

WINNEBAGO INDUSTRIES, INC.

FOREST CITY



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COMPANY BACKGROUND

Winnebago Industries operates the largest facility for motor home production in the United States (U.S.) and is a leading U.S. Class A and Class C recreational vehicle (RV) manufacturer. Incorporated in 1958, Winnebago Industries' headquarters are in Forest City, Iowa. The Forest City campus houses more than 17 industrial buildings with more than 2.2 million square feet under roof on 22 acres. Ten of these large facilities produce the majority of components for each motor home produced. Winnebago Industries also operates manufacturing facilities in Charles City, Iowa, and Middlebury, Indiana, with approximately 2,500 total employees.

PROJECT BACKGROUND

Diverting waste from Iowa's landfills is a priority for Winnebago Industries. In the last ten years, Winnebago Industries has implemented numerous programs that reuse and recycle millions of pounds of solid waste annually. Winnebago Industries' Forest City plant recycles 71 percent of all solid waste generated. The intern worked to support Winnebago Industries' ongoing environmental efforts by investigating additional recycling opportunities.

INCENTIVES TO CHANGE

RVs are designed to enhance the customer's experience with the outdoors. As a motor home manufacturer, Winnebago Industries works to continuously reduce the ecological impact of their manufacturing processes to protect the environment their customers enjoy.

Recent advertisements indicate that rival motor home manufacturers are adopting zero landfill initiatives. The industry-wide push toward environmental sustainability provides a strategic impetus for Winnebago Industries to reduce their waste stream.

RESULTS

Acrylic Recycling: The Plastics Building produces plastic components for Winnebago Industries' RVs. Plastic scrap is generated at mold trimming stations and reused. Winnebago Industries produces about 50,000 pounds of acrylic scrap each year that is sent to the landfill. The intern established a system for selling scrap acrylic trimmings. At a market value of \$0.25 per pound, the gain from selling acrylic material and the landfill savings total \$14,125 annually.

Kraft Paper Recycling: The Stitchcraft Building manufactures upholstered furniture and other textile goods for motor home interiors. Brown Kraft paper is used throughout the facility in fabric cutting processes. The facility uses 51,000 pounds of Kraft paper each year. The intern worked with Stitchcraft Building managers and material handlers to implement a system for collecting scrap Kraft paper. Kraft paper will be baled with cardboard and shipped to the current recycler. Annual gains from recycling Kraft paper total \$3,665.



Consolidated Shipping: Winnebago Industries sends units of scrap material directly to recyclers. Most recycling companies require a minimum shipping weight. Winnebago Industries holds inventories of recyclables until minimum shipping weights are accumulated, and when enough of a specific material is collected, a trailer is loaded and delivered to the recycler. Inventory is constraining the expansion of recycling programs and causing numerous other problems.

A local recycler is willing to provide a dropped trailer wherein materials can be loaded with no minimum weight requirement. Multiple materials can be loaded with no segregation within the trailer, including acrylic scrap. Consolidating the shipment of low-value materials by placing them all on the same dropped trailer can eliminate 100 units of material from inventory and free 718 square feet of floor space. The value of this freed space by eliminating inventory totals nearly \$36,000.

Additional Projects: Managers at Winnebago Industries are working to educate and motivate employees regarding what materials can be recycled. In the near future, Winnebago Industries plans to implement new waste containers for sorting recyclables on the motor home production line.



CONVENTIONAL AIR POLLUTANTS AND GREENHOUSE GASES DIVERTED IN METRIC TONS							
TOTAL FOR ALL SECTORS							
CO ₂	SO ₂	CH ₄	N ₂ O	CFC	NO _x	VOC	PM ₁₀
130							

PROJECT	ANNUAL COST SAVINGS	ENVIRONMENTAL RESULTS	STATUS
ACRYLIC RECYCLING	\$14,125	25 TONS	IN PROGRESS
KRAFT PAPER RECYCLING	\$3,665	25.5 TONS	IMPLEMENTED
CONSOLIDATED SHIPPING	\$35,937	STRATEGIC	IN PROGRESS

