

2010 Southwest Ohio P2 Intern Program

Hamilton Caster & Mfg. Company

P2 INTERNSHIP PROGRAM

The Southwest Ohio Pollution Prevention (P2) Internship Program is a partnership between Butler County Recycling & Solid Waste District, Hamilton County Solid Waste District and TechSolve, Inc. The program trains and hosts up to four college-level interns at selected companies in Hamilton and Butler counties using US EPA grant funds. The internship helps companies save money and increase environmental performance.



COMPANY BACKGROUND

Hamilton Caster & Mfg. located in Hamilton, Ohio was founded in 1907 and specializes in the manufacture of casters, wheels, hand trucks and trailers. The company is owned and operated by the Lippert family. The Southwest Ohio Pollution Prevention (P2) Internship Program assisted Hamilton Caster in accomplishing their goal of continuous quality improvement, further reducing the waste stream and researching areas for energy efficiency. The projects were accomplished through extensive research, cost analyses, contractor evaluations, and developing a set of recommended changes to benefit Hamilton Caster.



Derek Endres, Intern
Butler County Pollution Prevention

Dave Lippert, President
Hamilton Caster



Derek Endres & Lester Jones



Derek Endres

Shop Lighting Replacement –T12 and Halide to T8, T5

By replacing existing T12 magnetic ballasts and lights with T8 electronic ballasts and lights, there is an anticipated reduction in energy use of up to 48%. Replacing halide lights with T8 or T5 lighting is also recommended. These changes will save on energy costs and lower carbon emissions.

New Building Feasibility Study

The P2 projects involved evaluating design for a new facility with LEED certification goals to improve maintenance, operation, and energy costs. Better ventilation, heating and the addition of air conditioning will result in higher equipment efficiencies and increase employee productivity and safety.

New Boiler

The current boiler has an efficiency of 20% to 40%. Installing a new boiler will increase efficiency to 80%. New boiler technology requires less gas to operate, and therefore cost less to run and maintain. This upgrade has the potential to make a significant immediate impact on energy savings and air quality.

Steam Pipe Insulation

Insulating the steam and condensate lines will control heat loss and help maintain efficient temperatures throughout the plant. There is also a reduction in natural gas use with improved heating and air controls.

Power Factor Correction

Power factor is how much of the current contributes to real power in the load. Poor power factor results in reduced efficiency, which increases the cost of electricity. Reactive power charges can be made significantly smaller by the introduction of power factor correction capacitors. The capacitors reduce the electrical load and minimize wasted energy, improving the efficiency of the plant and reducing the electricity bill.

Pallet Recycling

The company previously sent pallets to a landfill, but pallets are now recycled. As a result Hamilton Caster was able to realize immediate savings in reduced trash collection fees, and anticipates that pallets may eventually generate revenues for the company.

Project	Annual Savings	Environmental Results	Status
Shop Lighting Replacement T-12 with T-8	\$37.39	Energy savings, improved lighting and a savings of 0.28 tonne of CO2/year.	Recommended
Shop Lighting Replacement Halide	\$1,537.93	Energy savings, improved lighting and a savings of 17.90 tonne of CO2/year.	Recommended
New Building Feasibility	\$2,543.49	Improved energy efficiencies, lighting, and reductions in waste. Saves about 22,422.29 of CO2 lbs/year.	Recommended
New Boiler	\$9,588.32	Improved energy efficiencies and air quality. Saves about 9,211 natural gas ccf/year	Recommended
Steam Pipe Insulation	\$3,471.43	Conserves energy and saves about 5,318.6 natural gas ccf/year from wood alone.	Recommended
Power Factor Correction	\$2,076.00	Energy savings and 1.39 CO2 lbs/year.	Recommended
Pallet Recycling	\$1,009.75	Waste reduction and saves about 73 trees/year.	Implemented

Estimated Projected Annual Savings: \$20,264