

SUSTAINABLE OREGON 2015



ASSOCIATION of
**OREGON
RECYCLERS**

37th Annual Conference & Trade Show

Waste to Resource Innovations: Closed Loop Waste Prevention Strategies and Business Models

Sponsored by:



Bureau of Planning and Sustainability
Innovation. Collaboration. Practical Solutions.



City of Portland, Oregon
Charlie Hales, Mayor • Susan Anderson, Director











GRAIN FREE
MADE IN USA
Earth Friendly Pet Company
Cycle Dog
TRAIL BUDDY TREATS
All Natural
No Additives
100% LAMB
Ingredient
Else

Cycle Dog
Earth Friendly Pick-Up Bags
Made With Corn/Plant Starches
PARK POUCH
Post-Consumer Recycled Rubber
Handsewn in USA
Earth Friendly Pick-up Bags
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Nothing Else

Earth Friendly Pet Company
Cycle Dog
TRAIL BUDDY BOWL
Post-Consumer Recycled Materials
Food Safe & Compost
Leakproof Three Quarts
Food Grade BPA Free
Made in USA

Earth Friendly Pet Company
Cycle Dog
TRAIL BUDDY TOYS
100% BPA Free
Non-Toxic
Made in USA

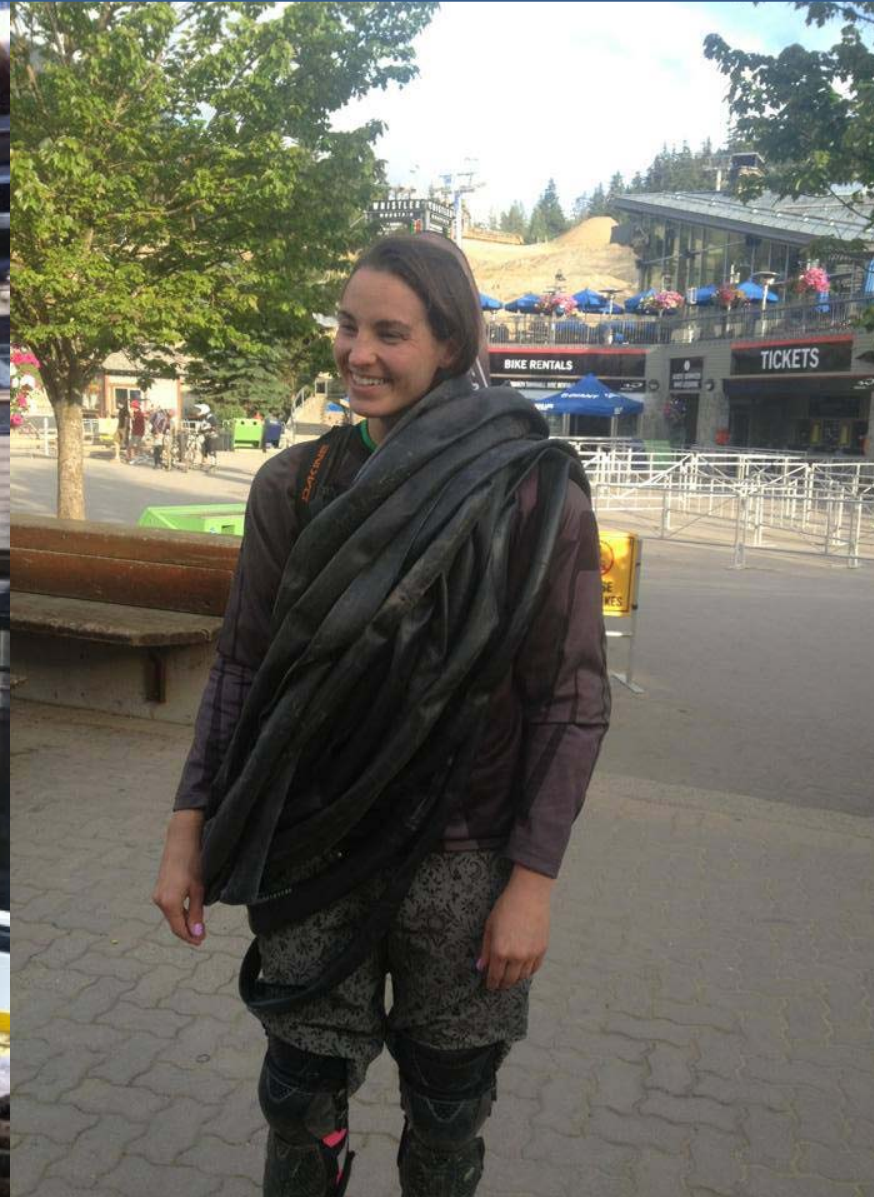
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**I don't always wear a collar,
but when I do, it's a Cycle Dog collar.**

-Milton, the most "Interesting Dog in the World"

How do you get all of those tubes?



1 Billion tubes produced per year

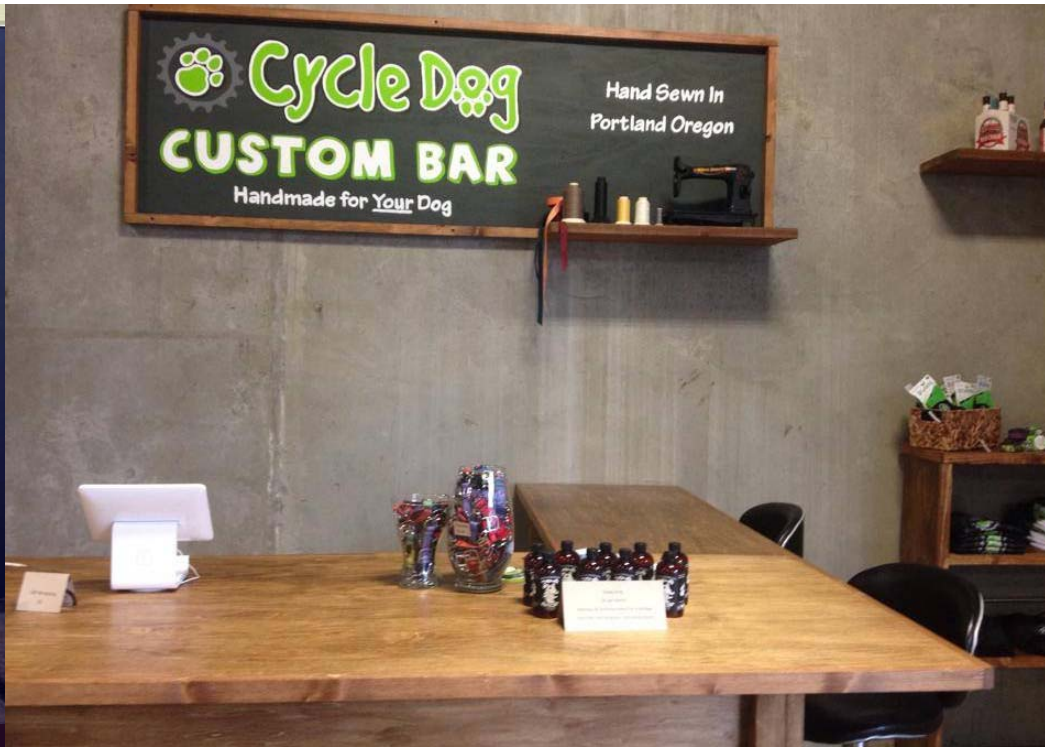


Building a Sustainable business



Pedaling Recycled Dog Collars







CORRECT
Collar / Lead
Samples!
KEEP ME HERE

circle dog

THULE
Trekway 2
New Universal Bike Rack - fits
mountain, road & hybrid bikes. No
straps or cables. Holds up to 2 bikes.
THULE

GBP



Sourcing on a bigger scale





***Making ResourceFull
Use of Garbage:
Enhancing Your Triple Bottom Line***

***AOR's 37th Annual
Conference***

June 5, 2015



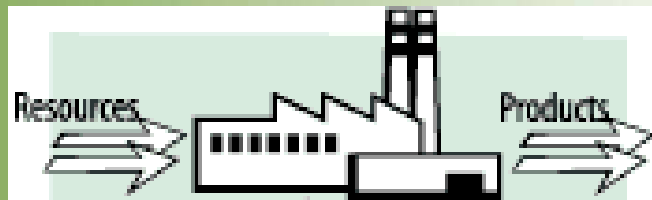
Corky Collier
Columbia Corridor Association

Principle: Garbage in...
Something of value out.



Like
Rumpelstiltskin,
spinning straw
into **gold!**

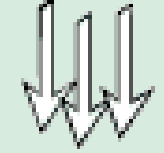
Anne Anderson, illustrator. *Anne Anderson's Old, Old Fairy Tales*. Racine, Wisconsin: Whitman Publishing Company, 1935.



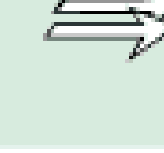
Look at the process to identify potential candidate streams for by-product synergy



By-products



Resources



Resources



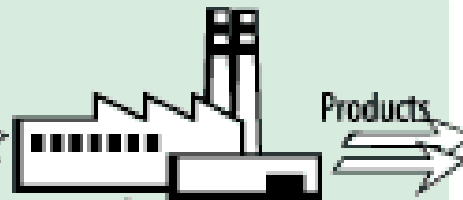
Resources



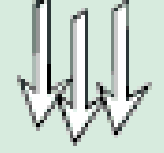
Resources



Resources



By-products



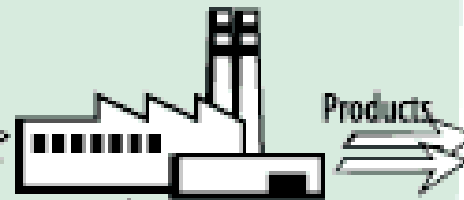
Resources



Resources



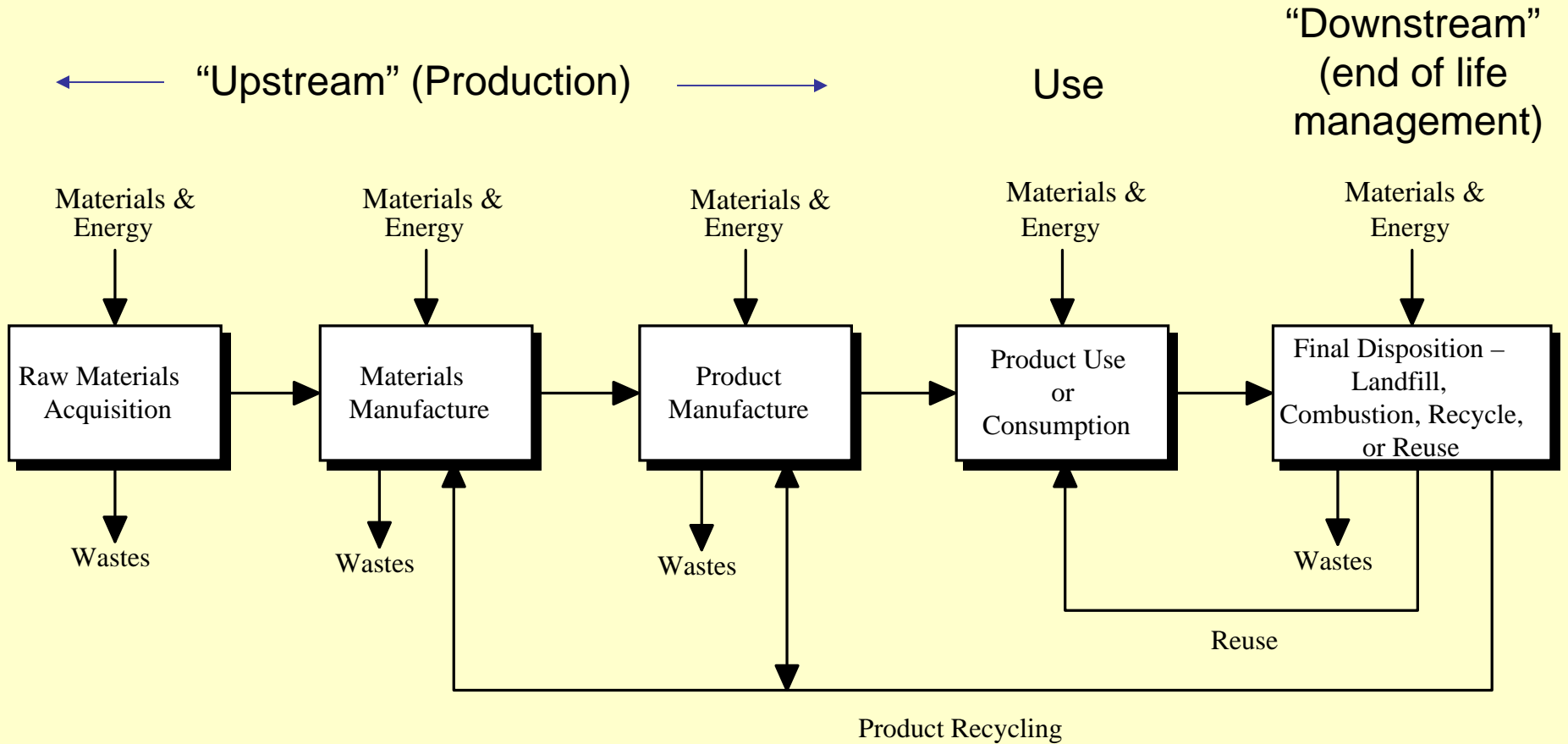
Resources



By-products



Life Cycle Stages



Hairy rubber bands

- Rubber bands are too cheap to justify de-hairing.
- ❖ What user will accept them?



Comparison: Reuse and Recycling



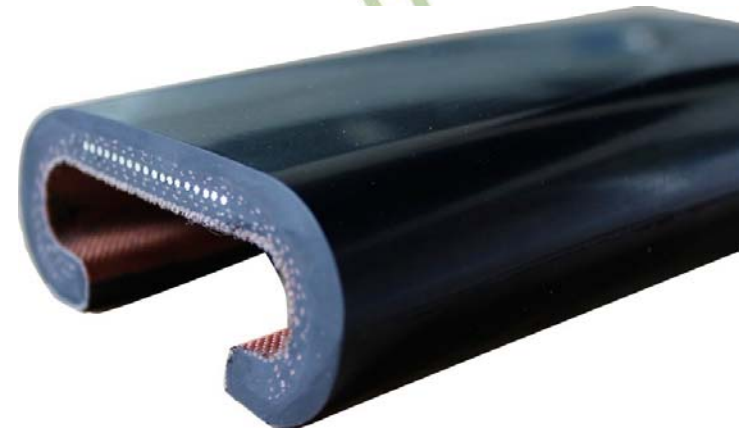
- Reuse = using a product in its original form.
Benefits of **reuse** are typically **greater**
 - Reusing a personal computer saves 5 - 20 times more energy.
 - Reusing a corrugated box saves 3 - 4 times more energy.

The Waste Hierarchy . . .



Escalator rail

- Cannot be repaired
- Most of the rail is in good condition
- ❖ Lot' s of minor uses, but what' s the highest, best use for a large quantity?



ResourceFull Use

Partners:

- Columbia Corridor Association
- Metro, City of Portland, Counties
- Boeing and Portland Airport Business Center

Process

- Quarterly workshops
- ***Speed Dating***
- Exchange follow up
- Online platform



Participants

- Port of Portland
- Siltronic
- Air Water and Soil Technologies
- Malarky Roofing
- SAPA Inc.
- Rockwest Training
- Precision Cast Parts (PCC)
- City of Portland
- Waste Connections
- Metro
- Stevens Printing
- Oregon Canadian Lumber Products
- Portland State University
- CCI Enterprises
- Aloft Hotel
- Columbia Steel
- Pavement Maintenance, Inc.
- Waste Xpress Environmental
- GEO Design
- Altec Industries
- Solar World USA
- Association of OR Nurseries



Examples

- Port of Portland/painting contractors
 - 10 drums, 18 buckets of paint, solvents
 - \$6,500 in disposal and purchasing savings
- Malarkey Roofing/Providence Hospital
 - 40 large super sacks
 - \$200 in revenue; \$1,000 in savings
- LSG SkyChefs/Stan's Appliance
 - 2 30-lb bottles of refrigerant
 - \$3,000 in disposal savings, \$400 in purchasing savings
- Siltronic/Precision Castparts
 - Hydrofluoric acid and nitric acid
 - \$24,600 in purchasing savings



GHG savings

- How much CO₂ equivalent pounds are saved by reusing 5 drums (250 gallons) of paint versus manufacturing?



Answer:

- 6000 pounds (3 tons)



ResourceFull Use- Metrics



- One-time Exchange of 250 gallons of yellow traffic paint destined for a hazardous waste landfill.
- Dollars saved by businesses
 - Cost of Paint - \$2,000 for 250 gallons
 - Cost of disposal - \$750 (assume \$150/drum to haz waste landfill)
- Pounds of waste prevented: 2,500 lbs (assume 10lb/gallon)
- Gallons of transportation fuel saved: 1.6 gallons of diesel fuel
(Transport to Haz waste site in Arlington)
- Estimates of Greenhouse gas reductions:
 - Estimate from manufacturing of paint: 6,300 pounds CO₂
 - Estimate from fuel saved: 42 pounds of CO₂

Xerox solid ink

- Quality rejects
- Wax based
- ✓ Camilla's Candles



What I got wrong. Part A.



“Given that we’re dealing with low-value commodities, transportation costs have to be kept to a minimum. Focus on the Columbia Corridor because companies can’t afford to transport the waste products very far.”

- Workshop participants from Salem and Eugene
- Resource exchanges in four Metro counties

What I got wrong. Part B.



“Businesses are focused on the bottom line. If re-use doesn’t pencil out, there will be no interest.”

- It turns out many want to help with GHG reduction.
- More importantly, a lot of people want to see more value wrung out of a commodity.
 - Sand that is no longer good enough for molds
 - Machine oil that is no longer good enough for Boeing

What I got wrong. Part C.

“You can’t scale-up re-use. Camilla’s candles is a nice home businesses, but you can’t create a large business from re-use.”

- Walmart kites
- Street cleaning dirt



Key Lessons

- Stuff has a lot of embedded energy
- Reuse is **hugely** better than recycling
 - ~ *Importance of upstream*
- Reuse and repurposing drive innovation
 - ~ new businesses and job creation.
- Can't do by-product synergy alone



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