

HAWORTH®

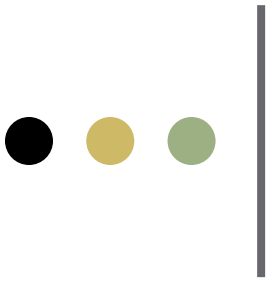
Zero Waste to Landfill - Achievable in Manufacturing?





PATH TO LANDFILL FREE

- ❑ What is landfill free?
- ❑ Anyone can be landfill free?
- ❑ What is our responsibility?
- ❑ The path before landfill free.



Recycling is the Path: It starts with a Green Plan

● ● ● | Basics of Forming a Green Plan

- ❑ Support
- ❑ The Plan
- ❑ Leadership
- ❑ Champions
- ❑ Buy-in
- ❑ Maintaining
- ❑ Celebrate



Management Support

- ❑ Commitment to Success comes from the top
- ❑ Management on board
- ❑ Employees and Suppliers need to believe the Importance of the Program
- ❑ Resources and Dollar commitment
- ❑ Recycling as a Company Program



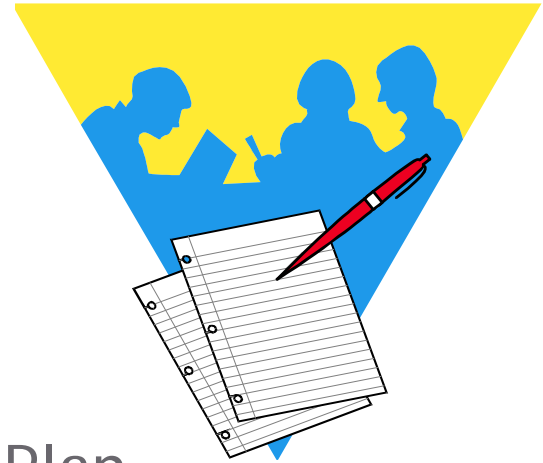
Recycling Leader

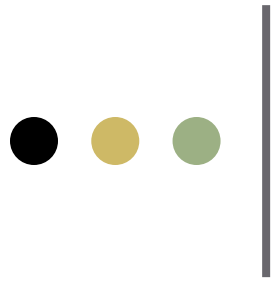
- ❑ Full or Part Time
- ❑ Must have Support to Implement
- ❑ Must have Passion and Knowledge
- ❑ Must have Resources, people more than dollars



Create a Plan

- Goals
- Who needs to be involved
- What will it take
- Present the Plan
- ALL Leaders must support the Plan
- Provide employee time
- Volunteer's with Passion





IMPLEMENTING A RECYCLING PROGRAM

FINDING SERVICE PROVIDERS

Some Providers are easy to find

- Metals
- Cardboard
- Paper
- Electronics



Some Providers Are Not Easy To Find

Everyone has those items you don't know what to do with

- Plastics
- Glass
- Powder Paint
- Wood
- Fabric
- Building Material
- Drywall
- Concrete
- Many Others





SOURCES TO USE

- The MRC
- The Internet
- Waste Haulers
- Recyclers
- Service Companies specialize in setting up recycling programs
- Companies in the same kind of business
- Companies with Quality recycling programs



SERVICE PROVIDERS

- Some are much better than others
- Partner with those providers willing to help

Simple Steps To
Help Preserve Our
Environment



CONTRACTS OR NOT

Agreements or Partnerships

- Contracts may be necessary
- Contracts can leave you locked in
- Service Agreement
- If you have partners then they are working for the best deal for both
- The more and diversified they are, the better opportunities
- You always have the leverage of moving to someone else
- You can move with the market



MATERIAL COLLECTION

CONTAINERS - WHAT - WHERE - HOW

- You need a Plan on how to gather material
- Engineers & plant managers input
- Feedback from employee's
- Recycle Bins accessible, trash bins hidden
- Buy anything, make what you need, cardboard boxes
- Special applications, brainstorming, team work

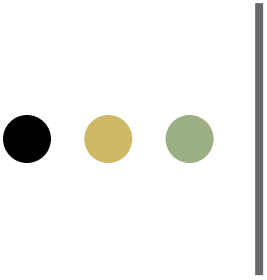


MATERIAL HANDLING

You Need a Plan

- Recycling team input
- Who handles what on site
- How to transport material on site
- Where do you take your material
- Then what do you do with it
- Bale or not to bale
- Hold or not to hold
- Small quantities/large





PROGRAM AUDITING

THE WASTE AUDIT

- A formal, structured process used to quantify the amount and types of waste being generated by an organization





EFFECTIVE WASTE AUDITS

- Determine the composition and quantities of waste
- Measure effectiveness of existing systems
- Identify opportunities for improving strategies and systems
- Collect data for measuring your efficacy



MANAGEMENT APPROVAL & SUPPORT IS IMPORTANT

- Access to a variety of materials
- Audits are given full consideration for further development
- Justify the time and resources that will go into conducting the audit
- Costs and Benefits

WASTE ASSESSMENT OR FACILITY WALK-THROUGH

- Which wastes are created
- Locations of waste streams
- End-points
- Volumes at specific locations



INTERVIEWS WITH EMPLOYEES

- How waste is created
- How it might be prevented
- What they see is typical for their operations.



TRACK YOUR COSTS

- Quantities, disposal method and disposal costs
- Waste reduction opportunities - H.V.P.W.
- Prioritizing efforts
- Tracking the overall success
- Motivated to reduce waste when they realize the full costs
- Materials coming in, the amount of materials leaving the business as waste
- Identify a list of highest volume materials being discarded to the smallest



EVALUATE YOUR OPTIONS

- Waste reduction options
- Every waste stream as a reduction opportunity
- Following the collection of data and site inspections, the members of the team will have begun to identify possible ways to reduce waste in other assessed areas
- Your waste reduction team should list all the possible opportunities to reduce waste within the facility



● ● ● HOW A PROGRAM CAN WORK



HAWORTH AND RECYCLING

- New Haworth Fac. 1980 & We Were Recycling
- Recycle Center Opens 1993
- Over 868,000,000 lbs Recycled since 1993



HAWORTH AND RECYCLING

- 18 MILLION POUNDS RECYCLED 1995
- OVER 10 YEARS AT 50 MILLION POUNDS PER YEAR RECYCLED





Commodities Recycled 2017

■ Co-Gen/Wood Waste	26,023,451 lbs
■ Crete	7,588,640 lbs
■ Metals	9,589,776 lbs
■ Powder Paint	715,139 lbs
■ Cardboard & Paper	2,047,026 lbs
■ Mineral Board & Dust	495,560 lbs
■ Fabric	694,370 lbs
■ Drywall	756,000 lbs
■ Plastic	354,043 lbs
■ Other Materials Recycled	502,371 lbs
■ Waste To Energy NA	947,800 lbs
■ 2017 Total Recycled N.A.	49,714,176 lbs
(Equivalent to 1,207 Semi-Truck Loads)	
■ 2017 Gross Profit	\$ 1,850,335.28
■ 2017 Total Cost to Recycle	\$ 1,143,051.74
■ 2017 Total Revenue N.A.	\$ 707,283.54
■ 2017 Landfill Costs	\$ 0.00

High Volume Production Waste

- What is it
- What do you track
- What does it accomplish
- What are the savings

HIGH VOLUME PRODUCTION WASTE - DECEMBER 2017

COMMODITIES IN LBS.	STEEL	ALUM	WOOD	FABRIC	POWDER PAINT	CRETE
HOLLAND	383,500	18,460				
-PANELS PLANT				49,150	13,037	
-HOLLAND COMPONENTS					5,827	
-HOLLAND LPP			2,040,140			
BRC	285,225				15,250	
BRW			34,160			
KENTWOOD	23,540					682,140
LUDINGTON	6,160	43,916			15,523	
BRUCE				1,160	3,095	
HIGH POINT				1,600		
CONOVER						
TOTAL RECYCLED DECEMBER	698,425	62,376	2,074,300	51,910	52,732	682,140
TOTAL EARNED HOURS DECEMBER	1,214	840	530	726	1,447	73
LBS PER 100 EARNED HOURS	575.48	74.22	3911.56	71.50	36.44	9344.38
YTD RECYCLED	8,553,290	907,891	22,644,760	679,645	643,980	7,467,320
YTD EARNED HOURS	11,214	8,392	5,505	6,658	14,024	693
YTD AVERAGE	762.7	108.2	4113.4	102.1	45.9	10769.1
2017 Goal	750.0	92.0	4100.0	90.0	40.0	13500.0
Revenue/Expense	\$85,394.25	\$47,034.82	\$68,197.50	\$737.28	\$1,200.00	\$14,602.82

OUR GOALS - No Waste

- Reduce
- Re-Use
- Recycle
- Co-Gen
- Waste-To-Energy



- April 2009 all U.S. Facilities, Pune, India & Shanghai, China went Zero Landfill
- May 2012 Europe went Zero Landfill



NOTHING IS FREE

- DOLLAR VALUE
- ZERO VALUE
- COST TO RECYCLE



OUR COSTS TO BE LANDFILL FREE

- Over 1.8 million annual revenue
- Over 1 million in costs to recycle
- Costs multiply times more than landfill
- Costs continue to rise



THE COMMITMENT TO STAY LANDFILL FREE

- Keeping sources
- Looking for opportunities
- Reducing costs
- Doing whatever it takes
- Justifying the program



TO BE LANDFILL FREE

**YOU HAVE TO DO IT RIGHT,
AND IT'S A DIFFICULT
ROAD TO TRAVEL**



QUESTIONS?

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