

How To Calculate How Many Waste Containers You Will Need For Your Community

The example we will use is to calculate how many dumpsters/trash carts you need for regular household and business garbage.

1. Get the "Specific Weight" of the waste you want to use the container for. The "specific weight" of something tells you how much weight there is in a given volume. In this case it is how many pounds of trash fit in one yard of trash. You can get these numbers from some different tables, determine your own numbers by placing the waste in a known volume container (for example, about four 55 gallon drums equals one yard) , or give us a call and we can help you with a good number. Knowing the specific weight is only important if you have the weight of the waste, but not the volume. If you have the volume of the waste (i.e. how big it is) already, then you can skip to step 2

For regular trash, an average number is about 175 pounds per yard. If people don't push their trash down into the cans or bags, it can be lower - maybe 125 pounds. If they push it down as much as possible and spend a lot of time pushing it down to fit in the bag, it could be 225 pounds per yard.

If you are calculating containers for something besides trash, such as aluminum cans, you'll need a different specific weight. A good way would be to throw all the cans in a 55 gal barrel and count how many it takes to fill it. Multiply that number by 4 (4 barrels = 1 yard). Then divide by 30. (30 cans weighs about 1 pound). That number would be the specific weight of aluminum cans. Make sure the cans are in the condition that the containers will be used for. If all the cans will be crushed, they should be crushed cans that you thrown in the barrel

2. How much of total waste do you need to plan for? In other words, how much of the waste is produced?

For trash, we'll use an average trash generation of 3 pounds per person per day. It is best to use your own waste numbers, but 3 pounds is probably a good safe estimate for non-hub villages.

If your total waste planned for is known by total pounds instead of per person, just divide it by the number of people in your village to get your weight per person. If you have a total volume, divide it by the number of people to get your volume per person. Convert the volume to yards because most waste containers are sized in yards.

3. Determine how much waste volume each person makes on average, using your total waste number and your specific waste number.

3 pounds per person **per day** ÷ (divided by) 175 lbs per yard x **7 days per week**. = 3 divided by 175 x 7=0.120 cubic yards per person **each week**.

4. How much volume of waste for your total population?

If you have 500 people in your village

500 people x 0.120 yards per week = 60 yards per week of garbage.

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5. Determine how many dumpsters. You will need to select the size of dumpster you want and how many times per week it is emptied. Remember, it is easier to get funds for equipment than it is to get funds to pay people. So if you need to lower the time spent by the waste technician, then you will be looking at collecting the dumpsters just once per week. So your dumpsters have to be big, or there has to be a lot of them. As the planner you can try several different ways of calculating, once you have looked at the type of dumpsters/trash carts you want and have seen what sizes they come in.

Example: With 4 yard dumpsters collected once per week:

60 yards of garbage divided by 4 yards divided by 1 collection = 15 dumpsters.

Once per week collection is usually the minimum in summer - but it depends on how hot and smelly and how far away the dumpsters are from people's homes. If you have the labor and resources, you might plan on 2 times per week:

60 divided by 4 divided by 2 collections = 7.5 dumpsters- so 8 dumpsters

Then as a planner you always want to order at least one extra dumpster, 2 if you can afford it - and also be planning which locations might need 2 dumpsters.

If this is not enough dumpsters - when you calculate out - for how far people would have to walk to them - then you would look at smaller dumpsters/carts, but more of them. There is usually an optimal number of the right size dumpsters - if the total cost is too high they end up being hard to get funded. If you select larger dumpsters or more frequent collection, you will need the waste technician to work more. But they may already be working enough time to have this happen. Often, when collection programs are started, or dumpsters placed at the dump entrance, the dumpsite becomes much easier to manage, and so the time is cut down from those duties.



Businesses: Remember - you would want to find out from the schools and businesses about their trash needs too - they probably know really well. The 3 lbs per person per day usually takes into account business wastes, but some businesses like to have their own dumpsters, such as the school and store. Businesses are the ones with all the cardboard. If this is in a separate dumpster, it is easier to divert to a cardboard baler or cardboard logs.

Also see our User Fee Schedule Worksheet (in Excel) at

<http://www.zendergroup.org/docs/user%20fees.xlsx> And our general Collection page on our website for further resources <http://www.zendergroup.org/collection.html>

Questions? Follow the same steps for other wastes or types of containers. If you have questions on how to do this, please let us know. Contact Lynn, Simone, or Shawna at zender@zendergroup.org or call 277-2111.