



# **Los Alamos County Solid Waste Audit**

## **Final Report**

Presented to:  
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## **Table of Contents**

Project Summary .....	3
Table 1.1 Sorted Material Totals .....	3
Los Alamos Waste Audit Data Charts .....	5
Chart 1 Sorted Categories as Percentage of Total Weight.....	5
Chart 2 Sorted Categories as Percentage of Total Volume .....	6
Chart 3 Sorted Waste as a Percentage of Total Annual MSW .....	7
National Waste Data Chart .....	8
Assumptions.....	9

## **APPENDICES**

- A. Waste Sort Press Release
- B. Waste Sort Photos
- C. Project Invoice

## Project Summary

On March 25, 2016, a compactor truck dropped mixed MSW on the transfer station floor. Los Alamos County Eco Station staff and Jessi Just Consulting conducted a waste sort on that 6,280 lbs (3.14 Tons) of household garbage. The material sorted represented about 100 households on one route in an urban Los Alamos neighborhood. Staff opened trash bags and sorted material into nine different categories, with the remaining material counted as “trash”.

A general summary of the volume and weight of each category is shown in Table 1.1.

*Table 1.1 Sorted Material Totals*

<b>SORTED MATERIALS</b>	<b>Material Weight (lbs)</b>	<b>Percentage of Total By Weight (lbs)</b>	<b>Material Volume (cu.yds.)</b>	<b>Percentage of Total By Volume (cu.yds.)</b>
<b>Mixed Recycling</b>	400.0	6%	10.0	26%
<b>Cardboard</b>	180.0	3%	1.5	4%
<b>Food Waste</b>	880.0	14%	2.0	5%
<b>Yard Debris</b>	720.0	12%	10.0	26%
<b>Glass</b>	400.0	6%	1.0	3%
<b>Scrap Metal</b>	100.0	2%	0.3	1%
<b>HHW</b>	100.0	2%	0.3	1%
<b>Trash</b>	3200.0	52%	1.0	3%
<b>Electronics</b>	100.0	2%	0.5	1%
<b>Reusables</b>	100.0	2%	12.5	32%
<b>Total Waste</b>	<b>6180.0</b>	<b>100%</b>	<b>39.0</b>	<b>100%</b>

Of the total 6,180 pounds, just 100 pounds was considered HHW. The materials were mostly undried latex paint and stains. Just one potentially dangerous item was found by staff and immediately handled properly. No one was injured and the item looked like a horse or cattle medicine injection needle full of liquid, attached to a medical bag.

In general, it looked like this neighborhood recycled basic household recyclables, because mixed recycling and cardboard were very minimal. As predicted by staff, there was a large amount of yard debris. We also noted that much of the yard debris (as leaves, pine needles, and grasses) went uncounted because it was nearly impossible to separate that small debris from the trash.

All materials were recorded in both volume and weight measurements. Distinguishing the difference between the heavy materials and the bulky materials is very important in goal setting. As you set program goals, you will also want to consider which type of waste is causing more problems, costing more money, or would gain the most benefits from diversion. Diverting heavy materials from the landfill, such as food waste, often save municipalities money in transportation costs and tipping fees. The benefits of diverting bulky materials, such as yard debris and reusables, are saving landfill space and providing a valuable service to residents.

Chart 1 (page 5) shows materials as a percentage of the total weight. The “trash” comprises the largest category by weight. Materials noted in this category were: cat litter, diapers, full cans/package food, grass clippings, and leaf litter – all wet and heavy items. Note, as well, that the original material had been compacted which tends to weigh 2 to 3 times more than the same volume of uncompacted material.

The next heaviest category recorded was food waste. This is common, even at a national level. Recorded in tons, food is the second largest category of waste in the United States. (See Chart 4, page 8). Just one cubic yard of vegetative food waste weighs over 1,000 pounds.

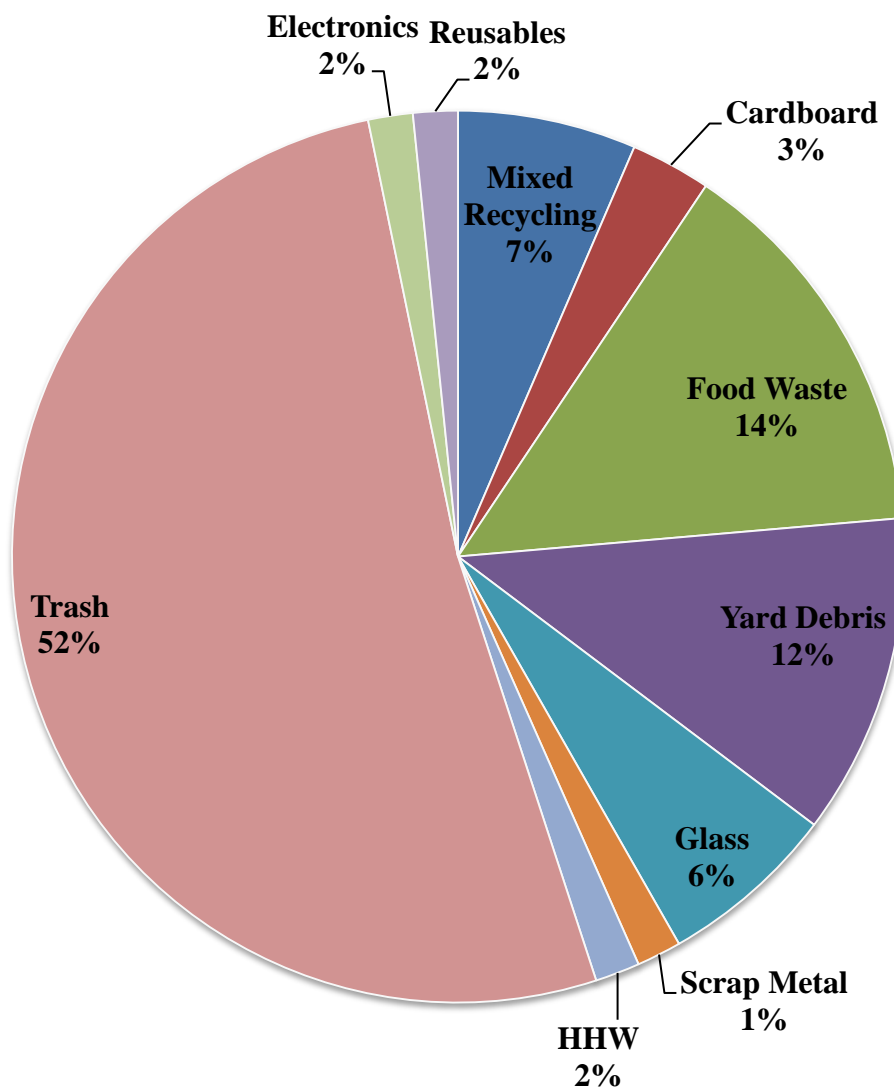
Chart 2 (page 6) shows materials as a percentage of the total volume. You’ll notice that trash has dropped to one of the smallest categories. Mixed recycling and yard debris now make up the largest categories.

Chart 3 illustrates the annual recycling rate, currently at 9%. This percentage was generated by simply dividing the annual tonnage of MSW generated by the annual tonnage of recycling generated (2015).

The pull out section of this graph shows the weight of the sorted material compared to the total weight of MSW generated in Los Alamos County in one year. This is simply a reminder of the small sample size.

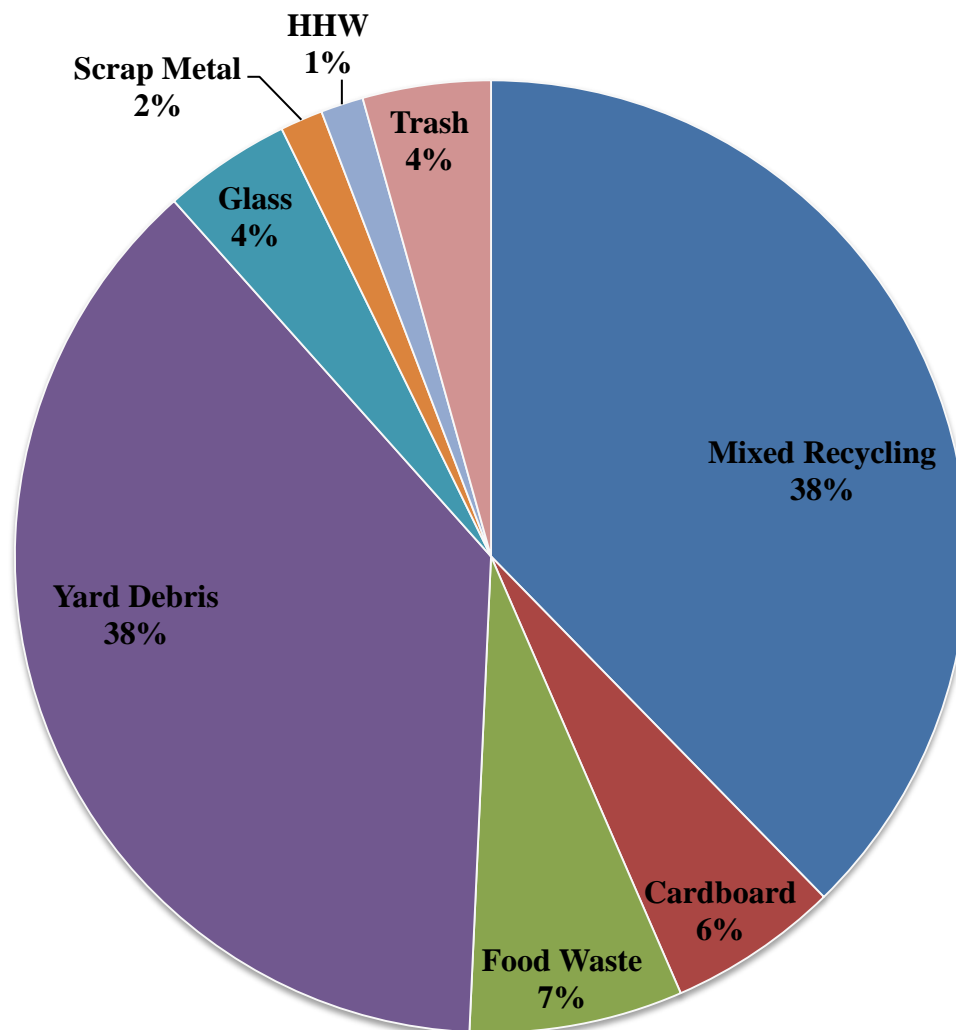
## Los Alamos Waste Audit Data Charts: Chart 1

Sorted Categories as Percentage of Total Weight  
Total Sorted = 7,860 lbs



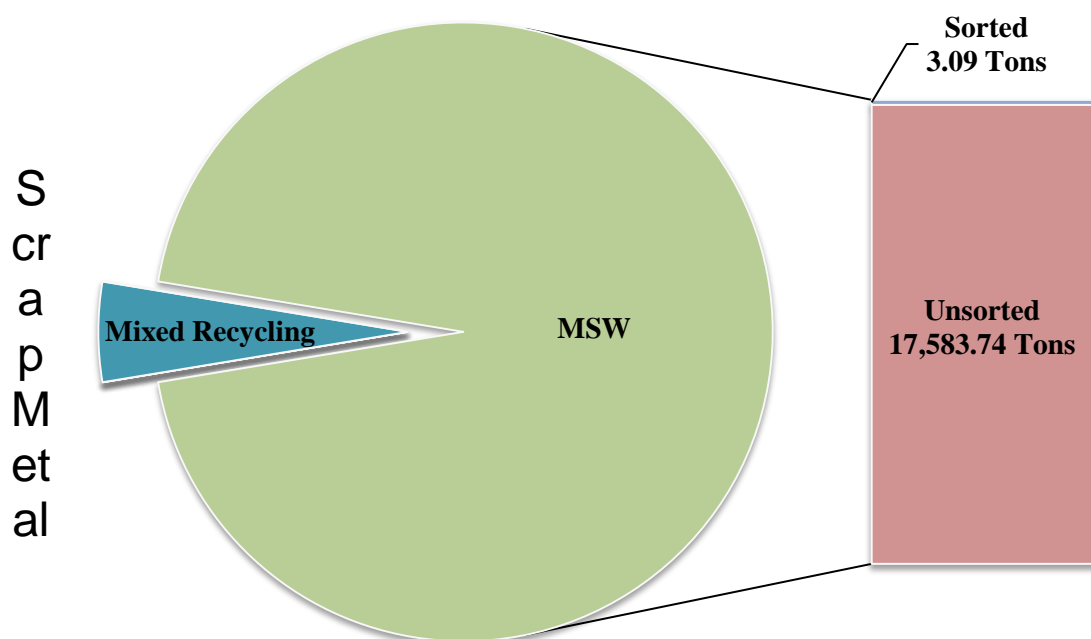
## Los Alamos Waste Audit Data Charts: Chart 2

Sorted Categories as Percentage of Total Volume  
Total Sorted = 39 cu.yds.



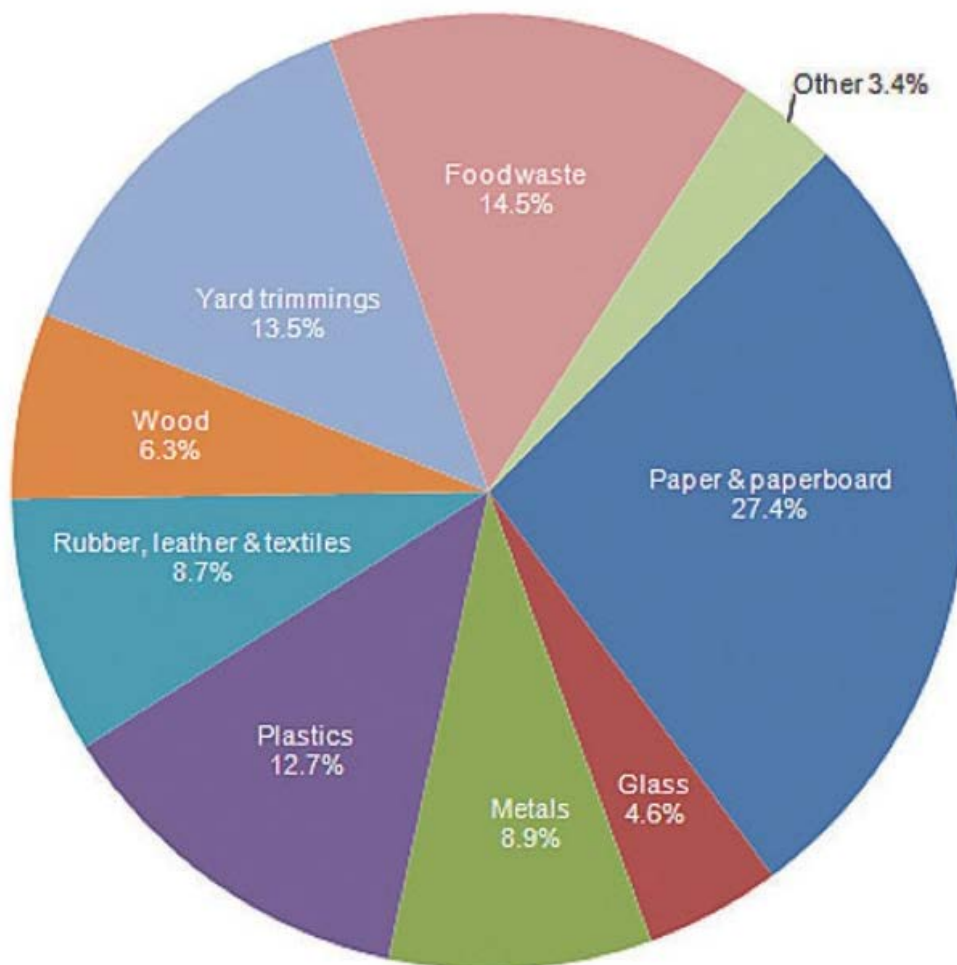
**Los Alamos Waste Audit Data Charts: Chart 3**

**Sorted Waste as a Percentage of  
Total Annual Los Alamos County MSW**



#### National Waste Data Chart 4

### Total MSW Generation (by material), 2012 251 Million Tons (before recycling)





## **Assumptions**

It would not be wise to base any program decisions on so little data from this small waste audit. As we see represented in Chart 3 (page 6), the sorted material is less than 1% of the total amount of MSW through the transfer station annually. With such a small sample size, I cannot recommend program changes or decisions based on the data collected.

I can, however, make some broad assumptions based on information collected during our waste audit and over the course of this project, which may help you to continue growing your recycling program.

**Assumption 1: Continue to host waste audits throughout the year, in order to capture more data and a larger sample.**

There are a variety of ways to conduct audits, from simple to complex. Choosing different waste streams for an audit, such as one neighborhood or only small businesses, can help to gather focused data. Once the focus group is chosen, visual audits can be conducted on some portion, then a waste sort, and even a survey can all help determine what is in the waste and how much. The combination of a focused audit and a simple goal can help move a recycling program forward in manageable steps.

You may also consider conducting random waste audits on loads much like you already conduct inspections. Once a day, an inspection on just one, 96-gallon cart of trash would be about a 21 Ton sample size, annually. In order for this method to be efficient, the audit should only capture data on 1 or 2 material categories.

**Assumption #2: Consider food waste collection in the long-term planning of your yard debris collection program.**

There is a long list of benefits to diverting food waste from landfills. Over 150 cities have begun food waste collection programs because it extends the life of landfills, and saves money in tipping fees, but other benefits are showing. Some cities, like San Francisco, and even rural areas in Iowa have found that it is cheaper to compost than dump food waste because it reduces the risk of potential groundwater pollution and the end product of compost can be reused and resold as fertilizer.

Healthy soil for erosion control, fertilizer on fields, and land remediation is a desperate need in New Mexico, so any municipality that can make good soil from a waste product will benefit greatly.

Asking for a little guidance on site and equipment requirements, options, or planning would be a great first step that would help in goal setting. Start with Joan Snider at NMED (505-827-2780) or Walter Dods at Soilutions (505-877-0220).

### **Assumption #3: Seek ways to increase the Los Alamos County recycling rate.**

It is clear from visual audits on the mixed recycling pile at the Eco Station that recyclers in Los Alamos County understand the rules. Good job! Recycling right is a very important part of our industry – quality in, quality out.

It is also clear from the waste sort data that the residents in this neighborhood were recyclers. This was a very small sample size, however. By using the following formula we can calculate the Los Alamos County recycling rate.

<u>TONS RECYCLED</u>		<u>1762.5</u>	
TONS RECYCLED	= RECYCLING RATE	1762.5	= 11%
+		+	
TONS DISPOSED		17568.83	

In comparison, this is below the New Mexico state recycling rate (currently 16%) and well below the national recycling rate (currently static at 34%).

With such “good” recyclers already on board, this is the perfect time to start seeking new audiences for captivating campaigns, new businesses for the commercial recycling route, and new residents who are hesitating to recycle. Studies have shown that the top 3 ways to increase participation in recycling are: convenience, incentives, and outreach. With audits in focus, this may be a good time to “audit” the outreach program, too. Where is it working? Where could you improve? What new audiences can you reach out to?

April 5, 2016

**Los Alamos County Environmental Services conducts waste audit to answer questions about recycling**

Los Alamos – A Los Alamos County Environmental Services (LAC) compactor truck, half-way through its morning route, came back to the LAC Eco Station to drop 7,860 pounds of trash. On a typical day, this driver would fill the truck with about 20,000 pounds of trash before returning to the Eco Station, but on March 25<sup>th</sup> staff and LAC Sustainability Board President, John Bliss, were prepared for the smaller mixed trash load to arrive.

Dressed in protection equipment from head to toe, staff and volunteers began opening trash bags and sorting material from the huge pile into smaller categories. Food waste, yard debris, mixed recycling, glass and cardboard each had a separate bin. Hazardous waste, electronics and scrap metal were also separated from the main pile. The crew worked fast to determine which recyclable category the material would have gone into before it was mixed with other trash. Once a bin was full, it was weighed on the scale and recorded. Any material that did not fit into these categories was recorded as trash.

By the end of the day, just 6 people had sorted, weighed and recorded 6,280 pounds (3.14 Tons) of the mixed trash pile.

“It’s definitely hard work, but we have learned so much about what is still going into the trash,” noted Angelica Gurule, Environmental Services Manager.

LAC is dedicated to sustainability and providing services which create a better community for current and future generations. Recently, LAC hired Jessi Just (Jessi Just Consulting) to help with a “waste sort”. This activity, combing through trash and sorting into categories, is designed to help identify volume and weight of recyclable materials generated. Data from this activity, and future waste sorts, will be used to grow program services and improve outreach efforts.

“From this sort, it was clear that most people recycle the common materials,” explained Jessi Just. “I was really pleased with the lack of cardboard mixed into regular trash! In order to make clear assumptions based on data, LAC will need to conduct several more waste audits, but this is a great start!” Ms. Just reported.

Ms. Just will document all findings in a report to LAC Environmental Services later this month, but she gave us a sneak peak at some of the largest categories of sorted, divertable material.

Yard debris made up one of the largest categories, at 720 pounds of the total sorted.

“Perhaps citizens are not aware that they can bring leaves, dead plant material and small branches to the Eco Station for recycling? This decaying material is a good nitrogen source for LAC’s composting program, so it’s sad to see so much of it going to waste,” reported Ms. Just.

At 880 pounds of the total sorted, food waste made up the largest category. “This isn’t surprising,” said Ms. Just. “Food waste makes up about 14% of the waste going into landfills, across the nation and contributes to greenhouse gas emissions. Backyard composting is a good idea, even in the desert!”

If you have any questions about recycling and solid waste in Los Alamos County please call the Eco Station at 505-662-8163. Thank you for recycling.

