

# Counting Your Community's Trash

**HOUSEHOLD TRASH:** There are lots of ways to count your "residential wastestream".

**Collection Service Method:** This is the easiest method. Find out how much garbage is collected each week. It is best to determine a volume from how big the trash collection vehicle is, and how full it is. The other way is to count garbage bags.

For a normal big green garbage bag that is full, but easy to tie up, you have about 3 cubic feet (cf) of garbage, and about 22 pounds (lbs) of garbage. So:



**If you count 40 bags, then you have about 40 x 3 cf = 120 cubic feet (cf) of garbage.**

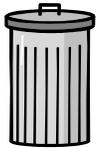
Now you need to find out how many people generated that garbage. If about 80 people live in the collection service households, that means that each person produced:

**120 cf / 80 people = 1.5 cf of garbage each week per person**

If you have a total of 200 people in your village, then, assuming everybody produced the same amount, you have a total of:

**200 people x 1.5 cf = 300 cf of garbage total in one week, and 300 x 52 = 15,600 cf each year**

**The Household Test Method:** This method is best, but it is difficult to do.



- ✓ Get some volunteer households and give them 4 garbage bags.
- ✓ Label two bags: "food" and two bags: "other".
- ✓
- ✓ Tell people to use these bags for their trash for one week. They should throw all their food (preparation, scraps, etc.) in the "food" bags (except for fish scraps for dogs), and all other trash (including food containers) in the "other" bags.
- ✓ Maybe go to the classroom and recruit kids and their families. The kids can have a math lesson and will make sure their families know how to use the bags.

Collect the bags after exactly one week. Then count or weigh them. If you want, add up the food wastes separately from the other wastes. *You can use this method to figure out how much of any type of household waste is produced.* As long as the food waste is separate, it is not too messy to go through the other bags. So you can pull out and count or weigh the type of waste you are interested in. Also, you could mark another bag "paper", or "bottles". But it is hard to get people to separate their garbage into more than 2 bags.

Note- for the houses with lots of people, you may need to supply more bags. You need to get enough households to participate or this method won't work. Try to get a variety of households to participate, but use mostly larger households.

If your community has:	You need this many households to participate:
20 or less households	Try for half, but at least 5 households
Between 20 and 50 households	Try for at 10 –15, but at least 7 households
Between 50 and 100	Try for 15 – 20, but at least 10 households
Between 100 and 150	Try for 20 – 30, but at least 15 households
Between 150 and 200	Try for 25 – 40, but at least 18 households

Remember to count the number of people in those households, so that you can estimate the total amount of garbage. Go back to the  section for help in changing the number of bags to waste volume.

Make sure people understand what they need to do, and *make sure that everyone in the house knows to use the bags.* You may find you need to redo this method. Also – be careful about privacy. If people are uncomfortable, don't go through their garbage – just weigh or count the bags.

**The Dump Method:** Rope off a small section at the dump that doesn't already have garbage in it. Tell people that for one week they need to discard all of their garbage there. Then after one week, count it. The trick to this method is to make sure that everybody knows to dump their garbage there. Also, try placing a big sign on the way to the dump to remind people.

**The Last Resort Method:** If none of these methods work out, assume every person in town produces about 35 lbs of waste each week, or 0.17 cy = 4.6 cf of bagged garbage.

**CONSTRUCTION WASTES:** An average house construction project produces about three and one-half tons



of waste (lumber, porcelain, sheetrock, etc.). A commercial building of about 2,500 square feet produces about 3 to 5 tons of waste. Talk to the project contractor to get the best volume and weight estimate. One ton of construction wastes is about 1½ to 2 ½ cubic yards.

**SEASONAL CHANGES** You may need to adjust for seasons. The businesses can give you a winter total and a summer total. For households, you may need to do the method in summer and winter. Then figure out the yearly total by adding the summer plus winter totals.



**BUSINESS WASTES:** The best way to figure out business waste is to go ask them.



Find out how many bags of garbage they have and add them up. To get the waste volume, see the  section above.

Note – read the  section on the next page before you do this method.

Note- to save time, be sure to check the type and amount of hazardous wastes from each business while you are there. For example, find out how much oil, antifreeze, and other chemicals they ship in, and how much they store, use, and dispose each year. This information will be very helpful in planning for emergency spill and hazardous waste programs.

## BURNABLES



Do you have home/business barrel burning in your Village? Then for all of the above methods, keep track of whether you are counting the unburned garbage that *actually goes out to the dump*, or the total garbage before it gets burned. If you are okay with the in-town burning, then you may just want to figure out how much garbage goes to the dump. If you want to phase out in-town burning because of the health risks, then be sure to count all the garbage before it gets burned. If you don't use a community burnbox or incinerator, but want to, then you should go back to the  method.

Get people to put all their paper, food, and other safe burnables into one bag, and non-burnable garbage in another. Remember, plastic should be considered a non-burnable.

## RECYCLING: If you are interested in recycling, try this:



**Aluminum cans, glass bottles, plastic bottles:** Go to all of the stores. They keep track of how many drink cans and bottles they ship in, so get their numbers. Then add in the amount you think that people might bring in themselves (maybe another 10 percent of the total?).

**Cardboard:** Go to all the stores and ask how many boxes they ship in. Add the number of boxes that the post office gets in. Then add a little more for the boxes that people bring with them on the plane.

**Paper:** To recycle paper, it needs to be clean. So most of the paper is going to come from offices, not homes, where it gets contaminated with food. Ask businesses how many bags of paper wastes they produce. Then go to the  section to change the bag count to a waste volume.

If you are thinking about getting paper from households too, then go to the  section.

Note - you'll need a big education campaign to get households to separate out paper.

## SPECIAL WASTES

After you figure out your household wastes, you still need to account for the wastes that don't go into garbage bags.



**Big Appliances** ("white goods"): Multiply the number of households times the normal number of appliances for a house in your Village. Say you have 40 households with about 2 appliances (a refrigerator and stove), and most people keep their appliances for 20 years

$$2 \text{ appliances} \times 40 \text{ households} \div 20 \text{ years} = 4 \text{ appliances each year are discarded}$$



**Lead-acid batteries:** Multiply the number of households times the number of vehicles (boats, snowmachines, ATVs, trucks, etc.). Then divide by the typical battery life, which is about 4 years. For 40 households, each with about 2 vehicles:

$$40 \text{ households} \times 2 \text{ vehicles} \div 4 = 20 \text{ batteries each year}$$



**Other wastes:** You can use the same approach for other special wastes, like big furniture, tires, and scrapped vehicles.



**Medical wastes:** While you're at it, stop in at the clinic, and see what they do with their sharps, other infectious wastes (gauze, Band-Aids, Kleenex, etc.). Treat these wastes separately.



**Household Hazardous wastes:** Household hazardous wastes take up very little volume. For a decent estimate of the total weight of household hazardous wastes, multiply the number of Village residents by about 1.5, for the total weight in pounds each year.



Careful with your math -- keep track of the units you are using! To change cubic feet to cubic yards divide by 27! To change pounds to tons, divide by 2,000!



**WEIGHT OF WASTES:** Sometimes you'll need the waste weight, especially if you are thinking about shipping out wastes or want to compare your wastestream with another community.

**Regular house garbage:** Change cubic feet (cf) into cubic yards (cy) by dividing the number of cf by 27. Now multiply the number of cy by 200 (there are about 200 lbs of regular garbage in each cy). **OR** you can multiply the number of bags you have by 22 lbs. Each bag has about 22 lbs of garbage.

**Business wastes:** A lot of business waste is mostly paper. For full bags that are mostly paper, each bag will weigh about 15 lbs (lighter if the paper isn't pushed down some). A cubic yard of mostly paper will weigh about 100 lbs.

**Aluminum cans:** 30 cans weigh about 1 pound.

**Glass bottles:** Multiply each bottle by about 0.4 pounds (Each bottle weighs four-tenths of a lb).

**Cardboard:** An average corrugated cardboard box weighs 2.5 lbs. For non-corrugated cardboard, like cereal boxes, figure 8 boxes weigh approx. 1 lb.

**Special Wastes:** The easiest way is to add another 5 percent to your residential wastestream weight. This will include the appliances, tires, furniture, etc., but not vehicles. For a yearly residential weight of 50 tons, multiply 50 by 0.05. This equals 2.5 tons of special wastes.

## ON-SITE WASTE VOLUME:

Want to know how much space you need each year for your garbage? You need the *on-site waste volume* – not the volume in trash bags. Divide the *on-site volume* by how high the waste is piled at your dump. This number is how much area you need each year.

**Normal waste compacted by heavy equipment:** Divide the off-site weight in pounds by 750 to get the on-site volume in cubic yards (cy).

**Burned wastes/ash/construction rubble:** Divide the weight in pounds by 1,000 to get on-site volume in cy.

**Normal waste that is piled up or matted, but no heavy equipment:** Divide the waste weight by 300 to get the on-site cy. Note if your dump wastes are scattered, you will have to figure out how much empty space in-between you have. See WOW Fact sheet # 6: *How to Describe Your Dump*.