
Commentary Report

Scoping study of potential health effects of fortnightly residual waste collections and related changes to domestic waste systems



WRAP helps individuals, businesses and local authorities to reduce waste and recycle more, making better use of resources and helping to tackle climate change.

CIWM is a non profit-making organisation dedicated to the promotion of professional competence amongst waste managers.

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Front cover photography: Waste Operative pushes a garden waste wheelie bin towards collection lorry

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Introduction

It has long been known that waste resulting from human activity can create potential health hazards for householders and waste workers. Waste poorly stored, collected or disposed of has the potential to create health risks and nuisance such as flies, vermin and airborne disease.

In response to the known hazards, sensible precautions have been developed: good hygiene is essential, waste must be properly contained, and householders must be helped to understand how to use their local services properly.

Barely a decade ago, domestic waste collection in the UK was simple: waste was typically collected once a week from a single container and for the most part dumped unsorted in a landfill site. However, as the environmental damage this caused became better understood, a number of new collection systems have been developed to encourage recycling and divert waste from landfill. Typically, these systems involve the fortnightly collection of residual waste combined with a variety of recycling systems for both dry and organic wastes.

Background to the current study

The growth of these new systems has been accompanied by public questioning of the impact that the fortnightly collection of residual waste could have on health and nuisance risks and the way it should be managed.

WRAP is funded by government to advise local authorities on the most effective ways to implement recycling schemes. While the decisions about the systems to use are for individual local authorities to make, WRAP's role is to help local authorities to ensure that schemes are well designed, with well run local recycling services that are well explained to householders.

The Chartered Institution of Wastes Management (CIWM) is the professional body for the waste industry, with a particular focus on best practice and the development of professional excellence.

It was against this background that WRAP and CIWM decided they would jointly fund a review of existing knowledge about potential risks and mitigations, primarily to identify whether any further research needed to be done and whether any further guidance for local authorities or the public was necessary.

What did the study find?

A key purpose of the study was to establish the concerns which were being raised about the new waste management systems, review what was currently known about those issues including the available mitigation arrangements, and to identify areas for further work.

This scoping study has reviewed the available scientific evidence of the potential risks to householders and operatives, differentiating between those impacts that pose a nuisance and those that have the potential to harm health.

A wide ranging literature review examined over 150 published papers and documents dealing with a range of potential health impacts linked to waste management, particularly those that investigated the impact of collection frequency on public and occupational health.

No documented evidence of a direct link between the *frequency* of waste collection and any actual health impacts on householders or waste collectors was found, although the review does establish that more research has been carried out on waste treatments than on waste collection systems.

The literature review did confirm some issues that could be affected by collection frequency: the incidence of maggots and flies; manual handling issues related to the weight of the waste containers; and the risk of exposure to bacteria, moulds (and their spores), and bioaerosols (airborne microorganisms) from both kitchen and garden organic waste materials.

Although both householders and waste collectors could theoretically be affected by the factors outlined above, the conclusion is that the lower exposure of householders and the availability of simple precautions mean the risk for them is little changed from that experienced with weekly collections.

However, the repetitive nature of the occupational exposure suggests that the risks could be more significant for operatives. In particular, further work to understand the effect of long term exposure of operatives to bioaerosols is needed. Properly controlled, these issues need not become a real risk. Local authorities and their contractors should ensure that their risk assessments are up to date and relate to the collections systems in place. A precautionary approach should be used where there is uncertainty about risks.

Good practice and mitigation measures

Extensive good practice guidance is available to local authorities operating fortnightly collections (WRAP 2007). The Defra 2007b report also outlines various mitigation measures to limit nuisance to the householder and potential health impacts related to the collector.

Particularly in summer months, local authorities should remind householders to:

- keep containers outdoors and, if possible, out of direct sunlight;
- ensure waste is properly contained and there is no access for flies or rodents
- wrap food waste;
- wash hands and work surfaces after contact with waste
- maintain hygiene of containers by washing and/or disinfecting regularly, both inside and out;
- ensure a container with a tight-fitting lid is used for organic/food waste;
- where food waste is temporarily stored in the home for home composting or separate collection, empty the container regularly; and
- use a liner or place paper within the bin to soak up wet residues.

Local authorities should also:

- design waste collections carefully, e.g. type and number of containers, and flexibly, e.g. provision for the variety of dwellings included in the scheme, such as high rise and small terraced properties;
- have clear policies, particularly related to containment of waste in secure containers;
- communicate with and give clear guidance to residents;
- have sufficient staff resources to provide support and information to residents, particularly on the introduction of new schemes;

- have effective recording, handling and analysis procedures for complaints; and
- make regular risk assessments of health and safety issues for waste collectors, and ensure that training and information on mitigating any risks is made available.

The way forward

In the view of WRAP and CIWM, the outcomes of this scoping study are:

- So far, there is no direct evidence that fortnightly residual waste collections have led to any health impacts for either householders or operatives in the UK.
- More work should be done to understand the risks of long term exposure of collection operatives to bioaerosols on their own or in combination with other airborne pollutants.
- As with any waste collection scheme, fortnightly collection schemes can lead to potential health and nuisance hazards if those hazards are not managed adequately. The mitigation measures and best practice identified in the report and summarised here will substantially reduce most of the identified risks.
- Of these, the most important relate to proper storage of biodegradable waste, adequate storage capacity, good hygiene, clear communications to householders, and effective health and safety procedures.
- Separate weekly food waste collections, properly run, can significantly reduce the amount of biodegradable waste in the residual waste stream and reduce public concerns about fortnightly waste collections, but they require both clear advice to householders about hygiene issues and a precautionary approach for waste operatives while further work on bio-aerosols is carried out.

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