



SEPARATING YOUR STREAMS WORKBOOK

WHO IS THIS FOR?

Anyone involved in making the decision over what recyclables to collect and how to collect them.

SEPARATING YOUR STREAMS WORKBOOK



FOUR FACTORS TO CONSIDER WHEN DECIDING TO SEPARATE.

MARKETS If a market doesn't exist near you (or at least somewhere you can cost-effectively ship to), you can't recycle that material regardless of reports insisting otherwise. Something isn't recyclable because you generate a lot of it and wish it would go away. Something is recyclable because someone can utilize that to manufacture a new product. If you, or someone between you and the manufacturer, can't get something clean enough for them to use, it isn't recyclable.

What will those markets cost you or pay you? As a general rule, the more purely you can separate your stuff, the more someone will pay you for it. When trying to judge value, try to look at both short term and long-term value. Try to get some long-term info about pricing before making a final decision. Recyclables are a commodity and the price goes up and down (both from month to month and year to year). Don't implement a program when the short-term price is so high that you can't also support it when the price drops.

GENERALIZATION

Contamination by waste generator

Contamination during collection process

Net increase in amount of stuff actually recycled

Revenue back to waste generator

MORE COMMINGLING

Fewer categories = less opportunity for someone to put a recyclable material into the wrong recycling bin

More commingling means more contamination in the recycling process. Depending on how commingled you get, some materials such as soiled paper and broken glass become nearly impossible to cost-effectively separate back out to their highest and best use.

Net increases in actual recycling become much more muted and may even decline (after contamination during collection process is factored in)

More commingling = more middle-men to separate and process materials to make them mill-ready = less revenue back to generator. Also, the more commingled the more likely that some materials cannot be recycled back to their highest and best use, which means even less revenue.

MORE SOURCE-SEPARATION

More categories = more opportunity for cross contamination (recyclable materials put in the wrong bin)

Except for stuff that is cross contaminated as above, more segregation = cleaner more mill-ready material

The purity of material collected from source separated programs typically ensures that more of the material collected actually gets recycled.

The more pure stuff = more mill ready stuff that can be recycled back to its highest and best use = more revenue back to generator

CONVENIENCE TO THE END USER For the waste generator, there are two types of convenience. Recycling has to be easy to do and easy to understand. Interestingly, those two things can be at odds when it comes to deciding how much to separate or commingle your recyclable materials.

All other factors being equal, the more your stuff is commingled into 1 bin, the easier it is for waste generators to put it into the right bin. And the easier it is to do, the more likely someone is

to recycle. However, the more you commingle your stuff, the harder it is to understand what can and cannot be recycled in each category. For example, people know what a cereal box is. If you have a bin that says “recycle your cereal boxes here” people can clearly understand that. If you have a bin that says “mixed paper” or “single stream,” does that include cereal boxes? Many people won’t know and the more they don’t know, the more likely they are to throw something into the trash.

GENERALIZATION	MORE COMMINGLING	MORE SOURCE-SEPARATION
Convenience	Typically more convenient for user More convenient with parallel access and restrictive openings	Typically less convenient for user
Ease of understanding for waste generator	Generally easier to understand At some point though, you lose a reference anchor regarding why or whether or not something is recyclable because the opening ID or label is too generic and vague.	Common, well-understood items like aluminum cans, glass or paper are generally pretty straight-forward Obscure, difficult to understand types of paper can be confusing [e.g. what’s ledger paper?]
Increase in amount of stuff collected for recycling	More convenience and less sorting typically means that more people participate and put more stuff in the recycling bin (not always the right stuff but more stuff)	More sorting and less convenience typically means that fewer people participate and less stuff is put into the recycling bins.

COLLECTION LOGISTICS The more categories you separate recycling into, the more bins you need, and the more trips to the same stop you need.

Keep in mind that the total volume doesn’t necessarily change because of the number of categories that you sort (this often gets a bit misrepresented in the discussion about how much to separate). The limiting factors are the size of the truck or cart that you are using to collect materials in, and the number of people that you are collecting from.

If you have less of something per stop because you have sorted into a lot more categories, then it means you can pick up from more stops before the bin/truck is full and you have to turn around to empty it. There is some increase to pick up more streams, but it is not the linear increase in cost that is often represented in the discussion about collecting single stream, dual stream, or source separated recyclables.

Certain materials (like cardboard) often require special handling because of their size, which makes commingling them with other streams more difficult.

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GENERALIZATION

Number of bins required

MORE COMMINGLING

Less categories = slightly less bins

You still need the same volume of bins to collect the same volume of material.

With fewer categories to sort into, you can typically go with fewer but larger bins. However, safe lifting issues will always limit the size of the bins

MORE SOURCE-SEPARATION

More categories = more bins = but only slightly. You still need the same volume of bins to collect the same volume of material. But with a more source separated system, it does require more bins per collection location [typically more smaller bins]

Ease of understanding for waste generator

You still need the same volume capacity of truck to collect the same volume of material.

The more commingled = the fewer compartments in each truck, which allows you to better maximize the capacity of the truck [not worrying that one compartment fills before the other]

More commingling may allow you to make fewer stops at each location [e.g. with single stream you only stop to pick up one stream at each location. The trade off is that you get fewer stops until the truck is full]

You still need the same volume capacity of truck to collect the same volume of material

Too much source separation can create some collection inefficiencies. It can be difficult to subdivide a truck into different categories and ensure that each compartment of the truck fills up equally. As a result, the truck often has to be emptied without its full capacity having been maximized

CREDIBILITY You may be administering a respectable program that happens to get sorted out at the materials recovery facility. However, when people see all the contents of a recycling station being dumped into one truck, they may get the impression the institution isn't even really recycling at all.

If people believe their recycling efforts are in vein they're less likely to comply in the future. So often, the success of a program lies in the efforts to educate people on some of its finer points and the bigger picture. Give regular updates on the progress of your recycling efforts so they know it's really happening and working.

GENERALIZATION

The extreme case

MORE COMMINGLING

The "good old days" that were very convenient in which we put all our stuff in 1 bin, except that it all went to the landfill as trash

Or "dirty MRFS" that collected everything all in one bin as trash, but then tried to sort recyclable materials out of the trash after it was collected

MORE SOURCE-SEPARATION

The "Recycling in Hell" cartoon from the New Yorker in the early 1990's in which someone is wandering through an endless list of different categories that they had to now sort their trash into

DOS AND DON'TS However you decide to collect recyclables (more commingled or more source-separate) consider the following quick rules of thumb in selecting or designing your bins.

- Make your labels easy to actually see
 - Don't use low-contrast colors for labels
 - Do use high-contrast colors for labels
- Choose labels that are easy to understand
 - Don't use ambiguous language if it can be helped
 - Do use clear, discrete language for your labels
- Use restrictive openings according to waste stream
 - Don't allow for generic square openings for waste, cans and paper
 - Do employ slot openings for paper, circles for cans or "Saturn" shape for commingled
- Minimize contamination by providing end-users with parallel access
 - Don't place a recycling-only bin independent of a waste bin
 - Do place a waste bin next to a recycling bin (or use an all-in-one waste & recycling bin)

GLOSSARY OF TERMS

PARALLEL ACCESS Having the same system for both trash and recycling. Involves co-locating the trash and recycling in visibly different well-labeled bins.

- If you have a trash can without an adjoining recycling bin, too often recyclables will be thrown into the trash.
- If you have a recycling bin without an adjoining trash can, too often trash will be thrown into the recycling, contaminating the recycling and resulting in an entire bin full of recyclables being discarded as trash.

RESTRICTIVE OPENINGS Having different shaped openings that easily communicate which material goes into which container.

- Typically involves long thin slot for paper and round hole for bottles & cans.
- Size of bottle and can hole can be a big issue. Too small and it can't accommodate a standard 2-liter bottle. Too big and it's not obvious that it's a restrictive opening.
- Restrictive slots can also be cut into cardboard dumpsters (a much thicker and wider version of the paper slot). Encourages or forces people to flatten their cardboard box to get it into the dumpster.

DUAL STREAM Collecting recyclables in two categories, typically one for mixed paper (including cardboard) and one for commingled bottles & cans.

DUAL STREAM PLUS A modified version of dual stream in which cardboard is kept separate from either paper or bottles & cans.

SINGLE STREAM Collecting all recyclables (paper, cardboard and bottles & cans) together in one bin and sending to special facility to sort it all out.

ABOUT THE AUTHOR

ROGER GUZOWSKI Roger has spent more than 20 years in the recycling field and has managed award-winning campus recycling programs in both Massachusetts and California. Throughout that time, Roger has been one of the more prolific public speakers about recycling in the country, having presented in almost every region of the country and for a broad spectrum of organizations. Roger has also been a frequent contributor to several recycling list-servs and an author or contributor to several publications and primary writer of Max-R's recycle blog. Roger has played a leadership role in several state and national collegiate recycling councils, and has been actively involved with a variety of recycling organizations including MassRecycle, the California Resource Recovery Association, the Northeast Resource Recovery Association, and the National Recycling Coalition.