New York State Department of Environmental Conservation
Division of Materials Management

Methodology Used to Determine Designated Food Scraps Generators

Food Donation and Food Scraps Recycling Law

In March of 2019, New York passed a statewide Food Donation and Food Scraps Recycling Law (the Law). Under the Law, effective January 1, 2022, designated food scraps generators (DFSGs) are required to donate excess food and recycle remaining food scraps if there is an available facility within 25 miles with capacity. ECL § 27-2211 (1) requires DEC to publish the methodology used to develop the list of designated food scraps generators that are subject to the Law – those that generate 2 tons of food scraps or more per week and that are not otherwise exempted.

This summary provides an outline of the procedures used by DEC to determine the DFSG list.

The New York State Pollution Prevention Institute (NYSP2I), which is under contract with DEC to perform a multitude of tasks to assist with the effective implementation of the Food Donation and Food Scraps Recycling Law, assisted DEC in this effort.

1. Identifying Food Scraps Generator Sectors

There is a wide range of business sectors across New York State. DEC analyzed the various sectors and identified the ones likely to generate large amounts of food scraps. For comparison, DEC also looked at the regulated generator sectors in other states and cities with food scraps recycling laws or mandates in place. For businesses, use of NAICS (North American Industry Classification System) or SIC (Standard Industrial Classification) codes is the most common method to group similar operations and was used to gather data for the various sectors that DEC identified. For non-businesses such as colleges and correctional facilities, publicly available information was used to inform DEC's database.

Ultimately, DEC categorized the generators into the following sectors:

- Colleges and Universities
- Correctional Facilities and Jails
- Full Service Restaurants
- Grocery and Specialty Food
- Hospitality
- Limited Service Restaurants
- Supercenters
- Other Generators

- Amusement and Theme Parks
- Casino and Race Tracks
- Food Wholesale and Distribution
- Malls
- Military Bases
- Sporting Venues

Note: The Law specifically exempts some sectors. Therefore, this methodology did not seek factors to estimate food scraps generation for the following exempt sectors: K-12 schools, hospitals, nursing homes and adult care facilities. In addition, the Law exempts cities with a population of one million or more which have a local law which requires the diversion of edible food and food scraps from disposal. Therefore, generators in New York City are exempt.

2. Choosing Food Scraps Generation Factors

Site-specific information on food scraps generated from all sources is not readily available, or in many cases, not even known by the generator. Therefore, to produce a list of DFSGs, DEC used factors that approximate the food scraps generated based on other known information such as number of employees, students, etc.

NYSP2I at Rochester Institute of Technology (RIT) conducted research per the request of the DEC, to develop draft methodology for identifying and estimating food waste generation rates for business sectors subject to the Law.

To determine the best factor to use for each type of generator, NYSP2I reviewed academic literature, government funded reports, and other information available from non-profits and consultants. After reviewing and assessing these reports, food scraps generation factors were suggested by NYSP2I and approved by DEC. Each factor chosen was qualitatively evaluated, starting with reviewing and assessing the underlying research or other work performed to create the factor estimate. Those factors and sources were analyzed using a variety of criteria: age of study, referencing by prominent sources (e.g., ReFED), validity of estimate generation (e.g., whether there was primary data gathered or the factor was generated from a single data point), how closely aligned the factor was to other estimates for the same category, and conclusions drawn from Center for Ecotechnology's analysis, which is included in its entirety in Appendix A in the report below. The complete analysis can be found in the NYSP2I report here: https://www.rit.edu/affiliate/nysp2i/sites/rit.edu.affiliate.nysp2i/files/docs/resources/NYSP2I_Food_Scraps_Waste_Estimation_Methodology_Guidance.pdf.

Food Scraps Generation Factors Selected for Use:

Colleges and Universities (Postsecondary Schools):

Residential: 142 lb/student/year

Minimum students for 2 tons per week = 1,465 students

Non-residential: 38 lb/student/year

Minimum students for 2 tons per week = 5,474 students

Correctional Institutions:

County Jails/Other: 1 lb/inmate/day

Minimum inmates for 2 tons per week = 570 inmates

State Correctional Facility: 0.65 lb/inmate/day

Minimum inmates for 2 tons per week = 877 inmates

Food Retail:

Supermarkets and convenience centers: 3,000 lb/employee/year

Minimum employees for 2 tons per week = 69 employees

Supercenters: 1,000 lb/employee/year

Minimum employees for 2 tons per week = 208 employees

Hospitality:

Hospitality: 1,983 lb/employee/year

Minimum employees for 2 tons per week = 105 employees

Restaurants:

Full Service Restaurants: 3,000 lb/employee/year

Minimum employees for 2 tons per week = 69 employees

Limited Service Restaurants: 2,200 lb/employee/year

Minimum employees for 2 tons per week = 94 employees

Other Food Service Generators:

Other types of food service generators not listed above (e.g., malls, sporting venues, etc.) provided a unique challenge. There are data sources providing food scraps generation for some of these generators, but the variability is significant because the generators can vary widely in operations. Using these data sources with site-specific information DEC determined which of these entities are likely

DFSGs (generate more than an average of 2 tons/week of food scraps on an annual basis). Due to insufficient data DEC was not able to estimate a specific tonnage of food scraps generated from these entities.

Food Wholesale and Food Distribution: NYSP2I identified a food scraps generation factor for this sector based on number of employees. DEC determined that more research is needed for this sector to obtain more accurate data, especially with respect to the proportion of material that would need to be depackaged prior to being recycled.

Amusement and Theme Parks: Many of these facilities have hotels and/or large restaurants on premises for which there are established food scraps generation factors. In those instances, that data informed the analysis to calculate whether the facility would generate more than 2 tons of food scraps per week.

Casinos and Racetracks: Many of these facilities have hotels and/or large restaurants on premises for which there are established food scraps generation factors. In those instances, that data informed the analysis to calculate whether the facility would generate more than 2 tons of food scraps per week.

Convention Centers and Trade Shows: When available, seating capacity and number of annual visitors and number of employees were taken into account along with food scraps generation factors identified by NYSP2I and NRDC. Data is not consistent across the sector. There is variability due to the number of events that occur at each facility and the amount and types of food available.

Military Bases: DEC contacted U.S. Army Fort Drum to determine foods scraps generation at military bases statewide. Based on the number of personnel and types of activities at this facility compared to other military installations in the State, DEC determined that these other installations generate well below 2 tons of food scraps per week.

Malls: DEC determined malls to be DFSGs when they had a significant restaurant presence, whether it be stand-alone restaurants or larger, established food courts.

Sporting Venues: DEC identified DFSGs in this sector using a publicly available factor for pounds per seat. There is variability due to the number of events that occur at each facility and the amount and types of food available.

DEC will continue to seek additional data sources to refine estimates for food scraps generation for these other food service operations. This data will become more refined in subsequent years as DEC gathers more information on waste generation from various types of generators.

DEC understands there may be additional sectors not captured in this analysis due to lack of available data. DEC will continue to reassess available data on an annual basis.

3. Sourcing Food Scraps Generator Data

In order to determine the DFSGs under the Law, DEC required a database of generators in the sectors, outlined above, including the characteristics of those generators (e.g., address, type, number of employees, etc.). NYSP2I researched available public and private databases available for this purpose. D&B Hoovers (Hoovers) was selected as the database available that could be used to identify DFSGs. NYSP2I obtained the database from Hoovers and used other publicly available data (e.g., college student population data, etc.) to produce an initial database of DFSGs and other generators for review by DEC.

4. Finalizing the DFSG List

DEC reviewed the preliminary list of DFSGs provided by NYSP2I. Although the underlying database, Hoovers, is useful for many analyses of businesses, a review of each individual generator illuminated that there are a number of errors that needed to be rectified. DEC spent significant time “cleaning” the database – removing duplicates, moving generators to the correct sectors, removing generators that are no longer in operation, etc. In most cases this required a web search of each generator listed, and in some cases contacting the generators directly.

This resulted in the DFSG list that DEC used to identify which businesses and institutions were required to donate and recycle food scraps.

5. Food Processing Waste Generators

Food processing operations can qualify as DFSGs under the law. Due to the highly variable and proprietary nature of these operations (e.g., size, type of food processed, nature of the waste – liquids versus solids, etc.), there are no factors that readily indicate how much food scraps are produced. Much of this waste is already recycled through animal feed, land application, and other means. To assist with the implementation of the law for food processors, DEC has contracted with Cornell University’s PRO-DAIRY Environmental Systems Team (DEST) to educate and assist farmers considering recycling methods (I.e., anaerobic digestion and/or animal feed) for food processing wastes and brewers residuals.

6. Next Steps

DEC will continue to refine these food scraps generation estimates based on new and revised data sources. Data continues to improve as other states and municipalities implement food scraps recycling law and mandates, and revise food scraps generation estimates based on data collected. In addition, feedback from generators and data from

annual reports submitted by DFSGs will help guide updates to the factors used to estimate food scraps generation from the various sectors.