

saving dollars for districts

With Washington and Oregon projecting decreased revenues, school districts are increasingly focused on saving money on operations so that more funding is available for teaching students. In this issue of Funding Strategies, we explore how school districts are successfully launching Resource Conservation Measures (RCM), resulting in low cost – and sometimes no cost – savings through conserving resources and reducing operational expenses.



We interviewed the following experts who have successfully planned, launched and sustained RCM programs, resulting in big savings for public school districts:

Nancy Bond : Resource Conservations Specialist, Portland Public Schools
Working with zero budget, Nancy Bond has helped save Portland Public Schools more than \$7.5 million in expenses over the last 9 years.
CONTACT INFO: nbond@pps.k12.or.us | (503) 916-2000 x74279

Chuck Collins : CEO, Cascade Power Group
As of 2010, Chuck's team has helped Lake Washington School District save an estimated \$1.4 million annually in utility-related costs.
CONTACT INFO: chuckcollins@cascadepower.com | (206) 351-1507

David Cone : Resource Conservation Manager, Evergreen School District
Evergreen School District has saved over \$2 million in 18 months since launching their RCM program in November 2008.
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Photo: Measure existing light levels in your classrooms with a light meter, and see whether you can delamp some of your light sources.

Top 10 Energy Conservation Measures for K-12 School Districts (Source: Chuck Collins, Cascade Power Group)



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| 1 | 2 | 3 | 4 | 5 |
| <p>Turn off or minimize any unnecessary lighting (e.g. use task lamp instead of entire classroom when working alone).</p> | <p>Close exterior doors when it is cold outside – do not prop them open.</p> | <p>Consolidate appliances like refrigerators, microwaves and hot pots into common areas.</p> | <p>Form a “Green Team” to monitor onsite energy usage.</p> | <p>Use window blinds to help regulate room temperature during hot or cold seasons.</p> |

MAKE A COMMITMENT

All three interviewees agree that securing a strong commitment from the district’s leadership is crucial to any RCM program’s success. Dave Cone suggests working with the School Board to set policy and carry it out through administrative regulation.

According to Chuck Collins, the Lake Washington School District’s RCM Policy statement (excerpted below) has been crucial to ongoing efforts to maximize energy efficiency, water conservation and waste reduction.

“The District recognizes the responsibility to develop and maintain programs to support the conservation of energy and natural resources. In recognition of this leadership responsibility, the district shall strive to (a) institute effective energy and resource management and (b) provide information and develop conservation attitudes and skills for the students it serves. Resource management should be, for the purposes of this document, defined as ‘conservative and efficient use of energy and utility resources’. Energy and utility resources include: electricity, natural gas, water, trash and recycling, and sewer services.”

“Once you have top down administration support, visit each school building to create an expectation of stewardship and conservation, then engage the parent community and ask for help,” explains Nancy Bond.

“For immediate, low cost solutions, school districts should begin with education and training to change staff and student behaviors.”

Chuck Collins

CHANGE BEHAVIORS FOR CONSERVATION

For immediate, low cost solutions, school districts should begin with education and training to change staff and student behaviors. “When starting out, don’t worry about commissioning and capital projects, but focus on the things that people can do inside their own buildings,” says Chuck Collins. Creating lasting changes in the behavior of building occupants becomes more financially important to school districts

as energy costs rise. Collins suggests that initially, districts focus on three things that are quick and easy, yet often overlooked:

- 1. Turn off the lights**
- 2. Close the doors**
- 3. Recycle things**

Nancy Bond has found that behavior changes, like ramping up efforts to reduce unnecessary plug loads, result in significant savings. A survey of five Portland Public Schools (PPS) buildings revealed 72 different refrigerators running 24/7 – most of them personal-sized and nearly empty. The district bought five new full size, energy efficient refrigerators and offered one to each building that would remove a minimum of five small refrigerators. PPS also asked for voluntary unplugging of unnecessary electrical appliances including electric pencil sharpeners, hole punchers, computers, microwaves, hot pots, etc.

In a similar initiative, PPS discovered that the district’s many photocopiers had sleep cycles set so that if a copier hadn’t been used for 8 hours, it would power down. The district is saving about \$92,000 per year in energy consumption by changing the sleep cycles to power down after 5 minutes of idle time.

6

Report problems with building (lack of heat, circulation, etc).

7

Turn off computers and monitors when finished.

8

Re-charge batteries for personal technology at home, not at school.

9

Use only Energy Star rated appliances and unplug them when not in use.

10

Don't overheat rooms – speak up if it feels too warm.



PPS is also reaping financial rewards through moving away from polystyrene trays towards permanent trays for serving lunches, and is eliminating individually wrapped sporks/straws/napkins to save several thousand dollars a year in expenses, and limit plastic wrappers.

Evergreen School District has found that removing unnecessary light bulbs – aka delamping – offers savings for school districts. After first measuring existing light levels with a light meter, Evergreen found they could remove several thousand light bulbs yet still meet lighting standards. This translated into dollar savings of \$45,000 per year in energy use plus reduced the cost of replacement inventory.

Even bigger savings were found when Evergreen got serious about turning off unused computers. The local utility, Clark County PUD, helped the district purchase software to automatically turn off computers when not in use. The district only paid \$3,000 of the software's \$69,000 purchase price but expects to save up to \$300,000 per year.

MAXIMIZE EFFICIENCY OF SYSTEMS
It is nearly impossible to understand how well building systems are functioning without first assessing energy performance with internal and external benchmarking. The EPA's Energy Performance Rating System provides benchmarking tools that allow assessment of building energy performance and can track savings over time. When Evergreen began benchmarking, they noted that almost all of the district's facilities compared poorly to a standard, and they began to look for common denominators such as overlit buildings and automation systems causing facilities to run when not required.

Participation from maintenance staff is key in achieving more efficient energy use. While the first step is to make sure existing systems are in good working order, maintenance and custodial staff are uniquely positioned to suggest new ideas to cut energy costs. The custodians at Lake Washington School District have come up with ideas to save the district thousands of dollars per year on energy costs by using occupancy sensors to turn off lights in unoccupied rooms, putting exterior lights on motion detectors, and disconnecting unnecessary lighting.

However, at Evergreen School District, Dave Cone has learned that installing sophisticated energy conservation technology does not necessarily equal highest performance. Most classrooms in his district have occupancy sensors that shut off the lights after 15 minutes of the room being vacated. Cone assigned a math class to multiply the number of lights in each classroom times the cost of waiting for the sensor to turn off the light versus manually flipping off the light switch upon leaving the room. The math whizzes calculated an additional \$12,000 energy cost per year simply because people were relying on the energy saving technology to turn off the lights.

Significant savings can also be found by closely tracking utility bills. Nancy Bond has uncovered millions of dollars of billing errors charged erroneously to Portland Public Schools. Bond discovered that for 7 years, PPS had unknowingly continued to pay the electric bill for a privately-owned building they had discontinued using 15 years prior – and the district eventually got a big refund check from the property owner. "Make sure someone is tracking

Additional References/Resources

ENERGY STAR
www.energystar.gov

US Green Building Council
www.usgbc.org

Northwest Energy
Education Institute
www.nweei.org

LPB Energy Management
(Utility Manager)
www.lpbenergy.com

Oregon Department
of Energy
www.oregon.gov/ENERGY

Building Operators
Certification
www.theboc.info

International Facility
Managers Association
www.ifma.org

Building Owners and
Managers Association
www.boma.org

utility bills very closely,” encourages Bond. “Also, look for spikes in water bills that might indicate a leak that can be fixed, as we have gotten significant money back from tracking and fixing leaks.”

Dave Cone says that managing building schedules provides the single biggest bang for the buck for many school districts. Districts may not be aware that school heating and cooling systems may be running on weekends and during summer days when they are virtually unoccupied. Cone suggests synchronizing sequences of operation to manage building temperatures in line with the actual use so that heating and cooling only run when necessary. For example, while summer daycare providers tend to reserve school cafeterias from 6 am until 5:30 pm, Cone has found that they take students on lots of field trips and therefore the cafeterias are frequently unoccupied during scheduled hours. Evergreen School District saved 91 run hours by staying on top of when the summer daycare programs actually needed the building systems to be operating.

INVOLVE OTHERS

Successful RCM programs generate enthusiastic participation from administrators, teachers, students, parents, and the whole community. Hold assemblies, send out emails, hang banners, and provide regular reporting of RCM results. Bring more people on board by starting a “Power Patrol” to scout for lights and computers that need to be off, or provide cash incentives to schools that demonstrate energy savings. “Publicize and celebrate your savings,” recommends Bond. “Write letters to the newspaper, reach out to the community and ask for donations of prizes and pizza parties when you reach RCM goals.”

Find local utilities, government agencies, and other organizations to partner in funding and implementation for conservation and efficiency. “We have not spent a lot of money on this – and when it does cost money, we have found other people willing to pay for most of it,” says Cone. “The bottom line for school districts is less money paid to the utilities and more for your mission!”

The purpose of [Funding Strategies](#) is to explore how school districts secure funding for projects. Please contact Mahlum for more information, or if your district would like to be featured.

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