

# Household food waste collections guide



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This publication updates the 2009 guide and pulls together the findings from more recent studies and pilots conducted by WRAP and others. Through the various sections, this guide is designed to support local authorities by detailing good practice and evidence which can help inform the design and delivery of high capture, cost-effective food waste collections

## Section 12: Safety and occupational health considerations for food waste collections

Local authorities operating their own collection services as well as those with contracted out services have a duty to ensure that a collection service is suitable and safe. Guidance is available from the Health & Safety Executive (HSE) on managing the risks involved in the collection of household waste<sup>1</sup>. The HSE guidance is aimed at (local authority) client managers, those who specify contracts and local authorities who operate services directly.

This section highlights some specific considerations for food waste collections, particularly when assessing collection route risks. It also highlights key considerations for safe working practices at food waste bulking facilities. Undertaking such assessments will help to ensure that any potential risks are mitigated.

In both cases the health, safety and welfare of collection crews and other staff should be factored in at the initial design stage of new services and operations. Earlier sections of this publication set out good practice in terms of the design and operation of food waste collections services.

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<sup>1</sup> <http://www.hse.gov.uk/pubns/waste23.pdf>

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### 12.1 Food waste collections - potential hazards to health and associated risks

No specific mention is made of food waste in the major reviews of health and safety regarding waste management in the UK. A joint study by WRAP and the Chartered Institution of Wastes Management (CIWM) published in 2009 identified various issues associated with waste collection, including risk of accidents and ill health<sup>2</sup>. Occupational health issues associated with food waste collection include potential exposure to:

- micro-organisms and mycotoxins;
- bioaerosols;
- odour;
- rodents and other vermin; and
- flies.

The impact, and the potential risks to members of staff, will vary according to:

- the types of food waste collected, collection containers provided and the vehicles used;
- frequency and location of collection; and
- their involvement in tasks such as transfer and bulking.

Waste collectors also face potential risks relating to accidents, vehicle exhaust emissions, handling of material, noise, and combined exposures of odours and

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<sup>2</sup> <http://www.wrap.org.uk/search/gss/Fortnightly%20residual%20waste%20study%202009>

bioaerosols or exhaust emissions and bioaerosols. The HSE guidance referred to above provides examples of risk control measures for many of these hazards.

The following sections identify some of the main operational matters that should be considered in assessing the potential risks to collection staff.

### **12.1.1 Containers**

Typically, food waste is collected from households using either kerbside containers (see section 4.1.2) or communal wheeled bins (see Section 8.5.2). The use of caddy liners (see Section 4.2) will ensure food waste is contained in the collection bin and will greatly reduce the likelihood of collection operatives being exposed to micro-organisms and bioaerosols whilst at the same time significantly reducing odours. In addition, the correct use of PPE (see Section 12.2.1), and in particular the wearing of gloves at all times when collecting food waste, will further reduce the likelihood of contact with micro-organisms.

Another important consideration is the weight of the waste containers handled by collection crews. A series of audited trials monitored the weights of full 23 litre food waste containers. The vast majority of containers when filled by residents with their weekly food waste weighed less than 4kg; this is considered an acceptable weight for handling containers by local authorities (see Section 4.1.2).

Where food waste is mixed with garden waste in wheeled bins, the higher concentration of grass clippings in the growing season inevitably means that the individual bin weights are particularly high, especially for lower frequency (fortnightly) collections.

### **12.1.2 Vehicles**

Variations in vehicle design and operation can include:

- top, side or rear loading;
- specialised compartments on co-collection vehicles for food waste; and
- design issues (e.g. compaction).

A risk assessment should consider how a vehicle is designed and likely points of exposure as there are issues with handling and exposure to dusts depending on vehicle design. High level top loaders and automated side loaders reduce exposure to bioaerosols. Vehicles with independent exhaust ventilation and remote operation also reduce exposure. Where food waste is collected mixed with garden waste, rotating compactors tend to generate more bioaerosols than packer type compaction vehicles because the high pressure compaction disturbs the organic material and the large dispersion point at the rear of the vehicle is at chest height for loaders. Vehicles with independent exhaust ventilation and remote operation also reduce exposure.

The mechanical loading of food waste vehicles should also be considered. Since food waste does not disperse like plastic or glass, the use of a single loading point with a bin lift is likely to cause pyramiding at one end /side of the vehicle's base. High volumes of food waste over one axle or one side of the vehicle may affect steering. The design of the vehicle to allow multiple loading points or a mechanism for spreading food across the wheel base will help with load distribution.

Another important variable is vehicle cleanliness. There is no requirement under the ABPR to clean vehicles after use. However, higher exposure to bioaerosols is associated with vehicles that are cleaned less often and vehicle cleanliness can affect worker exposure. However, since some methods of cleaning (e.g. high pressure water hoses) can also be a significant source of bioaerosol exposure, the cleaning method requires careful consideration and a separate risk assessment.

### **12.1.3** *Frequency of collection*

Frequency of collection is often cited as a concern with separate collection of wastes, particularly those with a high organic content like food waste. Weekly collection means a shorter period of storage than for fortnightly collections, with less time for moulds to grow and spores to disperse.

Longer collection intervals will increase the weight of material to be handled and hence there may be a greater musculoskeletal risk. Collection frequency should therefore be acknowledged as part of a risk assessment process.

### **12.1.4** *Staff*

The staff required for food waste collection rounds and what they are required to do are an important consideration. Often staff may carry out food waste collections only, but this is not the case in all areas. The particular staff and risk assessment issues are:

- Staff training and induction;
- hygiene;
- sensitivity to organic wastes;
- speed of working;
- area of working; and
- weather conditions.

Training and good hygiene are vital to the collections of any wastes. Staff with particular biological allergies (e.g. to penicillin) may need to be screened before work to minimise their exposure. Higher bioaerosol exposures, particularly bacteria, have been associated with summer collection of organic materials. Both issues need to be referred to during the risk assessment.

### 12.1.5 Property types

The types of properties from which collections are made – flats, houses and other residential properties and commercial properties - can have a bearing on the risks.

Risks may relate to:

- the location of the containers;
- the varying weights of different sized containers; and
- specific obstacles such as uneven flooring or steps.

Different approaches to collection from particular property types will influence handling and storage choices. These should be considered when designing the service and where there is variation across a local authority area the potential implications considered as part of the route-specific risk assessment. These choices may exacerbate other issues regarding potential exposure and thus require tailored assessment.

## 12.2 Food waste collection risk assessments

As for all waste collection operations, appropriate route based risk assessments should be completed. This section highlights what to take into account when conducting a risk assessment of food waste collections, whether this is food waste only, or food and garden waste combined. Further guidance on managing the risks involved in the collection of household waste (including food waste) can be obtained from the HSE<sup>3</sup>.

### 12.2.1 PPE provision for collection operatives

All waste collection operatives should be provided with the following personal protective equipment (PPE):

- boots with a good tread;
- overalls (either disposable or several sets to allow regular cleaning to remove residues and avoid repeat contamination);
- high visibility gear;
- gloves (changed on a regular basis depending on type); and
- onboard hand washing or other means of cleaning hands during the round (e.g. sterile wipes).

It may be necessary to provide operatives involved with unloading collected food and/or the discharge of food waste at bulking facilities with:

- waterproof gloves;
- goggles; and

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<sup>3</sup> <http://www.hse.gov.uk/pubns/waste23.pdf>

- face wipes.

Collection supervisors should ask the managers of anaerobic digestion and in-vessel composting sites where collection vehicles are unloading to advise on site specific requirements that collection staff need to adhere to.

### 12.2.2 Specific elements to consider

For any food waste collection round, collection round specific issues will need to be assessed, and the correct information supplied to the collectors and operatives dealing with the material.

Table 12.1 outlines the key areas that should be considered as part of a food waste risk assessment. It is not an inclusive list of all the issues for a risk assessment which will be specific to a collection round, but highlights those issues that should be considered with food waste collection in particular.

As part of the risk assessment process, talking to the operatives involved in collecting the food waste will help to learn from their experiences.

**Table 12.1** Food waste collection risk assessment – checklist of considerations

Activity	Included in assessment (tick)
<p><b>Type of waste being collected and frequency</b></p> <ul style="list-style-type: none"> <li>• Food waste in isolation and potential contaminants</li> <li>• Food waste mixed with garden waste</li> <li>• Length of storage (prior to collection)</li> </ul>	
<p><b>Techniques for handling food waste</b></p> <ul style="list-style-type: none"> <li>• When inspecting waste, open up the container and stand away in the first instance.</li> <li>• Carry small caddies with their lids closed.</li> <li>• Use caddies with 33 litres' capacity or less if repeatedly loading by hand.</li> <li>• Look away while discharging containers into the vehicle's loading point or container.</li> <li>• Do not handle or otherwise come into contact with liquids. If this occurs, staff should clean off this material especially if it is in contact with the skin.</li> </ul>	
<p><b>Vehicles and container design, and collection activities</b></p> <ul style="list-style-type: none"> <li>• Amount of food content in the container and the proportionate resource required to handle (e.g. small household caddies versus larger commercial or communal containers)</li> <li>• Location of the presented container (e.g. caddies on the kerbside or on residents' properties,</li> </ul>	

Activity	Included in assessment (tick)
<p>commercial containers in alleys on uneven ground)</p> <ul style="list-style-type: none"> <li>• Consider container design (open or closed), whether it could encourage dust or liquids, and how operatives should handle containment.</li> <li>• Include indicative fill levels for 'slave' containers and vehicle compartments without weighing equipment to avoid overfilling.</li> <li>• Vehicle design in terms of mechanical or manual loading and the optimum place for an operative to be situated during loading or other operations that may disturb material. Vehicle design should discourage operatives from loading the vehicle on the road.</li> <li>• Position cameras at the rear of the vehicle if rear end loading takes place.</li> <li>• Cleaning of the vehicle and cab. It is preferable not to use pressure washing or 'blowing off' with compressed air. If these are employed, consider providing good quality respiratory protective equipment (RPE); paper masks are not sufficient and FP3 should be a minimum.</li> </ul>	
<p><b>Discharging</b></p> <ul style="list-style-type: none"> <li>• Assess bulking up activities as a separate activity.</li> <li>• Assess operatives involved in bulking up (collection crews and staff on site) separately for COSHH; the need for air quality monitoring could be more pressing.</li> <li>• Ensure collection crews remain in their cabs during any discharging. If they need to enter enclosed halls or other buildings, consider providing RPE (FP3). Gloves and the PPE suggested above should be worn.</li> <li>• Provide face wipes.</li> </ul>	
<p><b>Information, instruction and training of collectors</b></p> <ul style="list-style-type: none"> <li>• Emphasise the importance of hygiene.</li> <li>• Provide adequate welfare and first aid facilities.</li> <li>• High visibility jackets and overalls must be worn and replaced regularly.</li> <li>• Protective washable or disposable gloves must be worn at all times during collection.</li> <li>• Washing and cleansing of hands prior to eating, drinking or smoking</li> <li>• Changing out of work clothes in the workplace before going home</li> </ul>	

### **12.2.3 COSHH assessments**

Employers are responsible for taking effective measures to control exposure and protect health. The Control of Substances Hazardous to Health Regulations 2002 (COSHH 2002) contains the main relevant legal requirements. Requirements include assessing the risk from harmful substances and preventing or controlling exposure to them.

As a minimum the COSHH assessment should cover the aspects listed in Table 12.2. This is not intended to be exhaustive and assessments will be round specific. However, it does provide a list of the main areas that should be considered in a COSHH assessment of food waste collection. Further relevant guidance is available from the HSE on 'Health & hazardous substances in waste and recycling'<sup>4</sup>

If the necessary expertise does not exist within the local authority's waste collection or contractor team, further consultation will be necessary. If there is demonstrated competence with risk assessments, however, it should be possible to extend this to an initial review of COSHH requirements.

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<sup>4</sup> <http://www.hse.gov.uk/pubns/waste27.pdf>

**Table 12.2** Issues to consider in a COSHH assessment of food waste collection

Activity	Included in assessment (tick)
<p><b>Two exposure routes</b></p> <ul style="list-style-type: none"> <li>• Hand to mouth contact and ingestion of micro-organisms such as bacteria from food waste spoilage</li> <li>• Potential for inhalation of airborne spores particularly when waste is drier and potentially dustier</li> </ul>	
<p><b>Is monitoring required?</b></p> <ul style="list-style-type: none"> <li>• Are the activities of the collectors likely to cause dusts and micro-organisms to become airborne? Examples might include dropping material, compaction, bulking large amounts or cleaning from surfaces.</li> <li>• A specific consideration for weather conditions, e.g. longer, warm and dry periods</li> <li>• Specification can follow the Association for Organics Recycling (AfOR) protocol filter method and would require specialised consultants to carry this out. This could be of particular relevance in bulking up facilities.</li> </ul>	
<p><b>Take health surveillance/ medical advice from an occupational provider but also consider:</b></p> <ul style="list-style-type: none"> <li>• Baseline lung function and an annual follow up</li> <li>• Ensuring vaccinations are up-to-date</li> </ul>	
<p><b>Monitor sick leave and reasons why to see if there are any patterns of ill health among staff:</b></p> <ul style="list-style-type: none"> <li>• Record the reasons for absence and notice taken of ailments such as stomach upsets, diarrhoea, coughs and respiratory issues, 'flu-like' symptoms which resolve quickly, and feelings of nausea and vomiting.</li> </ul>	

### 12.3 Health and safety management at food waste bulking facilities

Good planning at the design stage should include the development of safe working practices and the opportunity to successfully implement them for all stages of the operation (delivery, storage, loading and onward transfer). Items to consider at the design stage include:

- a separate and distinct delivery or tipping area where inbound vehicles are accepted;
- suitable and separate manoeuvring areas for delivery vehicles;

- suitable and separate manoeuvring areas for fork-lift trucks and loading shovels;
- a dedicated loading area for skips or trailer vehicles where loading by fork-lift or shovel forms part of the operation; and
- clear traffic management controls for access and egress to these areas, and the restriction of other vehicles and pedestrian traffic during food waste delivery, transfer or carrying (by fork-lift or shovel) and loading.

All site users and staff involved in the food waste operation (collection, site and haulage staff) should have safe working practices and risk assessments for their element of the operation. It is advised that these different elements are brought together in one place. Section 12.3.1 outlines key considerations in developing a 'Safety Code' for safe systems of work associated with the management of a food waste bulking and transfer operation.

		<p>At the West London Waste Authority transfer station at Transport Avenue, Brentford, a waste reception hopper is dedicated to food waste use. Collection vehicles reverse into the food waste bay when the barrier raises and discharge from standard rear ejection refuse collection vehicles into a hopper. Waste in the hopper is dropped into sealed ISO container units that are removed when full by a tug unit. Fully loaded food waste ISO containers are stacked and stored in a dedicated storage area prior to being loaded for rail transfer to a treatment facility.</p>
		

### 12.3.1 Safety Code at food waste bulking facilities

The Safety Code will contain instructions and protocols that must be observed by all personnel involved with food waste transfer operations. In developing the Safety Code guidance is available from the Health and Safety Executive (HSE).<sup>5</sup> HSE publications relevant to food waste bulking facilities include *Safe transport in waste management and recycling facilities* (Waste09) and *Health and safety training: Guidelines for the waste management and recycling industry* (Waste21). There is also specific HSE guidance on loading areas<sup>6</sup> and loading.<sup>7</sup>

The Safety Code should be supported by appropriate training, instruction and site induction for all personnel associated with the operation.

<sup>5</sup> See [www.hse.gov.uk/waste/information.htm](http://www.hse.gov.uk/waste/information.htm)

<sup>6</sup> [www.hse.gov.uk/workplacetransport/loading.htm](http://www.hse.gov.uk/workplacetransport/loading.htm)

<sup>7</sup> [www.hse.gov.uk/workplacetransport/factsheets/loading.htm](http://www.hse.gov.uk/workplacetransport/factsheets/loading.htm)

Table 12.3 illustrates the types of personal protective equipment (PPE) to be worn by site staff and all other personnel involved in the delivery of food waste to the bulking facility and transfer from it.

**Table 12.3** Typical PPE requirements at food waste bulking facilities

Type of PPE	Use requirement
Safety footwear with steel toecap and insole	To be worn at all times
High visibility tabard or coat	To be worn at all times
Gloves – puncture resistant	To be worn at all times
Hard hat	To be worn at all times in designated hard hat areas



At some Surrey Waste Management sites, a member of the collection crew is required to open the hydraulic lid of the skip in order for the driver to deliver the food waste load. A site requirement is the wearing of a hard hat while on site and the crew member opening the lid must comply with this.

### Key areas to be included in the 'Safety Code'

A summary of Do's and Don'ts

- Driving protocol – speed limits, reversing areas, separation of vehicles and pedestrians, proceed only under site staff direction, etc.
- Only the driver to leave the cab (where applicable)
- Use of PPE – high visibility jackets, suitable puncture-proof footwear, hard hats where appropriate.

Site-specific guidance including:

- Use of PPE
- Entry to site
- Speed limits
- Weighbridge protocols and priorities
- Traffic movements
- Permitted number of tipping vehicles
- Any unlocking of ejection or unloading body parts or removal of sheeting
- Any trip, slip or fall (dual height site) risks
- Protocol for driver only (or other crew member) out of the cab
- Open or swinging cab, body or other doors
- Use of sheeting/ unsheeting devices
- Vehicle safe working area (to allow driver or crew member to safely unload/ discharge load into delivery area)

- Reporting of any defects to plant, machinery, containers, signs, barriers, etc.
- Operation of the delivery vehicle to ensure driver is fully trained in its operation, including raising and lowering of any hoppers or pods during delivery/ collection of the food waste load
- Collection crew understand the site management requirements and their responsibilities
- Drivers are aware of their Road Traffic Act responsibilities and ensure the condition of their vehicle is acceptable before exiting the site
- Awareness of other delivery vehicles and other site traffic

Site safety code with instructions and procedures for the delivery, loading and onward transfer of food waste to include:

- Children and animals not permitted on site or, if site could be shared with a household waste recycling centre, in the area of site allocated to waste transfer operations
- Traffic management plans with internal site speed limits
- Any weighbridge on/off instructions
- Protocols on observing site signs and signals (e.g. traffic lights), queuing/ waiting arrangements and instructions from site staff (including banksmen)
- Specific tipping area requirements including vehicle control by banksman or other site operative to enter and exit delivery area
- Driver (or crew member alternative) to be the only person to leave the cab to assist in a delivery or transfer operation
- Securing of any doors, tailgates, sheeting devices, etc.
- Use of sheeting frames, covers or lids
- Exclusion of all other pedestrian and vehicular traffic during food waste delivery and loading operations – through the use of a temporary barrier to isolate the area

All site vehicle movements must be under the direct control of site staff.

Bespoke safety advice or instructions for individual pieces of plant, equipment or container

Operation of the loading shovel to bulk up and load food waste to include:

- Carried out by an authorised trained plant operative only
- Daily inspection and checks of the loading shovel
- Wearing of seat belt at ALL times
- Cab door to be closed at ALL times
- Keys to be removed when not in use
- Cleaning of the loading shovel, including wheels and loading bucket (including any COSHH requirements when using disinfectants or other cleaning agents)
- Use of a dedicated food waste loading bucket (where appropriate)

### 12.3.2 Safe working zones around vehicles and significant hazards

All food waste transfer operations should take place within designated waste or operational sites with little or no public access. Management of the food waste activity is therefore more easily controlled.

The illustrations in Appendix E give an indication of the recommended safe working zones required for a range of loading and unloading activities associated with these operations. During the unloading or loading of food waste, these areas should be kept clear of all pedestrians and vehicles that are not directly involved in the unloading/loading activity.

The only exception is direct delivery from a pod into a skip with a hydraulic roof where manual opening and closing of the roof is necessary. In this instance, the operative assigned to opening the roof must ensure that the locking pin or prop is in place once the roof is fully opened and then step away from the skip, to a safe distance, during the deposit of the food waste. Once the delivery operation is complete and the vehicle is clear, the operative can remove the locking pin, open the close valve and allow the roof to return to a closed position.



Skips with a hydraulic roof have a fail-safe pin for use when the roof is open to prevent it closing accidentally. This pin is removed before the close valve is operated. The roof has a locking device to ensure it remains closed when the skip is in transit.

At Surrey Waste Management transfer stations, the hydraulic roof is opened by a member of the collection crew delivering the food waste. On arriving at the weighbridge, the driver receives a jack handle to insert into the hydraulic pump on the skip to 'lever pump' the roof open. On arrival at the delivery area a crew member, wearing a hard hat, leaves the cab to open and close the roof for delivery of the food waste. On completion of delivery, and with the lid securely closed, the crew member returns to the cab and the jack handle is returned to the weighbridge on exiting the site.

### Sources of further information

'Scoping study of potential health effects of fortnightly residual waste collection and related changes to domestic waste systems', WRAP and CIWM, 2009

Safe waste and recycling services: [www.hse.gov.uk/pubns/waste23.pdf](http://www.hse.gov.uk/pubns/waste23.pdf)

Collection round issues and potential exposures

Waste Industry Safety and Health (WISH) Forum: [www.hse.gov.uk/waste/wish.htm](http://www.hse.gov.uk/waste/wish.htm)

Exposure to bioaerosols in waste: [www.hse.gov.uk/waste/health.htm](http://www.hse.gov.uk/waste/health.htm)

Carrying out a COSHH assessment: [www.hse.gov.uk/coshh/index.htm](http://www.hse.gov.uk/coshh/index.htm)

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