

Waste Reduction, Reuse and Recycling:

A Guide for Schools in Nevada



Contents

| | |
|--|----|
| OVERVIEW | 3 |
| BACKGROUND | 3 |
| WHAT YOUR SCHOOL CAN DO NOW | 4 |
| WASTE REDUCTION/PREVENTION STRATEGIES | 4 |
| MATERIALS REUSE STRATEGIES | 5 |
| ALL ABOUT RECYCLING | 5 |
| ENHANCING A RECYCLING PROGRAM | 6 |
| APPENDIX A: School Recycling Plan Template | 11 |
| APPENDIX B: Litter Survey | 13 |
| APPENDIX C: Waste Audit | 17 |

This guide will be updated periodically. If you have questions or suggestions for items not already covered in this guide, please e-mail ngoehring@ndep.nv.gov or staff@ktmb.org. We'd love to hear from you!

Overview

If you are reading this guide right now, chances are you are already participating in recycling and solid waste reduction activities at your school. Whether you facilitate the entire recycling and solid waste program as a staff member, or participate in a specific segment of the operation as a student, the information contained in this manual will provide you with useful information about how to begin or enhance waste reduction, reuse, and recycling activities at your school.

Background

There is a tremendous cost to both society and the environment to collect and properly dispose of waste. School districts across Nevada spend millions of dollars on waste collection and disposal every year! In addition, our waste contributes to the growing problem of quickly-filling landfills. So, the less we throw away and the more we recycle the lower our solid waste hauling and disposal costs will be. This can lead to significant savings and, of course, significant benefits to the environment.

You are probably familiar with the 3 R's; REDUCE, REUSE and RECYCLE. However, let's break it down so it applies to a school recycling program.

- The first and most important step is to **reduce** the amount of waste generated as a school; in the classrooms, in the office, in the cafeteria and in the hallways.
- Second, what can be **reused** at school? Paper only printed on one side and cardboard boxes are examples of materials that can be reused for their original purpose or in another way that prevents it from becoming waste.
- Lastly, **recycle** aluminum cans, plastic bottles and containers, glass bottles, cardboard, paper, light bulbs, batteries and any other materials which cannot be reused.
Whatever waste is left gets disposed of in a landfill.

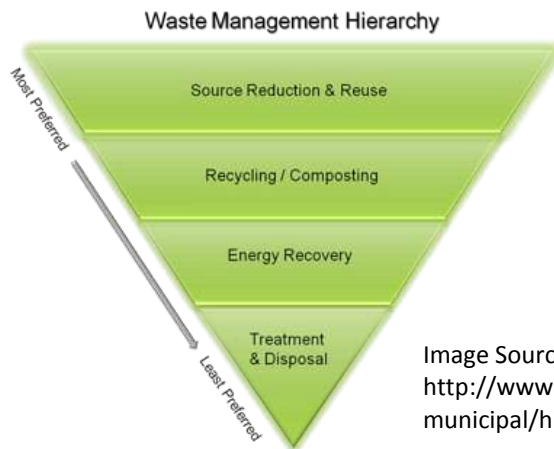


Image Source: EPA
<http://www.epa.gov/solidwaste/nonhaz/municipal/hierarchy.htm>

What your school can do now

- 1. Evaluate:** The first and best thing to do is understand what your school currently recycles and what it throws away. A relatively simple school litter survey (Appendix B) and a comprehensive waste audit (Appendix C) can help you figure this out.
- 2. Plan:** After reading this guide, decide the best approach for a new or improved waste reduction, reuse, and recycling program at your school. Remember that although recycling is an important program component, the greatest environmental benefits are achieved through waste reduction and reuse.
- 3. Implement:** Develop an action plan to implement as many waste reduction strategies as possible and then recycle whatever is left over! Use the School Recycling Plan Template (Appendix A).
- 4. Monitor:** Consider how the cleanliness of your school can be maintained. Create a plan to monitor and track problem areas, and design solutions to make waste reduction, reuse and recycling easier for students and faculty.

Waste reduction and prevention strategies

For administration and faculty/staff

If we don't create waste, then we don't have to store, collect, or haul it away to the landfill or the recycling facility. Waste prevention saves resources by encouraging more efficient use of materials and it reduces pollution associated with extracting raw materials, manufacturing excess items, and disposing of waste. So by practicing waste prevention, we can help the environment and cut costs simultaneously.

To reduce PAPER usage/waste:

- Encourage staff to make double-sided copies and print jobs whenever possible.
- Use electronic means of communication whenever possible and discourage the printing of e-mails.
- Instead of making individuals copies for everyone, use a central bulletin board when communicating information.
- Use reusable envelopes for interoffice mail.
- Limit the number of periodicals and catalogues the school receives.
- Collect single-sided printer and copy machine paper that can be used again.

To reduce PACKAGING WASTE:

- Request that suppliers who deliver products on pallets take them back and reuse them.
- Buy in bulk whenever possible.
- Encourage students who bring their lunch to use a reusable lunch bag, water bottle, and reusable containers instead of a brown paper bag, disposable drink containers and plastic baggies. Strive to have students adopt a "zero- waste" lunch model.

- Use reusable/washable cleaning cloths, aprons, tablecloths, etc., rather than single-use disposable products in the school cafeteria.
- Try to purchase items that have a minimal amount of packaging...avoid things that are shrink-wrapped, overly encased in cardboard, or that contain Styrofoam inserts.

To reduce OTHER MISCELLANEOUS wastes:

- In the classroom, use reusable dishware for class parties. Consider having each student keep his/her own cup, plate, and utensils for events.
- Set up a table at the end of each semester where students can place unwanted pencils, notebooks, etc.—offer these items at the beginning of the next year for students to use.
- Designate a “no-waste” day each month to see how much waste can be reduced. Have the students calculate how much waste was avoided by their efforts.

Materials reuse strategies

You can't eliminate all waste, but you can reuse materials in a creative or efficient way.

- Collect reusable items (e.g., clothing) for donation to local charities or other organizations in need of various materials.
- Maintain a free listing of used musical instruments and sporting equipment in the school newsletter.
- Incorporate the use of reusable materials in your school's art and science program. Host a sculpture or invention contest in which the students make their creations from materials that would have been thrown away or recycled. Display the art or science pieces in a visible place on your school campus.
- Hold a school “swap day” for students and staff. Incorporate the “trade” concept into a history lesson to learn about the development of the bartering, trade, and currency systems throughout the world.
- Think about ways to obtain things that are used or that might be considered ‘waste’ to someone else (remember the old saying—one man's trash is another man's treasure?).

All about recycling

Why do we recycle?

Anything you can't reduce or eliminate should be recycled. There are lots of good reasons to recycle!

- **Recycling is good for the environment!** Anything we take out of the waste-stream and recycle reduces the amount of material going into our landfills and virgin materials we are harvesting or mining.

- **Recycling saves money!** Recycling services are cheaper than trash hauling. By recycling, money is saved through a reduction in the number of trash dumpsters and/or the frequency of trash pick-up.

Your community may not have a recycling service available and you will need to transport materials to a local recycling center, drop-off location, or post office (if using a mail-in program). If you plan to drop off materials at a recycler that pays, recycling may be used as a fundraiser. Note that Nevada does not have a Bottle Bill (cash redemption program), so the value of bottles and cans will be less than in states with Bottle Bills. It is illegal to take bottles and cans into Bottle Bill states such as California for cash.

Enhancing a recycling program

The only way to have a truly successful recycling program at school is to educate and engage custodial staff, principals, teachers, students, parents, and cafeteria staff. Starting a dedicated recycling club is a great way to get the work done and engage the student body in a meaningful way.

Some of the questions that need to be addressed are:

- What materials are we going to collect and from where?
- Who is going to do the collection?
- How often will pickups need to be made?
- Does the school have the sufficient number and type of bins to do the collection? If not, where can they be obtained?
- How are staff time and education time impacted?
- What are the costs? Are there grants or low-cost alternatives available?

Grant Resources:

Grants can help take your program to the next level. Check out the [Coca Cola Bin Grant](#), the [Captain Planet Foundation Small Grant Program](#), and look for businesses or organizations in your community that may offer grants.

Use the School Recycling Plan Template (Appendix A) to document your school's plan. Use the School Litter Survey (Appendix B), and Waste Assessment/Waste Audit forms (Appendix C) to gauge where your efforts need to be focused.

CASE STUDIES: SUCCESSFUL RECYCLING PROGRAMS

Stead Elementary School - Stead, NV

| | |
|-----------------------------------|--|
| Who? | The school’s head custodian has taken the lead on securing and maintaining single-stream (co-mingled) recycling. |
| How? | Custodians empty the blue recycling bins in every classroom 2-3 times per week. |
| Most common items recycled | Paper and cardboard. |
| Most common trash items | Food waste and food packaging (currently, Washoe County School District does not have contracts with composters). |
| Why it works | <p>Strong leadership: A dedicated and enthusiastic custodian is committed to maintaining a high recycling rate. She goes out of her way to find second lives for materials, such as surplus school supplies, and has established a juice pack recycling program in the lunch room (sent to Terra Cycle).</p> <p>Convenient placement of recycling bins: All classrooms have blue recycling bins.</p> |
| Impact | As the largest elementary school in Washoe County School District, this facility produces a lot of trash. However, recycling efforts have allowed for a dramatic decrease in trash service—from three 6-yard dumpsters emptied daily down to one 6-yard and one 3-yard dumpster per week. This is a huge cost savings because trash service was reduced and recycling service is free. |

Sparks High School – Sparks, NV

| | |
|-----------------------------------|---|
| Who? | Students in the Life Skills program and environmental club, with teacher support |
| How? | Students follow established routes when collecting recycling from bins scattered around the school campus. |
| Most common items recycled | Soda cans and cardboard |
| Why it works | <p>Consistent student participation: Life Skills students develop skills while also providing a valuable service to the school. Paired with students in the Enviro Club, they get the job done.</p> <p>Placement in high traffic areas: Bins are placed in classrooms and high-traffic areas and are made more visible through helpful signage.</p> |
| Impact | Students earn money for the environmental club and Life Skills program |

Would these models work at your school? Are there ways in which they could be improved?

What other features make recycling programs successful?

- Participation and education at all levels—teachers, students, administration, custodial staff
 - Share the results of waste audits to motivate participation
- Utilize the results of litter surveys and waste audits to target efforts
- Clear signage, specific bin design, and strategic placement
 - Signage: Use short, simple language and pictures. See <http://www.recycleacrossamerica.org/> for good examples. Not using signage can lead to high rates of contamination.
 - Bin design: Whether your school uses blue plastic bins, or has repurposed cardboard boxes into recycling bins, keep in mind that smaller openings can help reduce contamination. If there are bins specifically for plastic bottles and/or cans, use a lid with a small circular opening. If bins are specifically for paper, use a lid with a long narrow slot. If the contents of a bin are visible (e.g. clear bag), try “seeding” the bin with a few of the items targeted for collection.
 - Placement: Placing recycling bins next to garbage cans is a good strategy for reducing contamination. Make sure bins are in each classroom, along with other high-traffic areas where recyclable waste may be generated (e.g. cafeteria).



Yellow Waste Management dumpsters for single-stream recycling materials. Photo credit: Washoe County School District.

What can schools recycle?

Recycling services vary by location.

Check with your local recycler and/or school district facilities staff to find out what your school can recycle. Recyclers in Nevada's larger communities offer single-stream (co-mingled) recycling collection.

- For Clark County, contact CCSD Recycling Coordinator, Mark Jones at (702) 799-5204 or mljones@interact.ccsd.net.

What about Styrofoam?

Many people think that because Styrofoam trays and cups are labeled with a #6 inside a recycling symbol, they are recyclable. Technically, Styrofoam is plastic (it's called EPS, or expanded polystyrene) and there are places in the country where it can be recycled, but in most parts of Nevada, we do not recycle Styrofoam, so try to limit its use if you can.

What do the little numbers on the bottom of plastic bottles and containers mean?



The number inside the recycling symbol on a plastic container refers to the type of plastic resin the item is made of. For example, if a plastic container has the symbol with the #2, it is made of High Density Polyethylene (HDPE). In many places, there are only certain types -- or numbers -- of plastic that can be recycled. Do you know how to tell what type of plastic you have? Turn over your plastic container and look for the three-arrow recycling symbol. In the center should be a number and that number will tell you whether you can recycle your plastic locally. Plastic bottles are typically #1. Some programs only accept #1 and #2 bottles. Yogurt containers are often #5, which are not accepted in all areas.

What else is recyclable at schools?

Ink and toner cartridges: Many printer and copier manufacturers offer mail-in recycling programs.

Electronic waste (also commonly called "e-waste"): Many school districts have policies in place for recycling of old electronics. These items include computer monitors and CPUs, televisions, VCRs and DVD players, fax machines, etc. You can check with your school district to see what electronics are currently being recycled.

Rechargeable Batteries: Rechargeable batteries come in all shapes and sizes and should always be recycled (instead of thrown away) because they contain heavy metals such as lead

and nickel. [Call2Recycle \(http://www.call2recycle.org/\)](http://www.call2recycle.org/) offers a free collection service for rechargeable batteries and cell phones.

Capri Sun drink pouches, candy and cookie wrappers, and other random stuff: There is a private company called TerraCycle that will pay a small amount (usually 2-3 cents per item) for collected Capri Sun juice pouches, candy and energy bar wrappers and other specific food-related packaging. The company turns these packages into backpacks, handbags, pencil cases, etc. and sells them online or in retail stores. See www.terracycle.net for more details about how to start a collection program.



Foil drink containers can be recycled through Terra Cycle (<http://www.terracycle.com/en-US/>)

Appendix A: School Recycling Plan Template

[Name of School]

[Faculty or staff contact]

Part 1: The basics:

Who is the hauler? _____ Point of Contact: _____

Is your school administration and Housekeeping/Custodial Services aware of your plan?

How many recycling bins are available across the campus? _____

What materials are being targeted for recycling? _____

What signage will be used on the containers to clearly convey what materials are accepted? (Attach copies to this plan) _____

What student group, class, or club is involved in the recycling efforts? _____

What waste reduction policies are in place?

Part 2: Logistics

Central Collection Area(s):

| Type of Material (trash, cardboard, comingled recycling, etc.) | Container Description (type, size, color) | Location of Container | Frequency of Collection | Day(s) of Collection |
|--|---|--------------------------|----------------------------|-------------------------|
| | | | | |
| | | | | |

Internal Collection Process:

| Location* (classroom, hallway, etc.) | Who empties bins? | How often are bins emptied? | When are bins emptied? | Other details |
|---|----------------------|--------------------------------|---------------------------|---------------|
| | | | | |
| | | | | |
| | | | | |

*Attach a campus map that indicates locations of recycling bins and dumpsters.

Part 3: Education/awareness components (check off components that will be utilized regularly):

- School assembly presentation
 - Frequency: _____
- Create recycling guides to post or distribute
 - Frequency: _____
- Include information in school publications/announcements
 - Frequency: _____
- Post information on the school website
- Utilize lesson plans about waste and recycling in the classroom
 - Frequency: _____
- Adopt-a-field program (e.g. a class commits to doing a clean-up on the school's field several times a years)
- Create informational posters

- Recycling and waste reduction competition
 - Frequency: _____
- Conduct a waste audit and/or litter survey
 - Frequency: _____
- Other: _____

Part 4: Looking Ahead

Why is the operation of this school recycling plan sustainable year-to-year? How is the risk of program collapse minimized?

How can the recycling and waste reduction program be expanded in the next 2 years? 5 years?

Will the program be used to raise money? Where will the money go?

How will you monitor success and track volumes?

Part 5: Resources

Complete the chart on who to contact for the following frequently asked questions:

| Issue | Contact |
|--|---|
| Report a missed pickup on my trash dumpster or classroom recycling bin | |
| Find out about school district policies related to recycling | |
| Get approval for major changes made to the campus recycling program | |
| Request technical support for recycling or waste reduction efforts | <p>Keep Truckee Meadows Beautiful, 775 851-5185 or staff@ktmb.org Nevada Recycles, Northern Nevada: 775 687-9466 Southern Nevada: 702 486-2850 x268</p> |
| Ask general questions about school recycling, waste reduction or reuse opportunities | <p>Keep Truckee Meadows Beautiful, 775 851-5185 or staff@ktmb.org Nevada Recycles, Northern Nevada: 775 687-9466 Southern Nevada: 702 486-2850 x268</p> |
| Have a presentation made at my school/classroom | <p>Nevada Recycles, Northern Nevada: 775 687-9466 Southern Nevada: 702 486-2850 x268</p> |
| Find out about additional recycling opportunities, fundraising, and other green schools topics | <p>Keep Truckee Meadows Beautiful, 775 851-5185 or staff@ktmb.org Nevada Recycles, Northern Nevada: 775 687-9466 Southern Nevada: 702 486-2850 x268 GREENevada, GREENevada.org</p> |

Appendix B: Litter Survey

1 “Minimal or No Litter”

- Virtually no litter,
- Presence and use of trash and recycling receptacles is obvious
- 1 or 2 small items in school hallway, cafeteria, school yard, etc.
- Collected quickly by one individual
- Neat and tidy appearance
- No graffiti or vandalism present



2 “Slightly Littered”

- Small amount of litter
- Trash and recycling bins are available, but could be placed in a better location
- You notice some litter that is pretty easy to pick up
- The site can be cleaned in a short period of time
- Little to no graffiti or vandalism



3 “Littered”

- Visible litter catches your eye frequently
- It will take some organization to clean up the site
- It will take multiple people and some time to clean up the litter
- Trash receptacles are available, but are not being used
- There are no recycling receptacles, or they are not being used
- Some graffiti and property damage



4 “Extremely Littered”

- There is a continuous amount of litter
- Litter is the first thing you notice
- There are no trash or recycling receptacles in sight
- Some equipment might be needed to move some of the larger items
- There is graffiti and vandalism at the site
- You get the feeling that someone does not care and has a lack of respect



Litter Survey Scoring Sheet

Area _____ Date _____ Scorer _____

List all litter, types of litter, lack of trash cans and recycling bins, wasteful behavior, graffiti and property damage.

| School Site: | Score (circle score) | | | | Notes |
|--------------|----------------------|---|---|---|-------|
| Location: | 1 | 2 | 3 | 4 | |
| Location: | 1 | 2 | 3 | 4 | |
| Location: | 1 | 2 | 3 | 4 | |
| Location: | 1 | 2 | 3 | 4 | |
| Location: | 1 | 2 | 3 | 4 | |
| Location: | 1 | 2 | 3 | 4 | |
| Location: | 1 | 2 | 3 | 4 | |
| Location: | 1 | 2 | 3 | 4 | |
| Location: | 1 | 2 | 3 | 4 | |
| Location: | 1 | 2 | 3 | 4 | |
| Location: | 1 | 2 | 3 | 4 | |
| Location: | 1 | 2 | 3 | 4 | |

Appendix C: Waste Assessment & Waste Audit

The following material has been adapted from a publication of the Northeast Recycling Council. The original document can be accessed at www.nerc.org.

Waste Audit

A waste audit is a hands-on activity to sort out the types, quantities, and origins of the waste generated in the school. It is a method of determining how much paper, food, and other materials are discarded in the school waste stream. The waste audit presents a qualitative (visual) and quantitative (numerical) look at materials in the school waste that can be reduced, reused, and recycled. Results of the waste audit can be integrated into a wide range of classroom topics and instruction. Having students assist in the audit or view the audit in progress is a great learning opportunity. During the audit materials are sorted into various categories—recyclable paper, beverage containers, plastics, etc. Weights and/or volumes are recorded. Items can be displayed allowing for discussion by students.

Use the attached simplified waste audit form or see NERC's more complex school [waste assessment](http://www.nerc.org/documents/school_waste_assessment_form.doc) and [waste audit forms](http://www.nerc.org/documents/waste_audit_sort_sheets.doc) (http://www.nerc.org/documents/school_waste_assessment_form.doc; http://www.nerc.org/documents/waste_audit_sort_sheets.doc).

School Waste Audit Preparation

Form a waste audit team that includes at least one parent, teacher, and/or staff. Be sure to involve or at least consult with the custodial staff so that they are fully aware of your plans. Their guidance and advice will be helpful.

Weighing and sorting the collected trash from the classrooms, teacher work area, etc. will take 1-4 hours depending on the size of the school and amount of waste. The cafeteria set-up (see below) is designed to avoid having to sort materials.

In order to calculate the school's current recycling rate, fill out separate waste audit forms for landfill-bound waste and waste separated for recycling. After the data has been collected, the rate can be calculated with either of these equations, which divide the quantity recycled by the total quantity of waste generated:

Recycling rate = total weight recycled / (total weight disposed + total weight recycled)

Recycling rate = total volume recycled / (total volume disposed + total volume recycled)

At least Two Days Prior to the Audit

- Announce the audit to all staff, teachers, administration, and students.
- Invite student/classroom participation. At a minimum, one-two students per lunch period to stand by the trash to assist in proper materials sorting would be useful.
- Determine if materials will be displayed for viewing by students.
- Decide on a location to be used for sorting the material. If students are to view the materials a larger area will be needed for display.

- Arrange for supplies: bathroom scale, pen, paper, calculator, nonlatex good quality disposable gloves, hand sanitizer, tarps (for work area and to display materials), and plastic garbage bags or bins.

The Day before the Audit is Scheduled:

- Save all school trash (in bags), *except* cafeteria garbage.
- Store in an accessible area, preferably close to where the audit will be conducted.
- If possible, group the bags by “classroom,” “teacher’s lounge,” “bathroom,” etc. Placing a label--using masking tape or labels—on the outside of the bag, is even better.

The Day of the Audit:

- The audit team begins sorting the collected garbage from the previous day.
- Classroom and office materials are sorted by recyclable paper, beverage containers, useable items, trash (plastics, pencil shavings, broken items, paper towels, etc.)
- Bathroom waste composition can be estimated rather than actually sorted.
- As materials are sorted set items on a tarp for display or place in plastic garbage bags or bins for weighing.
- Record weights by material (recyclable paper, beverage containers, reusable, trash)
- At the completion of the waste audit, individuals conducting the audit must return all garbage to bags for disposal and ensure that the work area is clean.

Tips for conducting the waste audit:

- Depending on the size of the school, it may work best to complete one waste composition form per department, section, or floor.
- If not separating materials collected in bags, but instead looking into individual trash cans, bring along scratch paper to record estimates of materials. Then average the total percentage of the category amounts and record on the form.
- Don’t worry about figuring out the percentages of all materials. Focus on the obvious high-generation materials and materials that can be targeted in the school’s waste prevention and recycling efforts.
- It is important to track the source of generation for materials that are supposed to be recycled or treated as hazardous waste and are still ending up in the trash.
- Don’t be overwhelmed by the categories and recording all the details. The importance of the exercise is to provide a picture of the school’s waste stream that will contribute to a waste prevention and recycling plan—it does not have to be an exact measurement.

Cafeteria Audit

- Prior to the start of the first lunch period, prepare a minimum of five large garbage containers, with liners. These cans will need to be in place during all lunch periods. Extra liners should be available. Students will scrape their trash into these cans, so they should be in the same location normally used for cleanup. Have a scale and paper and pen ready for recording weights.
- Have at least three signs made (the broader the categories, the more sorting will need to be done post-collection):
 - “Compostable: Food Scraps & Napkins”
 - “Trash: [list common trash items such as juice boxes]”
 - “Recyclables: [list acceptable recyclables]”, or use existing recycling

containers

- Milk and other liquids can also be collected separately in a bucket.
 - If the potential for recycling or composting milk cartons is available, separate these; also, some schools may be able to recycle juice cartons as well, so these could be separated.
 - A crate for unopened items, such as milk, uneaten fruit, packaged items, could also be set up.
- Have student and/or adult volunteers stand behind the cans. As students come up to scrape their plates, volunteers can help ensure the trash is sorted correctly. At least one member of the audit team should be on hand to supervise and to weigh and record collected materials. All materials should be weighed separately, by lunch period, and recorded.

NERC's [Rural School Waste Reduction, Recycling, and Composting Tip Sheets, Case Studies, and Webinar Presentations](http://www.nerc.org/documents/#SchoolWaste) are available for free download (<http://www.nerc.org/documents/#SchoolWaste>).

Simple Waste Audit Form

School Name: _____ Date: _____

Participants: _____

Where the waste came from: (circle below)

Cafeteria Office Classrooms Staff Room All Campus Trash Recycling Bins (record recycling data separately)

| Material | Weight (pounds) | Volume (gallons) | % weight of total | % volume of total | Currently collected for recycling? |
|-----------------------------------|-----------------|------------------|-------------------|-------------------|------------------------------------|
| Mixed paper, newspaper, magazines | | | | | |
| Cardboard | | | | | |
| Glass bottles | | | | | |
| Plastic bottles | | | | | |
| Other Plastic Containers | | | | | |
| Plastic Film | | | | | |
| Metal Cans | | | | | |
| Compostable food waste | | | | | |
| Paper towels/napkins | | | | | |
| Electronics | | | | | |
| Other: | | | | | |
| Miscellaneous trash | | | | | |
| TOTAL | | | | | |