Materials Management for Offices

A Best Practices Guide to Waste Reduction and Recycling

with an introduction to Zero Waste principles

NEBRASKA RECYCLING COUNCIL

A publication of the Nebraska Recycling Council © 2017
Funded by the Nebraska Department of Environmental Quality

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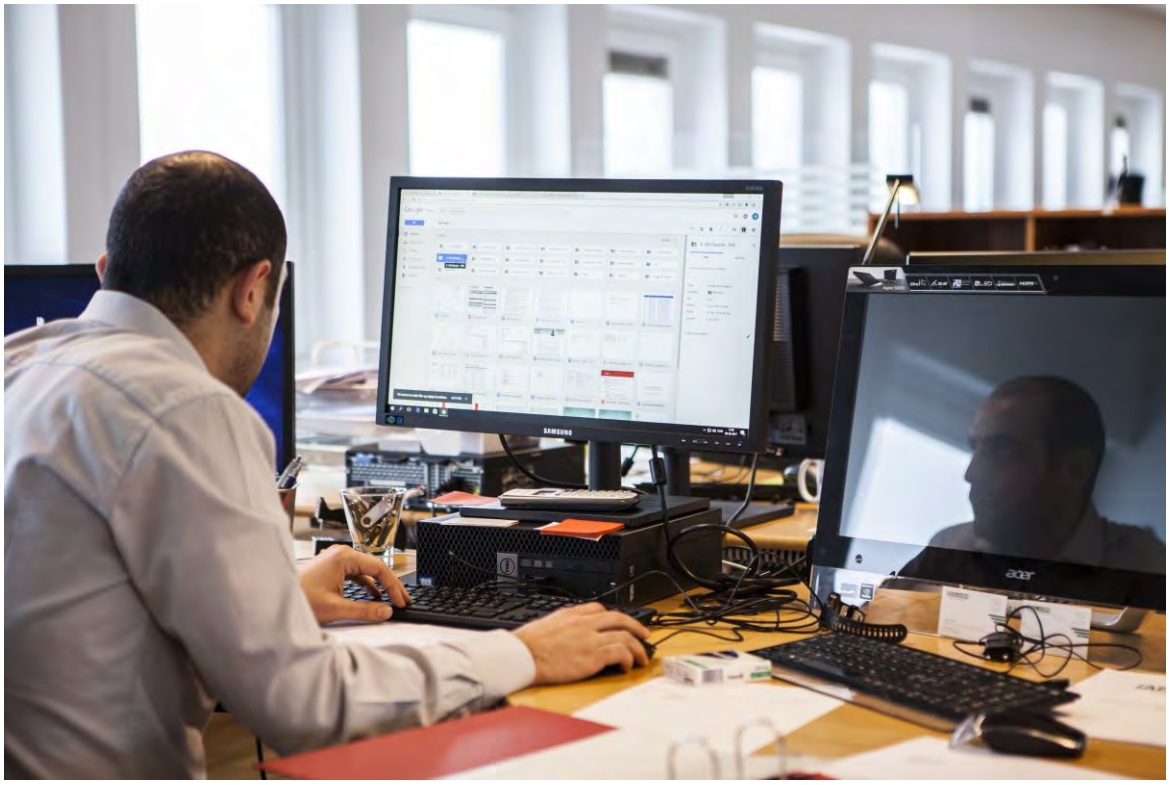


Introduction

The Nebraska Recycling Council created "Materials Management for Offices: A Best Practices Guide for Waste Reduction and Recycling" to provide a simple process for business owners and managers to go from zero recycling to Zero Waste. Moving toward Zero Waste is the goal; but first we'll help you analyze, then design a program that begins with basic waste diversion and employee training.

Offices generate relatively few materials that are hard to recycle. In many cases, substitutes are easy to find, and some processes can be digitized to remove the material footprint. Perhaps the most challenging part of changing your materials management system is employee participation. The best way to achieve participation is to remove barriers and increase perceived benefits of your new system. Ongoing training and communication are essential.

The state of recycling in Nebraska

The State of Nebraska released a *Waste Characterization Study* in 2009 that measured categories of wastes in eight landfills across the state. The main objective of this study was to determine the characteristics of Nebraska's solid waste stream and establish a baseline of waste characterization data for the state. The three largest portions of Nebraska's waste stream were paper fibers at 41.15%, plastics at 19.13%, and food at 16.64%. Combined, these three materials comprised almost 77% of Nebraska's total waste stream.

More than 50% of the paper fibers were easily recyclable, and approximately 27% of the plastics were easily recyclable. Food waste composting options have become more available since the study, although commercial composting services are mostly limited to larger metropolitan areas of the state. (Metals, comprising 3.64% of Nebraska's municipal waste stream, were easily recyclable more than 75% of the time.)

A *Nebraska Recycling Study* was conducted in 2015 to inform policy decisions and establish a baseline to measure progress in the future. The major findings were: "1) Nebraska lags in recycling compared to other states; 2) there are significant gaps in availability and accessibility to recycling in the State; 3) there is not currently a comprehensive plan or strategy to improve recycling in Nebraska; and 4) there are best practices demonstrated to be effective in other locations and in Nebraska communities that could be implemented across Nebraska, leading to reductions in waste and increases in recycling." Nebraska Recycling Study

A few words on Zero Waste

Zero Waste principles are logical and specific, yet taken altogether, they are demanding. The road to Zero Waste is a process that requires commitment, not perfection. Documentation (measurement and tracking) is key to navigating the path to Zero Waste, and it is also good due-diligence for any waste diversion program. Below are the fifteen areas in which a business seeking Zero Waste Certification must earn credits:

1. **Redesign** – right size containers and frequency; restructure waste collection agreements; review nine points of waste generation to eliminate wasting and pursue the highest and best use; review purchasing records and supply chain agreements.
2. **Reduce** – document materials reduced by commodity; have tracking program for materials flows; reduce size/amount of product packaging; go paperless for at least one major office function; duplex printing on all printers; grass-cycle; use native landscaping and xeriscaping.
3. **Reuse** – develop reuse systems; document reused pallets and shipping containers; implement reusable transportation options; reuse office supplies or other materials; reusable/durable service ware; donate food for human consumption; donate food for animal feed.
4. **Compost (Re-earth)** – collect compostables separate from trash; yard trimmings composted; on- and off- site composting of food scraps and soiled paper; utilize/reuse compost or mulch on-site; implement other technologies (e.g. digestion); growing food on-site for company use.
5. **Recycle** – 80% of 12 market categories, follow Highest and Best Use; document markets/uses for recyclables and use locally as much as possible.

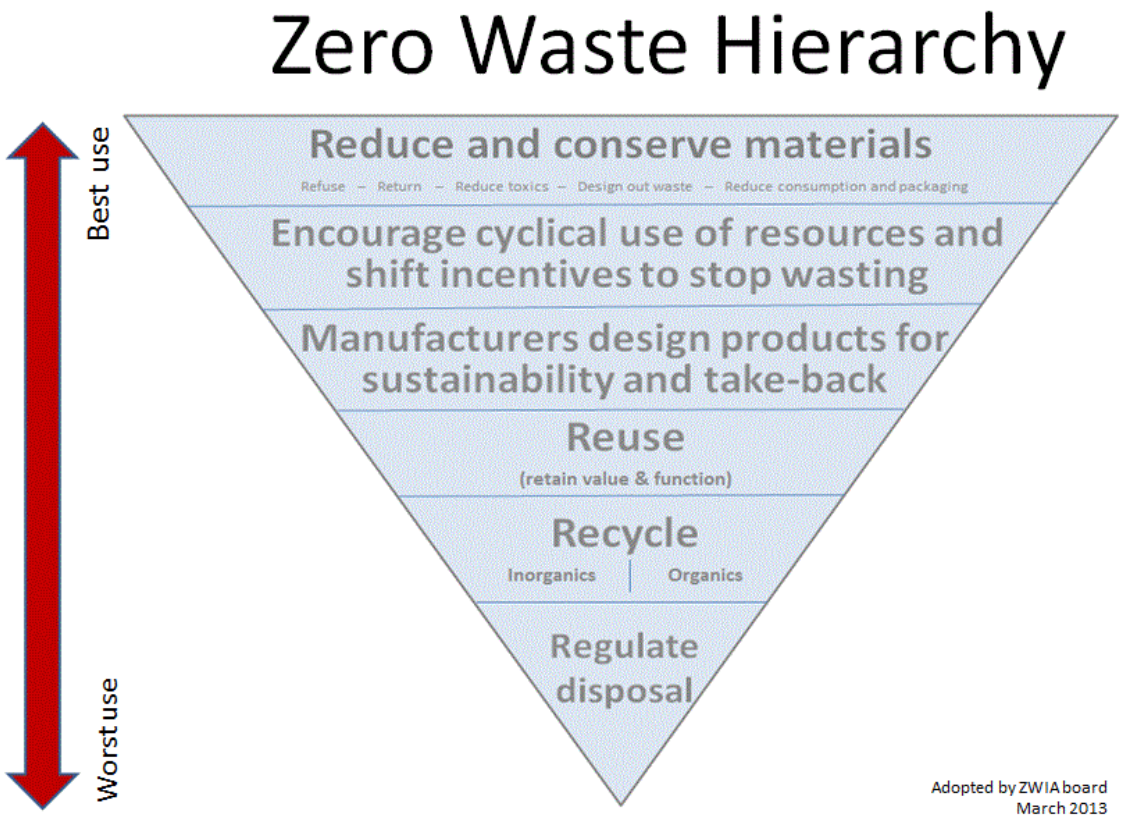
6. **Zero Waste Reporting** – document 90% diversion by commodities; track economics (including avoided costs & material sales revenues); use US EPA WARM Model for Climate Reports; US EPA Waste Wise Program Member.
7. **Diversion from landfill, incineration, and environment** – showing diversion rates above 90%.
8. **Zero Waste Purchasing** – Environmentally Preferred Purchasing policy; durable goods preferred over disposables; prefer sustainably produced paper and wood products; EPP highlighted in purchasing catalogs; purchase as priority used, refurbished, and/or remanufactured goods.
9. **Leadership** – Zero Waste goal adopted by upper management; upper management reviews monthly diversion activities; staff incentives encourage Zero Waste; take responsibility for all products and packaging for all company brands; require suppliers take responsibility for all products and packaging; upper management promotes Zero Waste in the community.
10. **Training** –Zero Waste policy provided to all employees; Zero Waste in orientation; communicate at least quarterly with staff about Zero Waste; clearly label receptacles for recyclables, compostables, and landfill material; training for purchasing agents on EPP preference; Zero Waste responsibility in job description; Zero Waste training on internal website.
11. **Zero Waste Analysis** – physical waste analysis done annually; complete recommendations from waste analysis; complete annual audit of recyclables to ID contamination; rejected recyclables documented as waste; staff engaged in waste analysis.
12. **Upstream Management** – work with suppliers to eliminate non-recyclable packaging; request vendors to be Zero Waste; 100% recyclable packaging policy; work with suppliers to redesign products for reusability/recyclability.
13. **Hazardous Waste Prevention** – hazardous materials properly labeled and stored; hazardous waste manifests saved for at least 3 years; reuse or recycle universal wastes; replace hazardous materials with non-toxics; reuse or recycle universal wastes from employees and/or community.
14. **Closed Loop** – 30% recycled office paper; 20% recycled janitorial paper products; purchase compost from facility that composts your material or from local sources; use local markets as much as possible.
15. **Innovation** – upcycle non-traditional recyclable materials; commit to continuous improvement.

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 Facility Certification

In September 2017, Green Business Certification Inc. (GBCI), the premier organization independently recognizing excellence in green business industry performance and practice globally, unveiled TRUE (Total Resource Use and Efficiency), the new brand identity for its zero waste rating system. The TRUE Zero Waste rating system helps businesses and facilities define, pursue, and achieve their zero waste goals through project certification and professional credentialing.

TRUE is a whole systems approach that helps organizations understand how materials flow through their facilities and identify redesign opportunities so that all products are reused. TRUE-certified projects meet a minimum of 90 percent waste diversion for 12 months from landfills, incinerators (waste-to-energy) or the environment.

TRUE is administered by GBCI and serves as a complement to the LEED green building rating system created by the U.S. Green Building Council (USGBC).

Ready, Set, Go!

Step 1: Gather information

Materials generated in a typical office facility varies by the function of each area. At employee desks, for example, office paper accounts for about 70% of typical office waste. However, employees tend to eat or snack at their desks, so plastic and metal containers, cups and cartons, glass bottles and jars, food waste and food-soiled paper can also be found. The first step is to do some research in your facility.

1. **Find out what's in your trash.**
    a. Visit all areas of your building where waste is generated. List all the recyclables, organics (including soiled paper) and landfill items generated in each area. Include restrooms, storage/supply rooms, office, printing and copy rooms, front desk/waiting rooms, break rooms, shipping and receiving, kitchen and front of house areas.
    b. Organic waste may be more prevalent in your office setting that you realize. This includes not only food waste, but also food-contaminated paper products and paper towels from restrooms that can be composted.
    c. If you already have recycling containers indoors, look at how much material is being thrown away and how well people are recycling. Is trash contaminating your recycling bin or recyclable materials in your trash bin?
    d. Consider a waste audit. The Nebraska Recycling Council can perform a fee-based waste audit for your organization. A waste audit will:
        1. Determine the quantity and type of waste generated.
        2. Provide a baseline from which you can measure progress and set goals.
        3. Identify opportunities for waste reduction, recycling and reusing materials.
        4. Validate the costs and the savings for implementing a waste management plan.
2. **Evaluate the potential for waste reduction.**
   Eliminating waste before it occurs is the top strategy for reducing costs.
    a. Make sure you're buying only what you need. This is especially important with perishable items.
    b. Are there durable, reusable substitutes for some of your materials? Think washable dinnerware and napkins.
    c. Review data from the waste review or audit for ideas. Involve employees in the audit and ask for ideas on how to improve.
3. **Assess your current hauling service.** ** Look at your outdoor trash dumpsters and answer the following questions:
    a. How many dumpsters and what size are they?
    b. How often are they picked up?
    c. How full are they when they are picked up?
    d. Are any of the containers used for recycling?
    e. Are any containers shared with other businesses?
    f. Do you contract directly with a service provider, or is this part of your lease?

Leaseholders**

Contact your property owner or manger to find out what additional hauling services are available. Talk to other tenants in the property to find out if they are also interested in recycling.

4. **Compare hauling services and pricing.**
   Ask your hauler and two others (if available) these additional questions:
   a. What are the different sizes of dumpsters offered and what are the associated costs?
   b. How much is charged each time the dumpster is pulled?
   c. Can they help right-size your dumpsters?
   d. Are there other businesses on this block that use their services?
   e. What materials do they accept for recycling?
   f. Can they provide a separate dumpster for cardboard free of charge? Will they pay you for baled cardboard?
   g. Do they offer organics recycling?
   h. Will their dumpsters be well-labeled according to material?
   i. Are their containers lockable to prevent scavenging, and will they be compatible with your available space?
   j. What is the collection schedule, and are there options to minimize frequency of pickups and transportation costs to haul your waste away?
   k. Can you downsize your garbage service to cover the costs of recycling and composting?
   l. Do they offer on-site waste audits, educational materials and/or training?
5. **Evaluate indoor containers.**
   a. Inventory your current container count by volume (size), color, and location.
   b. Evaluate their usefulness. Are there enough containers? Too many? Could they be placed in alternative locations that are more convenient for users, e.g. high-traffic areas?
   c. To encourage better recycling behaviors, consider the following principles:
      1. Color-code recycling, trash and organics containers. The color standards are: Blue for Recycling, Black or Gray for Landfill, and Green for Organics.
      2. Better signage. Color-coding is essential here too, and signage works best when there is a combination of images and words.

Cooperative hauling

If you are concerned that a new recycling dumpster will not fit in your central collection area outdoors, contact adjacent businesses to find out if they would consider sharing landfill and recycling containers. It might take some trial and error, but it could reduce the number of dumpsters and save money.

Better Signage

Recycle Across America is a nonprofit organization that advocates for easy to understand, consistent labels on recycling containers. They sell high-quality, weather-resistant labels in many configurations that can also be customized.

www.recycleacrossamerica.org

3. Create multi-use stations. Always pair a recycling bin immediately next to every landfill bin. Users need conveniently located, color-coded, and well-labeled bins to make the right choices, or contamination will occur. If organics are being collected, those (green) containers will need to be placed next to the others, too.

6. **Survey employees.** Have your employees complete a survey to help you develop better recycling tools and training programs.
    a. Ask detailed questions about every step of the recycling/composting process from receiving goods to taking materials to the central collection area outdoors to understand which ones are perceived as the greatest barriers to recycling participation.
    b. Ask specific questions about their views on the benefits of recycling, waste reduction, and reuse.

Step 2: Develop an action plan

1. **Determine the scope of your program.** Decide whether to begin recycling a limited menu of items, or include all generated materials in your program.
2. **Review quotes from haulers and select one that best fits your needs.** Ask service providers if they are willing to work with you during a trial period to determine best container sizes and processes.
3. **Consider using a resource management contract.** The U.S. Environmental Protection Agency outlines the standard practices for resource management contracting, including designing a resource management program, developing specifications and request for proposals, and negotiating contracts. Visit https://archive.epa.gov/epawaste/conserve/smm/wastewise/web/html/rm.html
   Through structuring the contract, you can:
    - Establish baseline service levels and performance goals;
    - Encourage input from contractors;
    - Establish transparent pricing for services; and
    - Provide for incentives for increased resource efficiency and reduced waste.
4. **Count and size containers to be purchased and reused.** Look at your container inventory. Now that you know the color-coding standards, start counting how many containers you will need, subtracting the number of containers you already have that can be reused.
5. **Purchase recycling containers and labels.** Nebraska Recycling Council offers recycling equipment grants for containers and labels. Also check with your local municipality about grants and incentives related to recycling containers. For a list of good container companies, visit www.nrcne.org and click on the Buy, Sell, Trade tab.
6. **Advocate for support.**
    a. Report your findings to the manager or building owner and bring them on board. Help them understand that recycling demonstrates your commitment to the environment and the community, has the potential to save money, and is attractive to customers.
    b. Inform employees about your program goals, and ask for their ideas and support. Identify recycling champions amongst your staff.
    c. Review the employee survey results. Which barriers to recycling stand out? How can you make the barriers easier to overcome? What can you do to discourage undesirable behavior and reward the behaviors you want to encourage?
    d. Add recycling/composting tasks and behaviors to job descriptions, employee orientation, employee manual and performance reviews.

7. **Design for Food Waste Diversion.** Commercial composting facilities can process a wide range of organic materials. Check with your local service provider to learn what is acceptable at their facility. Generally, it may include produce, meat, bones, grains, baked goods, cheese, coffee grounds, and food-soiled paper, such as uncoated paper plates, trays and cups, paper towels and napkins, parchment paper, egg cartons, soiled pizza boxes and waxed cardboard boxes.
8. **Reduce waste.** The best way to manage materials is to not use them in the first place. It is a smart approach to saving money and preserving natural resources. Here are some tips:
    a. Set printer defaults to print double-sided.
    b. Encourage employees to print less.
    c. Purchase software that supports digital storage of files and establish protocols.
    d. Replace disposable and recyclable dinnerware with reusables. Install a dishwasher, and encourage employees to bring reusable containers for their lunches.
    e. Reduce packaging waste by purchasing in bulk.
    f. Eliminate unnecessary forms and redesign to use less paper.
    g. Make fewer copies. Share copies and don't make more copies than are needed.
    h. Proof documents on screen and preview before printing.
    i. Use lightweight paper.
    j. Remove duplicate names and out-of-date entries from mailing lists.
    k. Take steps to reduce unsolicited mail.
    l. Design mailers that avoid the use of envelopes (fold and staple the paper).
    m. Use electronic mail and voice mail.
    n. Post announcements on bulletin boards or circulate copies.
    o. Circulate electronic memos, documents, reports, and publications.
    p. Allow printed internal documents to be circulated with legible minor hand corrections rather than retyping drafts.
    q. Print directly on envelopes rather than using labels.
    r. Use rechargeable batteries.
9. **Reuse.**
    a. Donate usable supplies and durable goods.
    b. Collect paper that has been used on one side and reuse as draft paper for scratch pads and copies (in copiers with multiple trays, one tray can be stocked with draft paper).
    c. Reuse envelopes by placing a label over the old address.
    d. Use reusable envelopes for inter-office mail.
    e. Use outdated letterhead for in-house memos.
    f. Reuse file folders.
    g. Shred newspapers and reuse for packaging.
    h. Investigate whether local libraries, schools, hospitals, nursing homes, etc. could use your old trade journals or magazines.
10. **Recycling.**
    a. Don't buy paper that is a contaminant in recycling. These include thermal fax paper and paper with glossy/plastic coatings or plastic windows. Bright-colored paper including goldenrod, paper printed with laser inks, or paper containing adhesive products is not desirable.

11. Purchasing.

a. Adopt green purchasing policies, and use non-hazardous or less toxic cleaning products, recycled content materials, and reusable items.
b. Buy and use paper with at least 25 percent postconsumer recycled content.
c. Purchase products with no packaging, less packaging, or reusable packaging.
d. Look for products in concentrate or bulk form.
e. Request that deliveries be shipped in returnable containers and return cardboard boxes to the distributor.
f. Ask vendors to take back packaging. In some cases, they may be able to reuse it.
g. Prior to recycling or disposing, check to see if anyone can reuse packaging materials. Some mail companies are willing to reuse packaging.
h. Repack in the same cartons that transported materials to the facility.
i. Set up an area for employees to exchange used items.
j. Advertise surplus and reusable waste items through the Nebraska Materials Exchange Program.
k. Rent equipment that you only use occasionally.
l. Use remanufactured office equipment.
m. Invest in equipment that is high quality, durable, and repairable.
n. Avoid items that can't be reused or recycled, like PVC binders and disposable batteries.

Step 3: Set up your program

1. **Set up measurement tools.** Prepare to document amounts of materials you will be diverting from the waste stream and associated costs. If you conducted a waste audit initially, you will have a baseline from which to compare progress. This information will be useful when making future decisions about waste management. This will also be a way to share the results of your new program with staff, providing tangible evidence of the benefits of their efforts. Try the US EPA's WARM tool for entering data.
2. **Set up indoor recycling containers.**
    a. Set up sorting stations where waste is generated and in other high-traffic areas.
    b. Place recycling, landfill and organics containers immediately next to one-another.
    c. Use color-coded bins (or color-coded liners if color-coded bins are not in the initial budget).
    d. Use color-coded labels with images.
    e. Place labels on bins and at eye-level where possible.
3. **Set up an organics collection system.**
    a. Work with your composting company to devise a system for organics collection. They will have requirements with regards to logistics and acceptable materials.
    b. Collect food in dedicated, leak-proof containers that are covered when not in use.

c. Size organics containers so they can hold enough food to be practical but won't get too heavy. (No larger than 5-gallon buckets for manual lifting.)
d. In addition to food and food-soiled paper products (including soiled cardboard), your composting service provider can take coffee grounds, paper tea bags, plant and flower trimmings, and wooden utensils, such as chop sticks, stir sticks, and potentially, compostable plastics.
e. Food waste should be removed at the same frequency as landfill waste.

4. **Set up the outdoor central collection area.**
   a. Place all dumpsters or carts adjacent to one another- landfill, recycling and compost. Contamination occurs when one bin is in a different or more convenient location than others.
   b. Label all carts and dumpsters with color-coded labels to help workers quickly identify where each type of waste belongs.

Step 4: Kick it off!

Train your entire staff to ensure that everyone understands the purpose and goals of the program. A kick-off event (for each shift, where appropriate) is an opportunity to demonstrate what can and cannot be recycled, how to sort, collect and store materials properly, assign responsibilities, and share any changes that will be made in personnel policies.

1. **Employees.**
   a. Share the goals of your program.
   b. Show staff how to recycle and when to compost or landfill with real items from your operations, and include how to process certain items before recycling (e.g. making sure containers are clean and empty). Give employees an opportunity to try it out during training.
   c. Share the importance of keeping materials free of contamination - i.e., only recyclables in the recycling bin and only compostables in the composting bin.
   d. Train staff to safely cut up boxes and lay them flat in the cardboard bin. That will reduce empty space between loosely packed boxes so you can fit more in for each pick up and save money.
   e. Include the central outdoor collection area in your training so employees learn where the correct containers are.
2. **If contractors provide custodial services for your establishment, be sure they are trained as well.** They are key players in the success of your program, and must be informed in order to ensure your recyclables, trash and organics are placed in the proper containers in the central collection area.
3. **Assign a manager or other champion** with the task of monitoring and helping employees, contractors, and customers separate their waste correctly. Provide gloves or grabbers for this person to physically move materials from one bin to another when mistakes are made. Once contamination occurs, others tend to follow the example.

Celebrate Zero

By now, you have accomplished

- *Diversion from landfill*
- *Leadership*
- *Training*
- *Innovation*
- *Hazardous Waste Prevention*

Step 5: Promote your program

Employees and customers are more likely to embrace your waste diversion program if you promote it on a regular basis and make it a part of your company's culture. People love success, so it is worth the effort to celebrate your achievements.

1. **Take advantage of national days to promote your program.** Use Earth Day (April 22) and America Recycles Day (November 15) to celebrate your success.
2. **Highlight the program** on your website and social media, and include recycling/composting information on menus, posters, table tents, door hangers, and flyers.
3. **Partner with your hauler** to help monitor diversion rates and promote your progress.
4. **Appoint champions** on each shift to help employees and customers recycle correctly and keep everyone informed about the progress you have made. Some businesses form green teams to maintain ongoing focus on environmental initiatives.
5. **Inform vendors and clients.** Share your goals, recycling efforts, and progress with vendors and clients.
6. **Share your knowledge** with other business establishments.
7. **Alert local recycling officials** about your efforts. Share milestones as you continue toward zero waste.
8. **Post results.** Let management and employees know how much waste is being diverted by posting monthly or annual results.
9. **Recognize employees** or groups of employees for their efforts in recycling.
10. **Print or type "recycled content"** on products with recycled content.
11. **Post informational signs** near recycling and composting bins to let people know what you are doing and why.

Step 6: Keep it going

Once the program has been launched, be sure to:

1. **Continue staff training.**
    a. Use staff training meetings to add more information about recycling and provide regular updates on progress.
    b. Request feedback from staff regarding contamination or improper handling of materials.
    c. Recognize and reinforce proper recycling and composting efforts by staff.
    d. Train all new employees.
2. **Conduct an annual waste sort** to monitor and identify improvements that can be made.
3. **Gradually eliminate more items from your waste stream**.
4. **Review waste hauling and disposal records and contracts.** Examine 12 months of records to identify fluctuations in the amount of waste produced, and any opportunities to reduce that waste and service fees.
5. **Continue down the road to Zero Waste.** Chances are, you have already begun to tackle Upstream Management, Hazardous Waste Prevention, and Closed Loop to some degree. Bravo! Perhaps Zero Waste Facility Certification is within reach!

Celebrate Zero

Bravo! Chances are that by now, you have already begun to tackle **Upstream Management** and **Closed Loop**, the final frontiers on the road to Zero Waste. Perhaps Zero Waste Facility Certification is within reach!

Acknowledgements

This guide was prepared through research of existing literature, hands-on experience, and interviews. For more information, visit www.nrcne.org. The Nebraska Recycling Council thanks the Nebraska Department of Environmental Quality for funding this guide in 2017.

Special thanks to the following sources:
Hennipen County Public Works www.hennipen.us/businessrecycling
U.S. EPA https://archive.epa.gov/wastes/conserve/materials/paper/web/html/schoolwork.html
https://www.epa.gov/smm/managing-and-reducing-wastes-guide-commercial-buildings
CalRecycle http://www.calrecycle.ca.gov/reducewaste/office/