



Case Study

Lake Washington School District Lowers Greenhouse Gas Emissions and Saves over \$200,000 Annually

"The greatest benefit of installing Verdiem's PC power management software is the direct effect we have on the environment. Lake Washington School District cut PC power usage almost 2.5 million kWh annually. Beyond lowering our utility bills, our reduction in electricity usage means an annual reduction of almost 3 million pounds of greenhouse gas emissions produced in generating that electricity."

Forest Miller, Director of Support Services

At-a-Glance

- ▶ With 23,500 students, 48 schools and over 11,000 PCs, Lake Washington School District is the fifth largest district in Washington State
- ▶ Annual Per-PC Energy Savings: 221 kWh / \$18.08 @ \$0.07 per kWh
- ▶ 1,580 metric tons of gas CO₂ not emitted equating to:
 - 342 cars not driven for one year
 - 179,954 gallons of gasoline saved
 - 3,674 barrels of oil not used¹

4-yr Total Savings: 9.8 million kWh / \$808,000

Growing Technology Means Growing Power Needs

Reflecting the community it serves, the Lake Washington School District (LWSD) in Washington State provides its students a technology-rich education. With nearly 23,500 students in 48 schools, the 11,000+ personal computers in use make up an impressive technology resource.

However, baseline measurements showed that the same PCs at LWSD that help provide the benefits of a modern technology-rich education also accounted for a staggering 6.4 million kWh of energy consumption annually. This translates into energy costs of about \$450,000 per year. Though high, the figure is not surprising, considering the fact that PCs are among the fastest growing consumers of energy in the nation today. According to a 2002 study by Arthur Little (now known as TIAA)², IT equipment such as PCs, monitors, and related office

tools account for 9% of all energy consumed, and is on its way to becoming the third-largest source of power demand in the commercial sector.

Understanding and Addressing PC Power Usage and Waste

Because energy usage by computers is not itemized separately in utility bills, many organizations don't realize the extensive electricity used by PCs. According to the US Department of Energy, a PC and monitor use an estimated average of 600 kWh per year, and up to two thirds of that energy is wasted because PCs are running at full power when no one is present.²

When the staff at LWSD learned about the PC power waste problem and of the Verdiem[®] SURVEYOR PC power management solution, they immediately saw an opportunity for a reduction in their electricity costs. Always looking for ways to cut unnecessary costs, LWSD embarked on a pilot program with Verdiem. Using both a quantitative and qualitative approach, the pilot program focused on discovery and savings projections.

To measure current PC energy usage and estimate potential savings, Verdiem installed its SURVEYOR software on a sampling of 83 computers. With no power management policies set, the software measured baseline power usage of the 83 computers for 2 weeks. Additionally, the staff was interviewed as part of the methodology in projecting power management policies and savings projections.

As a result, average PC power usage amounted to 575kWh

"Lake Washington School District has launched a number of natural resource conservation measures in recent years as environmental awareness and concern has grown. Managing PC power usage with Verdiem has been one of the easiest sustainability projects to execute. It had an immediate impact on costs and the environment and required no physical labor, site closures or program disruptions."

Chuck Collins, Resource Conservation Manager

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per year and Verdiem projected that significant cost and energy savings could be achieved. Both the energy usage measurement tool in SURVEYOR and Verdiem's methodology for projecting savings have been evaluated and verified by numerous utilities such as Puget Sound Energy (PSE), which powers Lake Washington School District. Encouraged by the validation and savings forecast, LWSD made the decision to implement SURVEYOR throughout the schools in the district.

SURVEYOR Benefits, Measurable and Immeasurable

Since SURVEYOR is centrally managed over a network, its implementation gave IT staff power management control over all the PCs on the LWSD network. This functionality not only made it easier to implement SURVEYOR, but also allowed the conservation effort to be maximized, eliminating power drains caused by individuals turning off power management settings at the PC level.

Central control over power policies also meant that IT could ensure PCs were on and accessible during maintenance tasks, such as software and configuration updates, without writing scripts or specially configuring network management tools. As an added bonus, LWSD found they could help improve security of all the PCs on the network during sleep modes by merely selecting a check box in SURVEYOR. Another unexpected benefit was SURVEYOR's ability to assist in asset management by giving all PCs on the network central visibility.

Unlike alternative PC power management options, SURVEYOR

from Verdiem provides actual, monitored power usage measurements with a tool verified by many municipal utilities. By implementing and simply powering down its PCs safely when not in use, LWSD conserves almost 2.5 million kWh of energy annually, amounting to an annual savings of \$202,000. A savings of 2.5 million kWh of electricity eliminates about 1,580 tons of CO₂ greenhouse gas emitted in generating that electricity. This is the equivalent amount of CO₂ produced by driving 342 cars for a year, burning 179,916 gallons of gasoline, or burning 3,674 barrels of oil.³

After initially considering SURVEYOR PC power management by Verdiem as a wise cost-cutting measure, Lake Washington School District now finds its greatest benefit to be its role in preserving the environment and conserving natural resources. They hope that sustainability projects implemented in the school district, such as installing SURVEYOR, will not only have a direct impact on the environment, but also an indirect, immeasurable one as they successively reinforce a lasting message to future generations.

"SURVEYOR lets us easily schedule when to leave the PCs on to automate IT tasks, while saving energy and money when no IT work is needed. And to date, use of SURVEYOR has not resulted in a single help desk call, which is refreshingly uncommon when new software is installed."

Bob Siemers, Senior Network Engineer

Benefits

SURVEYOR by Verdiem allows Lake Washington School District to:

- ▶ **Significantly reduce energy consumption and operating costs.** Data shows that by powering down PCs when not in use, LWSD saves roughly 2,466,449 kWh of energy use a year, amounting to about \$202,000 in utility bills, a savings of 38.4%.¹
- ▶ **Make a positive environmental impact with minimal effort** SURVEYOR power management for PCs can enable immediate and quantifiable reductions in energy consumption and greenhouse gas emissions without the substantial labor, materials, or disruptions required by other building conservation efforts such as upgrading lighting, windows, or heating/cooling systems (HVAC).
- ▶ **Ease IT management and increase visibility of computer assets** Network level control over PC power states ensures PCs are on and accessible during IT maintenance tasks without requiring scripts or the customization of network tools. The increased visibility of all networked PCs also enables better asset management.

¹ Savings calculations were made by comparing extrapolated data from a baseline power usage report recorded in October 2004 to a monthly power usage report from August 2006. Baseline power usage was extrapolated from a sample set of 83 computers for 2 weeks. Monthly usage reports extrapolate data from a sample set of 3842 PCs.

² Arthur D. Little Inc., Energy Consumption by Office and Telecommunications Equipment, January 2002, for U.S. Department of Energy

³ Equivalency calculations provided by U.S. Climate Technology Cooperation Equivalency Calculator at: <http://www.usctogateway.net/tool> – Sources listed on site.

Rebates and Incentive Programs

Many energy organizations and utilities recognize the powerful conservation opportunity SURVEYOR provides. They often support its purchase and deployment through discounts, incentives and rebate programs – several programs cover 50 percent or more of SURVEYOR's cost. Contact us to learn more about a possible energy incentive for SURVEYOR in your area.

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