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HNI CORPORATION

MUSCATINE



COMPANY PROFILE

HNI Corporation is a global family of industry-leading brands for the workplace and home. As a quality-driven manufacturer of workplace furnishings, HNI offers a broad collection of solutions that support work environments from the home office to the large commercial campus. As a maker of residential building products, HNI is the world's leader in hearth products. Headquartered in Muscatine, HNI operates four facilities in this Iowa community and more across the country and globe, employing more than 8,700 members worldwide.

PROJECT BACKGROUND

The P2 intern conducted an extensive data analysis of HNI's waste generation and costs, using P2 strategies to develop recommendations aimed at reducing solid waste going to the landfill. Data on many of HNI's different waste streams was collected and analyzed, with a main focus on paint waste and wood waste generated from the company's Muscatine production facilities. Solid waste weights, costs, and trends were all analyzed and broken down by each local production facility. The intern also analyzed the paint process to identify opportunities to optimize paint usage.



INCENTIVES TO CHANGE

HNI currently has a goal to move all company facilities to zero-waste-to-landfill status by the year 2030. More specifically, HNI is aiming to achieve a 95 percent diversion rate for each of their company sites. One of the first steps in achieving this goal is completing waste mapping exercises and in-depth waste profiles for each company location, including developing solutions for difficult-to-recycle materials. A focus on reducing large volume waste streams such as wood waste and paint waste is a major step towards achieving this goal.

RESULTS

Solid Waste Data Analysis: At the beginning of this project, an extensive analysis of paint and wood waste data was completed to create a baseline of total weights and costs for the generated wastes. The throughputs for paint sprayed and paint wasted for the four different Muscatine production facilities were compared. Landfill costs were used to estimate an average yearly cost to landfill the wasted paint.

To determine the weight and cost of wood waste, monthly load count summaries of outgoing wood waste and landfill tickets were used. The monthly summaries were used to determine an estimated weight of each load. Once the weight was estimated, the landfill tickets were used to determine transportation costs and tipping fees and generate an average annual wood waste disposal cost.

In addition to data analysis, time was also spent participating in a Rapid Continuous Improvement (RCI) event, with a goal of reviewing solid waste generation at the Muscatine production facilities and creating a standardization for waste bins located throughout the facilities to improve uniformity and access to production recycling receptacles. After the conclusion of the RCI, the P2 intern spent time at four different production locations to aid in the implementation of this effort.

Paint Waste Recovery: There are four different HNI facilities in the Muscatine campus that run powder coat paint lines. Paint that is not transferred to the products is collected as waste and sent to the landfill. Instead of disposing of the waste paint, HNI is looking into a company that would be able to take the paint waste and re-extrude it into custom colors. HNI would then be able to buy back this paint at a portion of the original cost instead of buying brand new paint. If this project moves forward, HNI would be able to completely recapture all of their paint waste, eliminating the waste stream and furthering the company's zero-waste-to-landfill goal. Initial samples of paint

waste have been sent for evaluation and trials. Team members at HNI will evaluate the recycled paint to see if it meets internal quality and use specifications.

Painter Training: An effective and ongoing training program for the company's painters could have numerous benefits including increased productivity, less paint waste and overspray, and reduced costs. Currently, HNI painters receive an annual training that is provided by vendors and limited to basic operation of the painting equipment. New painters are provided training and mentoring by senior painters when they are initially hired, potentially causing variability in the detail and depth of knowledge shared. Hiring an outside vendor experienced in delivering customized painter training would be an asset to the company's paint operation. Focused on proper technique, optimizing transfer efficiency and minimizing overspray, the training could take place at HNI's facilities and be provided annually to all company painters.

This recommendation is currently under review. If approved and funding is allocated, lead workers for each facility's painting operation will work with management to plan and coordinate training scheduling and logistics.

Wood Waste Reduction: Wood waste is produced at five different HNI Muscatine locations. The waste generated is primarily particleboard cutoff pieces along with the resulting dust created during the cutting process. Once the scrap particleboard is collected, the larger pieces are ground up and landfilled. As an alternative, HNI has identified a company that may be able to accept this wood waste and use it as a waste-to-energy fuel source. Sending waste to this company will cost HNI slightly more than sending it to the landfill, but diverting this material brings HNI closer to its zero-waste-to-landfill goal. This project has been signed off on by Management, capital has been approved, and it is in the process of being implemented.



PROJECT	ANNUAL COST SAVINGS	ANNUAL ENVIRONMENTAL RESULTS	STATUS
SOLID WASTE DATA ANALYSIS	\$4,200 (ONE TIME)	-	IMPLEMENTED
PAINT WASTE RECOVERY	\$950,535	372.7 tons	RECOMMENDED
PAINTER TRAINING – LANDFILL DIVERSION	\$1,902	41.8 tons	RECOMMENDED
PAINTER TRAINING – IMPROVED EFFICIENCY	\$51,010	-	RECOMMENDED
WOOD WASTE REDUCTION	-	7,014 tons	IN PROGRESS