

RECYCLING WORKS: A Tool Kit for Reducing Waste in the Workplace

Commissioned and Grant Funding Provided By:



Prepared Under Contract To:



Prepared by:



In Collaboration With: Mary S. Allen

Introductions

- Christina Seibert, Shaw Environmental, Inc.
 - Project Manager and Solid Waste Planner
 - Nearly 10 years of solid waste and recycling planning experience throughout Illinois and the U.S.
- Mary S. Allen, Solid Waste Agency of Northern Cook County (SWANCC)
 - Recycling and Education Director for SWANCC
 - Since 1995, she has developed and implemented SWANCC's school and community programs and resource materials that focus on reducing waste and toxicity
 - Teaching degree from Florida State University.

Purpose

- Focus on businesses, schools, universities and other institutions
- Provide up-to-date information to evaluate and establish waste reduction programs that are:
 - Compatible with operations
 - Cost-effective
 - Sustainable

Tool Kit Organization

- Designed to operate as a manual for developing and implementing a waste reduction program
 - Background information - importance of waste reduction in the workplace, common workplace characteristics
 - Steps to success – how to develop and implement your waste reduction plan
 - Related sustainable practices

Information Sources

- Previous IRA Recycling Works Toolkit, completed in 2004
- Guidance documents prepared by other agencies or units of government
- Professional experience

Why Reduce Waste?

Environmental Reasons:

- Preserve landfill capacity
- Conserve natural resources
- Conserve energy and reduce emissions



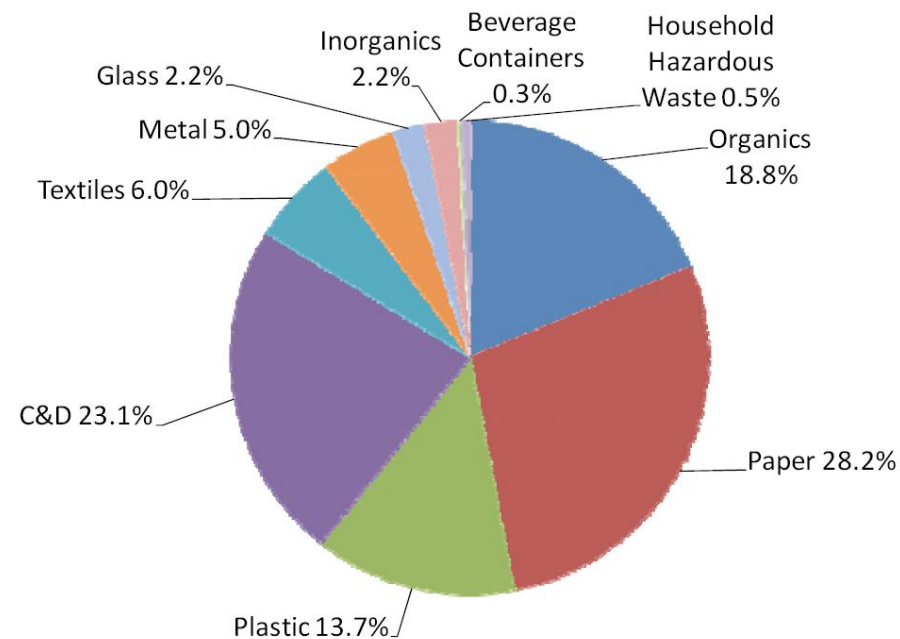
Business Reasons:

- Reduce costs
- Streamline business operations and increase operating efficiencies
- Demonstrate environmental stewardship
- Reduce liabilities



Illinois Waste Stream Characteristics

- Business-sector waste = 54% (10 million tons) of waste generated in state
- Business-sector waste = 46% (7 million tons) of waste disposed in state
- Current diversion = 30%



***Business-Sector Disposed
Waste Composition***

Waste Management Hierarchy



The diagram is an inverted pyramid divided into four horizontal sections. The top section is the widest and is labeled 'Source Reduction'. The second section is narrower and labeled 'Reuse'. The third section is narrower still and labeled 'Recycle/Compost'. The bottom section is the narrowest, forming the point of the pyramid, and is labeled 'Disposal'. The sections are colored in shades of green, with the top being the darkest and the bottom being the lightest.

Source Reduction

Reuse

Recycle/Compost

Disposal

Key Contacts

- Local service offerings and limitations
- Regional and national best practices
- Research and evaluation assistance
- Implementation guidance

Key Contacts

- Local
 - City and county waste and recycling coordinators
 - Waste and recycling haulers
 - Other businesses
- State
 - State agencies – DCEO, IEPA
 - Professional organizations – IRA, ILCSWMA, SWANA
- Federal
 - Federal agencies – US EPA
 - Professional organizations – NRC, KAB, RONA, SWANA

Steps to Success



Step 1. Form a Green Team

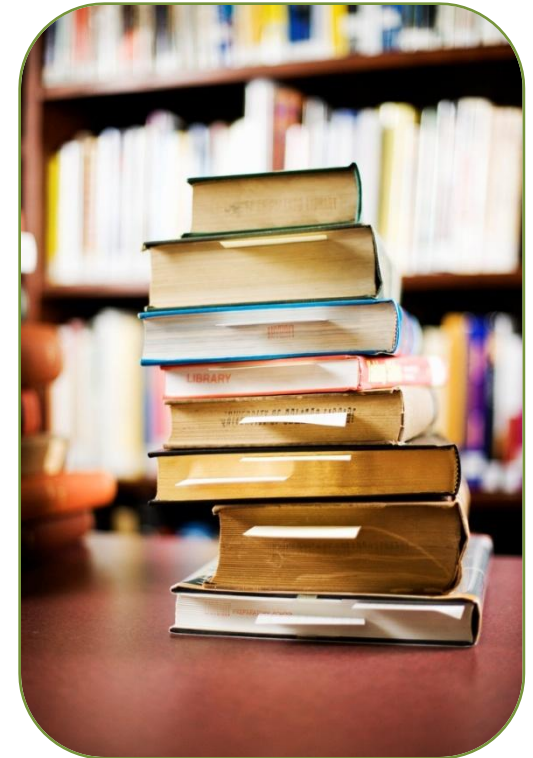
- Leader for waste reduction planning and implementation
- Share responsibilities and make decisions about waste reduction options
- Achieve management buy-in and support
- Resource for other employees / departments post-implementation

T-Shirts for Green Team



Step 2. Do Your Research

- Know your waste stream
- Know the services and markets available
- Consider costs and savings
- Reach out to key contacts



Waste Assessment / Audit

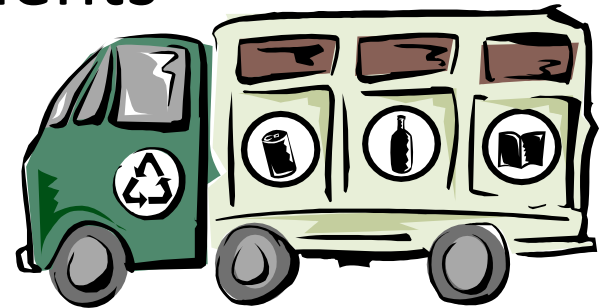
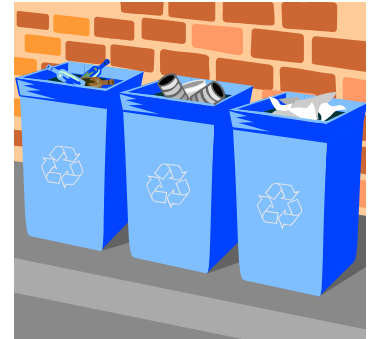
- Informs decisions on what materials to target and how much diversion potential exists
- Quantify how much and what types of waste your business generates
- Identify current waste management and recycling practices
- Identify processes that generate waste

Waste Assessment Options

- Visual observation quickly identifies:
 - Relative quantities of waste, by type
 - Large material streams that may be diverted
 - Overall waste generation and management practices
- Physical sort provides detailed information:
 - Quantities and composition of waste stream, by material type and source
 - Smaller material streams that may be diverted
 - Fine-tune projections of waste reduction quantities

Hauler Services

- Collection containers
- Materials for collection
- Quantity and quality requirements
- Collection process
- Costs
- Regional differences – hauler services tied to business size and market availability



Market Availability

- Separating materials for recycling only makes sense if there is a market for the material
- Location and material quality determine cost/revenue
- Generally, markets are more readily available in urban areas or near major transportation routes than in rural areas

Economic Analysis

- Recycling is a service – it carries a cost
- Source reduction may result in avoided purchasing costs
- Waste reduction results in avoided disposal costs
- Waste reduction may also result in revenues from sale of recyclables
- New costs incurred include:
 - Capital costs for containers, equipment (e.g., balers)
 - Operating costs for labor, collection, container maintenance, education/promotion

Economic Analysis

- \$ Annual savings and revenues
 - \$ Annual operating costs
 - \$ Annualized capital costs
- \$ Net savings (cost) of waste reduction program



Step 3. Evaluate Options

- Options considered based on findings from research
 - Source reduction and reuse
 - Recycling
 - Composting
 - Special and hazardous wastes
 - Green procurement
 - Green meetings

Source Reduction and Reuse

- Source reduction – preventing waste from being generated in the first place, or reducing toxicity of waste
- Reuse – using materials again for the same or another purpose
- Save money by not creating waste (or recyclables) in the first place
 - Consider strategies to reduce consumption of materials
 - Donate or repurpose working equipment / materials
 - Post materials on material exchanges

Recycling

- Recycling – separating, collecting, processing, marketing and remanufacturing a material that would have been discarded as waste
- Requires separation from the waste stream
- Common recyclable materials:
 - Glass
 - Metal
 - Plastics
 - Paper



Assorted Recycling Receptacles



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Composting

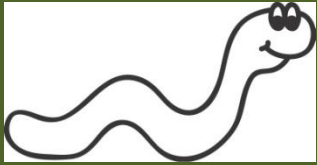
- Composting – converts organic materials (food scrap, yard trimmings, paper) into a dark, earthy-smelling soil conditioner
- Landscape waste banned from Illinois landfills since 1990 – significant commercial composting infrastructure has developed since
- Effective January 1, 2010, food scrap can also be composted in permitted facilities

Onsite Outdoor Composting

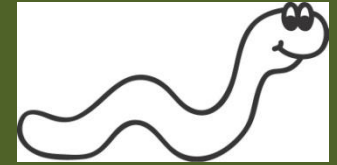
- Important to check local ordinances and permit requirements to determine if onsite composting is allowed
- Outdoor composting bins can be created easily from scrap materials or basic building materials
- Proper mixture of brown (wood, dried leaves) and green (yard waste, food scrap) materials is necessary to achieve quality compost and minimize odors and pests

Outdoor Composting Bins





Vermi-Composting



- Composting with special earthworms
- Worms process food scrap and worm castings contribute to finished compost
- Retail bins are able to handle relatively small quantities of food scrap
- Large-scale vermi-digesters are able to handle much larger quantities of food scrap and organic wastes

Worm Composting Bins



Special and Hazardous Wastes

- US EPA universal waste regulations govern management of:
 - Dry-cell and wet-cell batteries
 - Pesticides
 - Mercury-containing equipment and bulbs
- Electronics increasingly taken back by manufacturers or processing facilities
 - Computers, monitors, printers and televisions banned from Illinois landfills beginning January 1, 2012



Green Procurement

- Green procurement or Environmentally Preferable Purchasing ensures purchase of:
 - Materials with recycled content
 - Recyclable or renewable materials
 - Less toxic materials
- Suppliers can assist in identifying options and provide other waste reduction assistance:
 - Reduced and/or reusable packaging
 - Bulk purchasing

Green Meetings

- Incorporates environmental considerations to reduce waste generation and impact
- Green Meeting Industry Council and BlueGreen Meetings provide many resources
- Reinforces business goals and priorities while potentially reducing costs
- Reduces environmental footprint

10 Easy Tips (by BlueGreen Meetings)

1. Put it in writing
2. Use paperless technology
3. Meet close
4. Practice the 3 Rs
5. Bulk up
6. Lighten your stay
7. Eat green
8. Close the Loop
9. Save energy
10. Spread the word!

Convention Industry Council

- Collected Name Badges – 1,300 attendees, savings of \$975
- Used washable cups, plates, tableware - diverted approximately 1,800 lbs. of plastic from landfill, 5-day event
- Conserved water – no prefill, 2,220 attendees, 3-day event – lunch, saved 520 gallons of water

Step 4. Develop a Plan

- Identify activities (source reduction, reuse, recycling, composting) to reduce wastes
- Seek bids/proposals from service providers
- Identify responsibilities of staff and contractors
- Develop green purchasing and sustainable practices guidelines to support waste reduction plan

Step 4. Develop a Plan

- Identify program costs and implementation schedule
- Purchase and place necessary equipment
 - Collection containers
 - Processing equipment (e.g., baler)

Controlling Program Costs

- Jointly procure collection services
- Self-haul recyclables to drop-off facilities
- Start with large, easily recycled components of the waste stream
- Use simple items such as copy paper boxes or storage tubs for recycling containers and label with simple signage

Step 5. Launch the Program

- Educational materials and tools
 - Staff memos
 - Pamphlets and posters
 - Workshops
 - Display cases
- Promote program outside the business
 - Press releases
 - Encourage participation by customers, clients, patients, visitors, etc.

RECYCLING 101

PAPER

Newspaper (with inserts)
Magazines/Catalogs
• Glossy & Non-glossy
Telephone Directories
Office/School Paper
Advertising/Junk Mail
Kraft Brown Paper Bags
Corrugated Cardboard
Paperboard/Chipboard
• Cereal Boxes
• Pasta Boxes
• Clothing Boxes
• Tissue Boxes

METAL

Aluminum cans
Steel or tin cans

PLASTIC

Check container for number:

PET (#1) Plastic Bottles

- 2-liter soda bottles
- Plastic beverage containers

HDPE (#2) Plastic Bottles

- Laundry detergent
- Milk and water containers
- Shampoo/personal care

Plastics #4, #5 and #7

- Bottles and containers

GLASS

Bottles and jars only
Brown, green and clear glass
Remove lids from containers

RECYCLING PREPARATION

- All materials may be mixed together.
- Rinse all recyclables free of food residue.
- Crush cans and plastic bottles (optional).
- Flatten all corrugated cardboard and paperboard boxes.
- Remove any non-paper packing material.
- Cut corrugated cardboard into 2'x2' pieces.

FOR THE LOVE OF RECYCLING

- **DO NOT** place mirrors, lightbulbs, window glass or ceramics in recycling container.
- **DO NOT** include soiled paper fibers (oily pizza boxes, paper napkins, etc.).
- **DO NOT** place materials in plastic bags.
- **DO NOT** include plastic toys, #6 PS Plastics - styrofoam packaging containers, plastic film and lids or wood of any kind.



Please be sure to verify this information with your hauler.
Information on special recycling collection events can be found at swancc.org.

Recycling the smart way

By Monica Eng, Max Rust and Keith Clanton | TRIBUNE REPORTERS

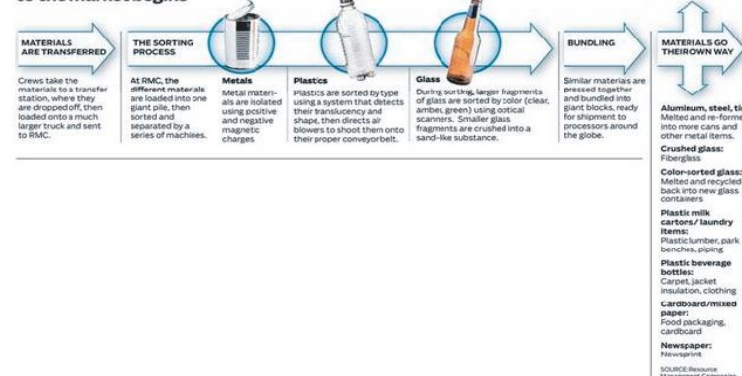
In honor of Earth Day — and spring cleaning season — we asked Tribune readers to submit questions about recycling programs through the Trib Nation blog. Answers to these and other questions below are based on interviews with Cal Tighelehar, the president of Resource Management, which processes recycling from many local communities, and other Tribune reporting.

Common mistakes

At Resource Management Co. (RMC) — which collects Chicago's blue cart recyclables — about 10 percent of the material received cannot be processed and is discarded. Rejected items range from the obscure (mattresses, kiddie pools) to items most people might consider recyclable. A good rule of thumb: If the item is a container for food or laundry detergent bought in a grocery store, it's probably accepted. A look at some of the common items RMC gets that end up in the trash:

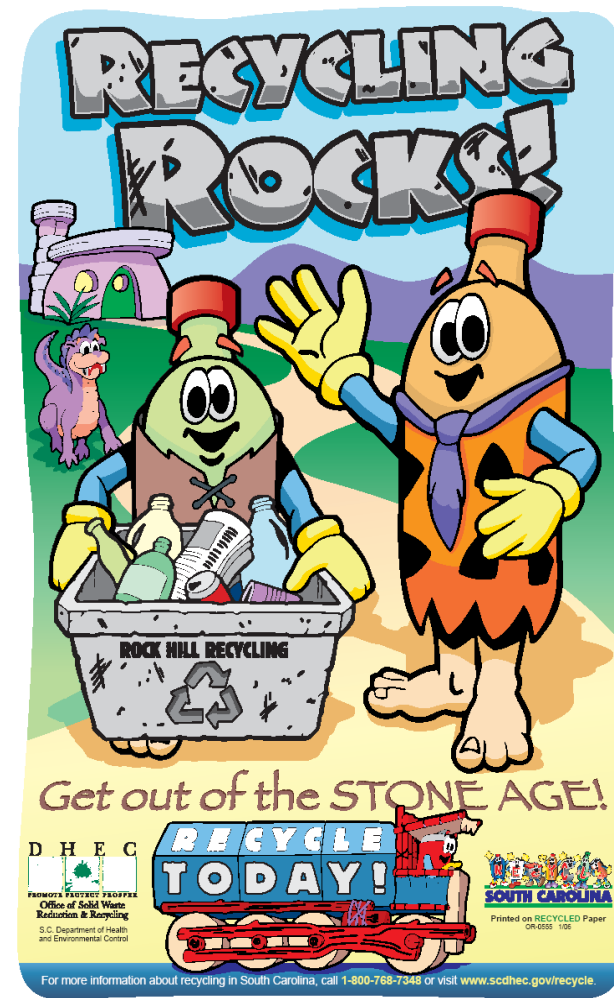


After the bin, the journey back to the market begins



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South Carolina DHEC Posters



RECYCLE for a Repeat Performance



In 6 weeks,
we can be back
on the shelf.

www.illinoisrecycles.org



RECYCLE for a Repeat Performance



Next, We Can Become:

- ♻️ Clothing
- ♻️ Carpet
- ♻️ Backpacks
- ♻️ More Plastic Bottles

www.illinoisrecycles.org



RECYCLE for a Repeat Performance



Yesterday



Today



Tomorrow

www.illinoisrecycles.org



Give-A-Ways



SANDWICH CONTAINER



RECYCLED CURRENCY PENCIL




MAGNET



REUSABLE WATER BOTTLE

Reusable Bag Messages

JUST BECAUSE YOU 
DOESN'T MEAN YOU HAVE TO.



RECYCLE BECAUSE YOU CAN!



"We abuse land because we regard it as a commodity belonging to us. When we see land as a community to which we belong, we may begin to use it with love and respect."

- Aldo Leopold

Step 6. Monitor and Measure Success

- Evaluate performance in first month to identify challenges, problems
- Routinely track diversion quantities and waste quantities to measure and report performance
- Identify opportunities for program modification, enhancement and expansion
- Report successes to employees to encourage continued participation
- Programs can take 6 months to 1 year to become established and show measurable impacts – be patient and persistent

Related Sustainable Practices

- Waste reduction can be part of a larger, comprehensive sustainability program that may also address:
 - Energy and water conservation
 - Reduce greenhouse gas emissions
 - Reduce water consumption and loss
 - Transportation and travel
 - Reduce transportation-related greenhouse gas emissions

What Are YOU Willing To Do To Make A Difference?

“Don’t make the mistake of underestimating the implications of small changes. **Simple doesn’t mean unimportant.** Even the simplest actions can make a difference when multiplied by many.”

Crissy Trask,
It’s Easy Being Green



Thank You!

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