

Case Study: Rural Oregon School

Vale School District, Idaho Power partnership is a winner

Located 12 miles from the Idaho border on the path of the historic Oregon Trail in Malheur County, Vale is a quiet place. The high-desert town has 1,000 residents, but most live outside the city limits on ranches and farms.

The Vale School District has just four schools—two elementary schools, a middle school and a high school—that could be easily overlooked when it comes to funding energy projects for schools.

But, thanks to the School District's electric utility, Idaho Power, and a state agency, the Oregon Department of Energy, the students and staff of this rural Oregon school district weren't overlooked. Now, they are benefiting from much-needed new school lighting and they are saving energy, too.

The Oregon Department of Energy recently facilitated a replacement and upgrade of lighting lamps and fixtures at Vale Elementary School, Vale Middle School and Vale High School.

The project included the installation of metal halide lights with new fixtures, T5 and T8s lamps and electronic ballasts, and occupancy sensors.

Vale School District expects to reduce lighting electrical use by 56 percent at the high school, 73 percent at the middle school, and 59 percent at the grade school.

Vale Middle School expects to save 73% of the electricity used for lighting with this project.

Great results

"We are more than happy with results," said Vale School Superintendent Matt Hawley. "The new lighting is great and all the contractors were outstanding to work with. Thanks to the new motion sensors, lights get turned off now. Before the project, lights would be turned on for a Saturday morning and they'd stay on all weekend."

A coach at the middle school comments: "The 'instant on' feature on the new lights is far better than the old lights. They would take 15 minutes to warm up, which seemed to take forever. It seems brighter now. The light is clear, almost natural light. The old lights made people look jaundice."

Williams Oil Settlement

Vale School District became a candidate for the lighting efficiency projects when funds became available in 2005 through the Williams Oil Settlement.

The Oregon Department of Energy administers the \$1 million Williams Oil Settlement. The settlement was the result of a coordinated investigation into allegations of price manipulation and antitrust violations in the Western power market during the energy crisis of 2000-01 by the attorneys general of Oregon, California and Washington.



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The Vale High School gym was dull and dim before the lighting efficiency project.

Idaho Power partnered with the Vale School District. The utility served as the school district's "pass-through" partner and accepted their tax credit eligibility. Idaho Power paid the Vale School District a lump sum of \$15,445 when the projects were complete. In exchange, Idaho Power took the 35 percent tax credit of \$20,215 that the projects qualified for. Idaho Power also provided the school district with a direct incentive of \$11,477 for the lighting projects.

Thanks to the Williams Oil Settlement, Idaho Power and the Oregon Department of Energy, Vale School District students and staff have brighter, more uniform lights that are saving electricity and money. And, that's a winning situation for everyone.

The Oregon Department of Energy identifies and distributes the funds to school facilities with high-energy use. The three Vale schools qualified. The Williams Oil Settlement funds were used to pay a portion of the \$57,760 cost of the three lighting projects.

Other funding

In addition to the Williams Settlement Funds, the Vale School District lighting projects also qualified for the Oregon Department of Energy's Business Energy Tax Credit Program. The School District's electric utility was able to assist so Vale could benefit from the tax credit program.



T5s provide a brighter, more natural light in the gym and use less electricity.

Lighting Considerations for School Gyms

There are a number of issues that should be kept in mind when considering fluorescent lighting for school gyms (or other high ceiling spaces) lighting, according to Greg Churchill, Energy Analyst with the Oregon Department of Energy's School Team. "School districts should consider these factors if choosing T5 fluorescent lighting rather than the traditional metal halide or mercury vapor lighting."

Pros

- ✓ T5s can reach full light output quickly when they are first turned on and after the light is turned off then on again. Metal halide (MH) or mercury vapor (MV) lights do not.
- ✓ The light output from the T5 degrades slightly over time while the MH light levels drop significantly.
- ✓ Staff can wait for several T5s to fail before replacing lamps whereas when one MH fixture fails it needs to be replaced immediately.
- ✓ T5s provide better color output (referred to as color rendition) than MH or MV lights. Poor color rendition can make people and objects look dull.
- ✓ Cracked T5s do not emit UV radiation that can burn the eyes of students and staff. Broken MH lights can present a health hazard.
- ✓ T5s can be turned on and off quickly without effecting light levels while MHs can not. T5s can even be controlled using occupancy sensors.

Cons

- ✓ Staff must change several T5s compared to one MH. This may take more time as well as require a high lift.
- ✓ T5s are expensive compared to T8s and MHs. Prices are expected to drop over time as they did with T8s after they were introduced.

Fluorescent Lamps

- T12 = 1.5 inches in diameter
- T8 = 1 inch in diameter
- T5 = 5/8 inch in diameter

New technology allows fluorescents with smaller diameter to provide brighter light using less electricity.