

# Food Residuals in Dane County Quantities and Sources

## Overall residuals generation

According to waste composition surveys done by consultants for Dane County in 1991-2 and 1994, the amount of food residuals going to landfills is estimated at 27,000 to 32,000 tons a year, with an approximately even split between the residential and non-residential sectors. On a percentage basis, food accounts for 17 to 21% of residential waste and 12 to 14% of non-residential waste.

While the data from the two waste composition studies are fairly consistent with one another, it is known that there are some specific gaps. For example, one of the local dairies periodically brings un-salable yogurt directly to the landfill, and this material was not counted as food residuals. Other food processors and food distributors will also bring in segregated loads of non-salable products to the landfill on an as-needed basis.

In comparison to the Dane County waste composition studies, a report done for the State of Wisconsin estimated that in 2005, food residual generation would be 303,000 tons for the residential sector and 130,000 tons for the non-residential sector. Pro-rated to Dane County on a population basis, this is approximately 32,000 tons a year, exactly the result from the Dane County 1994 waste composition analysis, although the allocations between residential and commercial sectors differ.

Also, the US Department of Agriculture has published a national report on the disposal of food waste. The data provide both total quantities, a breakdown by food type and a breakdown by residential and non-residential sources. They estimate that 48 million tons of food waste are discarded annually in the US, broken down as follows:

Fresh fruits and vegetables	19.6%, 18.9 billion pounds
Fluid milk	18.1%, 17.4 billion pounds
Grain products	15.2%, 14.6 billion pounds
Caloric sweeteners	12.4%, 11.9 billion pounds
Processed fruits and vegetables	8.6%, 8.3 billion pounds
Meats, poultry and fish	8.5%, 8.2 billion pounds
Other dairy	7.2%, 7.0 billion pounds
Fats and oils	7.1%, 6.8 billion pounds
Eggs	2.6%, 2.5 billion pounds
Other	0.7%, 0.6 billion pounds

Prorated to Dane County on a population basis, the USDA numbers work out to 70,000 tons of food residuals for Dane County, about twice what the Dane County waste composition studies found.

Part of the difference may be that the Dane County studies missed non-segregated loads of food as described above. In addition, it is noted that dairy products represent 25% of the material. If in liquid or semi-liquid form, these materials are apt to be sent to the sewer rather than the landfill. Also, home composting and the use of garbage disposal units will reduce the landfilling of much material. So, taking in these considerations, the USDA numbers do not appear to be much out of line with the Dane County numbers.

## Residential generation

Going back to the Dane County data, for the household material, the data for households was 16,700 tons in 1991 and 14,500 tons in 1994. This averages out to about 3.2 pounds for each of the County's 190,000 dwelling units per week.

## Commercial generation

For the commercial sector, an allocation is much more difficult. In 1991, it was estimated that 15,300 tons of food waste were discarded from the commercial sector, while the 1994 study put the total commercial food waste at 12,200 tons discarded in 1994. The following individual types of generators have been identified as perhaps being significant generators of food residuals:

- Bakeries (retail)
- Bakeries (commercial)
- Breweries and micro-breweries
- Convention centers
- Dane County Regional Airport
- Exhibition centers
- Fairs
- Food processors (dairies, Oscar Mayer, etc)
- Grocery stores
- Hospitality industry (hotels, motels)
- Households
- Institutional cafeterias (schools, hospitals, jails, nursing homes, businesses, etc.)
- Restaurants
- Other (parks, recreational events)

In an extensive literature review (see the bibliography), data on per employee generation of food residuals was found for grocery stores, restaurants, bakeries, prisons and other commercial sources. Data was also obtained on the Internet from the US Bureau of the Census on the number of specific commercial establishments (such as grocery stores, restaurants, and bakeries) in Dane County in 1997 as well as the number of employees in these establishments. However, in multiplying the per employee food residual generation by the number of employees, the amount calculated for two of the individual sectors came out to be larger than the total amount of commercial food residuals from the County waste composition studies.

For example, the literature puts the food residual generation at restaurants at between 4.5 and 7.5 pounds per employee per day, with the average at 6.0 pounds per employee per day. For Dane County, the Census Bureau data are that there were 711 restaurants with 14,800 employees. At 6 pounds per employee per day, the amount of food residuals from restaurants would be 16,200 tons a year, which is more than the total amount of commercial food waste found in the Dane County waste composition studies. A similar calculation for the grocery stores put their food waste generation at 13,100 tons based on data in the literature.

It is believed that one of the reasons for this discrepancy is that many of our larger commercial food residual generators are recovering some – or even a major – part of their food residuals, rather than disposing of them. For example, Dane County has an active food bank recovery program through Wisconsin Harvesters and more details will be provided in a later chapter. In addition, when staff was at a local “day-old” bakery, it was found that local farmers took much of the bakery that they could not sell for feed to their animals. And a local micro-brewery has told us that they have a ton of spent malt a week, which goes to local farmer for recovery. It is believed that a significant portion of the commercial and institutional restaurant and grocery store sector also uses food disposal units for at least part of their residuals. For example, a staff person in the environmental management program at the University of Wisconsin said that they dispose of very little food waste, most is processed by garbage disposal units.