# Best Materials Management Practices for Public Events





#### NEBRASKA RECYCLING COUNCIL

-waste nothing-





- Advocacy
- Equipment Grants
- Events
  - o Collection
  - o Educational
  - Networking
- Professional
  Development
- Public Education
- Technical Assistance
  - Recycling
  - o Organics
  - o Zero Waste
  - C&D Waste
  - o **Toxics**



### Local, State, and National Partners





KEEP AMERICA BEAUTIFUL AFFILIATE





workwell
Better health. Better business.







#### If you're not for zero waste...

#### How much waste are you for?





### **Oh**, **Plastics**

- 9% of the world's plastics are recycled
- 8 million metric tons of plastic flow into the oceans every year
- Packaging consumes 35 to 45% of all synthetic polymers produced in total
- By 2025 there will be 1 ton of plastics in the ocean for every 3 tons of fish
- By 2050, there will be more plastics than fish

# Oh, China



#### Oh, Nebraska



- 38<sup>th</sup> largest state in population 1.9 million
- 16<sup>th</sup> largest state in size 76,825 square miles
- 23.8 people per square mile (87 mi<sup>2</sup> nationally)
- Access to recycling is 55% in towns with populations of 100-800 compared to 92%+ in larger communities\*
- 17% recycling rate (National average 34%)\*
- Low landfill tipping fees average \$40/ton vs \$55/ton nationally = disincentive to recycle

\*Nebraska Recycling Study, 2015

### **Event Considerations**

- Waste streams
- Service Providers
- Food and exhibition vendors
- Volunteers and staffing
- Marketing and communications
- Purchasing
- Measurement



# **Understanding Existing Conditions**

- How many people attend the event?
- How much waste is typically generated at the event?
- Who manages the collection?
- Who hauls it away?
- What types of trash and recycling containers are used and who provides them?
- What are the waste-related costs for trash and recycling containers, hauling, disposal, recycling, and labor (either in dollars or volunteer time)?
- What materials are recycled?
- Who generates what types of waste and how much? (Guessing is okay!)
- What recycling opportunities exist in the community?
- Are there local organizations, agencies, or individuals that might be interested in supporting recycling efforts?

# Create or upgrade your management plan

- Get commitment from senior managers
- Designate a point person and/or steering committee
- Identify sustainability goals/objectives
- Research materials and equipment
- Plot specific activities, metrics and outcomes, and who is responsible
- Involve and inform key players early on
- Create a realistic plan and build on it



# **Plan Outline**

- 1. Goal
- 2. Program Management
- 3. Targeted Wastes
- 4. Communications plan
- 5. Materials/Supplies Needed
- 6. Labor
- 7. Itemized Costs
- 8. Savings- Revenue and Avoided Costs



# **Negotiating with Haulers**

- **Tipping fee-** based on amount of material disposed of at landfill
- **Pull charge-** charge for removing or emptying a dumpster
- **Rental fee-** cost of using a dumpster for a specific period of time
- **Cubic yard-** common measurement of volume of solid waste = 202 gallons
- **Tons-** common measurement of weight of solid waste = 2,000 lbs
- **Density-** weight per unit of volume food is heavy/dense

- **Dumpster-** also called container from 1 to 40 cubic yards
- Compactor- dumpster with internal mechanism that compacts waste – commonly used for cardboard
- Toter carts- wheeled carts for trash or recycling, 60 to 100 gallon capacity
- **Commingled-** when different materials are collected in a single recycling bin, like steel, aluminum, and plastic food and beverage containers

CAMP GROUND FRONT LOAD (residential type garbage, take-out, only garbage available in area; estimated @ 150 lb/yd) TONS																		
DATE:	8/24	8/26	8/27	8/28	8/29	8/30	8/31	9/1	9/2	9/3	9/4	9/26				TOTAL		
YARDS:	9	2	9	3	3	2	2	3	3	3	5	12				56	4.2	
BARN AREA FRONT LOAD (vendor waste, organics, guests; estimated at 175 lb/yd)																		
DATE:	8/24	8/25	8/26	8/27	8/28	8/29	8/30	8/31	9/2	9/3	9/4					TOTAL		
YARDS:	19	6	5	4	3	3	5	4	4	4	13					70	6.125	
FOOD PODS REAR LOAD (food court area, no organics collection available, est. 275 lb/yd)																		
DATE:	8/21	8/23	8/24	8/25	8/26	8/27	8/28	8/29	8/30	8/31	9/1	9/2	9/3	9/4	9/7	TOTAL		
YARDS:	4	18	22	24	36	26	14	26	18	24	24	36	28	36	25	361	49.6375	
		EVEN	IT CENT	ER REAR	LOAD (	light we	ight "flu	ff", mat	erials fro	om gues	ts after	shows, e	est 150	lb/yd)				
DATE:	8/21	8/23	8/24	8/25	8/26	8/27	8/28	8/29	8/30	8/31	9/1	9/2	9/3	9/4		TOTAL		
YARDS:	8	16	4	20	24	8	4	12	16	16	18	18	8	20		192	14.4	
DATE:																		
YARDS:																		
TOTERS @ NEBRASKA BUILDING (96 gal, "fluff", v. minimal, est. 150 lb/yd) 96 gal = 0.475 yd																		
DATE:	8/24	9/4														TOTAL		
TOTER:	1	20														21	0.748125	
DATE:		- I. I.							TRACIN	DEAC	045.55	CHELE		411.554		J. D. L.E.		
•	recycle	landfi	ll tonage	O'Ne	elli <b>Re</b>	ARLOAD	a FRO	NILOAD	IRASH	REAR	LOAD RE	CYCLE	pulls	4H-FFA	Pinni	cle Bank E	kpo   BEI	EF PH

#### Measure what matters

- Paper used or conserved
- Waste/ by-products landfilled, reused, composted or recycled
- Water used or avoided
- Food sourced locally and/or organic foods
- GHG emissions produced or avoided
- Food donated or given to animals



# **Full Cost Accounting**

#### Costs

- Supplies- barrels, carts, signs, bags
- Labor- volunteer and staff
- Contracted hauling services
- Disposal fees

#### **Avoided Costs/Revenue**

- Payment for recovered commodities (if any)
- Tipping fees avoided
- Materials not used

### Waste Reduction Strategies

- Reduce
  - Vendors
  - Printed materials
- Reuse
  - Vendors
  - Signage
- Recycle
  - Vendors
  - Attendees
  - Haulers
  - Recyclers



# Recycling

- OCC- Set up a covered storage area(s)
  - Non-waxed cardboard
  - Flattened
- Paper- just flyers, maps
- Cans, bottles
- Glass
- Wood pallets- Vendors take back, or provide specific location; dimensional lumber
- Grease & Cooking Oils- Rendering companies, Biofuels companies; 55 gal. barrels
- Regulated waste- automotive oil, oil filters, fluorescent tubes, batteries



#### **Bottled Water Alternative**



COMPANIA IN

ER REFLILS

#### One is Beer, One is Water



# Organics

#### **Types of materials**

- Animal manure and bedding
- Soiled paper and cardboard
- Vegetative waste e.g. flowers, wood, leaves, etc.
- Food waste
- Compostable flatware, dishware, napkins, bags

#### **Service Provider Concerns**

- Guidelines for contamination
- Types and number of containers
- Location of containers
- Frequency of pulls
- Odor management



### **Food Vendor Requirements**

- List of acceptable items
- List of banned items- no Styrofoam, etc.
- Instructions for use of sorting bins, materials e.g. flatten cardboard, rinse containers, where grease goes
- Standards for compostable ware (if used)
- Location of central recycling containers
- Vendor responsible for removing all other waste upon departure
- Provisions for donating food
- Contact information for vendor liaison
- Liaison speaks to each vendor at start



### **Compostable Products**

- <u>www.bpiworld.org</u>
- ASTM D6400 (plastics)
- ASTM D6868 (coatings)







### Bill Emerson Good Samaritan Food Donation Act

- Protects from liability when food is donated to a non-profit organization
- Protects from civil and criminal liability should the product donated in good faith later cause harm to the recipient;
- Standardizes donor liability exposure in all 50 states; and
- Sets a floor of "gross negligence" or "...knowledge... that the conduct is likely to be harmful to the health...of another person."



### **Exhibitor Requirements**

- Least amount of packaging or remove packaging before distributing
- Compostable "goodie" bags rather than plastic
- Post-consumer paper or highest recycled content paper you can find
- No neon or fluorescent or dark colored paper
- No candy wrappers, energy bars, chip bags, and packaging from pre-packaged food- these are all landfill items



### **Pre-event Publicity**

- Official web site
- Social media
- Press release, newsletters ads, radio, TV, etc.
- Official event printed materials
- Explain what your waste diversion goals are for this year





gagecountyfair How many lbs is this bale of aluminum?? Come on out to Ag Hall and give it a guess. You could win a YEAR of free curbside recycling. #gagecountyfair

¢ Q ⊥	
12 likes	
JULY 25, 2018	
Log in to like or comment.	

#### **During Event - Stage announcements**

"[Event name] is helping to reduce our impact on the environment by *diverting at least* [50%, 75%, 90%] of our waste from the landfill. Help us reduce waste by using the **Resource Recovery Stations** around this event to compost and recycle. Thank you for contributing to a greener [Event name or Community name]."



### **Post-Event - Environmental Benefits**

One ton of paper

- 17 trees
- 380 gallons of oil
- 3 cu. yards of landfill space
- 4,000 KW of energy
- 7,000 gallons of water

Recycled paper uses

- 64% less energy
- 58% less water

One tree can filter up to 60lbs. of pollutants from the air each year



# **Event Management**

- Point person
- Set Up
  - Confirm delivery and P/U times and locations of dumpsters with hauler
  - Review trash and recycling logistics with staff
  - Contact volunteers, set schedules
  - Inventory containers, signs, other materials
  - Reminder to vendors about recycling and materials responsibilities

#### • During the Event

- Master roster for who, what, where, when
- Have phone, walkie-talkie, or contact booth so staff, volunteers and vendors can speak with lead person
- Lead should visit all receptacle sites for issues periodically
- Check on recycling containers to make sure they are being used correctly
- Volunteers should be at Recovery Stations

# **Staffing and Volunteers**

- Recruiting
- Leader
- Training
- Volunteer kit
- Assignments
- Supplies



# **Volunteer Appreciation**

- Reasonable shifts, especially if they want to attend the event
- Confirm all volunteer commitments before the start of the event
- Recruit more volunteers then needed to cover for no-shows
- Give recognition e.g. free pass, tshirt, thanks in event publicity
- Thank volunteers each day and get a commitment for the next day



#### **Material Recovery Stations**



# confusion = contamination ,

zerohero

COMPOS

WASTE

good. green. fun. www.ZeroHeroFue.

RECYCLA





#### Color, consistency, clarity



www.RecycleAcrossAmerica.org



## Recycle Reciclar Empty, Caps On

#### PLASTIC BEVERAGE BOTTLES ONLY



#### Handling Collected Materials



# Handling Full Receptacles

- Where will full bags be taken?
- Will bags be stored? How long?
- Who will measure?
- How often?
- How will materials be weighed?
- Where will materials be weighed?
- Who will record metrics?



Waste Stream	Time	Station #	Weight	Contaminated?	Auditor's Name	Notes
Co-mingled Recycling						
(Plastic, paper,						
aluminum, etc.)						
Total Weight of	f Station Coll	ections				

## How many sorting stations?

Attendees	<100	100- 500	500- 1000	1000- 5000	5000- 10,000
Stations	1-3	3-5	5-8	8-12	12-15

- Quantity of food and materials distributed
- Venue layout
- Venue size



#### **Calculate Diversion Rate**



#### **ZERO WASTE RESULTS**



			Totals in lbs
	Half-Marathon	CO Marathon	
Compost lbs	427	1068	1495
Recycle lbs	239	570	809
Landfill lbs	/1	1/4	245
Total Weight Ibs	737	1812	2549
Diversion Weight	666	1538	2304
Percent Diverted	90.36 %	90.39 %	90.38 % Diverted

# **Final Thoughts**

- Develop a plan well in advance
- Make it easy for attendees
  - Material Recovery Stations
  - Provide clarity
- Support behavior change
  - Gaming or Awards
  - Signage and verbal reminders
  - Direct assistance at recovery stations
- Use technology
  - Apps, digital media, web sites
- Celebrate continuous improvement



'A vision without a plan is just a dream. A plan without a vision is just drudgery...but a vision with a plan can change the world.'