



**CIRCULAR  
FUTURES**

# **Systems Mapping of Business Food Waste Separation**

**Universal pain points in food waste  
separation in pubs & clubs  
in New South Wales**

*Prepared by Circular Futures, 2025*

*[circularfutures.co](http://circularfutures.co)*



The [NSW Waste and Sustainable Materials Strategy 2041: Stage 1 2021–2027 \(WaSM\)](#) set the target to halve organics waste going to landfill by 2030 and committed to achieving this target by mandating the diversion of organics waste through a separate Food Organics and Garden Organics (FOGO) waste collection service.

The [NSW Government is implementing FOGO legislation](#) that sets out the requirements to have separate food waste collection service(s) for businesses from 1 July 2026 in NSW. The legislation details the business types captured and the staggered approach (2026, 2028 and 2030) for different-sized waste generators, along with recycling and avoidance strategies.

This research project set out to identify and explore the friction points experienced with food waste recycling within three commercial environments in NSW and to apply a systems lens. A total of nine businesses were engaged to participate in the research, and twelve sites were visited as part of the research. All participating sites were offered anonymity.

The research focused on three types of the larger food waste generators captured by the FOGO legislation:

**1. Supermarkets**

In this scenario, there are multiple food waste types generated and layers of management (in the store and with the head office).

**2. Large Pubs and Clubs**

In this scenario, there are multiple kitchens or meal service types for large numbers of people; however, the facility is centrally managed.

**3. Shopping Centres**

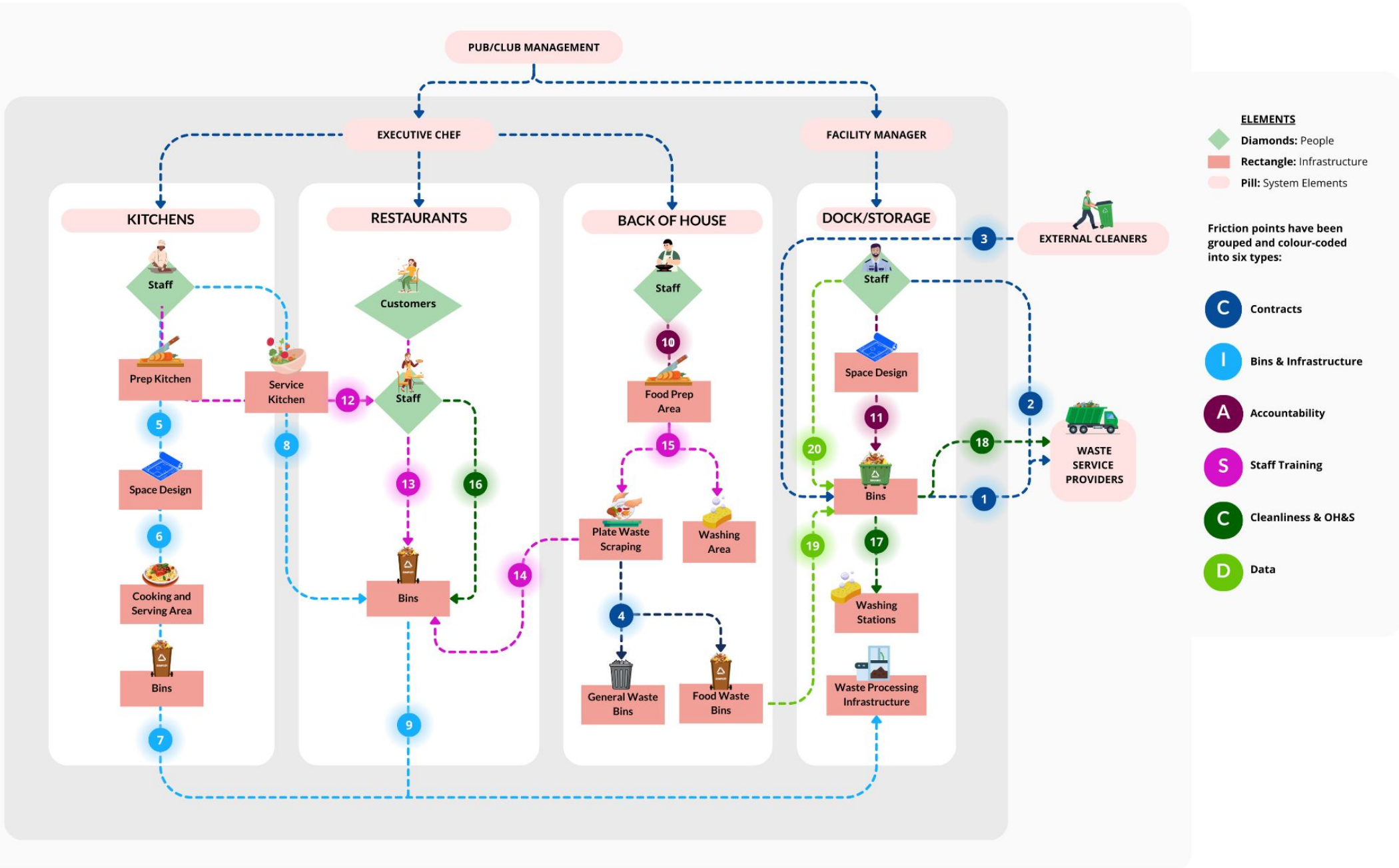
In this scenario, there are multiple independent businesses operating, but they share a central management structure for waste services.

Through desktop, observational and qualitative research, this project explored the primary and secondary friction points that result in disengagement, contamination, and organic food waste recycling losses in three commercial scenarios in NSW.

A report is available at [circularfutures.co](https://circularfutures.co).

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**C Contracts**

- 1 Contracts with waste management companies are affected by the total amount of waste produced (kg per day), frequency of pickups, use of compostable bin liners, and whether additional non-food items such as paper ramekins are allowed. Friction occurs if the service doesn't match the needs.
- 2 Contracts with waste management companies can result in friction if overage fees are charged for staff filling bins beyond the agreed amount or for bins with high levels of contamination. Conversely, friction occurs when patrons are present or when not all bins are full but are charged at the full-bin rate.
- 3 External cleaners can cause friction if adequate training is not provided on how to separate and manage the waste, resulting in contamination and overage charges.
- 4 Customers can generate significant plate waste. It can also occur when events do not attract as many diners as anticipated. Friction occurs when the frequency of pickups from waste service providers is inflexible or doesn't match the amount of food waste generated.

**I Bins & Infrastructure**

- 5 Chefs preparing food can add food waste bins to their station to reduce the need to make an extra step to use a separate bin before the general waste bin. Friction can occur when efficiency is lacking during food preparation and if the system is not easy to use.
- 6 Size and shape of the bins impacts their use. Friction occurs if the bins are too tall/skinny, becoming overfilled, heavy and hard to remove the biobag liners or empty the contents into the larger bins. Friction can occur if bins lack wheels or are incorrectly sized/shaped, making them harder to move.
- 7 Liners can be preferred if they help bins stay cleaner. Friction occurs when the bags are not strong enough and slip into the bins, are not certified compostable, there isn't enough budget to stock them, or the waste processor won't accept them.

8 At the end of service, food waste bins need to be removed from kitchens and emptied into larger bins for pick up. Friction can occur if bins are too large or too heavy for the kitchen hand to empty.

9 Plate waste scraping is affected by accessibility of bins, signage, and ease of use. Friction occurs when signs are unclear or access is confusing/difficult. Staff can also create issues if they allow non-organic materials to enter the food waste bins.

**A Accountability**

10 Oversight and management by a team lead (i.e., floor manager and/or head chef) can support staff compliance and improve system functionality over time. Friction occurs in the absence of oversight, resulting in increased waste and contamination.

11 Without someone directly responsible for training and process clarity, confusion and contamination occur (e.g., cutlery and non-compostable items in the food waste bins).

**T Training**

12 Staff may be resistant to the additional steps required to separate waste. All staff, including chefs, wait staff, prep chefs, and kitchen hands, should be trained on the system to reduce friction.

13 High staff turnover in hospitality, and the speed at which restaurants operate, can affect how effectively staff separate, and whether contamination increases or decreases during service. Friction occurs when training doesn't enable staff to build an effective, fast separation method into their work routine that prevents contamination.

14 Signage placed at plate waste stations, kitchen prep areas, and back-of-house areas influences where waste ends up. Friction occurs when there is inadequate training to understand signs, when accessible languages are not used, and when the information and visuals are confusing or out of date.

15 During plate waste scrapping, contamination can occur if gloves, cutlery, ramekins and paper products end up in food waste bins. Friction occurs if preventive training is not provided and waste contractors reject contaminated food waste bins.

**C Cleanliness + OH&S**

16 Plate waste is especially heavy, so bins can become very heavy throughout service and require more than one person to lift them to decant into collection bins. Friction occurs when the bins are too large/heavy to lift, or when stairs create mobility issues.

17 The dock and bins should be cleaned regularly to reduce the attraction of flies and vermin. Friction occurs when cleaning isn't done regularly, liners aren't used correctly, or waste service providers won't accept bin liners.

18 The frequency of bin collections from docks can affect the cleanliness of bins. Friction occurs when food waste is left too long and starts to rot, or when bins are located near customer car parks, creating undesirable smells.

**D Data**

19 Data on the amount of waste collected and contamination rates can impact the efficiency and management of the system. In large venues with multiple kitchens/services, data granularity is important for identifying hot spots. Friction occurs when data is unavailable, making it difficult to identify where performance needs improvement or to see potential cost savings that could help offset the cost of operating the waste collection system.

20 Record keeping and visual spot checks can help monitor staff compliance. Friction occurs when there is a lack of data management and record keeping, resulting in lack of transparency into where system weakness are occurring.



## Importance of Contracts

### Management Contracts

- Contracts for multiple sites in the chain, or multiple kitchens within a single premise, should provide clarity on roles and responsibilities for each food waste-generating area, as well as for shared infrastructure.

### Waste Contracts

- Waste contracts can determine multiple downstream factors, such as number and types of bins and the frequency of pickup (and varying cleanliness outcomes)
- Waste contracts can affect the fees charged and, in turn, the overall cost and savings in the system. Eg., kg collected or number of collections, penalties for overweight or contaminated bins, and other factors affect how aligned the service is with the needs and current staff behaviours.
- Waste contracts should allow for fluctuations in the amount of food waste generated and separated throughout the week, month, and year.
- Waste contracts can determine service elements, such as whether they accept bin liners and what items can be placed in food waste bins, such as bones and oyster shells.

### Service Contracts

- Service contracts can influence OH&S factors, such as size of bins provided by service providers, whether they are too large/heavy for staff to lift, if they have wheels, or if they are ill-suited to the facility (i.e., many stairs).
- Cleaning contracts require adequate training built into the agreement to reduce contaminated and overweight charges. This may be separate from staff training due to the provider's external nature.
- Bin cleaning services may be needed if no on-site option is available.

## Example

**Optimal Case:** Data-informed contracts are built according to the needs of the specific facility and multiple food-waste-generating areas, ensuring optimal bin infrastructure and pickup frequency, and charging in a way that encourages food waste separation.

**Sub-Optimal Case:** Pickups are infrequent and have limitations, and staff are not adequately trained, resulting in poor food waste separation, contaminated bins, unhygienic docks, and additional charges that reduce the desire to maintain the system.

## Recommendations

1. **Frequency and timing of pickup:** Ensure bin emptying aligns with the amount of food waste generated, and look for patterns and fluctuations in customer behaviour to adapt accordingly.
2. **Compare quotes and track fees:** Solicit multiple quotes and compare rates for different types of services; check whether compostable liners can be used and if that is part of your system's needs; ensure the waste collection contractor provide data on what's collected and where it ends up. Regularly review the collection fees, compare them with offsets from diverted food waste in general waste, and make refinements as needed to optimise cost efficiency. Share results with staff (e.g., tonnes diverted from landfill, tonnes of compost made, etc.) to encourage continued behaviour change.
3. **Service contracts** may be needed where kitchen staff are only responsible for filling, cleaning, and emptying kitchen bins into larger bins at the central dock or waste management areas; for example, a contract may be needed for bin washing/dock management, macerator maintenance, and staff training.



## Importance of Bins & Infrastructure

### Size

- Bins need to be manageable for staff to lift and move easily throughout your facility, whilst also being robust enough to withstand the weight of the food waste.
- Wheels or trolley bases on bins can be useful if they are large and the distance is longer, or even just to make it easier to manoeuvre around the kitchen area.
- Where two bins are required (general and food waste) in the kitchen, more space will be needed; consider reducing the size of each and emptying them more frequently.

### Bin Cleanliness

- Install bin wash stations in the dock area near where organic waste is emptied, and wash after each use.
- Ensure someone is responsible for bin cleaning for the shared bins to maintain hygiene.
- Liners can be used to maintain hygiene if the contract with the waste provider allows them; tie them off at the top of the bins to prevent them from falling into the bins.

### Infrastructure

- Infrastructure needs to facilitate both pickup and decanting processes, such as ramps or dedicated hallways, to enable bin mobility.
- Create a station near food waste bins to make it easy to remove contamination, e.g., cutlery.
- Create a station near food prep areas to collect trimmings for repurposing into stock and other uses.

## Example

**Optimal Case:** Bins are in the right areas to encourage food waste separation. Bins are a manageable size for the staff to use, move, wheel and lift, with dedicated passages from location to location. Cleaning stations are clean, easy and pleasant to use and bins are always returned to kitchens clean. Staff are trained on when to empty bins to reduce build up.

**Sub-Optimal Case:** Heavy, wet, quickly degrading waste accumulates in large, heavy, overfilled bins that are infrequently cleaned and difficult to move. Smell and vermin infiltration make them undesirable to use, and if biobags are used, they are too small and fall into the bins when the waste becomes too heavy.

## Recommendations

1. **Signage:** Clear, visual and multilingual signage placed at all locations where food waste bins are used helps to clarify what can and cannot go in the bins and reminds staff of the system's optimal use.
2. **Cleaning and clearing:** bins are emptied regularly to reduce build up (ie, after prep and before service to allow for plate waste). Bins are cleaned regularly to prevent food waste buildup and unhygienic conditions.
3. **Mobility audit:** Speak to staff to understand the process they go through to move waste through the system. Adapt bin sizes, bin liner sizes (larger than the bin size helps avoid slippage), bin wheels, ramps, and other methods of movement to optimise the process and make it easy for staff to improve the system over time.



## Importance of Accountability

### Dedicated Manager

- Consider having a dedicated manager (such as head chef or operations manager) to facilitate processes and compliance throughout the system (in kitchens, eating areas, and in the dock/main bin storage area)
- The dock/bin storage areas should be checked regularly to ensure that contamination is not occurring and that staff are engaging effectively with the system.

### Follow Up

- Conduct regular check-ins with staff to ensure that the size of the bins, how they are using them, the frequency of pick-ups, and any additional parts of the system are working efficiently (both in terms of cost, time, and waste separation).
- Get real-time data that feeds back to management for system adjustments and changes as needed.

### Processes

- Clear processes and procedures help establish expectations and efficient operations. Have someone accountable for this in each food service area.
- Check in with department heads (kitchen, bar, restaurant, etc.) to ensure staff are complying with the system and make adjustments to improve over time.
- A regular bin audit process, such as photos, can help track and improve the system by increasing bin empties or conducting top-up training.

## Example

**Optimal Case:** A dedicated manager for each department sets up and manages the waste separation processes, regularly auditing the performance and ensuring waste moves safely and efficiently through the system. Regular training eliminates contamination by cutlery or non-compostable items. Observations of food waste are used to inform food waste-avoidance and donation opportunities.

**Sub-Optimal Case:** No person(s) is assigned responsibility for waste separation or training. There is limited follow-up to monitor the system and improve it over time, leading to contamination and associated fees.

## Recommendations

1. **Set up clear procedures:** Develop processes and procedures for accountability, tailored to each department's needs, for management and staff. This could include training and data collection to report on the performance of the food waste vs general waste systems.
2. **Oversight:** Set up a clear accountability system in which it's part of a person's role/job to check bins, improve the process to avoid contamination, reduce hygiene issues, and optimise infrastructure. If available, have a dedicated dock manager to facilitate and guide staff, collect data, and provide feedback to head chefs.
3. **Seek Feedback:** Develop a formal system of feedback to inform staff about the amount of waste separated and any opportunities for improvement to increase motivation, and allow feedback to flow from staff to management on ways to improve the system.



## Importance of Training

### Initial Training

- Ensure that all existing and new staff are effectively onboarded into the system with face-to-face training.
- Have new staff be shown when they are hired what to do/not to do.
- Provide visual materials that are easy to engage with and desirable to read/watch/follow.
- Check in on staff, asking if there is any recommendations for improving the system to ensure they are engaged.

### Signage

- Provide clear, well-labeled signage showing pictures of the types of food waste that can be recycled. Install signage in prominent areas and on bins to reinforce system training.
- Create signage highlighting the common contaminants found in the food waste bin.

### Reinforcement & Rewards

- Training should be reinforced, and good waste management and recycling should be rewarded regularly.
- Consider holding regular new-staff training sessions.
- Provide top-up training to management and conduct check-ins on how to improve the system.

## Example

**Optimal Case:** Training is provided in an accessible way and begins with an initial in-person demonstration session, followed by regularly-scheduled check-ins for new staff and routine training updates for effective system use. Clear signage is used.

**Sub-Optimal Case:** Training processes are inconsistent, which can lead to new staff not being aware of requirements, not separating food waste effectively, and increased contamination by cutlery, stickers, etc., resulting in higher costs.

## Recommendations

1. **Start early & often:** Establish initial training sessions right from the start of new staff onboarding, and offer regularly scheduled in-person demonstrations. Collect feedback so everyone is invested and aware of the progress and compliance.
2. **Handbook:** Develop a handbook that includes visually-appealing graphic assets suitable for printing and laminating. Consider providing translated material for the dominant languages used on your site. Don't rely solely on printed materials; provide regular reinforcement from accountable persons.
3. **Systemise procedures:** Establish a set of standardised routines and processes to maintain consistency and reduce training costs. Consider a decision trees or waste hierarchies showing donations, trimming as additional visual support tools for on-site use, along with visual spot checks.



## Importance of Cleanliness + OH&S

### Training & Oversight

- Effective management procedures are in place to maintain the cleanliness of kitchen bins, public areas, and dock areas.
- Data is provided by inventory/waste contractors so managers can monitor and maintain the system.
- Appropriate training is provided for the safe operation of any on-site processes (such as bin lifters or macerators).

### Weight and Movement

- Plate waste tends to be quite heavy, which can increase issues with moving larger bins and decanting into pickup bins.
- Consider emptying kitchen bins after food prep and before table service so they don't need to be emptied again during the busiest food service times.

### Bin Washing

- Ensure washing stations are provided so it's easy for staff to clean bins and clean their hands after handling bins.
- If an external service is used for bin cleaning, ensure it aligns with kitchens' needs and avoids periods when patrons may be parking near the dock area.

## Example

**Optimal Case:** Effective scheduling and training help ensure bins and general areas are clean and hygienic, bin sizes are optimised for safe decanting, and pickup/cleaning procedures are aligned to flow efficiently, preventing waste accumulation.

**Sub-Optimal Case:** Bins aren't emptied before they get too heavy, making it difficult for kitchen hands to empty them; washing stations aren't available, leading to food waste attracting vermin; and staff aren't comfortable using the system.

## Recommendations

1. **Incentivise through communication and training:** Motivate everyone to achieve expectations when using the system effectively so it maintains cleanliness and hygiene. Provide feedback and positive reinforcement to improve system engagement over time.
2. **Bin size:** Ensure the right size and number of bins are provided throughout the system, that staff are trained in safe handling to avoid injuries and maintain cleanliness, and that prompt attention is given to cleaning.
3. **Dock area:** Ensure that the dock area is kept clean and free of hazards, and that appropriate infrastructure, such as bin lifts, is installed so that staff do not have to lift heavy bins and can easily follow contamination practices.



## Importance of Data

### Data

- Set up data collection systems from the start to establish a baseline for comparison.
- Collect real-time data to help improve the efficiency and cost-effectiveness of your system.
- Ask your waste contractors to provide real-time data on the volume and weight of waste picked up, contamination rates, and the cost of pickups for all types of waste.

### Data Management

- Incorporate data collection systems so that management can see compliance and improvements over time, document changes you make to see how this may or may not improve the system's efficiency.
- Feedback performance data to each kitchen to reinforce food waste recycling efforts.

### Systems in Place

- Conduct regular audits to identify where issues may be occurring and where food waste can be avoided.
- Establish open communication and feedback systems (e.g., staff, cleaners, and waste service providers) to ensure ongoing improvements and quick responses to issues.

## Example

**Optimal Case:** Internal audits establish baseline data and provide management and staff with information needed to efficiently manage food waste. This is facilitated by a centralised, easy-to-read data feedback system that incentivises engagement and optimises cost savings.

**Sub-Optimal Case:** No or limited data is collected, leading to a lack of awareness of the amount and type of food waste and of the food waste recycling system, resulting in inefficiencies and increased costs.

## Recommendations

1. **Establish a baseline:** Conduct waste audits to gather as much data as possible. Consider implementing a regular audit process to assess performance and drive improvements.
2. **Establish a data collection method:** Ask your waste service provider to provide real-time data and assess your monthly costs and revenues. Look to optimise the system for cost savings and revenue potential; consider building your own data system to monitor in real time and address food waste avoidance and donation.
3. **Create a data feedback process:** Share collected data with department managers so that they can make changes to the performance of their kitchen and service area systems. Consider incentives and feedback systems that encourage staff to improve their part of the system.