

2010 Case Study

Prairie Band Potawatomi Nation

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Major: Architectural Engineering
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Mayetta, Kansas



Company background

The Prairie Band Potawatomi Nation is a federally-recognized sovereign nation located near Mayetta, Kansas. The reservation covers approximately 11 square miles and includes a casino/resort, government office building, health center, police and fire departments, and numerous other buildings. The tribe employs more than 1,100 people on the reservation, including almost 800 at the Prairie Band Casino and Resort. It offers a wide variety of services on the reservation and in the surrounding area.

Project background

Most of the projects focused on the Prairie Band Casino and Resort, as this was the largest building on the reservation and had the largest potential for savings. For this internship, Schaffer researched lighting replacements in a number of areas throughout the building. He also researched ways to reduce waste from food in the restaurants and individually-packaged amenities offered in the hotel. The final project at the casino was water-usage reduction through use of low-flow aerators. In addition, Schaffer researched a possible re-lamping project for some of the housing on the reservation.

Incentives to change

Prairie Band Potawatomi Nation participated in the Pollution Prevention Institute intern program to continue its environmental stewardship efforts, as well as to reduce its operating costs,

Projects reviewed for E2/P2 potential

1. *Casino Lighting*

A large number of incandescent bulbs were found throughout the Prairie Band Casino and Resort. Suitable fluorescent replacement bulbs were identified and priced for each area. Potential savings for all areas totaled 587,788kWh and \$30,243 annually. Cost savings include savings (or increased cost) due to bulb prices.

2. *Housing Lighting*

Surveys were sent to residents living in housing clusters on the reservation asking them to count incandescent bulbs in their housing units. There were 5,454 bulbs identified in 154 houses/apartments. Using the EPA estimate of three hours/day and the most recent electric rates for each cluster, potential savings amounted to 280,881kWh and \$29,208 annually.

3. *Bulk Dispensers*

A large amount of waste is generated from the production and packaging of individual amenities (soap, shampoo, lotion) offered in the hotel guestrooms. This study researched potential savings from replacing these amenities with bulk dispensers. Estimated annual savings totaled around seven tons of waste and \$37,000 from amenity purchasing and waste hauling savings.

4. *Food Waste*

An estimated 250 tons of food waste are generated each year in two of the restaurants in the casino. Estimates on food waste in the other areas were not currently available. Some of the food waste in the buffet is pre-consumer and could potentially be donated to a local shelter. The remaining food waste could be composted at the existing composting site on the reservation. Potential savings in waste hauling amounted to more than \$10,000. Taking into account the increased cost for storage, transportation, and woodchips (needed for composting), net annual savings totaled \$8,427.

5. *Sink Aerators*

In an effort to reduce water usage at the hotel and casino, low-flow sink aerators were researched. Flow rates were measured on sinks throughout the building. It was determined if aerators rated at one gallon per minute (gpm) were installed in the

hotel guestrooms and casino floor restrooms, use of 659,000 gallons of water could be cut for an annual cost savings of \$8,246.

Summary of 2010 Intern Recommendations for Prairie Band Potawatomi Nation

Project	Annual Cost Savings	Environmental Results	MTCO₂e Reduced	Status
Casino Lighting	\$30,200	588,000 kWh	417.5	Recommended
Housing Lighting	\$29,200	280,000 kWh	199.5	Recommended
Bulk Amenity Dispensers	\$37,000	7 tons of waste	n/a	Trial Phase Recommended
Food Waste	\$8,400	250 tons of waste	n/a	Recommended
Sink Aerators	\$8,200	659,000 gallons of water	1.5	Recommended
Total for all Projects	\$113,000	868,000 kWh 257 tons of waste 659,000 gal. of water	618.5	-