



MEDFORD SCHOOL DISTRICT SAVES MONEY FOR WHAT MATTERS

STRATEGIC ENERGY MANAGEMENT YIELDS ESTIMATED ANNUAL SAVINGS OF \$80,900

Since 2009, Medford School District has been working to reduce energy operating costs in its 19 buildings. The district has taken advantage of Energy Trust of Oregon services and cash incentives to renovate or construct six schools to standards exceeding Oregon Energy Code and has upgraded lighting to efficient LED technology in three buildings. Those investments are saving the district an estimated \$71,000 in annual energy costs.

Recognizing that capital improvements represent only part of its energy-saving potential, Medford enrolled in Energy Trust's commercial Strategic Energy Management, SEM, initiative, which focuses on behavioral changes and no- or low-cost operations and maintenance improvements that deliver significant and persistent savings. In less than one year of SEM, the district doubled its estimated annual energy savings, putting another \$80,900 back into its annual budget. In addition, Medford earned a \$23,000 cash incentive from Energy Trust.

"Although we've been focusing on energy efficiency for a while, SEM turned out to be a gold mine of additional savings," said Lief Hochendoner, the district's resource conservation manager and energy champion.

Learning to identify hidden energy waste

During SEM, Medford employees met regularly with energy experts from Energy Trust along with other businesses and organizations participating in their SEM cohort. Participants received training and tools from Energy Trust, shared information with each other on strategies and progress, and developed long-term skills to find and eliminate energy waste in their facilities.

One of Medford School District's first tasks was to update its conservation and sustainability policy to include energy best practices. "Being successful at SEM depends a lot on getting cooperation from building occupants," explained Hochendoner. "Having a strong policy demonstrates support from district leadership, helping to smooth the way."

The district also established a district-wide energy team that includes building supervisors, facilities employees, the mechanical supervisor and faculty. The energy team meets monthly to discuss and implement energy saving strategies. An energy champion is responsible for coordinating the team's efforts and monitoring progress.

Strategic Energy Management offers:

- Technical support and training
- State-of-the-art tools and templates
- Coaching from experienced energy experts
- Energy savings of up to 20 percent
- Cash incentives for energy saved through operational and behavioral improvements



CENTRAL HIGH

During SEM, Medford School District removed lamps in over-lit areas at Central High. Apart from Strategic Energy Management, Medford also used an Oregon Department of Energy grant and cash incentives from Energy Trust to convert some lighting to LEDs, which are saving the district \$20,000 annually on energy costs. Because LED lamps last for years without replacement, the district also cut maintenance costs.



RUCH COMMUNITY SCHOOL

Ryan King, who teaches middle school science, gets students engaged in real life solutions by exploring ways to make Ruch Community School more energy efficient. A member of Medford's SEM energy team, King is working with students in applying for grants to help power the school with solar energy.



KENNEDY ELEMENTARY

Sixth grader Isobela Pickard walks with Thomas Ettel, principal of Kennedy Elementary, as she makes her rounds reminding students and teachers to turn off lights and other equipment. Pickard, who initiated a school-wide energy-efficiency patrol on her own, has found the district's energy team to be supportive of her grassroots efforts.

Medford's energy team joined Energy Trust experts in walking through two of the district's buildings to assess current energy management practices and identify potential operations and maintenance improvements. The group paid particular attention to actions that could easily be replicated in multiple buildings throughout the district.

The resulting list of opportunities included several low- and no-cost recommendations commonly found during SEM—removing lamps in areas that are over-lit; ensuring doors and windows remain closed while heating, ventilation and air conditioning units are operating; and adjusting controls and software to align HVAC scheduling with building occupancy. The district also learned that unnecessary plug loads, such as mini-refrigerators operating in individual classrooms and cellphone chargers plugged into power strips 24/7, add up quickly.

"We expanded our summer building-closeout process to include unplugging power strips, appliances, computers, monitors, TVs and other plug loads," said Hochendoner. "That simple decision is saving us about \$50,000 in annual energy costs." Bolstered by that success, Medford's energy team is working with faculty to further trim plug loads and is giving them the responsibility of "pulling the plug" before they turn in building keys when the school year ends.

Employee and student engagement is critical

Because SEM focuses on operations and maintenance, engaging the district's 1,200 employees has been essential and also a big challenge. To help bring about culture change, Medford rolled its conservation and sustainability policy into annual Safe Schools Training required of all new and returning employees. In addition, the district developed a quarterly newsletter to highlight success and educate employees.

Site supervisors and their custodians are the boots on the ground, helping to coordinate the effort in a district that spans three cities—Medford, Jacksonville and Ruch—and a wide geographic area. "We keep our eyes open for issues, such as lights that shouldn't be on," said Roy Harper, site supervisor for eight buildings. "We report issues to the right channels, and we get things done."

Medford also engaged its information technology department to help set up PC power management software to ensure computer equipment goes to sleep at night and on weekends.

The district gets teachers and administrators on board by supporting instructors who incorporate energy into their teaching. "The district's facilities department has been a great resource in supplying electrical equipment so I can



demonstrate which light bulbs use more electricity or show students the power of solar energy,” said Ryan King, a middle school science teacher at Ruch Community School, who serves on the energy team. “Energy is a linchpin issue for today’s students, who will face the energy challenges of tomorrow. It’s important to set an example by demonstrating solutions and framing the issue in a positive light.”

At Kennedy Elementary in Medford, Isobela Pickard started a student energy patrol to cut energy waste. Facilities employees provided Pickard with “Turn it off” stickers that she uses to remind employees and students to turn off lights and equipment. “It’s hard to break habits. If we keep reminding people how to use less energy, they’ll catch on,” said Pickard.

Monitoring and reporting on progress

Energy Trust also provided Medford School District tools that allow the facilities team to track energy use over time, with adjustments built in for weather, occupancy and other variables. “These tools make a big difference,” said Ron Havniear, manager of facilities and support services. “An unexplained increase in energy use tells us that something needs attention, and being able to quantify the success of our hard work underscores the value of the program to employees and decision makers.”



SEM is great for those who can’t or aren’t ready to do capital projects. You may not be able to afford a new chiller, but you can still save a lot by making low- and no-cost improvements.

Lief Hochendoner,
resource conservation manager,
Medford School District



SEM Improvements

During its first year of SEM, Medford School District:

- Updated its conservation and sustainability policy to include energy best practices
- Disconnected plug loads during summer break
- Aligned heating, ventilation and air conditioning scheduling with building occupancy
- Ensured doors and windows are closed while HVAC units are running
- Replaced mini-refrigerators in individual rooms with centrally located refrigerators
- Installed software to put computers to sleep at night
- Removed lamps from over-lit areas
- Controlled after-hours use of gym lights



Lief Hochendoner, resource conservation manager; Ron Havniear, manager of facilities and support services, Medford School District.



The hundreds of thousands of dollars we're saving is money that will go directly back into the classroom.

Ron Havniear, manager of facilities and support services, Medford School District



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MEDFORD STRATEGIC ENERGY MANAGEMENT ESTIMATED SAVINGS

- 1.08 million annual kWh
- \$80,900 in annual energy costs
- \$23,700 Energy Trust cash incentive
- 520 tons of carbon dioxide avoided

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- Customers with a portfolio of buildings
- Buildings with complex energy systems
- Customers with a complex organizational structure
- Customers interested in continuous improvement