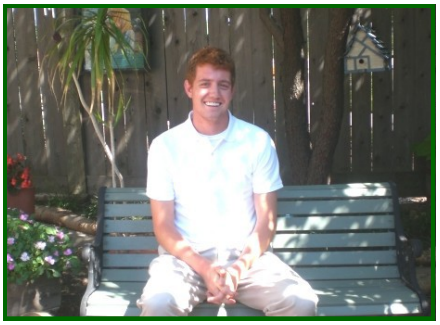
2009 Case Study

H2E Circuit Rider



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Kansas

Company background
The 2009 H2E Circuit Rider intern provided a variety of services to nine facilities across Kansas and Missouri. These services were designed to help facilities identify opportunities for environmental and cost savings.

Project background
The H2E intern worked with facilities that had pre-registered for the service in late 2008. After confirming their interests, a list that defined H2E intern services was provided to interested facility contacts. Services included the following audits or assessments: mercury inventory; solid-waste audit; red bag (infectious) waste audit; and energy conservation opportunities including lighting, appliance upgrade, vending machine misers, and power management systems. After the types of services were confirmed, a site visit date was set up and specific services the facility asked for were performed.

Incentives to change
Hospitals are generally in the business to care for the health of their communities. By reducing environmental impacts and costs, facilities can often redirect the dollars they save to patient care services.

Projects reviewed for E2/P2 potential
1. Mercury inventory
Two of the nine facilities requested a full inventory of mercury at their facility. Using the mercury manager tool, 128 grams of mercury in mercury-containing equipment were identified in thermostats, boiler barometers, and boiler thermometers.

2. Infectious waste audit
Red bag audits begin with a review of a hospital's red bag policy. This was followed by a visual audit of red bag contents in soiled utility rooms, patient rooms, labs, etc. Content of sharps containers was also visually audited.

After performing the audit, the intern found that many of the items being thrown away in the infectious waste should actually be considered regular solid waste. At the five locations that requested an infectious waste audit, the intern identified about 36.2 tons of infectious waste that could be reduced annually by properly sorting waste. This translates into a $13,361 annual cost savings.

3. Solid waste
Recycling and waste programs were designed for two of the locations investigated. These programs will reduce the amount of cardboard and adult briefs being sent to the land fill. This project resulted in an annual 441-ton waste reduction and cost savings of $22,917.

4. Vending machine misers
Vending misers are a simple and inexpensive technology that can reduce the energy used by non-perishable beverage and snack vending machines. According to the vending misers' manufacturer, each machine consumes about 3500 kWh per year. A miser reduces this consumption by approximately half. Misers generally cost $150-$170.

Four of the nine hospitals received this service, three of which provided an estimated number of machines. Estimated yearly energy reduction is 147,000 kWh and a cost savings of $9,830.

5. Power management
Energy Star Power Management is a program designed to put monitors and computers (CPU, hard drive, etc.) into a low-power "sleep mode" after a period of inactivity. Simply touching the mouse or keyboard "wakes" the computer and monitor in seconds. Activating sleep features saves energy and money. Energy Star estimates savings can be $25 -

$75 annually, per computer, when using power management features.

Three of the locations requested an evaluation of this program for their site. If all three locations implement this project 1,038,733 kWh and $74,759 can be saved annually.

6. Kitchen hoods
Melink is a company that provides Intelli-Hood technology designed to cut energy usage in kitchen hoods. A system of sensors retrofitted to kitchen hoods detects the low and high periods of use for the hood and adjusts the cubic feet per minute used in the exhaust. The Intelli-Hood system adjusts the power used by 70 percent during low periods of use. If the four interested locations installed these hoods, there would be a $25,307 yearly savings.

7. Lighting
Energy conservation opportunities for lighting were assessed at four facilities in three ways: de-lamping, daylight sensors/manual light shut-offs, and replacing 2x2 fixtures with 4x2 fixtures. Combining these three projects resulted in a 370,510 kWh and $26,534 annual savings.

8. Energy star appliances
Purchasing Energy Star-qualified products reduces a facility's energy and water consumption by using advanced technologies — resulting in cost savings. Spending slightly more money on quality Energy Star-qualified appliances produces long-term pay offs in utility savings. From the three locations that were interested in this project, annual savings would be 457,109 kWh and 164,164 gallons of water, with a yearly cost savings of $33,157.

9. Water conservation
One facility asked to consider water conservation in addition to the services currently provided by the program. The facility is considering switching to reduced flow on faucets, shower heads, and toilets. Projects to reduce flow on faucets and shower heads were already in place, so low-flow toilets were assessed and recommended. Annual savings would be 858,000 gallons of water and $4,307.

Summary of 2009 E2/P2 intern recommendations for H2E Circuit Rider

Project description	Annual estimated environmental impact	Annual estimated cost savings	Status
Mercury inventory	128 grams	—	Recommended
Red bag (infectious) waste audit	36.2 tons	$13,361	Recommended
Solid waste	441 tons	$22,917	Recommended
Vending machine misers	147,000 kWh	$9,830	Recommended
Power management	1,038,733 kWh	$74,759	Recommended
Kitchen hoods	Not Calculated	$32,432	Recommended
Lighting	370,510 kWh	$26,534	Recommended
Energy Star appliances	457,109 kWh & 164,164 gallons	$33,157	Recommended
Water conservation	858,000 gallons	$4,307	Recommended
Total savings *	**1,022,164 gal, 2,013,352 kWh, 477.2 tons solid waste, 128 grams mercury**	**$217,297**	
GHG reductions *	**1,405 metric tons CO2e**		

* Does not include projects that are "not recommended" or "further research is needed."