Pella

CASE SUMMARY 17

PELLA CORPORATION

Pella, Iowa
Marion County

Intern: Luke Streit
Major: Agricultural Engineering
School: Iowa State University

The Company

Pella Corporation is one of the world's leading manufacturers of premium quality windows, entry door systems, storm doors and patio doors. The Pella, Iowa location employs 3,600 people and produces Architect Series®, Designer Series® and Precision Fit® doors and windows.

Project Background

Pella Corporation recycles several components of its waste stream. However, recycled material collection and handling practices need to be improved. Pella Corporation presently recycles sawdust, scrap lumber, aluminum, steel, glass, cardboard, office paper, plastic films, rigid plastics, newspapers, magazines, electronics, batteries, shop rags, paints, solvents, oil, coolant, steel and plastic drums.

Incentives to Change

Pella Corporation currently incinerates a portion of its solid waste for energy recovery. However, the incinerator is nearing the end of its useful life. Incinerator use will eventually cease and its waste stream will be diverted elsewhere, preferably without increasing the amount sent to the landfill. Pella's in-place recycling programs will continue to be improved.

Results

Recycling Awareness and Training. Pella Corporation recycles many different byproducts. However, much of the incinerator and landfill waste streams are composed of recyclable items. It was determined that awareness would need to be raised and training given to employees. A presentation was developed that discussed recyclable materials at Pella Corporation, the cost benefits of recycling versus landfilling and the waste management hierarchy. The presentation was delivered to more than 1,000 employees.

Waste Management & Recycling Team Event. The intern initiated a team of employees to develop a better waste management plan throughout the organization as a part of the continuous improvement. The team identified problems with the existing system, gathered data, devised a new process and developed a training and implementation program for the new system. Upon implementation, the management of wastes will be fundamentally changed and integrated into a normal factory process rather than managed as an afterthought.

Scrap Lumber Recycling - $34,000. Pella Corporation's largest waste stream is scrap lumber. Two reuse or recycling outlets are available for the byproduct. One option can cut scrap into pieces that can be used in product or can grind lumber into sawdust. The other vendor provides Pella with a roll-off box for holding pallets, crating, scrap window frames and other large lumber scrap. Nevertheless, lack of floor space for more collection containers sometimes forces waste to the incinerator. About 1,000 tons of lumber are processed through the incinerator annually. Sending this recyclable material to the landfill would cost Pella more than $34,000 in disposal fees each year. The project proposal involves eliminating "burnable" containers and replacing them with lumber receptacles.

Pallet Feet Reuse - $22,500. Pallet feet are built onsite to store inventory on a temporary basis. When the product is moved out of storage, the pallet feet are sent to the incinerator. Pella Corporation spends approximately $22,500 each year on material, labor and disposal costs to handle the pallet feet. If reused, that money could be saved and 37 tons of waste could be diverted from the incinerator each year. The project is recommended, but needs further study to be implemented.

Plastic Strapping Recycling - $15,600. Pella Corporation currently uses both steel and black polypropylene strapping for in-house operations. However, steel strapping poses a safety threat, and polypropylene is not very recyclable. Therefore, it is recommended that Pella switch to green polyester strapping to replace both of the current types. Polyester is just as strong, can stretch without permanent deformation and is easily recyclable. By converting strapping to green polyester, Pella Corporation can recycle about 35 tons of this material annually, saving $15,600 in material and disposal costs.

Spool Reuse - $550. Pella Corporation uses a foam spacer that separates two panes of glass. The spacer comes on a plastic spool, which was being thrown in the landfill when empty. The supplier was contacted about reusing the spools, and has agreed to send a truck, free of charge, to pick up empty spools whenever needed. Reusing the spools will divert about 7.5 tons from the landfill and save Pella Corporation about $550 annually in disposal fees.

Metal Plant Crating Recycling - $450. A small portion of the incinerator waste stream was composed of wood crating from the Metal Plant. The crating was difficult to push into the incinerator due to its size; the operator had to break apart the lumber in order to load the material. Consequently, the process was changed and the material was diverted to a trailer for recycling. The process change will divert about 8.5 tons of waste from the incinerator and save Pella Corporation approximately $450 annually in avoided disposal fees.

Waxy Paper Recycling - $200. Waxy paper waste is generated from the numerous labels and adhesive backing used at Pella Corporation. By recycling this material, about seven tons of landfill and incinerator waste can be diverted, saving the company $200 each year in disposal costs.

The waste reduction opportunities already implemented will reduce Pella Corporation's solid waste by 16 tons and save the company about $1,000 annually. If all projects are implemented, Pella Corporation could reduce their solid waste by about 1,095 tons and save $73,400 each year.