

# Foodservice Best Practices

(Restaurants, Schools, Universities, Event Venues, Stadiums, Correctional Facilities)

for identifying and measuring food waste

## 1 Introduction

After conducting multiple food waste studies at medium to large NY food waste generators (hospitals, grocers, universities, and catering event venues), New York State Pollution Prevention Institute (NYSP2I) developed a 12-step Food Waste Self-Assessment How-to Guide (How-to Guide). To address the unique needs of foodservice operations in **restaurants, schools, universities, event venues, stadiums, and correctional facilities**, NYSP2I developed three (3) additional resources; a printable **Foodservice Log Sheet** to use during the assessment, this **Foodservice Best Practices** document, and a Microsoft Excel **Foodservice Results** file.

This Foodservice Best Practices document expands upon the How-to Guide by providing:

- Guidance for successfully using the **Foodservice Log Sheet**, including examples.
- Food waste study **best practices** for restaurants, cafeterias, and event venues.
- Instruction and examples on how the **Foodservice Results** file may be successfully used.

## 2 Why conduct a food waste self-assessment?

- Knowing the source, loss reason, and amount of food waste helps identify opportunities to reduce the waste and purchasing / disposal costs.
- Food waste that cannot be reduced could otherwise be diverted from landfill. Surplus (overproduction) food may be donated, bringing possible tax benefits and increasing community relations. Food scraps may be recycled by composting or anaerobic digestion, turning the waste into useful products such as fertilizer or electricity. Additional resources and information are available on NYSP2I's [Food Waste Diversion](#) program page.
- Sustainable business practices provide an opportunity to attract and retain environmentally conscious customers.

### 3 Foodservice Log Sheets – Guidance and Examples

Studying Foodservice food waste requires different approaches for pre- and post-consumer waste. Pre-consumer waste is both generated and handled by staff (e.g. serving or plating lines, prep kitchen). Post-consumer waste is generated by restaurant, cafeteria and catering customers, and is handled by staff in the dining area or tray/dish room. In addition, post-consumer waste is often mixed with non-food waste (e.g. packaging, napkins). NYSP2I developed two separate log sheets after pilot studies at three restaurants and event venues. This section details how to successfully use the separate pre-consumer and the post-consumer **Foodservice Log Sheets** in a study.

#### 3.1 Foodservice Pre-consumer waste Log – example

The first page in the **Foodservice Log Sheet file** is the **Pre-consumer Waste Log**, and is used to record the pre-consumer prep waste, pan scrapes, expired, quality (e.g. burned), and surplus food. In the Figure 1 example, the facility serves both catering meals and cafeteria customer meals at breakfast, lunch and dinner. Note that the dinner waste is saved from the night before, and is measured first in the example.

[illegible]

### 3.2 Post-consumer Plate Waste Log & Customer Count – example

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Post-consumer Plate Waste Log & Customer Count

**Post-Consumer Waste Representative Sample - Measuring less than 100% of the customers that were served**

	Meal Service / Time - Breakfast - E.g. L 11:30 (Lunch) - B, L, D - Other	Source Location - dining area1 - dining area2 - dining area3	Disposal Method - donation - animal feed - rendering - anaerobic digestion - compost - landfill - other	Loss Reason - plate waste	Food Description - What is it? - E.g. Lettuce, vegetable mix, apples, turkey burgers, cheddar cheese, etc.	Empty Container Weight (lbs.) - Tare Weight of container	Total Weight (lbs.) - Weight of food and container together	Diners Counted/Notes - E.g. 42 plates counted
1	Breakfast	College Town (Dining area1)	landfill	plate waste	Waffles, breakfast sandwiches	2	8.6	41 plates
2	Lunch	College Town (Dining area1)	landfill	plate waste	Fruit	2	3.1	82 plates counted for lunch
3	L 11:45	College Town (Dining area1)	landfill	plate waste	Pizza, chicken wings, chicken tenders	2	11	
4	L 1:30	College Town (Dining area1)	landfill	plate waste	Salad, sandwiches	2	4.4	
5	Dinner	College Town (Dining area1)	landfill	plate waste	Broccoli, seafood	2	4.5	96 plates counted for dinner
6	Dinner	College Town (Dining area1)	landfill	plate waste	Chicken, pasta salad	2	7	
7	Dinner	College Town (Dining area1)	landfill	plate waste	Burgers, French fries, pizza	2	15.3	
8	Other	College Town (Dining area1)	landfill	plate waste	Cookies, brownies, cake	2	3.2	Buffet dessert - afternoon snack 26 plates
9	Breakfast	Coffee Bar (Dining area2)	landfill	plate waste	Croissants, bagels, donuts, breakfast sandwich	2	6	20 customers
10	Lunch	Catered Buffet (Dining area3)	landfill	plate waste	Rolls, salad, rice, chicken	2	20.2	65 customers
11				plate waste				
12				plate waste				

Top section = study data

**Total Meals Served - Assessment Day**

	Dining Area1: College Town	Dining Area2: Coffee Bar	Dining Area3: Catered Lunch
Breakfast	659	80	
Lunch	688	56	65
Dinner	522	43	
Other Meal (Optional)			

Bottom section = customer counts

Figure 2: Example Post-consumer Waste Log & Customer Count

### 3.3 Log Sheet – Meal Service Details

Record the meal service type (i.e. breakfast, lunch, or dinner) in the left most column of the log sheet. The approximate time in which the data is recorded is also important. If there are issues that come up about the data later on, the timestamp can help your team recall what happened during the period in question. In the example, shown in Figure 3, the cafeteria serves breakfast, lunch and dinner. Note the dinner waste is from the night before and is weighed first – at 8:15am. In addition, the example uses shorthand for Breakfast (B), Lunch (L) and Dinner (D). The **Foodservice Results** file is also shown, which has a drop-down menu for selecting the Meal Service.

Meal Service / Time	Timeframe (hrs.)	Source Location	Disposal Method	Loss Reason	Food Description
- Breakfast - E.g. L 11:30 (Lunch) - B, L, D	- E.g. 12 hrs. - leave blank if 24 hours	-kitchen -other1 -other2	- donation - animal feed - rendering - anaerobic digestion - compost - landfill - other	- prep waste - expired - surplus - quality - other	-What is it? -E.g. Lettuce, vegetable mix, apples, turkey burgers, cheddar cheese, etc.
Dinner 8:15		Kitchen	Compost	Prep waste	Vegetable trimmings
D 8:30		Kitchen	Compost	Surplus	Steamed rice and veggie mix
Breakfast 9:15		Kitchen	Compost	Prep waste	Waffle batter, fruit trimmings, rinds
B 11:30		Kitchen	Donation	Surplus	Breakfast pizza
Lunch 1:15	48	Kitchen	Landfill	Surplus	Pre-made sandwiches

Meal Service	Time Frame (hrs)
dinner	
breakfast	
lunch	
dinner	
other	
lunch	48

Figure 3: Pre-consumer Waste Log (Left); Results File – Log Sheet Tab (Right)

### 3.4 Log Sheet – Timeframe Details

**Timeframe** is the hours of production studied for the **pre-consumer waste**. In Figure 4, the cafeteria sells “grab and go” pre-made sandwiches, which are made every other day. In the example, surplus sandwiches that have reached their “sell-by dates” and remain unsold are sent to landfill, the timeframe for these log sheet entries is 48 hours (2 days).

Meal Service / Time	Timeframe (hrs.)	Source Location	Disposal Method	Loss Reason	Food Description
- Breakfast - E.g. L 11:30 (Lunch) - B, L, D	- E.g. 12 hrs. - leave blank if 24 hours	-kitchen -other1 -other2	- donation - animal feed - rendering - anaerobic digestion - compost - landfill - other	- prep waste - expired - surplus - quality - other	-What is it? -E.g. Lettuce, vegetable mix, apples, turkey burgers, cheddar cheese, etc.
Dinner 8:15		Kitchen	Compost	Prep waste	Vegetable trimmings
D 8:30		Kitchen	Compost	Surplus	Steamed rice and veggie mix
Breakfast 9:15		Kitchen	Compost	Prep waste	Waffle batter, fruit trimmings, rinds
B 11:30		Kitchen	Donation	Surplus	Breakfast pizza
Lunch 1:15	48	Kitchen	Landfill	Surplus	Pre-made sandwiches

Figure 4: Example - Donation of multiple day's production surplus

*Note about donations: Weigh and record items for donation where they are stored to maintain food safety and **do not** de-package them. Clean the scale before weighing donated items.*

### 3.5 Log Sheet – Source Location Details

The **Source Locations** recorded on the log sheet include typical locations for foodservice operators:

Meal Service / Time	Timeframe (hrs.)	Source Location	Disposal Method	Meal Service / Time	Source Location	Disposal Method
- Breakfast - E.g. L 11:30 (Lunch) - B, L, D	- E.g. 12 hrs. - leave blank if 24 hours	-kitchen -other1 -other2	- donation - animal feed - rendering - anaerobic digestion - compost - landfill - other	- Breakfast - E.g. L 11:30 (Lunch) - B, L, D - Other	- dining area1 - dining area2 - dining area3	- donation - animal feed - rendering - anaerobic digestion - compost - landfill - other

Figure 5: Pre-consumer Foodservice Log Sheet (Left) and Post-consumer Foodservice Log Sheet (Right)

In addition to the kitchen and dining area, there is an 'other1' and 'other2' option in the **Foodservice Results** file (Figure 5). Use the 'other1' and 'other2' source location to identify:

- A specific cafeteria / restaurant area such as the Salad Bar or Pizza Station.
- A specific kitchen area such as catering / event prep.
- A secondary cafeteria/dining area.
- Catering event (E.g. staff luncheon, holiday party, etc.) food scraps and surplus food.
- Any other source that is not already on the list.

As shown, the **Foodservice Results** file is set up to record and work with up to three (3) unique dining areas under the Post-consumer source location.

### 3.6 Log Sheet – Disposal Method Guidance

The **Disposal Method** column is used to record how the food waste is disposed of, in addition, is used to identify what is donated, landfilled and recycled (Figure 5). Recycling includes rendering, compost and anaerobic digestion. Note that any food that is reused internally is NOT waste because it is not disposed of, a few reuse examples:

- Surplus food provided as staff meals.
- Bacon from breakfast used as a pizza topping.

### 3.7 Log Sheet – Recording post-consumer waste – taking a representative sample.

Start with an empty trash bag and count trays or customers as the waste is emptied into it, then sort and measure the food waste. See the How-to Guide (Section 6a) for more information.

This sheet is used to measure the two largest post-consumer plate waste areas: the cafeteria eat-in area and the tray dishwashing area, along with a third area 'other' (Figure 6). If there is an area besides the cafeteria or tray return that has plate waste, record it as 'other' on the sheet.

Post-consumer Plate Waste Log & Customer Count

Post-Consumer Waste Representative Sample - Measuring less than 100% of the customers that were served

	Meal Service / Time	Source Location	Disposal Method	Loss Reason	Food Description	Empty Container Weight (lbs.)	Total Weight (lbs.)	Diners Counted/Notes
	- Breakfast - E.g. L 11:30 (Lunch) - B, L, D - Other	- dining area1 - dining area2 - dining area3	- donation - animal feed - rendering - anaerobic digestion - compost - landfill - other	- plate waste	- What is it? - E.g. Lettuce, vegetable mix, apples, turkey burgers, cheddar cheese, etc.	- Tare Weight of container	- Weight of food and container together	- E.g. 42 plates counted
1	Breakfast	College Town (Dining area1)	landfill	plate waste	Waffles, breakfast sandwiches	2	8.6	41 plates
2	Lunch	College Town (Dining area1)	landfill	plate waste	Fruit	2	3.1	82 plates counted for lunch
3	L 11:45	College Town (Dining area1)	landfill	plate waste	Pizza, chicken wings, chicken tenders	2	11	
4	L 1:30	College Town (Dining area1)	landfill	plate waste	Salad, sandwiches	2	4.4	
5	Dinner	College Town (Dining area1)	landfill	plate waste	Broccoli, seafood	2	4.5	96 plates counted for dinner
6	Dinner	College Town (Dining area1)	landfill	plate waste	Chicken, pasta salad	2	7	
7	Dinner	College Town (Dining area1)	landfill	plate waste	Burgers, French fries, pizza	2	15.3	
8	Other	College Town (Dining area1)	landfill	plate waste	Cookies, brownies, cake	2	3.2	Buffet dessert - afternoon snack 26 plates
9	Breakfast	Coffee Bar (Dining area2)	landfill	plate waste	Croissants, bagels, donuts, breakfast sandwich	2	6	20 customers
10	Lunch	Catered Buffet (Dining area3)	landfill	plate waste	Rolls, salad, rice, chicken	2	20.2	65 customers
11				plate waste				
12				plate waste				

Total Meals Served - Assessment Day

	Dining Area1: College Town	Dining Area2: Coffee Bar	Dining Area3: Catered Lunch
Breakfast	659	80	
Lunch	688	56	65
Dinner	522	43	
Other Meal (Optional)			

Figure 6: Example of post-consumer waste log sheet - representative sample

The key metric for post-consumer waste is **waste per person**. Once the waste per person is known, the total waste for the day, week, and year may be calculated for the average customer count. For the Figure 6 example, the breakfast waste calculations are as follows:

- Line Item 1: College Town Cafeteria waste (dining area1) =  $8.6 - 2 = 6.6$  lbs.
  - 41 plates counted and measured (eat-in customer waste)
  - Waste per person =  $6.6 \text{ lbs.} / 41 = 0.16 \text{ lbs. / person}$
  - For 659 customers, waste per week =  $0.16 \times 659 \times 7 = 738 \text{ lbs.}$
- Line Item 9: Coffee Bar waste (dining area2) =  $6 - 2 = 4$  lbs.
  - 20 customers waste was measured (small dining area, mostly grab-n-go customers)
  - Waste per person =  $4 \text{ lbs.} / 20 = 0.2 \text{ lbs. / person}$
  - For 80 customers, waste per week =  $0.2 \times 80 \times 7 = 28 \text{ lbs.}$

See **Sections 6.1** and **6.2** for how customer information is entered into the **Foodservice Results** file.

## 4 Foodservice Food Waste studies – best practices

The following sections describe the best practices for assessment logistics. These guidelines directly relate to **Step 2: Define Assessment Logistics** within the How-to Guide. The titles of each section provide reference to the corresponding step number within the guide, e.g. **Section 4.1 Logistics – Assessment Length** is related to Step 2a in the **How-to Guide**.

### 4.1 Logistics – Assessment length (2a)

Typical assessments will take 3-8 hours to capture 24 hours of waste. Not all of this is active time; staff may work on other activities in between measurements. A best practice is to hold the previous day's evening waste, sorting and measuring it during the assessment day.

### 4.2 Logistics – Collection plan (2b)

Note all pre-consumer waste locations that will need to be assessed. Assigning responsibility of certain trash bins to workers and using brightly colored tags and signs to alert staff are best practices to have a successful food waste assessment. To collect post-consumer waste (plate waste) as a sample, staff will have to be present to count trays as they are emptied into the sample collection bag and to bring the bag to the assessment location determined in (2c).

### 4.3 Logistics - Locating space for the assessment (2c)

The assessment location should ideally be set-up near the compactor or another trash collection area. This is convenient as well as reduces the chance that food waste is disposed of before measurement. It may be more convenient to find space to perform the assessment outside in a shaded area near the trash collection area, weather permitting.

### 4.4 Logistics – Schedule (2d)

Coordinate with staff to identify drop-off or pick up times for the waste by source. There will be pre and post-consumer food waste for each meal service. Kitchen prep waste and plate waste are typically the largest sources of food waste due to large volumes of prepared food and customers not finishing their food.

### 4.5 Logistics - Determining number of people (2e)

Generally, 2-3 people are required to sort, record, and weigh waste. More details are available in the How-to Guide.

## 5 Foodservice Results File

The **Foodservice Results File** is used to calculate food waste averages and to identify trends and focus areas for improvement efforts. To obtain results, enter customer and assessment information and the file will do the rest.

The file is broken up into several Tabs that are shown in the following sections.

### 5.1 Instructions tab

The **Instructions** tab provides step-by-step instructions on using the file (Figure 7).



Instructions Customer Info Log Sheet Overview Source Loss Reason Surplus Recycling

## INSTRUCTIONS

### Food Waste Assessment Results

**Step 1** Hit the **Enable Content** button at the top of the screen.

! SECURITY WARNING Macros have been disabled. Enable Content

**Step 2** Enter customer volume & capacity information in the **Customer Info** tab (blue).  
These values are used to scale the results. Customer Info

**Step 3** Enter data from the manual log sheet into section **A** on the **Log Sheet** tab (blue).  
Enter Post-consumer tray sample counts into section **B** on the Log Sheet tab. Log Sheet

**Step 4** Click the **"VIEW RESULTS"** button.

VIEW RESULTS

**Step 5** Review the (5) green tabs to see results.

Overview Source Loss Reason Surplus Recycling

Figure 7: Foodservice Results File Instructions Tab

## 6 Foodservice Results – Entering the assessment information

The Excel Foodservice Results has two tabs for data entry and the remainder to summarize the results. The two tabs to enter information onto are the **Customer Info** and **Log Sheet** tabs.

### 6.1 Customer Info tab

Facility and customer volume information is required to calculate the results, and is entered onto the **Customer Info** tab. Required entries are colored green as seen in Figure 8. The information contained within the remaining tables and figures, starting with Figure 8, were generated from the content in the Log Sheet Example from and Figure 2 from **Section 3**.

Instructions	Customer Info	Log Sheet	Overview	Source	Loss Reason	Surplus	Recycling
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## Food Waste Assessment

### Customer Volume Information

General Information		Color Code	
What kind of Facility / Area is being studied?	College/University	General Information	
Minimum Daily Diners:	1,900	Required Information	
Maximum Daily Diners:	2,700	Optional Information	
Day of Assesment:	Wednesday		

Study Locations and Total Meals Served on Assessment Day						
Areas	Dining Area 1	Dining Area 2	Dining Area 3	Kitchen	Other 1	Other 2
Location Name (may be left blank)	College Town	Coffee Bar	Catered Lunch			
Days / week Open	7					
Breakfast	659	80		n/a		
Lunch	688	56	65			
Dinner	522	43				
Other Meal: <div>Dessert</div>						
Total	2,048	244	65			
Assessment day total meals	2,357					

Average Daily Volume - Number of Diners							
Dining Area 1 : College Town							
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Average day
1,224	1,836	1,836	1,836	1,836	1,836	1,836	1,749

Dining Area 2 : Coffee Bar							
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Average day
700	600	600	600	600	600	900	658

Dining Area 3 : Catered Lunch							
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Average day
							0
Total Average Daily meals							2,407

Figure 8: Customer Info Tab

## 6.2 Log Sheet tab

The Log Sheet tab has two sections for the study information (Figure 9). The top section, **Section B - PLATE WASTE (post-consumer) SAMPLE DATA**, is where the number of post-consumer trays/customers measured is entered. Section B is only used to scale the results. **Section A – LOG SHEET INFORMATION** is for all the pre- and post-consumer measurements.

Instructions
Customer Info
Log Sheet
Overview
Source
Loss Reason
Surplus
Recycling

**Color Code:**

Assessment Info

Sample Data

Log Sheet Info

Optional Info

Section B - Post-Consumer PLATE WASTE SAMPLE COUNTS			
Dining Area1 : College Town	Actual Count	Same Per Person Waste As	Est. Count
Breakfast	41		
Lunch	82		
Dinner	96		
Other Meal :			

Dining Area2 : Coffee Bar	Actual Count	Same Per Person Waste As	Est. Count
Breakfast	20		
Lunch		breakfast	20
Dinner		breakfast	20
Other Meal :			

Dining Area3 : Catered Lunch	Actual Count	Same Per Person Waste As	Est. Count
Breakfast			
Lunch	65		
Dinner			
Other Meal : Dessert	26		

If a meal is not studied, an **assumption** must be made to calculate the waste per day. Select the **Same Per Person Waste As** meal from the drop down menu that best estimates the meal that was not studied. Selecting a meal generate an Estimated Count (**Est. Count**)

Either **Tray Count** ---OR--- **Same Per Person Waste As** may be entered, but not both.

VIEW RESULTS

**Section A - LOG SHEET - Study Data**

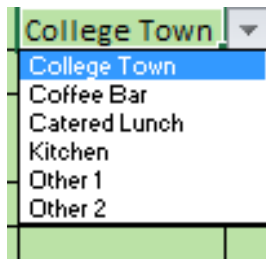
Meal Service	Time Frame (hrs)	Location Name	Disposal Method	Loss Reason	Food Description	Container Weight (lbs)	Total Weight (lbs)	Notes
dinner		kitchen	compost	prep waste	Vegetable trimmings	2.0	65.5	Dinner from last night
dinner		kitchen	landfill	surplus	Steamed rice and veggie mix	2.0	16.0	Contaminated on the line; c
breakfast		kitchen	compost	prep waste	Waffle batter, fruit trimmings	1.0	41.6	
breakfast		kitchen	donation	surplus	Breakfast pizza	2.0	11.0	
lunch	48	kitchen	landfill	expired	Pre-made Sandwiches	2.0	16.2	Past sell-by date
lunch		kitchen	compost	prep waste	Fruit and vegetable trimmings	2.0	75.1	

Top section =  
customer  
counts for  
Post-  
consumer

Bottom  
section =  
study data

Figure 9: Results File - Log Sheet Tab to enter data

Note that the Meal Service, Source Location, Disposal Method and Loss Reason columns have drop-downs boxes, an example drop-down on the **Log Sheet** tab (Figure 10):



College Town

College Town

Coffee Bar

Catered Lunch

Kitchen

Other 1

Other 2

Figure 10: Example drop-down

## Section B – Post-consumer waste - number of trays measured

On the top of the tab, enter the number of trays / customers measured for each dining area studied. If a meal was not studied, pick one of the other meals from the drop-down menu in the “**Same per Person Waste As**” column so that the result can be scaled and calculated for a full day. In the Figure 11 example, **Coffee Bar** lunch and dinner waste was not studied, instead, breakfast waste per person was used to calculate the results, see Figure 11 and Figure 12.

Post-consumer Plate Waste Log & Customer Count

Post-Consumer Waste Representative Sample - Measuring less than 100% of the customers that were served

Meal Service / Time	Source Location	Disposal Method	Loss Reason	Food Description	Empty Container Weight (lbs.)	Total Weight (lbs.)	Diners Counted/Notes
- Breakfast - E.g. L 11:30 (Lunch) - B, L, D - Other	- dining area1 - dining area2 - dining area3	- donation - animal feed - rendering - anaerobic digestion - compost - landfill - other	- plate waste	- What is it? - E.g. Lettuce, vegetable mix, apples, turkey burgers, cheddar cheese, etc.	- Tare Weight of container	- Weight of food and container together	- E.g. 42 plates counted
1 Breakfast	College Town (Dining area1)	landfill	plate waste	Waffles, breakfast sandwiches	2	8.6	41 plates
2 Lunch	College Town (Dining area1)	landfill	plate waste	Fruit	2	3.1	82 plates counted for lunch
3 L 11:45	College Town (Dining area1)	landfill	plate waste	Pizza, chicken wings, chicken tenders	2	11	
4 L 1:30	College Town (Dining area1)	landfill	plate waste	Salad, sandwiches	2	4.4	
5 Dinner	College Town (Dining area1)	landfill	plate waste	Broccoli, seafood	2	4.5	96 plates counted for dinner
6 Dinner	College Town (Dining area1)	landfill	plate waste	Chicken, pasta salad	2	7	
7 Dinner	College Town (Dining area1)	landfill	plate waste	Burgers, French fries, pizza	2	15.3	
8 Other	College Town (Dining area1)	landfill	plate waste	Cookies, brownies, cake	2	3.2	Buffet dessert - afternoon snack 26 plates
9 Breakfast	Coffee Bar (Dining area2)	landfill	plate waste	Croissants, bagels, donuts, breakfast sandwich	2	6	20 customers
10 Lunch	Catered Buffet (Dining area3)	landfill	plate waste	Rolls, salad, rice, chicken	2	20.2	65 customers

Figure 11: Printable Log Sheet data

Section B - Post-Consumer PLATE WASTE SAMPLE COUNTS			
Dining Area1 : College Town	Actual Count	Same Per Person Waste As	Est. Count
Breakfast	41		
Lunch	82		
Dinner	96		
Other Meal :			
Dining Area2 : Coffee Bar	Actual Count	Same Per Person Waste As	Est. Count
Breakfast	20		
Lunch		breakfast	20
Dinner		breakfast	20
Other Meal :			
Dining Area3 : Catered Lunch	Actual Count	Same Per Person Waste As	Est. Count
Breakfast			
Lunch	65		
Dinner			
Other Meal : Dessert	26		

If a meal is not studied, an **assumption** must be made to calculate the waste per day. Select the **Same Per Person Waste As** meal from the drop down menu that best estimates the meal that was not studied. Selecting a meal generate an Estimated Count (**Est. Count**)

Either **Tray Count** ---OR--- **Same Per Person Waste As** may be entered, but not both.

**VIEW RESULTS**

Figure 12: Result File

## 7 Foodservice Results - Viewing results

After you enter the assessment data in the **Log Sheet** tab, the **Overview** tab (Figure 13) provides the bulk of the results.

### 7.1 Overview Tab

The first section shows the daily, weekly, monthly and yearly food waste generation amounts in units of pounds (lbs.) and tons.

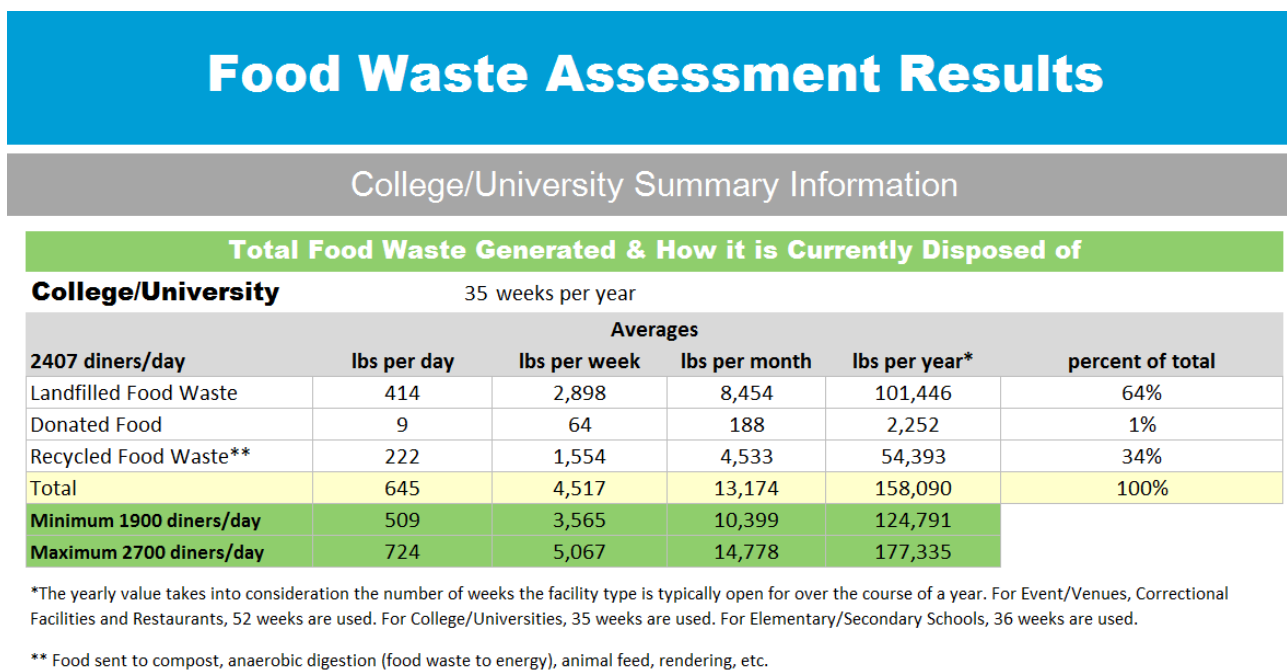
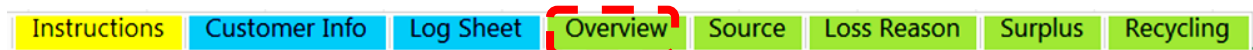


Figure 13: Results from Overview Tab

Below is an example of how the total daily amount of food is scaled in Figure 13 (donated food amount):

- From Figure 1, the kitchen donates **9 lbs.** (once you subtract out the weight of the container, 2 lbs.) of breakfast pizza to a food bank on the day of the study.
- The study day had **2,357** meals served; the average day has **2,407** meals served (Figure 8).
- This information is used to scale the results using this equation:
  - Weight from study x ( average meals per day / actual meals on study day )
- The average donated food per day = **9 x ( 2,407 / 2,357 ) = 9 lbs.**
- How this works is that the waste per person is the same for both the study day and the average day:
  - Actual weight / actual meals on study day = **9 / 2,357 = 0.0038 lbs. / person**
  - Average food weight / average number of meals = **9 / 2,407 = 0.0037 lbs. / person**

Along with the total waste amounts, the waste by source location, meal service and loss reason are calculated and summarized as shown in Figure 14, Figure 15, and Figure 16. Additional summary charts and tables are included in the **Overview** tab. The figure below shows a subset for illustrative purposes.

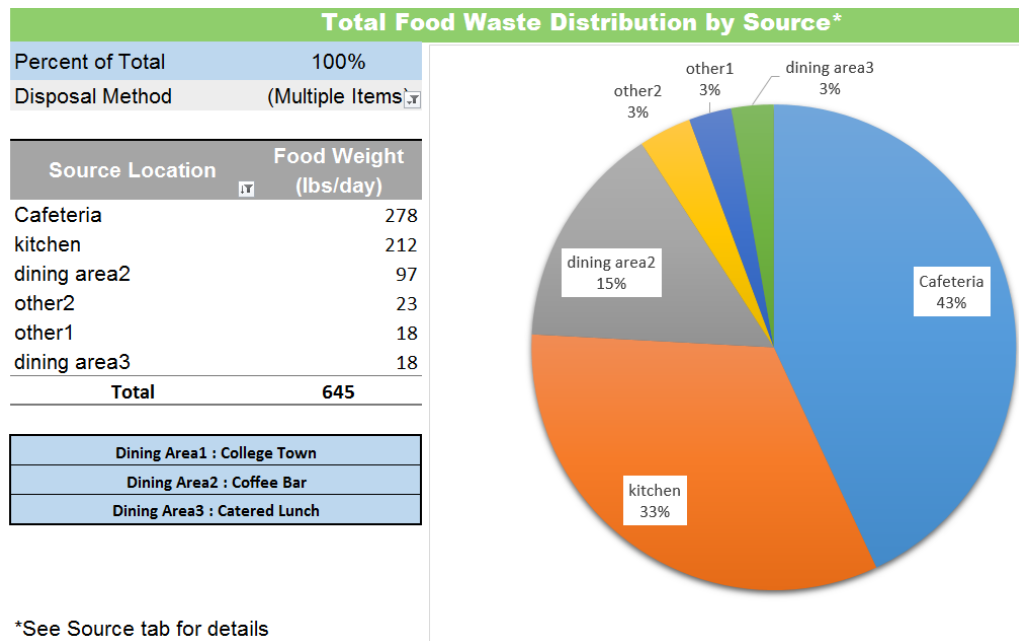


Figure 14: Waste by source location

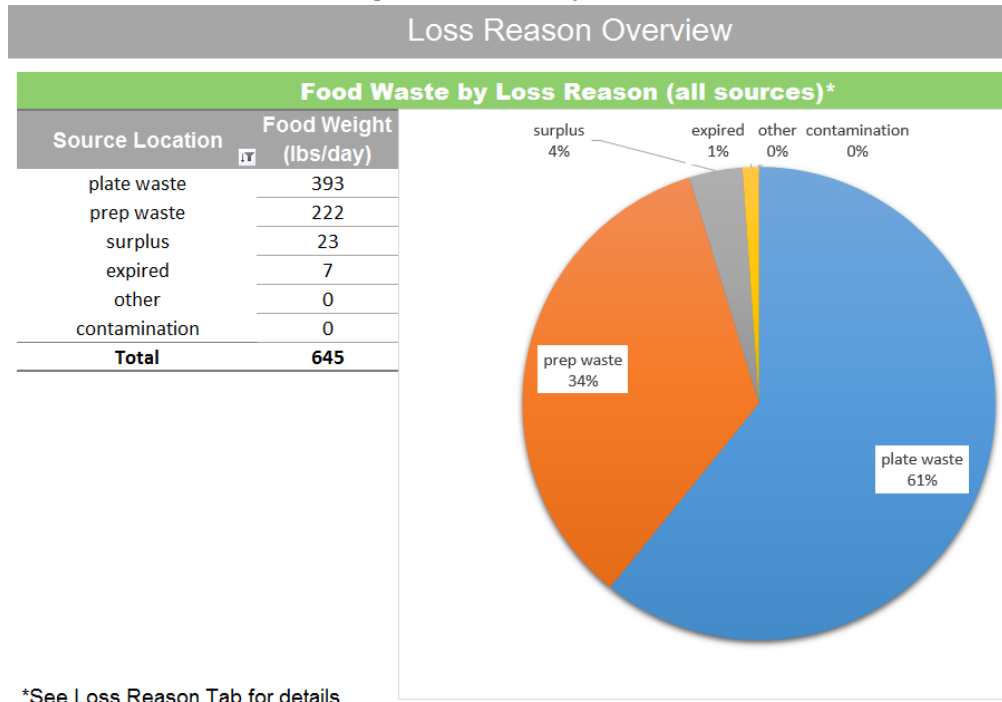


Figure 15: Waste by loss reason

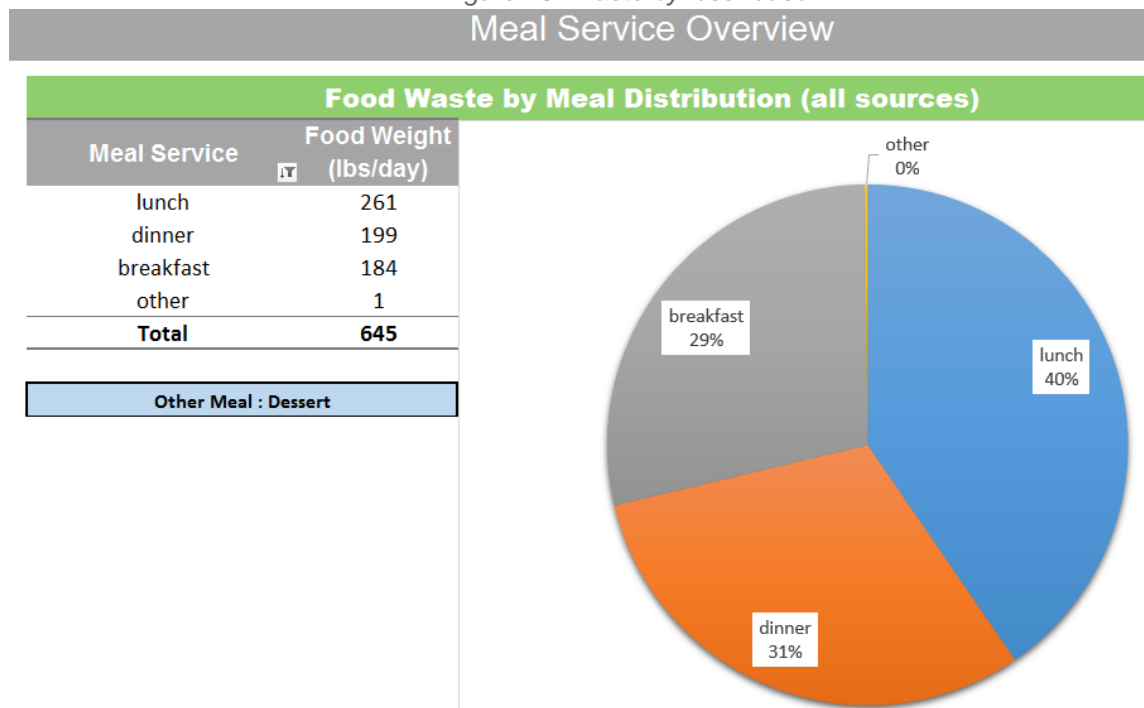


Figure 16: Waste by meal service

At the end of the **Overview** tab is a comparison of the facilities average food waste to the research-based estimated food waste for foodservice facilities of a similar in size. The estimate (Figure 17) utilizes the number of full-time employees and information from **NYSP21's Food Waste Estimator Tool** to make the comparison.

NYS Food System Sustainability Clearinghouse Estimation Tool			
College/University Food Waste - Actual vs. Estimate*			
	Estimated (lbs/week)	Actual (lbs/week)	% Lower
Min (1900 diners)	5,165	3,565	45%
Average (2407 diners)	6,543	4,517	
Max (2700 diners)	7,340	5,067	

[\\*http://www.rit.edu/affiliate/nysp21/food/food-waste-estimator](http://www.rit.edu/affiliate/nysp21/food/food-waste-estimator)

Figure 17: Actual vs. Research-based estimated food waste

The **Source** and **Loss Reason** tabs go into the specific details of what items came from which source and why they were being disposed of. These tabs are useful to help you identify specific food waste reduction opportunities after reviewing the results for the **Overview** tab.

## 7.2 Source Tab

On the **Source** tab, view all the waste items that were disposed of from each source location. Figure 18 provides an example of two of the tables included in the analysis. As shown, below each header name, e.g. **College Town**, is the percentage of total waste that was measured within that particular source location. In this example, **College Town's** waste is 43% of the total recorded.

### Kitchen

33% of total

Source Location	kitchen
-----------------	---------

Source Location	Food Weight (lbs/day)
<b>prep waste</b>	<b>181.0</b>
Vegetable trimmings	64.8
Waffle batter, fruit trimmings	41.5
Fruit and vegetable trimmings	74.7
<b>surplus</b>	<b>23.5</b>
Breakfast pizza	9.2
Steamed rice and veggie mix	14.3
<b>expired</b>	<b>7.3</b>
Pre-made Sandwiches	7.3
<b>Total</b>	<b>211.7</b>

### College Town

43% of total

Source Location	dining area1
-----------------	--------------

Source Location	Food Weight (lbs/day)
<b>plate waste</b>	<b>277.8</b>
Waffles, breakfast sandwiches	90.6
Fruit	7.9
Pizza, chicken wings, chicken tenders	64.5
Broccoli, seafood	11.6
Chicken, pasta salad	23.2
Burgers, French fries, pizza	61.8
Cookies, brownies, cake	1.0
Salad, sandwiches	17.2
<b>Total</b>	<b>277.8</b>

Figure 18: Source Tab

## 7.3 Loss Reason Tab

The **Loss Reason** tab, as seen in Figure 19, summarizes additional details on why there is waste, allowing focused improvement efforts to save money and reduce waste. Similar to what is provided in the **Source** tab, shown in Figure 18, the percent of total waste per loss reason is given below each title. For example, **Prep Waste** accounts for 34% of the total measured on the day of the assessment. You will also find in this example under the plate waste column, a line called **Calculated Plate Waste Amount**. This refers to the calculated amount of waste generated for lunch and dinner based on scaled sample collected and recorded on the **Log Sheet** for the coffee bar at breakfast; see Figure 20 for more details.

Instructions Customer Info Log Sheet Overview Source **Loss Reason** Surplus Recycling

### plate waste

61% of total

Loss Reason plate waste

Source Location	Food Weight (lbs/day)
<b>College Town</b>	
Waffles, breakfast sandwiches	90.60
Fruit	7.88
Pizza, chicken wings, chicken tenders	64.49
Broccoli, seafood	11.61
Chicken, pasta salad	23.22
Burgers, French fries,	61.76
Cookies, brownies, cake	1.02
Salad, sandwiches	17.20
<b>Coffee Bar</b>	
Croissants, bagels, donuts, breakfast	43.15
calculated plate waste amount	53.40
<b>Catered Lunch</b>	
Rolls, salad, rice, chicken	18.20
<b>Total</b>	<b>392.52</b>

### prep waste

34% of total

Loss Reason prep waste

Source Location	Food Weight (lbs/day)
<b>kitchen</b>	
Vegetable trimmings	64.8
Waffle batter, fruit trimmings	41.5
Fruit and vegetable trimmings	74.7
<b>Other 1</b>	
Vegetable / seafood trimmings	18.4
<b>Other 2</b>	
Pan scrapes / leftovers from buffet line - rice, chicken	22.7
<b>Total</b>	<b>222.0</b>

Figure 19: Loss Reason Tab

Instructions Customer Info Log Sheet Overview Source Loss Reason Surplus Recycling

Dining Area2 : Coffee Bar	Actual Count	Same Per Person Waste As	Est. Count
Breakfast	20		
Lunch		breakfast	20
Dinner		breakfast	20
Other Meal :			

Meal Service	Time Frame (hrs)	Location Name	Disposal Method	Loss Reason	Food Description	Container Weight (lbs)	Total Weight (lbs)	Notes
breakfast		Coffee Bar	landfill	plate waste	Croissants, bagels, donuts, breakfast sandwich	2.0	6.0	20 customers

Figure 20: Calculated plate waste amount source information

## 7.4 Surplus tab

The **Surplus** tab provides detailed information on current surplus food, highlighting the importance of source reduction, Figure 21, and food donation, Figure 22, as well as identifying opportunities to reduce prep / kitchen labor, energy and purchasing costs. Educational information / web links about donating surplus that cannot be reduced are also included.



Figure 21: Surplus Tab – Source Reduction

Donation summary			
	Lbs/day	Lbs/year	% Increase
Current Amount	9	3,355	-
Potential Amount	23	8,573	156

Current Donation	
Disposal Method	donation

Location	Lbs/day
☐ kitchen	
Breakfast pizza	9.2
Total	9.2

Potential Donation	
Loss Reason	
Disposal Method	(All)

Location	Lbs/day
☐ kitchen	
Breakfast pizza	9.2
Steamed rice and veggie mix	14.3
Total	23.5

Figure 22: Surplus Tab - Donation

## 7.5 Recycling tab

The **Recycling** tab (Figure 23) provides information on how much could be recycled (food scraps) compared to the current state. Educational information / web links about recycling food are also included.

Recycling summary			
	Lbs/day	Lbs/year	% Increase
Current Recycled Amount	222	81,034	-
Potential Recycled Amount	622	226,949	180

To see compost sites, anaerobic digestors, food banks and more near you visit the [Organic Resource Locator](#).

Current Recycling	
Disposal Method	(Multiple Items)

Location	Food Weight (lbs/day)
☐ kitchen	
Vegetable trimmings	64.8
Waffle batter, fruit trimmings	41.5
Fruit and vegetable trimmings	74.7

Additional Recycling (potential)	
Loss Reason	(Multiple Items)
Disposal Method	landfill

Location	Food Weight (lbs/day)
☐ kitchen	
Pre-made Sandwiches	7.3
☐ College Town	
Waffles, breakfast sandwiches	90.6

Figure 23: Recycling Tab

## 8 Conclusions and Next Steps

This document provided you the best practices for conducting a food waste self-assessment at your business. An example, carried throughout, walked you through how to perform the assessment and the synergy between the systematic **How-to Guide**, the assessment day **Log Sheet**, and the **Results** file. All of files included in the Toolbox were put together based on hands on food waste assessment experience in your sector. NYSP2I is available to review the assessment results and identify potential areas in which to provide assistance.

NYSP2I collaborates with businesses, municipalities, and community organizations in New York State to identify practical, cost-effective solutions for diverting, preventing, and managing food waste. We aim to give our partners across the Empire State the tools and resources they need to solve problems associated with food waste and to build a more sustainable food system. To learn more about NYSP2I's involvement in reducing food waste, check out <https://www.rit.edu/affiliate/nysp2i/services/food-waste-diversion>.

## 9 Funding and Acknowledgement

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