

Project Overview

Industrial Assessment Team

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Major: Civil Engineering
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The Company

During the summer of 2005, technical assistance was provided as part of the Industrial Assessment Team and as a staff member to a Nebraska environmental service provider, WasteCap Nebraska.

WasteCap Nebraska is a non-profit recycling organization that works with businesses throughout Nebraska to help implement recycling programs. Their two person staff provides free, confidential, non-regulatory waste reduction and recycling services to Nebraska businesses. They offer on-site assessments, employee training, workshops and product recycling research as well as recycling contract management services.

As part of the Industrial Assessment Team, a pollution prevention assistance report was prepared for the City of Lincoln Parks and Recreation. Lincoln Parks and Recreation maintenance shop and district offices provide maintenance and upkeep of 99 miles of trails, 114 parks, gardens, plazas, malls, islands and/or conservancies (covering nearly 5100 acres), 11 outdoor pools, 8 recreation centers, two dog run parks, and 112,000 city trees in Lincoln.

Project Description

The primary project for WasteCap was to research and write the continuation of a handbook to be used as a resource for businesses to establish waste reduction and recycling programs. This second volume provides information for 4 different wastes: batteries, pallets, plastic film, and aerosol cans.

During the summer training session for the P3 program, students prepared individual technical assistance reports for the maintenance shops of Lincoln Parks and Recreation (LPR) that focused on pollution prevention opportunities within the shops. These 18 reports were assembled into one comprehensive report and further assistance was also provided to LPR's four district offices. Subjects of the report include analyses of compressed air losses, heat loss, parts washers, and non-hazardous chemical alternatives.

Pollution Prevention Benefits

The WasteCap handbook provides information about the physical process of recycling, reasons to recycle, and waste reduction ideas. The handbook aids businesses in implementing recycling programs within their company; the

material is easily transferred to a power point presentation and provides interactive links to additional resources. Both the ease of implementation and tangible cost benefits realized through recycling help encourage businesses to consider and investigate additional pollution prevention opportunities.

Because the landfills in Lincoln does not accept unpunctured aerosol cans, the aerosol can recycling system suggested to LPR shops to properly puncture and dispose of aerosol cans, will assure an environmental sound disposal practice. Also recommended was a fine particle filter in the dust collection system to protect employees from inhaling harmful airborne particulates in the shop. By replacing the unnecessary oil-storage rack with 1-quart quantities and by installing an absorbent sock in the floor drain, LPR will help prevent contamination from spills.

Results

Significant amounts of heat are lost through compressed insulation throughout LPR's shop. Spray polyurethane insulation could save \$2570 a year in utility expenses. Switching to non-chlorinated pool paint could save an estimated \$1000 a year in addition to the benefits from using a less hazardous paint. Table 1 gives the total annual savings from suggestions made to the City of Lincoln Parks and Recreation maintenance shops.

Table 1. Total P2 Savings

Solid Waste diverted from the landfill (lbs)	Hazardous Waste reduced (lbs)	Water conserved (gal)	Electricity saved (kWh)	Cost Savings (\$)
418	614	1,296,000	88,692	\$7,466