

City of Austin – Austin Resource Recovery City-Wide Diversion Rate Study Sampling and Sorting Methodology - Garbage and Recyclables

Sample Selection.

Samples will be obtained from Commercial collection vehicles that have been pre-selected to contain the majority of waste collected within the City.

Once the designated vehicle(s) enter the landfill/MRF, the gate attendant, or other facility personnel, will instruct the driver to proceed to the unloading location, which will be in proximity to that day's active working face for garbage and on a designated area for recyclables. The vehicles selected for sampling will empty their loads in an elongated pile in the designated location. From each pile, the field crew will select one sample from the pile, choosing from different locations for each load. Then 200 to 300 pounds of garbage or recyclables will be extracted from the designated cell and transported to the sorting location. Care will be taken when sampling from the bottom of the pile to avoid collecting any material (dirt and soil typically) from the unloading area.

Bulky items may be encountered in some garbage loads. The use of a grid-selection process to identify whole-sample cells helps ensure that such items are accounted for when encountered. Occasionally, however, bulky items in a sample may result in a sample weight in excess of 300 pounds. Bulky items will be reduced to component parts to the extent possible and be included in the total sample.

Once the sample has been extracted from the pile, it will be transported to the sorting location and deposited on a tarp. The crew supervisor will visually check the approximate weight of the material. If more is needed, it will be obtained from the pile as noted above, or, if too much has been extracted, a portion will be removed and not sorted. The sample will then be sorted as described below.

Once the appropriate amount of material has been delivered to the sorting location, the remainder of the load can be incorporated into the active portion of the landfill or the recyclable's sorting queue, or otherwise removed for disposal.

Sorting Methodology.

Samples will be selected based on the protocol described above. When a sample meets the range of 200-300 pounds, the sample will be photographed and the crew will begin sorting the waste into the appropriate categories listed below. Laundry baskets and/or plastic tubs will be used to hold materials as the sample is sorted. Bags, boxes, and containers encountered in the sample will be emptied and their contents sorted. Wastes containing materials from multiple categories (e.g., a child's electronic toy comprised of paper, plastic, and electronic components) will be sorted into the category with the most weight, i.e., paper and plastic would go to the "mixed paper and materials" category if the weight of the paper was estimated to be more than the weight of the plastic. Recyclable materials that contain multiple categories will be designated as residuals.

The field crew will sort samples to the greatest reasonable level of detail, until no more than a small amount of material remains. Many samples, after being sorted down to five pounds or less, contain small residual pieces of material which are difficult to separate. Material which cannot be further separated will be characterized as "Fines" and recorded as such. This is most applicable to the garbage sort, but could be necessary for the recyclables.

Once the sample sorting is complete, baskets will be visually checked for accuracy and the samples weighed. The weight of any individual items weighing more than 150 pounds will be estimated by the crew, usually by having two or more members lift the object and agreeing on the estimated weight. A visual estimate of the composition of any fines will be made and recorded. Any additional observations

about the sample, such as the presence of bulky items or unusual wastes, will be recorded. Additional photographs of the sorted materials will be taken for quality assurance purposes.

All weights and observations will be recorded in written form on paper data forms. The paper forms will be organized according to category, and each form will have a designated line for the recording of the weight. Additionally, all forms will prompt for the following basic information to be included: Date; Site Location; Sample ID. Space will also be provided for general notations and comments. Once a form is completed, it will be reviewed for completeness and accuracy and compared to the visual observations of the material. Once the form is deemed complete, it will be placed into a folder for recordkeeping.

Once the sample data has been recorded, the sorted material will be placed into a roll-off or similar container provided by the facility for disposal or further processing of recyclables. If the sorted recyclables are to be sent to a processing facility, they can be placed into a separate container if provided.

The following are the sort categories for the material:

TABLE 1. MATERIAL STREAM COMPONENTS		
Material Category	Material Component	
Paper	Mixed Paper	office paper, mail, newspapers, phone books, cereal boxes, boxboard
	Corrugated cardboard	OCC
Plastics	Polyethylene terephthalate	PET (#1)
	High Density Polyethylene	HDPE (#1)
	Low Density Polyethylene	LDPE (#4)
	Rigid/Durable plastics	buckets, children’s toys, lawn chairs, laundry baskets
	Other Plastics	(#7)
Metals	Ferrous metal	Iron / steel, cans
	Aluminum	cans and foil
	Other metals	copper pipe, galvanized tubs, pipes
Glass	Glass bottles and jars	
Compostable Materials	Yard trimmings	grass, leaves, twigs
	Food waste	
	Soiled, Waxed, or Food contaminated paper	
	Wood	other than yard trimmings or C&D (Stumps, large tree branches)
	Other organics/combustibles	dead animals
Reusable / Recoverable Materials	Electronics	
	Construction and demolition (C&D) material	non-painted wood or drywall

TABLE 1. MATERIAL STREAM COMPONENTS

Material Category	Material Component	
	Household hazardous waste	paints, oils, batteries, cleaners, pesticides
	Textiles	clothing, shoes, linens
	Carpet	carpet, rugs, and backing
	Furniture	fixable / repairable
	Polystyrene / Styrofoam	# 6
	Thin Plastic bags	single use bags, vegetable bags
	Thick/Durable Plastic Bags	shopping bags
	Plastic Film	pallet wrap, clean food service film, ziploc bags, vacuum back bags/pouches
	Cartons	gable top cartons, juice or milk containers
	Pallets	
	Tires	
Landfill / Hard to Recycle Materials	Other Glass / Ceramics	broken plate glass, non-container glass, ceramics
	Unfixable Furniture	painted wood, particle board, plywood furniture
	Residuals	diapers, doggie bags, multi-layer material pouches, chip bags, candy wrappers, unknown material