

# BREWING A SUCCESSFUL ZERO WASTE PROGRAM



# Presentation Overview

**Defining Zero Waste**

**Current Best Practices**

**Waste Audits**

**Tracking Progress**

**Lessons Learned & Resources**



# Defining Zero Waste

"Zero Waste is a goal that is ethical, economical, efficient and visionary, to guide people in changing their lifestyles and practices to emulate sustainable natural cycles, where all discarded materials are designed to become resources for others to use. Zero Waste means designing and managing products and processes to systematically avoid and eliminate the volume and toxicity of waste and materials, conserve and recover all resources, and not burn or bury them. Implementing Zero Waste will eliminate all discharges to land, water or air that are a threat to planetary, human, animal or plant health."

***~Zero Waste International Alliance***

# Why is Zero Waste Important?

- Employee engagement
- Reduce contributions to landfills
- Preserves natural resources and keeps materials in production cycles
- Avoids disposal costs
- Potentially gain a revenue
- Reduce GHG emissions
  - ▣ Vehicle trips, manufacturing, and landfill methane generation
- Create jobs





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# ***SNBC Zero Waste Goal***

- **Drivers:**

- **Improve environmental health** by reducing landfill contribution, reducing greenhouse gas emissions, sustaining natural resources, and preventing the release of harmful chemicals into land, water and air
- **Save money** by reducing utilities costs and resource consumption and to provide a revenue stream by selling commodities





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# Potential Wastes

- Energy
- Compressed Air
- Employee time/productivity
- Miscellaneous solid waste
- Water
- Packaging Materials
- Food
- Parts/Service
- Money

And most importantly... BEER

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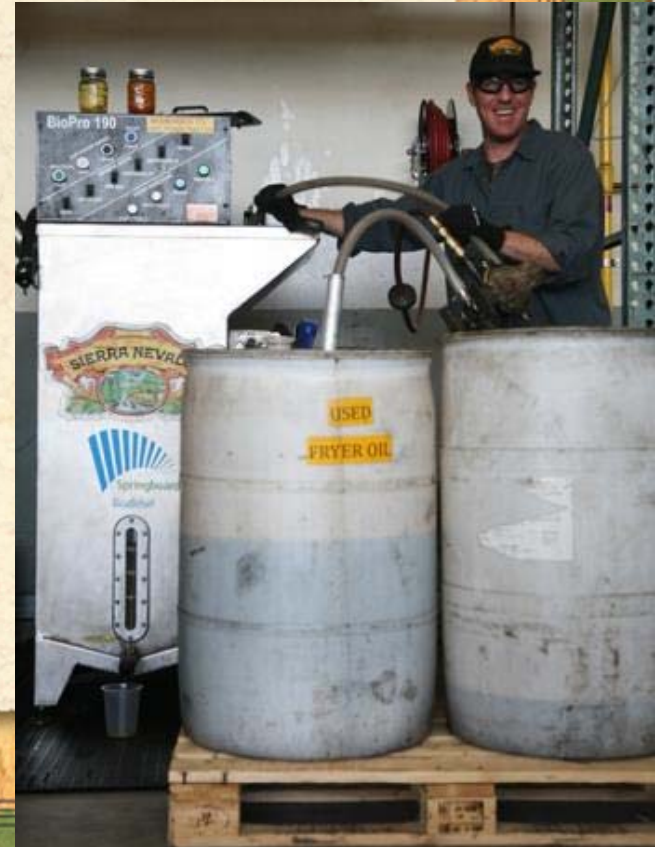
treehugger



# ***SNBC Steps to Sustainability***

- Focus on Zero Waste Goal
  - Closed loop system thinking
- Auditing/benchmarking
- Tracking
- Process/behavior change

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# What's Our Goal for Solid Waste?



A horizontal decorative bar at the top of the slide, consisting of an orange square on the left and a blue rectangle extending to the right.

# Current Best Practices

# Current Solid Waste Program

## Recycling



- Comingled- Paper, Glass, Aluminum, Tin, Rigid Plastics, Scrap Metal
- Single Stream- Cardboard, Shrink Wrap, Pallet Straps, Silicon Release Paper, Batteries, Light Bulbs



# Current Solid Waste Program

## Recycling Costs/Revenue

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- Comingled:
  - ~20,000lbs/yr
  - ~\$2,000/yr In Removal Fees
  
- Single Stream- Cardboard, Shrink Wrap, Pallet Straps, Silicon Release Paper
  - ~150,000lbs/yr
  - ~\$5,000/yr In Revenue



# Current Solid Waste Program

## Byproduct Synergies



- Spent Yeast- Distilled To Extract Ethanol For E85 Blending.
- Spent Grain- Dairy Cattle Feed.



# Current Solid Waste Program

## Byproduct Costs/Revenues

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- Spent Yeast:
  - 100,000 Gallons Or >800,000lbs In 2013.
  - Currently No Associated Cost Or Revenue
  
- Spent Grain:
  - Approx 10,000,000 lbs per year
  - ~\$20,000/yr In Revenue

# Current Solid Waste Program

## Landfill Material



- Landfill:
  - ~100,000 lbs/yr
  - ~\$4,000/yr In Removal Fees



# Current Solid Waste Program

## 2013 Overview

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- Landfill: 115,200 lbs
- Comingled Recycling: 19,200 lbs
- Single Stream Recycling: 76,150 lbs
- Spent Yeast: 834,773 lbs
- Spent Grains: 8,193,290 lbs
  
- Overall Total = 9,238,613 lbs
- Total Recycled/Reused = 9,123,413 lbs
  
- Overall Diversion Rate = **98.8%**
- Diversion Rate Excluding Spent Grain/Yeast = **45.3%**

# Current Solid Waste Program

## 2013 Overview

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- Landfill: **-\$4,000**
- Comingled Recycling: **-\$2,000**
- Single Stream Recycling: **+\$1,889**
- Spent Yeast: **\$0**
- Spent Grains: **+\$20,483**
  
- Overall Total = **+\$16,372**
- Overall Total Excluding Spent Grain/Yeast = **-\$4,111**





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# 2013 Resource Recovery

Over 52,000 tons diverted from landfill  
106 tons to landfill = **99.8% diversion**

Avoided ~\$6.2 million in disposal fees  
~\$980,000 in revenue

95.43% Diversion excluding spent grain

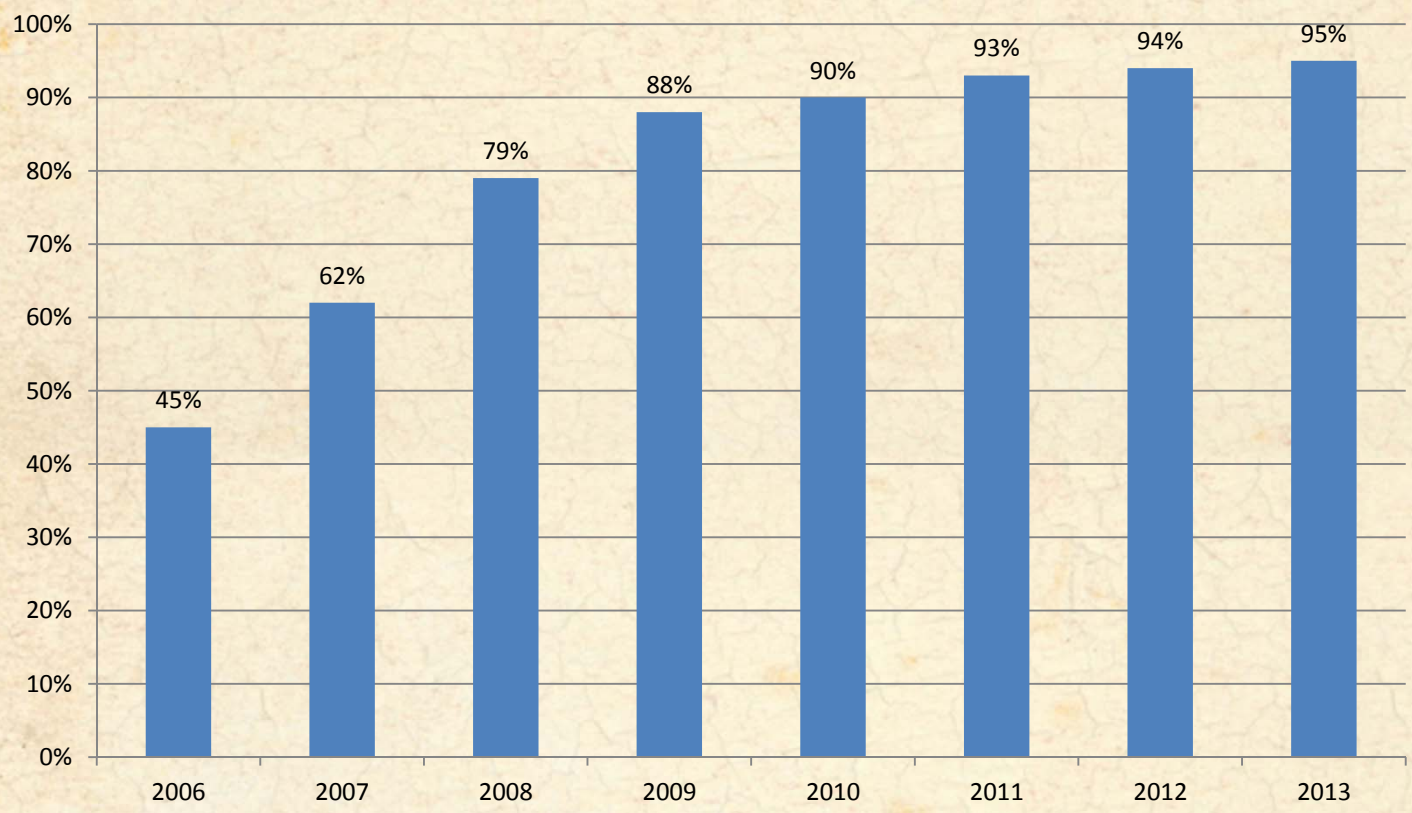




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# Progress Over Time

## Diversion Rate Excluding Spent Grain



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# Recycling saves money?

	Total lbs Diverted	Potential Disposal Cost	Revenue
Cardboard	713,916	\$45,691	\$29,286
Plastics*	134,536	\$8,610	\$8,805
Paper	104,029	\$6,658	\$0
Scrap Metal	50,100	\$3,206	\$13,557
Scrap Glass	718,048	\$45,955	\$1,262
HotRot	650,371	\$41,624	\$0
Co-Mingle Recycling	14,296	\$915	\$0
Other Recycling	16,616	\$1,063	\$7,859
Wood**	265,480	\$16,991	\$0
Green Waste	1,759,320	\$112,596	\$0
<b>2013</b>	<b>4,426,712</b>	<b>\$283,310</b>	<b>\$60,769</b>

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# Reuse is always better than recycling!

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Not So Good Choice...



- Pallets
- Boxes
- Packaging Materials
- Paper
- Burlap
- Employee Classifieds

Great Choice!



**Stainless Steel**  
The cost of quality

 Polished 2" tubing Our cost: \$6.58 per foot Recycle value: \$0.50 per foot	 Polished 2" tee Our cost: \$16.91 ea. Recycle value: \$0.14 ea.	 Square tubing 2" Our cost: \$11.62 per foot Recycle value: \$0.93 per foot	 Polished 2" elbow Our cost: \$11.15 ea. Recycle value: \$0.15 ea.
 Round bar stock 1/2" Our cost: \$1.90 per foot Recycle value: \$0.60 per foot	 Fretlock stainless valve Our cost: \$100.00 Recycle value: \$2.11	 Flat bar 2" Our cost: \$1.95 per foot Recycle value: \$0.90 per foot	 Ball valve 1/2" Our cost: \$45.00 ea. Recycle value: \$0.40 each

Minimizing waste = Big savings  
\*Recycling rate based on \$0.25 per pound-updated August 2010

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# RECYCLING

SPENT GRAINS, HOPS, & YEAST





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# Recycling

- Glass
  - Cans & Bottles
  - Cardboard
  - Shrink Wrap
- Paper-White & Mixed
  - Plastic Strapping
  - Packaging Material
- Batteries
  - Light bulbs
  - Computers
- Scrap Metal & Wire
  - Burlap
- Compost / Green Waste
- Construction debris



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# Setting Up Collections

- Never leave a bin alone!
- Color coding helps
- Clear labeling is important
- Bins don't have to be expensive – whatever you have works!
  - Your waste hauler might also be able to provide them for you







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# Setting Up Collections

- Don't get upset when people ignore your labels!!
  - Just treat it as another opportunity to educate

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# Break Rooms

Reduce + Reuse + Recycle + Rot  
=  
Zero Waste





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# Closing the Compost Loop



Discards are collected from restaurant, break rooms, and some brewing operations



Organics are composted onsite in the HotRot



Finished compost is used in onsite restaurant garden



Food from the garden is served in the Restaurant

2 weeks later we have stable compost!

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# Diversion Stats -

## 2013

- 94.43% Overall Waste Diversion rate
- 84.28% Waste Diversion rate not including spent grain/yeast
- 56% Reduction in Waste pounds/bbl from 1<sup>st</sup> quarter to 4<sup>th</sup> quarter
- 25% Increase in recycling pounds/bbl from 1<sup>st</sup> quarter to 4<sup>th</sup> quarter
- Over 4.3 million pounds diverted from the land

# Waste Audits

Getting down and dirty!

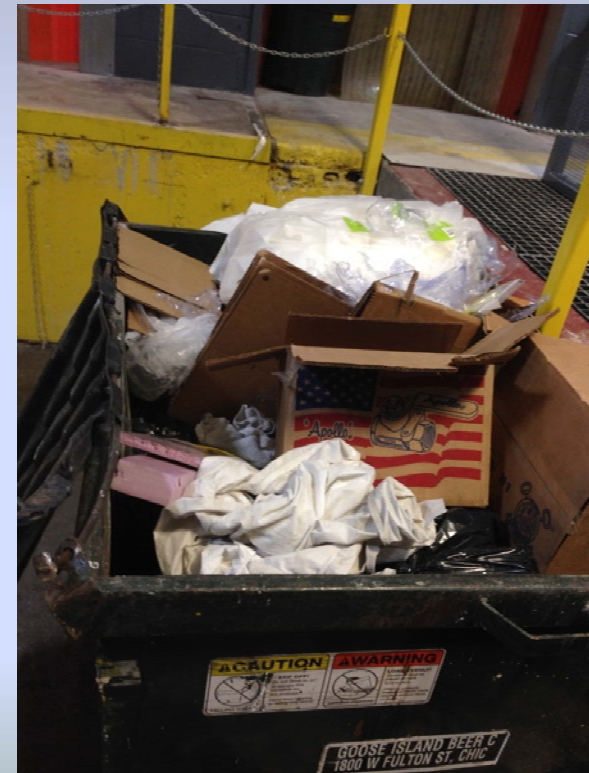


# 2014 Solid Waste Audit

## Seems Like We Are Doing Great! Why Audit?



- Determine How We Are Actually Doing
- Better Understand Our Waste
- Collect Data
- Improve Recycling
- Justify Composting
- Improve Diversion Rate!





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# How to do a waste audit

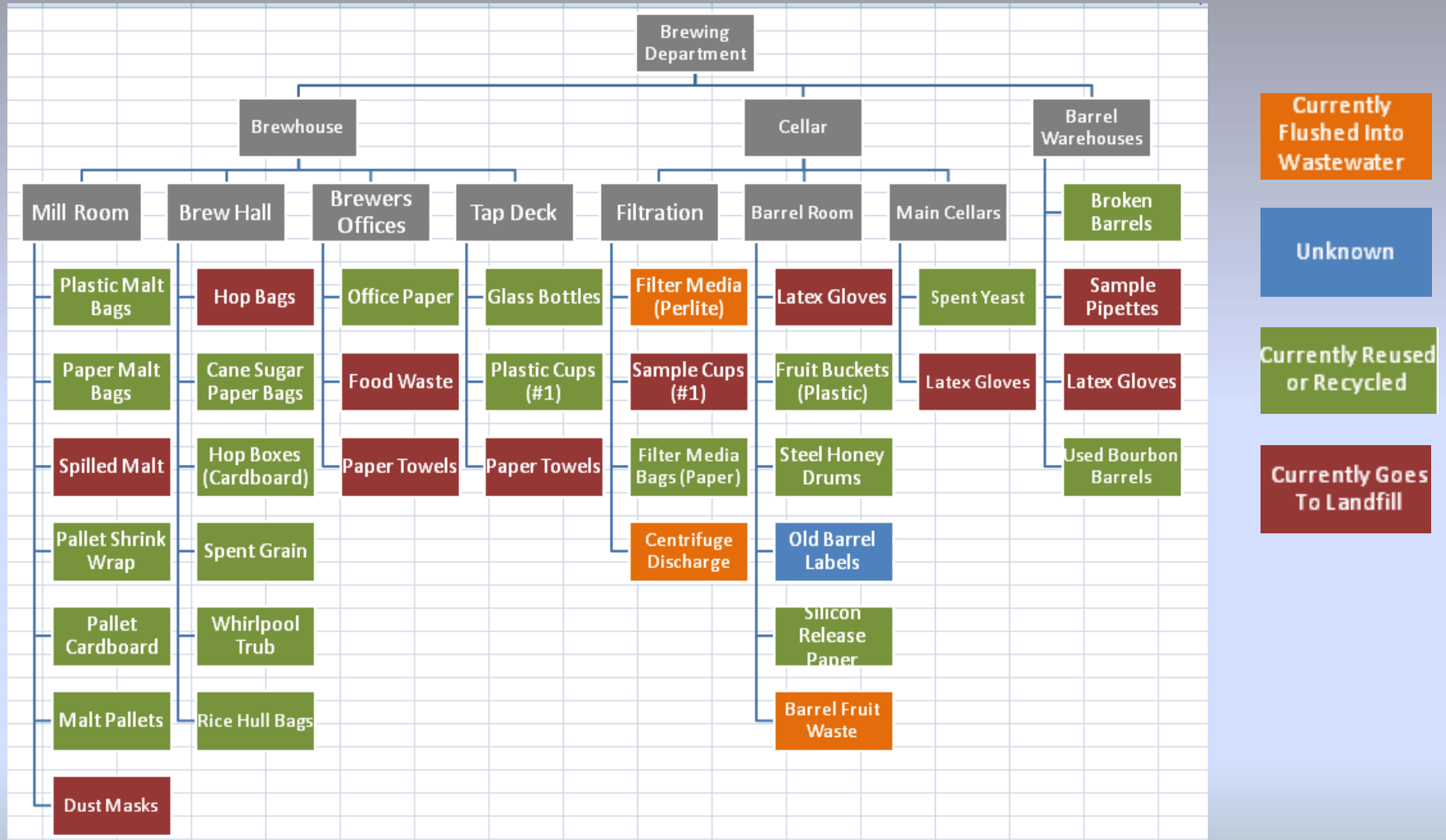
- Yes, you do have to get your hands dirty!
- You will need: rubber gloves, a scale, a notepad & pen, a large bin helps with weighing, PPE and a headlamp if you're in the dark
- More than one person makes it go a lot smoother
- Start removing bags from the bin and identifying where the material came from.
- Weigh and record it
- Move on to the next bag!

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# Where Is Our Waste Coming From?

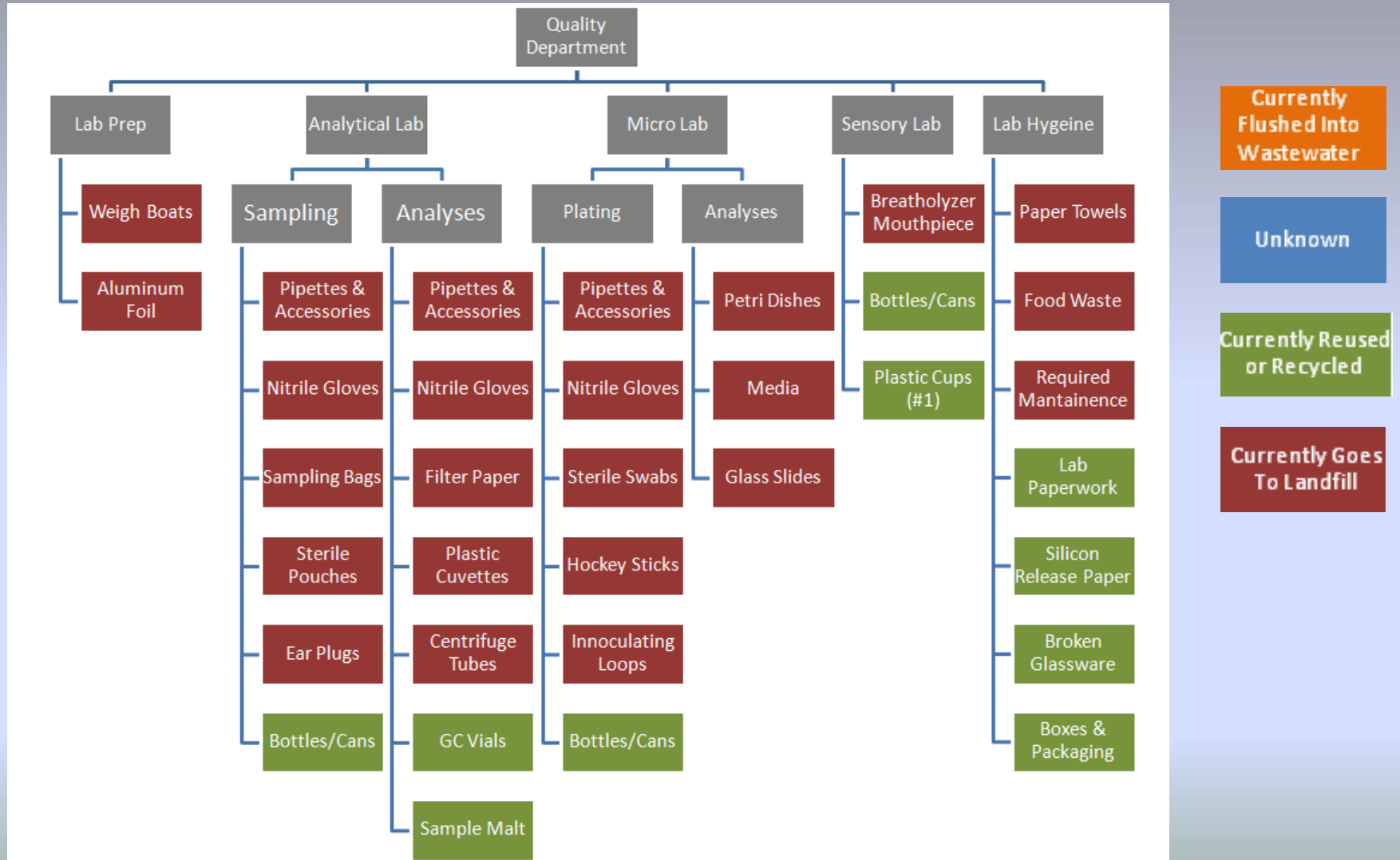
## Department Flow Charts - Brewing





# Where Is Our Waste Coming From?

## Department Flow Charts - Quality





# Method for Waste Audit

- Original plan (dumpster dive)
  - Safety concerns
- Draft spreadsheet for collection
  - Identify streams ahead of time



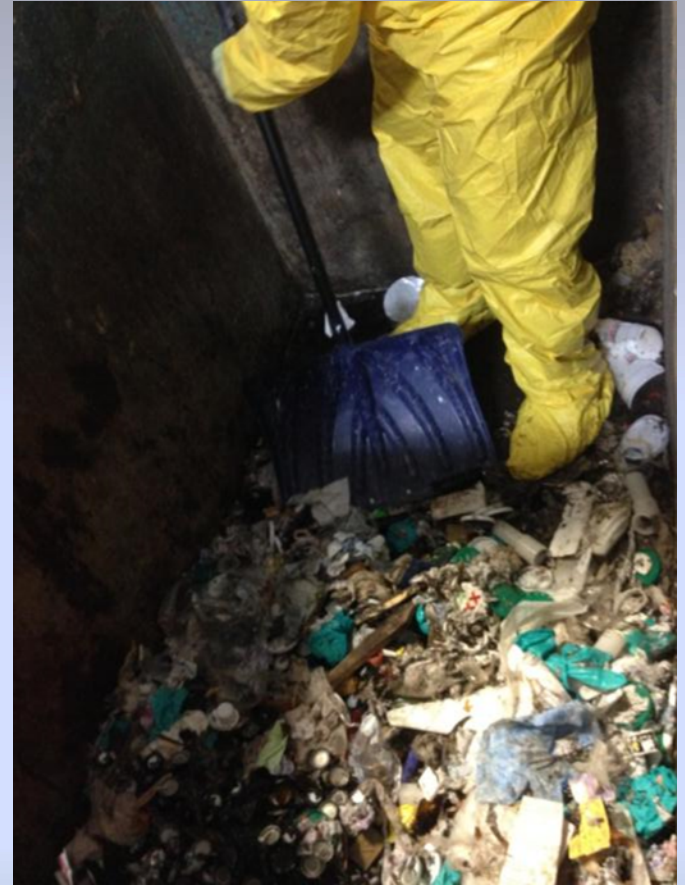
# Solid Waste Audit

## Data Collected

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- Type Of Waste
- Recyclable? Compostable?
- Weight
- Volume (Estimate)
- Other Qualitative Observations





# Dumpster Diving

## Green Geese At Play



# Dumpster Diving

## Green Geese At Play





# Dumpster Diving

## Green Geese At Play



# Audit Overview

## Stats From Our Adventure

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- 6 Volunteers
- 1.5 Hours of Audit Time
- One Overflowing 1.5 Yard Landfill Dumpster
- 306 Pounds of Waste Sorted
- 25°F on January 9<sup>th</sup>



# Results

## How'd We Do?



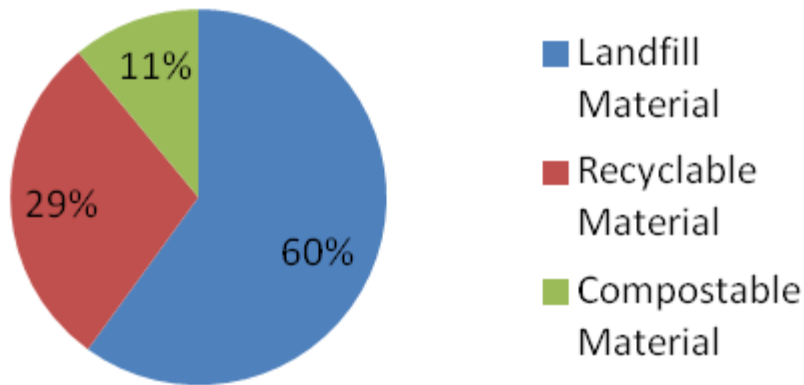
Solid Waste Name	Recyclable?	Compostable?	Weight (lbs)	Actual Volume (cubic yards)	Percent of Total Volume	Percent of Total Weight
Contractor Waste (rubber mat, plastic sheets, pipe insulation, construction debris, countertops, wood, tile scraps)	N	N	81	0.26	21.2%	26.4%
Compost Material (food waste, compostable dishes, napkins)	N	Y	37	0.13	10.6%	12.1%
Non-Recyclable Plastic (ziplock bags, chip bags)	N	N	12	0.12	9.5%	3.8%
Misc Landfill Material (bottom of dumpster- unidentifiable stuff)	N	N	29	0.10	8.5%	9.5%
Mixed Stream Recycling (glass, aluminum, plastic)	Y	N	21	0.10	8.5%	6.9%
Glass Bottles	Y	N	28	0.08	6.4%	9.1%
Mixed Recyclable Paper (office paper, 6 pack holders, receipts)	Y	N	12	0.08	6.4%	3.8%

# Results

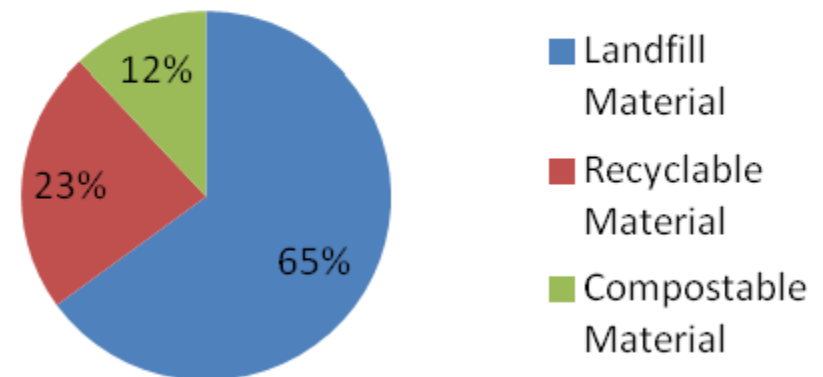
## How'd We Do?



### Percent of Total Dumpster Volume



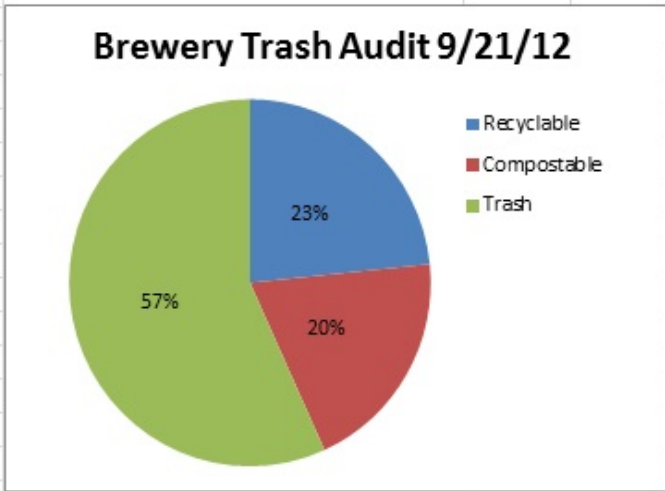
### Percent of Total Dumpster Weight





## Main Brewery Trash Audit 9/21/12

	<u>LBS</u>	<u>% of total</u>		<u>LBS</u>	<u>% of total</u>
4 Glass/Trash	134.2	7.45%	Broken Buckets	8.4	0.47%
5 Misc	114.2	6.34%	Rusty pipe	12.4	0.69%
6 Labeler/package area/keg etching	100.6	5.58%	Cans, bottles, paper	26.4	1.47%
7 Lab	73	4.05%	Cardboard	19.2	1.07%
8 Insulation Waste	71	3.94%	Glass	253.6	14.08%
9 Littlefoot	52.6	2.92%	Ag (drip line, recyclable jugs, cardboard, plas	39.4	2.19%
10 Mylar Filtration Polyclar bags	49	2.72%	Paper	60.6	3.36%
11 Painters	42.9	2.38%	Shrink wrap	1.2	0.07%
12 Truckshop	39.8	2.21%	<b>TOTAL RECYCLABLE</b>	<b>421.2</b>	<b>23.38%</b>
13 Packaging/Floor Sweepings	34.8	1.93%			
14 Breakroom / Bathroom	33.4	1.85%	Paper towels	20.4	1.13%
15 Terra Alba bags	26.4	1.47%	Big Room (food, BOH packaging, paper)	201.8	11.20%
16 Maintenance	25.6	1.42%	Breakroom (food, packaging, paper towels)	135.4	7.52%
17 Employee Personal Trash	23.4	1.30%	<b>TOTAL COMPOSTABLE</b>	<b>357.6</b>	<b>19.85%</b>
18 10 gal glue trash cans (x2)	20	1.11%			
19 Ken	16.2	0.90%			
20 Concrete	14.4	0.80%	Recyclable	421.2	23.38%
21 Calcium bags	14.4	0.80%	Compostable	357.6	19.85%
22 Wax Cardboard	14.2	0.79%	Trash	1022.5	56.76%
23 Smoking Area	12.8	0.71%	<b>GRAND TOTAL</b>	<b>1801.3</b>	<b>100.00%</b>
24 Bathroom	11.6	0.64%			
25 Contractor	11.6	0.64%			
26 Air Filters	11.4	0.63%			
27 Mylar Hop Bags	9.6	0.53%			
28 Broken mustard container	9.2	0.51%			
29 S Conf Rm/Facilities Office	9	0.50%			
30 Warehouse	8.8	0.49%			
31 Styrofoam packing blocks	8.2	0.46%			
32 Facilities Office	7.6	0.42%			
33 POS	6.2	0.34%			
34 IT	5.8	0.32%			
35 Filtration (brushes, gloves)	2	0.11%			
36 Shipping Bag (truck)	2	0.11%			
37 Plastic Bollard	2	0.11%			
38 Bag of bags	2	0.11%			
39 Keg cap sticker backings	1.4	0.08%			
40 Transportation Gate	1.2	0.07%			
41 <b>TOTAL TRASH</b>	<b>1022.5</b>	<b>56.76%</b>			





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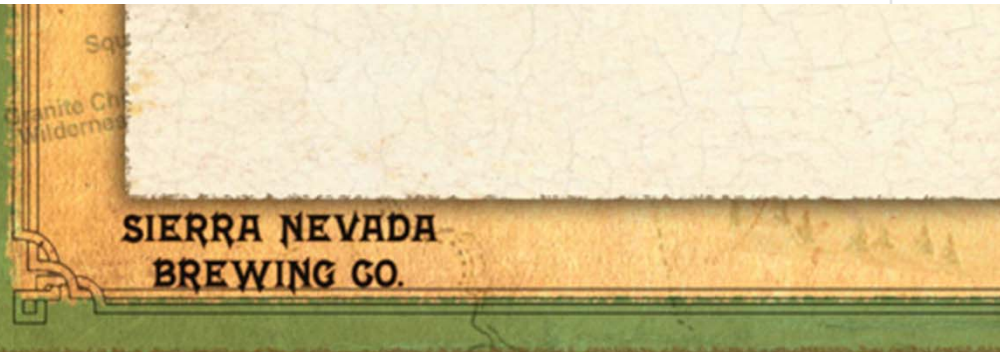
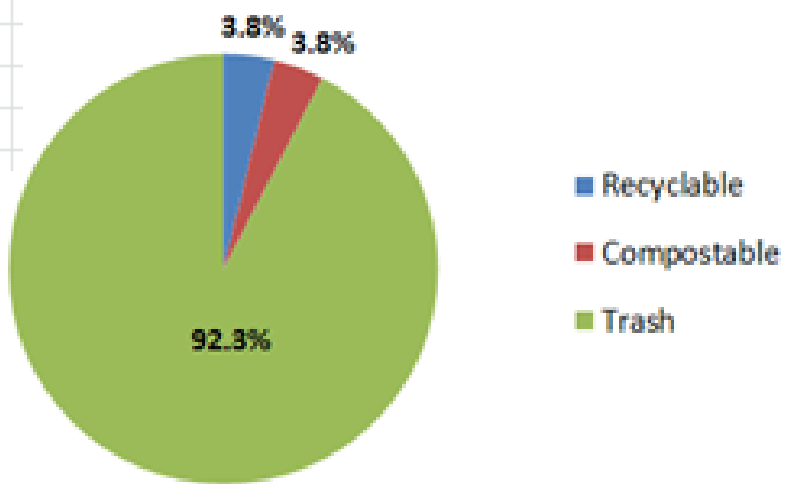
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### Main Brewery Trash Audit 6/4/2013

	Lbs
<b>Break rooms and Bathrooms</b> (paper towels, food packaging)	517
<b>Production</b> (hop bags, sugar bags, terra alba bags)	212
<b>Maintenance</b> (air filters, floor sweepings, material scraps)	90
<b>Construction and Painting</b> (concrete bags, rags, brushes)	186
<b>Littlefoot and Oasis</b>	126
<b>Offices and Graphics</b>	36
<b>Bottleshop / Keg Etching</b> (floor sweepings, labels, glue)	427
<b>Truck Shop / Scale House</b>	6
<b>Lab and R&amp;D</b> (petri dishes, pipettes, packaging)	107
<b>Big Room</b>	343
<b>Gift Shop and POS</b>	47
<b>Tour Desk / Beer Steward Training</b> (cups, beer bottles, tasting cups)	8
<b>Miscellaneous</b> (broken furniture/brooms, fly paper, kitty litter, gloves)	450
<b>Recycling</b> (cans, bottles, cardboard, paper)	100
<b>Compostable</b> (paper towels, food soiled paper)	100
<b>GRAND TOTAL</b>	<b>2,756</b>



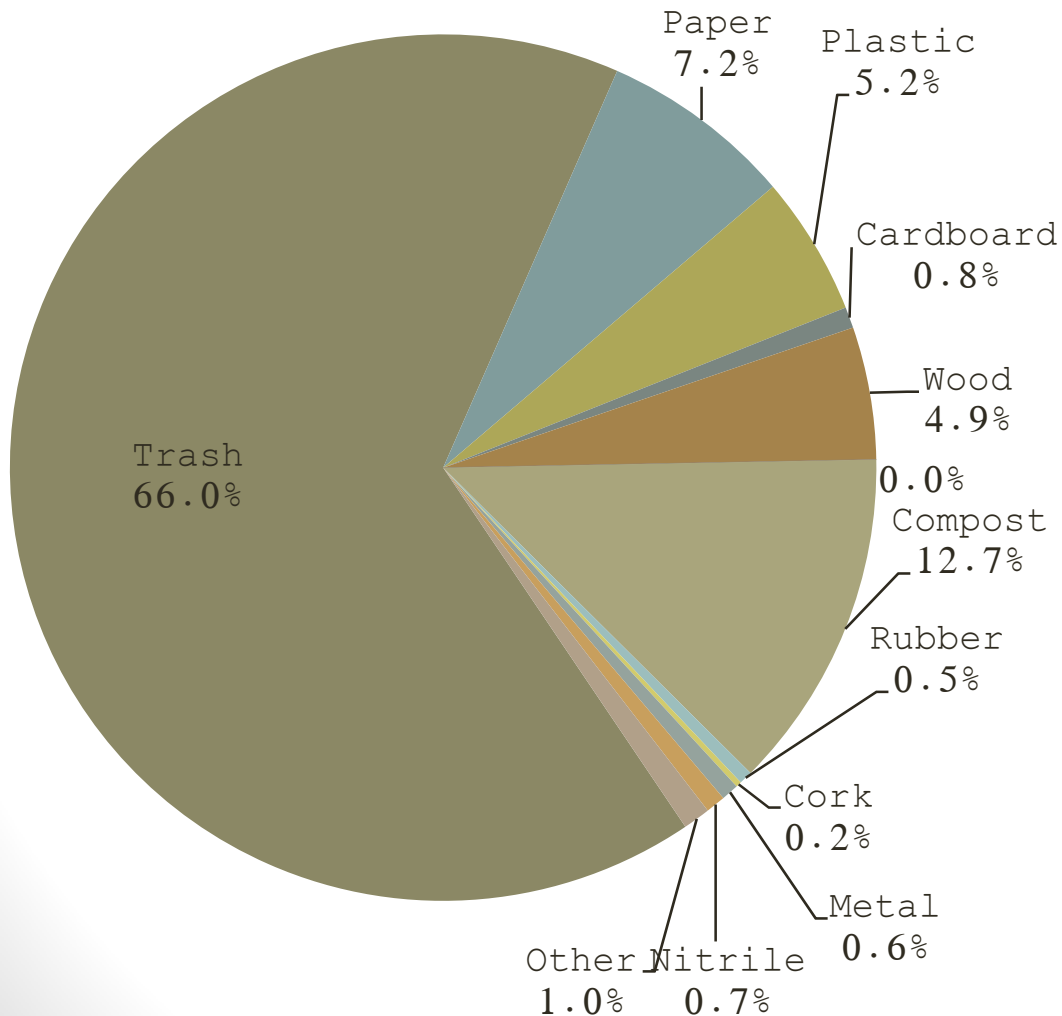
### Brewery Trash Audit 6/4/13





# Results

## Allagash Waste



- Target = 100% waste
- Breakdown by department revealed importance of convenience



# Audit Recap

## Noted Issues

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- Recyclables in Landfill Dumpsters
- Single Stream Recyclables in Comingled Dumpsters
- Contractors and Cleaning Crews Not Training
- Landfill Dumpster Contained 12% Compostable Material
- Unclear Signage on Bins and Dumpsters
- Recycling Dumpsters Overflowing





# Audit Recap

## Post-Audit Improvement Actions

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- Communicate Results!
- Clarify Recycling Bin and Dumpster Signage
- Employee, Contractor and Cleaning Crew Training
  - Develop Sustainability Training Presentation
  - New Hire Training
  - Contractor/Cleaning Crew Orientation

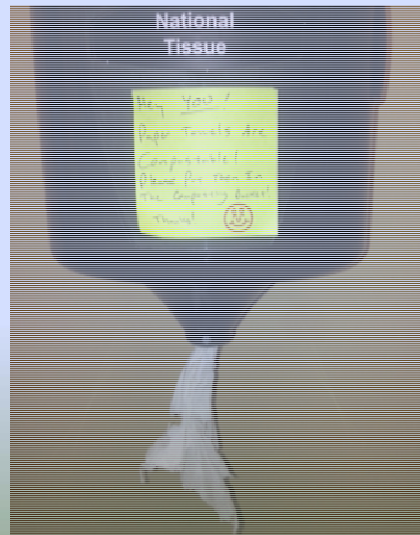


# Audit Recap

## Post-Audit Improvement Actions



- Implement a Composting Program!
- Communicate Company-Wide and Train Employees.
- Friendly Reminders...





# Actions

- Results distributed company wide
  - Specific department overview
- Changes to metrics
- Signage adjustments
- Added receptacles
- Further contact with waste management company
  - Adjust certain waste streams
- Continue to increase communication to enhance



# Tracking Progress







# Weights are key to data collection



## INVOICE

RECOLOGY BUTTE COLUSA COUNTIES  
 2720 SOUTH FIFTH AVE  
 OROVILLE CA 95965  
 530-342-4444

SIERRA NEVADA BREWERY  
 CHERI CHASTAIN  
 1075 EAST 20TH STREET  
 CHICO, CA CA 95928

PLEASE RETURN TOP PORTION WITH YOUR PAYMENT  
 KEEP THIS PORTION FOR YOUR RECORDS

SIERRA NEVADA BREWERY  
 CHERI CHASTAIN  
 1075 EAST 20TH STREET  
 CHICO, CA CA 95928

CONTACT IS TERRY 624-8075 OR 624-9039

INVOICE DATE  
 INVOICE NUMBER  
 PAGE NUMBER

CUSTOMER NUMBER  
 ORDER NUMBER  
 TOTAL AMOUNT  
 PURCHASE ORDER  
 SERVICE LOCATION

REMIT TO: 1075 20T

RECOLOGY BUTTE CO  
 PO BOX 1512  
 OROVILLE CA 959

RECOLOGY BUTTE CO  
 PO BOX 1512  
 OROVILLE CA 959

BUTTE COUNTY  
 NEAL ROAD LANDFILL  
 1023 NEAL ROAD  
 PARADISE, CA 95969

Weighted:  
 BILL TO: 11561  
 RECOLOGY BUTTE COLUSA COUNTIES

Vehicle ID: 13064  
 Roll-off ID: 14140  
 Reference: 1000005031  
 Origin: BUTTE COUNTY  
 DATE IN: 04/26/13 TIME IN: 13:52:26  
 DATE OUT: 04/26/13 TIME OUT: 13:02:26  
 INBOUND TICKET Number: 02-01089274

SCALE GROSS WEIGHT 33440 LB  
 STORED TARE WEIGHT 29960 LB  
 NET WEIGHT 3480 LB

Qty	Description	Amount
1.74 TON	Drop Box Uncom	68.05

AMOUNT DUE: 68.05

DATE	JOB#	W/O #	TYPE	DESCRIPTION
4/05/13	TRASH BOX	202998	EXCH	30 YD DEBRIS BOX, OPEN DISPOSAL CHARGE FUEL SURCHARGE COMPACTOR
4/12/13	TRASH BOX	203192	EXCH	30 YD DEBRIS BOX, OPEN DISPOSAL CHARGE FUEL SURCHARGE COMPACTOR
4/19/13	TRASH BOX	203393	EXCH	30 YD DEBRIS BOX, OPEN DISPOSAL CHARGE FUEL SURCHARGE COMPACTOR
4/26/13	TRASH BOX	203625	EXCH	30 YD DEBRIS BOX, OPEN DISPOSAL CHARGE FUEL SURCHARGE DB

CREDIT LIMIT: \$2000.00  
 NORMAL TERMS: NET 30

TOTAL AMOUNT

DATE: 4/26/13  
 CUSTOMER SERVICE: SIERRA NEVADA BREWERY  
 1075 20TH ST E  
 CHICO CA  
 TIME: 13:04  
 SIZE: 30.00 30 YD DEBRIS BOX, OP Exchange  
 FRAN: A0166484  
 CIC: 2858721

BOX IN CHECK #  
 C.O.D.  
 BOX CHARGE \$118.00

CA 95928  
 ORDERED BY DS/CD TRASH BOX ONLY  
 PO #  
 JOB #

13064  
 404  
 04001633  
 HORTON, DUSTY R.  
 BOX RATE \$118.00

ORD/SEC. 0000003/001  
 PHONE (530)893-3520

TRASH BOX  
 ENTER OFF SILVER DOLLAR WAY ENTRANCE



COMMENTS

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# Don't have weights?

**RECOLOGY BUTTE COLUSA COUNTIES**  
**PO Box 1512**  
**Oroville CA 95965-1512**

**PLEASE RETURN THIS PORTION WITH**  
**CHECK IN THE ENVELOPE PROVIDED**  
BILL DATE 03/27/2013

SERVICE FROM: 03/01/2013  
SERVICE TO: 03/31/2013  
LOCATION: 1075 20TH ST E  
Route 112 Billing No. 26394726 Type CA-R1 Franchise CIC

ACCOUNT NUMBER	021206457
CURRENT CHARGES	327.33
BALANCE DUE	654.63

SIERRA NEVADA BREWERY-PUB ACCT  
1075 20TH ST E  
CHICO CA 95928-6722

RECOLOGY BUTTE COLUSA COUNTIES  
P.O. Box 60818  
Los Angeles CA 90060-0818

000000026394726000000000065463 000000 0100220130000012064579

SERVICE LOCATION: 1075 20TH ST E  
DAYS OF SERVICE: -TWTFFS  
MONTHLY RATE 327.33

KEEP THIS PORTION FOR YOUR RECORDS  
BILLING QUESTIONS CALL: 530-342-4444  
Account No. 021206457

Billing No. 26394726

DATE	DESCRIPTION OF BILLING CHARGES	AMOUNT
03/31/2013	PREVIOUS BALANCE	327.30
03/31/2013	COMMERCIAL 96 GAL-SPECIAL MAR	318.27
03/31/2013	FUEL SURCHARGE MAR	9.06
	<b>BALANCE DUE</b>	<b>654.63</b>





**SNBC 2014 Waste Diversion Totals**

(Lbs)	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Total
Cardboard	48,000	43,618	41,595	53,704	0	0	0	0	0	0	0	0	186,917
Plastics*	13,733	11,790	9,354	14,446	0	0	0	0	0	0	0	0	49,323
Paper	11,650	5,615	3,515	20,295	0	0	0	0	0	0	0	0	41,075
Scrap Metal	11,132	47,213	12,742	1,816	4,090	0	0	0	0	0	0	0	76,993
Scrap Glass	73,797	85,985	40,908	45,026	38,000	0	0	0	0	0	0	0	283,716
HotRot	57,689	41,287	46,837	52,706	0	0	0	0	0	0	0	0	198,519
Co-Mingle Recycling	1,404	1,206	1,085	908	0	0	0	0	0	0	0	0	4,602
Other Recycling	1,786	1,389	1,598	940	0	0	0	0	0	0	0	0	5,713
Wood**	101,100	3,310	6,620	50,508	46,180	0	0	0	0	0	0	0	207,718
Green Waste	126,900	135,000	89,100	81,000	0	0	0	0	0	0	0	0	432,000
Spent Grain	6,741,520	5,917,320	5,790,320	5,801,040	0	0	0	0	0	0	0	0	24,250,200
Spent Yeast	1,703,600	1,529,140	1,455,320	1,422,940	0	0	0	0	0	0	0	0	6,111,000

<b>2014 Total</b>	<b>8,892,311</b>	<b>7,822,873</b>	<b>7,498,994</b>	<b>7,545,329</b>	<b>88,270</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>31,847,775</b>
<b>Avoided cost w/out grain &amp; yeast</b>	\$40,904.86	\$25,428.79	\$17,575.14	\$23,184.16									<b>\$107,093</b>
<b>Recycling Revenue</b>	\$3,378.57	\$4,689.09	\$4,589.78	\$3,968.49									<b>\$16,626</b>
<b>Cost of Services</b>	\$2,845.76	\$1,944.32	\$2,359.63	\$2,197.14									<b>\$9,346.85</b>
<b>Net Revenue</b>	\$41,437.67	\$28,173.56	\$19,805.29	\$24,955.51									<b>\$114,372.04</b>

	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Total
<b>Diversion Rate</b>	99.79%	99.80%	99.76%	99.77%									
<b>Total Landfilled (lbs)</b>	18480	15640	18080	17140	0	0	0	0	0	0	0	0	
<b>Lbs landfilled : bbl</b>	0.22	0.21	0.24	0.22									
<b>2013</b>	99.79%	99.81%	99.61%	99.75%	99.85%	99.82%	99.83%	99.76%	99.87%	99.81%	99.84%	99.83%	99.80%
<b>Diverson w/o spent grain/yeast</b>	96.03%	96.01%	93.34%	94.94%									
<b>2013</b>	95.80%	95.49%	91.03%	93.69%	96.06%	95.35%	96.00%	94.83%	97.27%	95.83%	96.58%	96.26%	95.42%





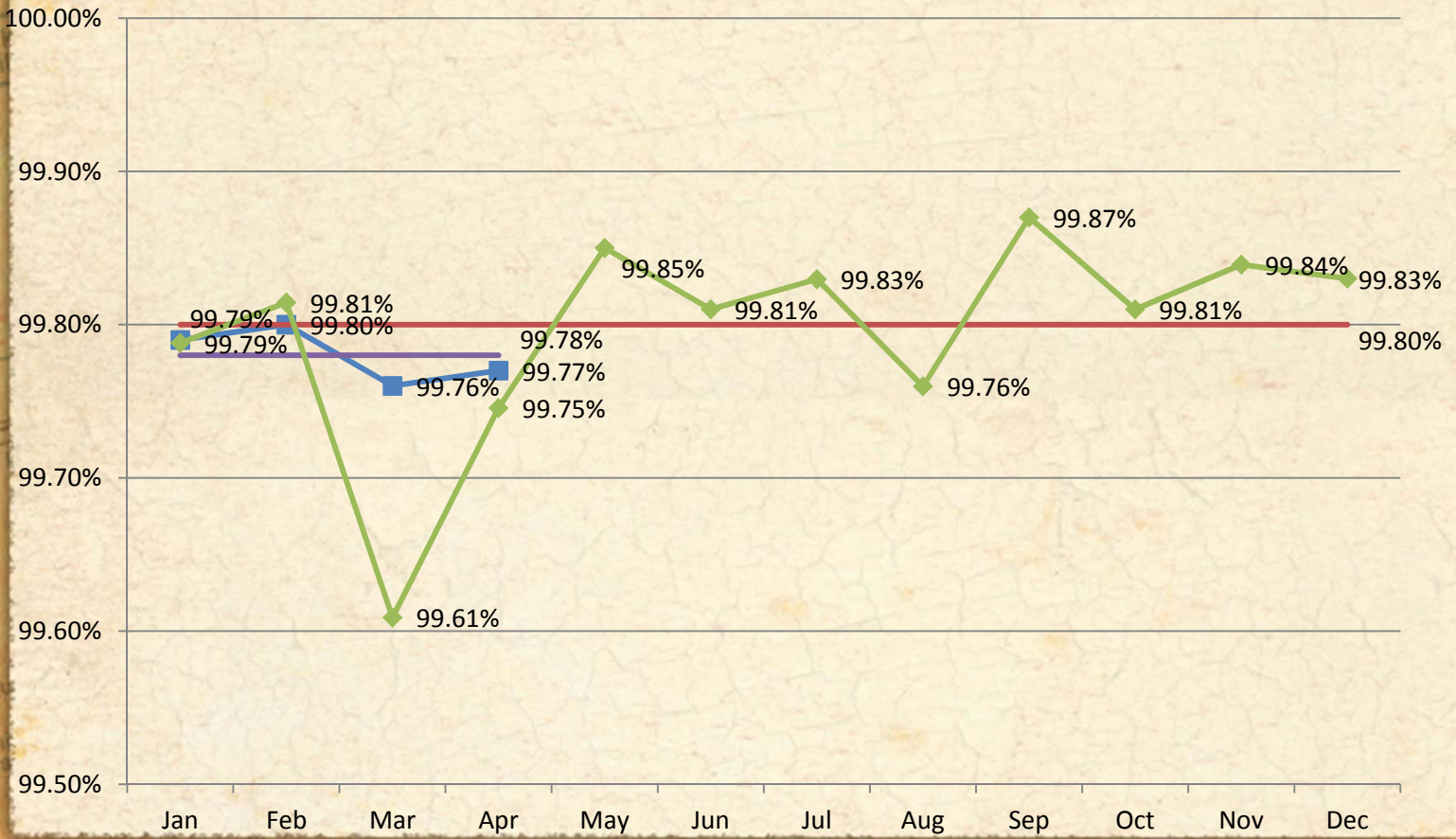
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# Tracking Progress

## 2014 Percentage of Waste Recycled

The percentage of SNBC's solid waste diverted from the landfill through recycling and composting efforts

2014 2014 Goal = 99.80% 2013 = 99.80% 2014 YTD 2014 Goal 2013



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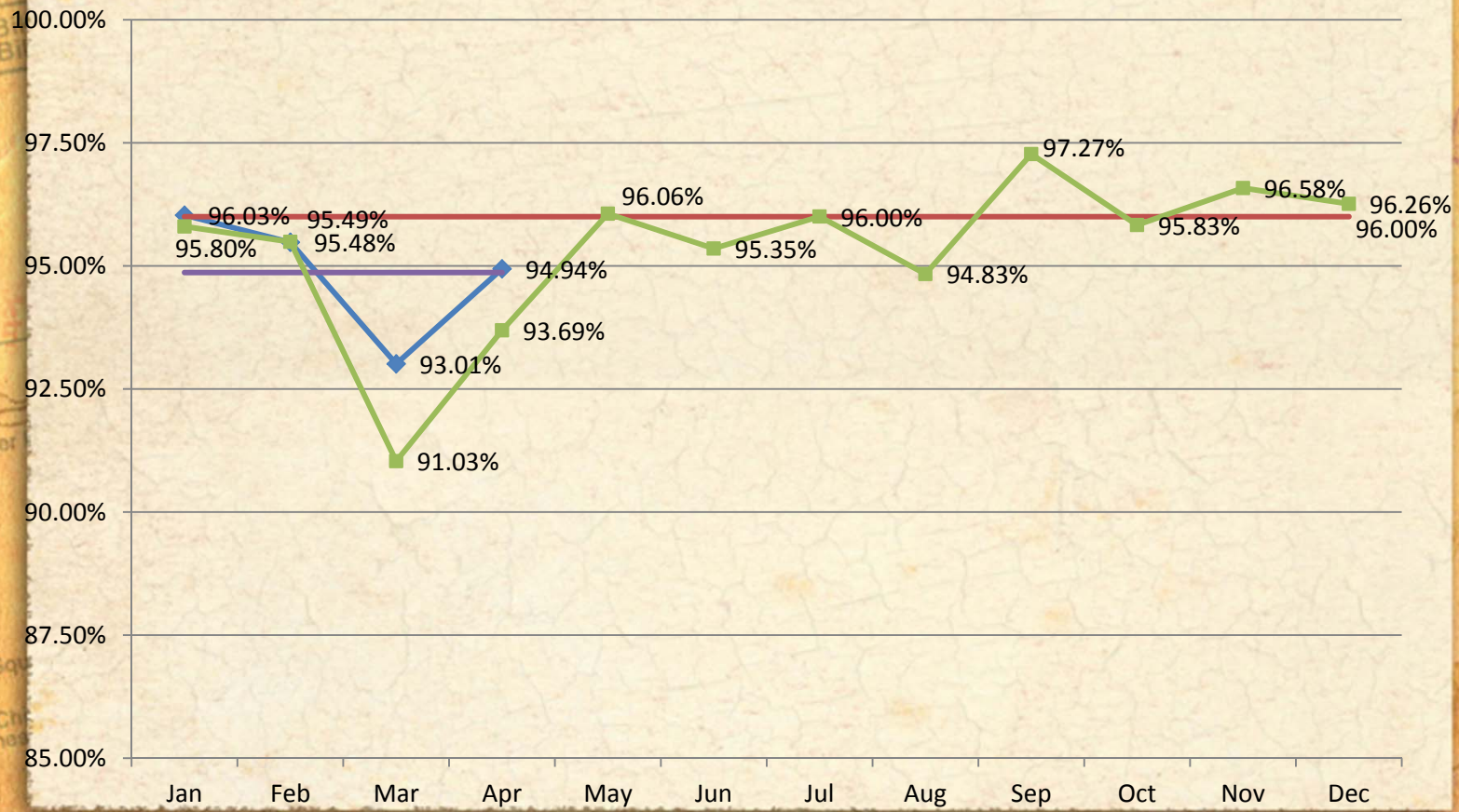
# Refining Tracking Metrics

## 2014 Percentage of Waste Recycled Excluding Spent Grain and Yeast

The percentage of SNBC's solid waste (excluding spent grain and yeast) diverted from the landfill through recycling and composting efforts

2014 Goal = 96.00%      2013 = 95.35%

2014 YTD      2014 Goal      2013



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# Lessons Learned & Resources





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Blackwood Canyon

# *Lessons Learned*

- Educate, educate, educate
- Use the buddy system (think creatively)
- Find metrics that are right for you
  - Once you have your metrics, be transparent – employees can make or break progress!
- Set realistic goals
- Remember... zero waste is a team effort!







# Education

## Sustainability

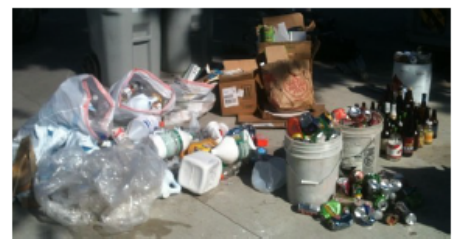
WORT'S HAPPENINGS

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### The Sustainability Department Gets Trashy

On June 4, the Sustainability Department donned rubber gloves and dove into the 30-yard trash dumpster that contains all of the trash from the entire facility. Why? Conducting a waste audit tells a lot about the people who contribute to it: what kind of food we eat, which departments create more waste than others, and how much recycling ends up in our trash cans. Sustainability sorted and weighed more than 2,600 pounds of waste in order to identify opportunities for improvement.

Every ton of material the brewery sends to the landfill costs \$110; in 2012 we spent more than \$22,000 on trash. In May 2013, the brewery produced 28 pounds of waste per Chico employee. Every little bit you can keep out of the landfill protects our natural resources and saves the company money.



The audit found that most of the waste in our trash container originates from break rooms and bathrooms (there were a lot of paper towels and food packaging and containers). A total of 506 pounds of waste came from those areas. Adhering to the recycling hierarchy will reduce waste in every area of the brewery.

**REDUCE** the amount of waste you bring into the brewery by eating fresh, whole foods that don't have packaging (fresh fruits and veggies, a sandwich made at home, leftovers from dinner, etc.). Not only will it reduce waste, but you will be putting much healthier food into your body!

Use **REUSE** able containers for your lunch and beverage

ages to keep packaging material out of the landfill. There was a large number of disposable coffee cups in the trash! Remember to use your Klean Kanteen or another reusable coffee mug and bring food in Tupperware or glass containers.

**RECYCLE** what you can. We pulled 100 pounds of cans, bottles, paper, and wood from the trash! All of these materials should have been put in recycling bins and kept out of the landfill.

Finally, **ROT** what you can. Any food left over from your lunch or snack should go into a compost bin. All food waste, paper towels, to-go containers from the Pub, coffee stir sticks, and food-soiled paper are compostable. Also, remember to use the yellow compost buckets in the bathrooms for your paper towels.

If you have any questions about what's recyclable or how to dispose of something, please stop by the Sustainability Department. That's what we're here for!



Chester Clever, Mandi McKay, and Cheri Chastain tackle a lot of garbage.







# Zero Waste Certification

## USZWBC Zero Waste Facility Checklist

Facility Name **Sierra Nevada Brewery**

Facility Address **Chico, CA**

- USZWBC Third-Party Certification
- Supports ZWIA definition of no waste to landfill, incineration, and the environment
  - Drives the development of new markets and new ideas towards A Zero Waste Economy
  - Meets Zero Waste Businesses request for valid and comprehensive third-party certification
  - Focuses on upstream policies and practices beyond diversion or recycling
  - Emphasizes strong Total Participation: Training of all employees, ZW relationships with Vendors and customers

Facility Totals (Pre Certification Estimates)	Points
Bronze: 31-37 points Silver: 38-45 points Gold: 46-63 points Platinum 64-80 points	73

Overview of Categories & Points

Redesign	4	Leadership	6
Reduce	7	Training	6
Reuse	7	ZW Analysis	5
Compost (Re-earth)	6	Upstream Management	4
Recycle	3	Hazardous Waste Prevention	5
ZW Reporting	4	Closed Loop System	2
Diversion (Min 90%)	4	Innovation	3
ZW Purchasing	7	Total Points	73

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# Zero Waste Certification

**Sierra Nevada Brewing Co. receives first Zero Waste Platinum Certification from USZWBC**

by Jason Morgan December 2, 2013



U.S. **zerowaste**  
BUSINESS COUNCIL

[www.uszwbc.org](http://www.uszwbc.org)

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# Brewer's Association Manuals

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## BREWERS ASSOCIATION

A Passionate Voice for Craft Brewers


EVENTS \* PRESS ROOM \* MEMBERSHIP \* DIRECTORIES



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- Craft Brewing Statistics
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- Sell Sheets
- Marketing & Advertising Code
- Label Approval Guidance
- Power Hour
- Publications
  - Sustainability Tools**
    - Energy
    - Solid Waste
    - Water and Wastewater
- Wholesaler & Retailer Resources

### ENERGY

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#### Energy Usage, GHG Reduction, Efficiency and Load Management Manual

##### Introduction

Craft brewers are an innovative segment of the greater brewing industry. It's no surprise that many craft brewers have discovered innovative solutions for energy usage and greenhouse gas (GHG) reduction opportunities at their facilities. Considering today's rising energy costs, reducing energy usage should be a high priority at all breweries.


Owners and operators may consider energy costs as an expense they cannot control, and that it only rises and falls with the price of energy in the area. Depending on these costs, energy reduction may not be a top priority within brewery operations, but breweries that do not pay attention to the opportunities at all levels of their operations may miss out on potential cost saving and revenue generating measures.

There are many best practices for energy efficiency and conservation that can be easily incorporated into daily operations, as well as solutions that can reach beyond GHG reduction and lead to operating cost reductions, additional sources of income and new community initiatives. These solutions help brewers save money and become industry leaders in sustainable practices.


##### The Manual

This manual is a consolidated resource for effective energy management and GHG reduction solutions in the craft brewers segment. Solutions outlined can apply to all breweries regardless of location and operational size. Guidance is



### ENERGY MANUAL & TOOL BOX

[Energy Manual](#) (6M file) 

#### Guidance


- [Set-Points](#) 
- [Employee Engagement](#) 
- [Insulation](#) 
- [Lighting](#) 

#### Checklist

- [Energy Audit](#) 
- [Future Design Tips](#) 

#### Spreadsheet Tools

- [Energy/GHG Data Collection](#) (.xslm)
- [Renewable Energy Cost Calculator](#) (.xslm)



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**THANK YOU!**