and Sherwood discuss usage estimates and potential

energy savings. Soon, Sherwood will get an up-to-the-minute schedule of events for the schools, which he hopes will allow for more accurate scheduling and increase savings.

Burton and Sherwood pour over the figures. They decide savings could result from a change in the thermostat setback schedule.

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Ray Burton

Such changes affect faculty and staff, so the problems are complex, and they want to make sure the savings are worth the effort. Even a small savings can be worth a lot over the long term, they agree.

But Burton warns about overestimating savings, which can cost credibility.

During a break, Sherwood tells me, "The thing I like about Ray is he is genuinely excited about saving energy; therefore helping the school keep more money."

On the technical side, Burton has helped the Everett School District get the most out of its HVAC monitoring program, IBEX from Alerton Controls. This system controls the lighting and HVAC equipment, regulating supply air temperature, on/off times, boiler efficiency, temperature settings, and fan run-times.

Burton has helped the district optimize energy use by developing building operating guidelines and then reviewing existing control settings. He makes sure the district is not heating hallways to the same temperature as classrooms, or starting the heating system too early in



the morning. And before each break, he reminds the districts to set up their holiday energy-use schedules.

Burton and Sherwood's teamwork has paid off. The Everett School District has saved more than a million dollars in three and a half years.

As the meeting ends, the two discuss the next site visit for a few district schools. "Each school has its own challenges" says Burton, "The trick is to create solutions that everyone is on board with."

2:30 p.m.

Burton has a utility staff meeting at 3 p.m. As we walk back to his office, he explains that one way to create solutions and manage expectations is to create a series of energy data graphs. Within the RCM community, data is the language of change. Beyond the numbers, it's important for the RCM to communicate enthusiasm and savvy.

Quantitative savings, plus quality interaction is the formula for Burton's success at school districts in the Snohomish County PUD service area.

Additional Information

For more information about resource conservation management, contact:

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