



Grade: K-12

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School Zero Waste Guide

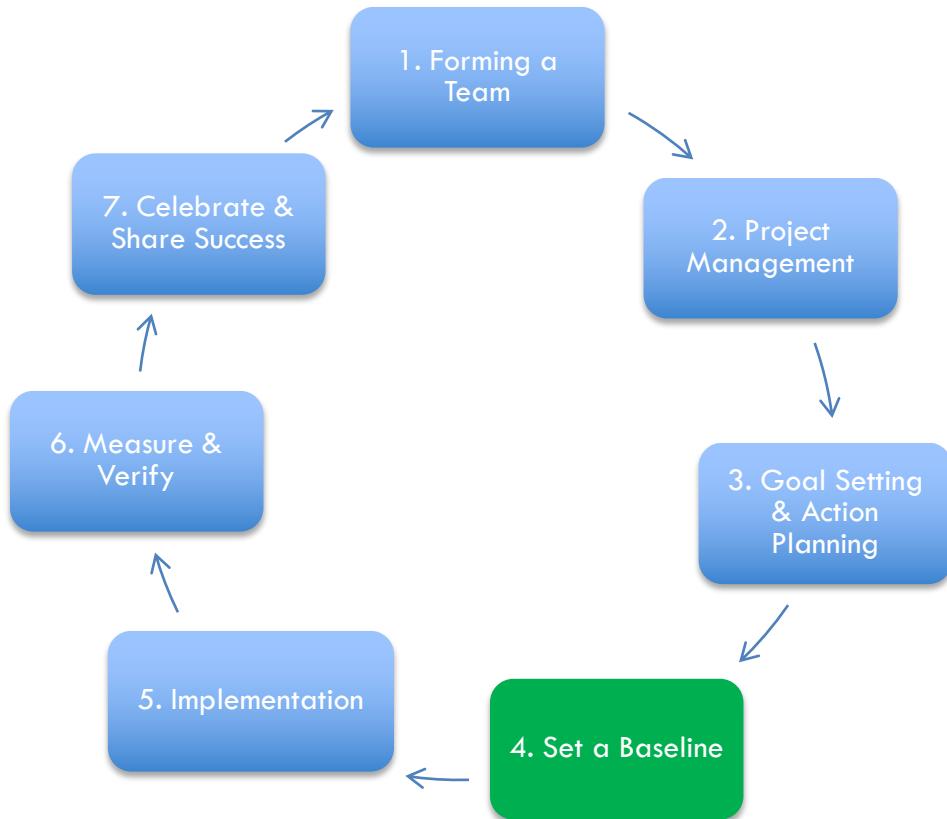
Information and
tools to design and
implement a zero
waste program at
your school



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4. Set a Baseline



Section 4 includes tools to help establish a baseline for your conservation goals. A baseline is the starting point to which you can create a specific goal and compare your results against. Knowing your baseline will help you measure your success!

Assessing Your Resource Consumption

Recall, a baseline is the amount of waste your school currently produces that you can use for comparison. Ideally, your team would conduct at least two waste audits. The first waste audit you conduct will be prior to implementing your conservation measures and will serve as your baseline data. By conducting a second audit after practices have been put in place, you can measure the success of your waste diversion efforts based on the difference between your baseline data and the data you collect after implementation.

Note: There are two major indicators of waste behavior that can be measured in a waste audit:

- The first indicator is the total amount of waste generated within a school, which demonstrates the amount consumed and discarded.
- The second indicator is the percentage of that waste that is correctly sorted – how much of what is thrown away is really “waste” that should go to the landfill versus material that can be productively reused or recycled?

Your Waste

Why conduct a Waste Audit?

- ✓ In 2016, citizens in the United States generated about 254 million tons of trash, with each American generating about 4.4 pounds of trash daily. Only 34.3% of that material was recycled.¹ Fortunately, over the last ten years, the per capita amount of waste generation has begun to level off, and recycling rates have steadily been increasing since the 1960s.
- ✓ In 2018, Americans are generating more trash than ever, especially plastic trash. A whopping 91% of plastic isn't recycled.² Plastic and its byproducts are littering our oceans, waterways, and cities, and contributing to human and animal health problems. If current trends continue, by 2050 there will be 12 billion metric tons plus of plastic on our earth. That amount is 35,000 times as heavy as the Empire State Building. ²
 - Straws – Americans use 500 million disposable straws every day³
 - Packaging – the U.S. sent 10 million tons of plastic packaging and containers to landfill in 2015⁴
- ✓ Recycling and composting at your school play an important role in creating a healthier, sustainable planet. They even help reduce greenhouse emissions. For example, recycling one ton of paper saves 17 trees from being cut down. Each tree helps reduce global warming by capturing and holding carbon dioxide, a major greenhouse gas.⁴
- ✓ The products we produce go through a relatively linear process from extraction to production to distribution to consumption to disposal. For more on this process and how recycling and composting fit into it, check out The Story of Stuff video:
 - <http://storyofstuff.org/movies/story-of-stuff/>



Figure 1. Americans currently generate 262 million tons of trash per year. In 2015, only 34.7% of this waste went to recycling or compost facilities⁵.

¹ Breyer, Melissa, "Trash by the numbers: Starting statistics about U.S. garbage", treehugger, July 1, 2016, <https://www.treehugger.com/environmental-policy/trash-numbers-startling-statistics-about-americans-and-their-garbage.html> (September 25, 2018).

² Parker, Laura, "Here's How Much Plastic Trash is Littering the Earth", National Geographic, July 19, 2017, <https://news.nationalgeographic.com/2017/07/plastic-produced-recycling-waste-ocean-trash-debris-environment> (September 25, 2018).

³The U.S. National Park Service, "The Be Straw Free Campaign", National Park Service, July 18, 2018, <https://www.nps.gov/articles/straw-free.htm> (September 25, 2018).

⁴The U.S. Environmental Protection Agency, "1960-2015 Total Plastic Containers and Packaging MSW by Weight (in thousands of tons)", U.S. EPA, July 19, 2018, <https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/containers-and-packaging-product-specific-data#PlasticC&P> (October 16, 2018).

⁵ Center for Sustainable Systems, University of Michigan. "Municipal Solid Waste Factsheet.", 2018, <http://css.umich.edu/factsheets/municipal-solid-waste-factsheet> (October 16, 2018).

- ✓ Discuss with your waste team your motivation behind conducting a waste audit.
 - Why is it important to talk about waste?
 - Do you think your school has a problem with waste? If so, what do you think it is?
 - What do you think is important for your peers at school to know to change their waste behaviors?
- ✓ Conducting a waste audit can help you identify issues that your school is having with waste and help you track any waste diversion efforts you start at your school.

What do we throw away?

- ✓ There are three main components to waste: trash, recycling, and compost:
- ✓ Recycling is the process of collecting and processing materials that would otherwise be thrown away and turning them into new materials. For example, recycled glass is collected and melted into molten glass. This can then be used to make more glass! Check out this video for more information on the process of recycling glass:
 - <http://www.npr.org/sections/money/2013/06/20/190741862/video-how-a-used-bottle-becomes-a-new-bottle>
- ✓ Composting (also decomposition or biodegradation) is a natural process that breaks down organic matter - anything that comes from a plant or animal. Bacteria, fungus, and a host of invertebrates eat and digest the organic matter in simpler forms of compounds required for primary productivity. A variety of composition and moistures, and physically turning the matter will create a healthy compost mixture. After the organic matter has broken down, it will start to smell like garden soil and it can be added to the garden, spread around landscaping, or given away to student's families to be used in home gardens. Compost adds nutrients and water retaining properties to soil to encourage healthy plant growth. Organic material can consist of things such as banana peels, eggshells, or other biodegradable materials.
- ✓ Trash is any material that does not fit into one of these two categories. Most trash goes to landfills. Any waste that can be diverted from trash to recycling or compost means less is going to landfills!

What does your local waste hauler accept?

- ✓ Different waste and recycling haulers allow for different materials to be thrown away.
- ✓ Research your local waste haulers website to find information about what kinds of materials can be recycled.
- ✓ Recycling variations to look out for:
 - Some recycling companies require sorting between paper and plastic/glass/aluminum. However, other recycling agencies have universal recycling which means you don't have to sort between recyclable materials.

- Plastic recycling can be challenging. Check the number on the bottom of the plastic container to determine if it can be recycled. Most recycling companies do not accept soft plastic/plastic films (e.g. plastic bags, plastic wrap, wrappers, etc.) even if they have a triangle recycling symbol on them.
- Compost variations to look out for:
- Dirty paper (e.g. paper towels and napkins) should be composted, not recycled. Make sure your school bathroom has a compost bin for all of the paper towels.
- Plant-based products like fruits and vegetables are the most common types of compost. However, animal-based products like meats and cheeses can also be composted, but this varies depending on the local waste hauler
- Some haulers accept bioplastics/compostable plastics, and others do not. If you have an organic composting facility, they cannot accept any plastic content – even if it says “compostable”. If your hauler has an industrial composting facility, they can likely take biobags and bioplastics.
- Trash variations to look out for:
- Some materials cannot be thrown out in the usual trash. Products that contain chemicals or biohazards often require special disposal at a recycling center. Examples of these kinds of products include batteries, CFL bulbs, computers, prescriptions, etc.

Understanding your school's waste systems

Before you can begin to implement changes, you need to understand your current system and where there are problems. This guide details the three key components for helping you to identify problems:

- Infrastructure Audit
 - Custodian Interview
 - Waste Audit
- ✓ Infrastructure Audit - Inventory of Bins
- It is important to have an understanding of the current structure of trash, recycling, and compost bins at your school. Use a map of your school to take an inventory of all of the different bins on campus. Use different colors or symbols to indicate the different types of bins. What observations can be made about this map?

Conducting a Waste Audit

Adapted from the National Wildlife Federation's Sample Consumption and Waste Audit

Before your Waste Audit:

- ✓ Waste removal is a group effort! Make sure to keep key parties involved in the process. Many will be able to offer support. In Sections 1&2, your Green Team identified key school and district administration as well as community partners.
- ✓ Contact your local waste or recycling hauler. Many local recycling agencies have community outreach staff that may be able to come to your waste audit and advise on recyclable materials. Your local waste or recycling agency may also be able to assist or advise you on how to implement your conservation and policy efforts after your waste audit. They may have existing signage or sorting details that you can use or draw ideas from.
- ✓ Many waste haulers offer financial incentives for schools to generate less waste and/or improve their diversion rate. Discuss possible benefits of decreasing the total amount of waste generated and the frequency at which waste needs to be collected. This information may help gain extra support from administration and custodial staff.
- ✓ Contact your school administration to let them know your team will be conducting a waste audit.
- ✓ Work with your school custodian. The custodian at your school has the most knowledge about waste on campus and may even have a few ideas about how to increase recycling or composting on campus. Before your audit, interview your school's custodian about waste habits. You'll also need to work with your custodian on what trash, recycling, and composting to save for you to conduct your waste audit.

Custodian Interview:

Before your waste audit, ask your custodian for 15-20 minutes of their time to discuss the current waste structure at your school. The questions below can be used as a guide for what to ask your custodian. You may want to ask additional questions that are more specific to your school.

- How often are the bins emptied? Is there a difference for bins inside classrooms and ones outside?
- Show the custodian the inventory map of the bins you created.
- Are there any additional bins that are not marked on the map?
- Which bins tend to fill up quickly?
- Where would the custodian ideally see the bins? (e.g. More bins in the lunch area? Fewer in the hallways or walkways?)
- Do you have two bins on your cart?

4. Set a Baseline Waste Audit

- Is there enough room in the dumpsters? Do you have a dumpster for trash and recycling?
- Inform the custodian of your plan for the waste audit. Let them know you would like to work with them throughout the entire process. Work with the custodian to coordinate the logistics of the waste audit.

Remember, the custodian is a key person in the waste process at your school. The support of the custodian is critical to the success of your waste program. You should work with your custodian throughout your waste conservation work to ensure the custodian understands the goals of your Green Team. Remind them that you want to educate the school community about their waste in an effort to streamline the waste process and increase the accuracy of sorting at the school.