GREATER CAMBRIDGE SHARED WASTE

GREATER CAMBRIDGE SHARED PLANNING

North East Cambridge Area Action Plan

Proposed Submission

Topic Paper: Waste Management and Collection

Greater Cambridge Waste Service and Greater Cambridge Planning Service

November 2021

Contents

Introduction

The Greater Cambridge Shared Waste Service (GCWS) provides a waste management collection to over 126,000 households and empties over 32,000 bins each day. GCWS recognises it has a spectrum of housing types both established and new to service and this diversity is expanding. This paper summarises the position of the GCWS in its approach to waste management provision at existing and new developments to inform the North East Cambridge (NEC) Area Action Plan (AAP).

Background and context

Waste Management and collection provision to residents in Cambridge and South Cambridgeshire has traditionally been through the use of 240 litre two wheeled bins for houses and larger 1100 litre 4 wheeled bin for flats. Bins at flats have been contained within bin stores, cupboards and compounds of varying styles. To compliment the provision at the home these have been supplemented with community bring bank sites typically for items not collected from the home, e.g. textiles, books, small waste electrical items.

Issues have arisen with the management of waste from flatted development. In particular, communal storage areas, which impacts the efficiency of waste collection and the achievement of higher recycling rates. As a result, GCWS have sought more innovative solutions where these can be integrated into the design of development at the master-planning stage. Particularly relevant to larger scale strategic developments, this includes underground storage systems using specialist collection vehicles. Such systems enable waste facilities to be integrated more successfully into development and streetscene and offer the option to replace traditional bins at houses and flats and above ground bring bank sites. This is shown to be successful where the land is in single ownership but is not tested in Greater Cambridge for strategic sites in multiple ownership. The benefits to this approach include:

- Space efficiency in designing properties as no storage of bins within the property is needed.

- Has reduced the incidence of dumping of rubbish in bins stores at bring sites which creates practical and environmental difficulties and a financial burden for residents, managing agents and the Council.
- More efficient collection of rubbish (emptying fewer bins and less often).
- Bins can be remote monitored to help schedule collections.
- Residents can use the bins when they wish with no collection days to remember.
- Increases the quality of the recycling collected.

Key Evidence Documents

- Resources and Waste Strategy for England
- 25 Year Environment Plan
- Waste Management Plan for England
- National Planning Policy for Waste
- Cambridgeshire and Peterborough Joint Waste Management Strategy
- Cambridgeshire and Peterborough Supplementary Planning Document and Design Guide for developers
- Greater Cambridge Shared Waste Collection policy

NEC Evidence and Topic Papers

- Housing Topic Paper (2021)
- Environmental Health Topic Paper (2021)
- Climate Change, Energy, Water and Sustainable Design and Construction Topic Paper (2021)
- Internalisation Topic Paper (2021)
- Smart Infrastructure - Environmental Monitoring Topic Paper (2021)

Resources and Waste Strategy for England

Government are currently consulting on this strategy and the outcome will be known later in 2021. This will fundamentally change what waste local authorities collect and

how this is undertaken, e.g. from 2023 type of bins to be collected and the design of waste facilities in new development to cater for this.

National Planning Policy Framework

The NPPF (2021) has the environmental objective that aims to contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy.

National Planning Policy for Waste 2014

The Waste Management Plan for England sets out the Government's ambition to work towards a more sustainable and efficient approach to resource use and management. Positive planning plays a pivotal role in delivering this country's waste ambitions through:

- delivery of sustainable development and resource efficiency, including provision of modern infrastructure, local employment opportunities and wider climate change benefits, by driving waste management up the waste hierarchy;
- ensuring that waste management is considered alongside other spatial planning concerns, such as housing and transport, recognising the positive contribution that waste management can make to the development of sustainable communities;
- providing a framework in which communities and businesses are engaged with and take more responsibility for their own waste, including by enabling waste to be disposed of or, in the case of mixed municipal waste from households, recovered, in line with the proximity principle and dealt with as close to the source of the waste;
- helping to secure the re-use, recovery or disposal of waste without endangering human health and without harming the environment; and
- ensuring the design and layout of new residential and commercial development and other infrastructure (such as safe and reliable transport links) complements

sustainable waste management, including the provision of appropriate storage and segregation facilities to facilitate high quality collections of waste.

Greater Cambridge Waste Service Aims and Objectives 2021-22

The key objectives of the shared waste service are to:

- deliver a safe and legally compliant service;
- maintain and improve service quality that residents can see and appreciate;
- developing a low carbon service;
- reducing the total waste horizon, whilst encouraging recycling;
- lower operational costs, particularly in the areas of premises, management, administration, fleet and equipment costs;
- increase opportunities to market and compete for additional business, for instance in relation to trade waste;
- find new opportunities to reduce net costs in relation to fleet procurement and maintenance;
- achieve service improvements, greater resilience and better performance, through shared knowledge and experience;
- enhance opportunities to work with other Cambridgeshire local authorities via the RECAP (Recycling for Cambridge and Peterborough) Waste Partnership to reduce waste collection and disposal costs, improve income and secure service improvements;
- Deliver the Key Performance Indicators (KPIs) for the service (KPI's for the service are to recycle 52% of the waste collected in 2021/22 and to collect 99.7% of bins as scheduled);
- deliver the ongoing benefits of a shared service through change and innovation.

(Relevant) Operational Plans for 2021-22

- Service wide and local focused material quality campaign to reduce contamination in the recyclate.
- Implement changes to Yotta Alloy data management system for both streets and waste service to further improve digital end-to-end customer processes.
- Work with RECAP partners on contract reviews and partnership opportunities.

- Identify and develop operational plans to ensure the service will comply with the national 25 Year Resources and Recycling Strategy.
- Reduce the amount of food waste that is thrown away and increase capture of food waste.

Greater Cambridge Waste and Recycling Policy

The Councils want to develop services that result in reductions in carbon emissions, and support the waste hierarchy, putting waste prevention first. The Waste Service is committed to increasing recycling in order to maximise use of finite resources thereby minimising energy use and waste disposal. The Waste Service supports national and European pressures for change to reduce the amount of biodegradable waste that is sent to landfill. It addresses tightening health and safety laws, ensuring that the Council maintains safe, economic and efficient recycling and waste collections.

The Standard Waste Service consists of:

- 240 litre black bin or white sacks for general waste
- 240 litre green bin or brown sacks for garden and food waste
- 240 litre blue bin, boxes or transparent sacks for mixed dry recyclables
- Properties such as flats or accommodation blocks will normally use communal 1100 litre and 660 litre wheeled bins
- In most cases the service operates an alternate weekly collection with the exception of green waste that is collected on a monthly basis from December, January and February
- Currently operating a weekly collection of Food waste using a 23 litre caddy for houses and an 140 litre brown bin for flats, as we expect separate food waste to become mandatory from 2023.

The policy is flexible on how the collections are provided to new developments, particularly flatted schemes, recognising the constraints and amenity implications of bins and communal waste storage areas. The current waste collection policy can be

found on the Cambridge City Council and South Cambridgeshire District Council websites:
https://www.cambridge.gov.uk/bin-collection-performance-and-policy
https://www.scambs.gov.uk/bins/recycling-and-reducing-waste/our-policy-and-performance/

Cambridge City Local Plan 2018

Policy 28 - Carbon reduction, community energy networks, sustainable design and construction and water use. This policy directs development to prepare a Sustainability Statement as part of the Design and Access Statement and include sustainable design and construction principles into their proposals which need to consider amongst other sustainability principles site waste management.

South Cambridgeshire Local Plan 2018

Policy CC/1: Planning permission will only be granted for proposals that demonstrate and embed the principles of climate change mitigation and adaptation into the development. Applicants must submit a Sustainability Statement to demonstrate how these principles have been embedded into the development proposal. The level of information provided in the Sustainability Statement should be proportionate to the scale and nature of the proposed development. Supporting text states:
Climate change mitigation means taking action to reduce the causes of climate change, primarily through reductions in greenhouse gas emissions. Designing and constructing developments that are extremely energy efficient or make the best use of renewable energy technologies are both ways of helping to mitigate further climate change.

Policy CC/6 Construction Methods: Development which by its nature or extent is likely to have some adverse impact on the local environment and amenity during construction and/or generate construction waste must: a. Carefully manage materials already on-site (including soils), or brought to the site, to reduce the amount of waste produced and maximise the reuse or recycling of materials either onsite or locally. Any construction spoil reused within the development should take account of the landscape character and avoid the creation of features alien to the topography; b.

Ensure that constructors are considerate to neighbouring occupiers by restricting the hours of noisy operations and by locating storage compounds and using plant or machinery to avoid noise, smells, dust, visual or other adverse impacts. 2. Where practicable, construction traffic will be required to be routed to avoid roads passing through villages. 3. Any temporary haul roads must: c. Be agreed with the Local Planning Authority; d. Be located, designed and landscaped in such a way as to avoid any adverse impacts on existing residents and businesses; e. Have an agreed methodology for where they cross public rights of way; and f. Include provision for the cleaning of vehicle tyres to avoid the deposition of mud / debris on the public highway and the generation of dust. 4. Applicants must submit supporting documents with any planning application to demonstrate how their development will comply with this policy; this should include a Construction Environmental Management Plan (CEMP) or similar document and may include registration with the Considerate Constructors Scheme. The level of information provided in the supporting documents, including CEMP or similar document, should be proportionate to the scale and nature of the proposed development.

RECAP Supplementary Planning Document (SPD)

The RECAP SPD needs reviewing and does not fully reflect the latest guidance from the Greater Cambridge Waste Service. This is currently being reviewed and until this is published it should be considered in line with up to date guidance on the Cambridge City Council and South Cambridgeshire District Council websites:
https://www.cambridge.gov.uk/recycling-and-waste-guide-for-developers
https://www.scambs.gov.uk/planning/planning-permission/developer-guidance/waste-and-recycling-guide-for-developers/

Performance Data

Greater Cambridge Waste Service has a good recycling rate as shown below.

	2020/21
Quarter 1	51.17%
Quarter 2	54.20%
Quarter 3	50.12%
Quarter 4	47.71%
Annual	**50.92%**

Growth across Greater Cambridge makes maintaining this good performance a challenge. Robust communications from the Council is vital for new residents but provision of suitable collection arrangements can have a fundamental effect on residents' participation in a scheme, both in terms of quantity and quality of recycling collected.

In particular, the success of recycling collection can be hampered by ineffective design of communal collection from flats. Greater Cambridge has a significant number of existing flats and new ones being developed. Residents in flats have little accountability for their waste which leads to abuse of bins (putting the wrong items in meaning it cannot be recycled) and abuse of bin stores themselves (dumping of items in bin stores). When this happens, the waste service cannot access the bin to empty it, it is very unpleasant for residents to use and interest and good will to do the right thing wanes. If bins cannot be emptied on the first occasion and it is necessary to return, or excess waste needs clearing, the cost of this is borne by the Council, managing agent and the tax payer.

Of the 51% recycling rate in 2020/21 about 24% was dry mixed recycling and by comparison the amount of dry mixed recycling collected from Eddington underground communal recycling areas is over 30%.

More open bin storage arrangements can have a positive effect, whether these are freestanding above ground or underground. They make the facilities more pleasant

to use, reduce antisocial behaviour and ongoing costs. They can even foster better social interaction and neighbourliness.

A recent analysis of the general rubbish collected (summer 2019) has shown how much more food waste is left in rubbish bins than is recycled, and highlights how much more food waste, paper and plastic there is to capture. Successful design of waste storage will have an important part to play in achieving this.

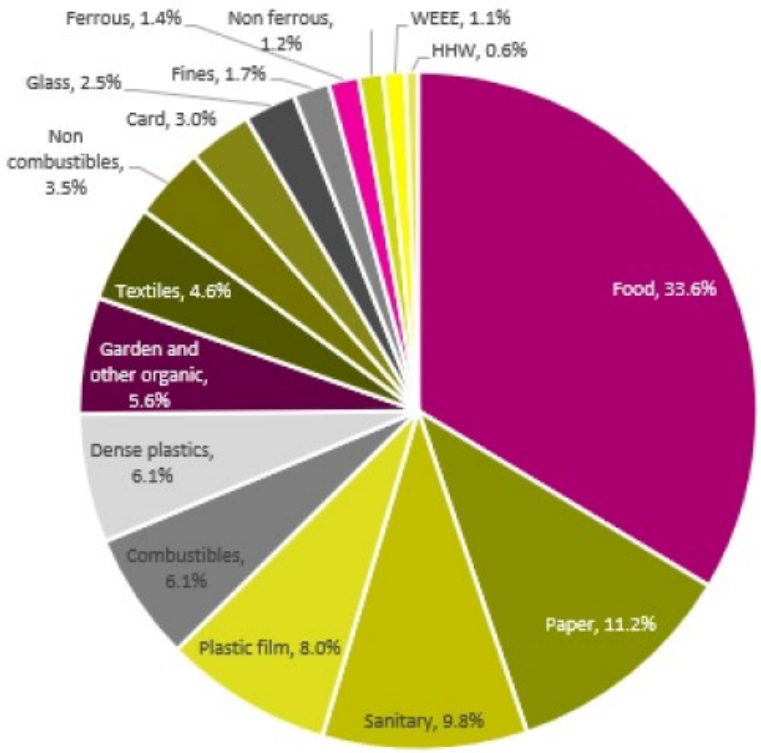

Figure 30 Composition of kerbside residual waste in Greater Cambridge Shared Services (%)

Image from RECAP Waste Analysis report, Resource Futures July 2019

Other Issues Requiring Consideration

- Yellow lines in public realm areas are a must adjacent to communal collection points for flats or for bring banks. This deters cars parking in spaces that are needed by refuse collection lorries. Underground containers cannot be lifted over vehicles when being emptied and a clear line of access to the vehicles is needed to pull wheeled bins. They should not be pulled past parked cars to get the lorry.

- Appropriate provision for garden and food waste needs to be considered.
- There should be no street furniture close to the underground bunkers as to not interfere with the crane operations in the emptying of the bins.
- The high density of dwellings at North East Cambridge may pose challenges in terms of number of underground collections sites, but it may be possible to balance this with increased collection frequency.

Type of system and what is to be collected

What system is most appropriate is dependent on; location, size of development, service user - houses or flats, and what is being collected.

Types of waste	HI-AB system (larger container sunk into in the ground. Needs vehicle mounted crane to lift)	Hydraulic system (Hydraulic powered platform on which a wheeled bin stands. Can be emptied by traditional collection vehicle)
General rubbish	☑	☑
Dry mixed Recycling	☑	☑
Garden waste	☑	☑
Food waste		☑
Mixed garden and Food	☑ (smaller size container needed)	☑
Bring banks for textiles, books and Small electricals		☑

Current Waste Collection provision on strategic development sites within Greater Cambridge

Eddington, Cambridge

- All houses and flats have underground for rubbish and recycling. Exclusively HIAB (vehicle mounted cranes) system.

Chesterton Road, Cambridge

- Bring banks for dry mixed recycling (hydraulic lift system).

Hawkey Road, Trumpington, Cambridge

- Bring banks site for dry mixed recycling and Small Electrical (HI-AB and hydraulic lift system).

Fawcett Road Abode Estate, Trumpington, Cambridge

- Bring banks site for dry mixed recycling and small electrical (HI-AB and hydraulic lift system). There was some issues with installation and during collections, but nothing significant to discourage option and seek to plan out with new sites.

Glebe Farm Drive, Trumpington, Cambridge

- Bring banks for dry mixed recycling and small electrical items (HI-AB and hydraulic lift system)

Osprey Drive, Trumpington Meadows, Cambridge

- Bring banks for textiles and small electricals (hydraulic lift system)

Relating the Experience of Eddington underground collection system to North East Cambridge

Eddington is the only location so far where it has exclusively replaced wheeled bins for house and flats by using an underground collection system for general waste and recycling. NEC will be more challenging because of the multiple land ownership, but this emphasises the importance of a coordinated approach to promote joint working between the landowners both in the design and post construction phases, including the establishment of a management company or similar to manage site-wide infrastructure provision, such as waste management.

In Eddington, communal bring banks are used for garden and food waste that is collected and taken to be composted through on-site site management. Lessons can be learnt from this experience for NEC and, whilst not replicating the approach, seek to implement a bespoke scheme that is fit for purpose.

It is recognised that Eddington is not a typical development with the University managing all the public realm and maintaining the whole site. On NEC land ownership and management is fragmented. It may also be more challenging to secure the economies of scale that was possible for the University on one site that may impact on viability. This highlights the reliance upon a coordinated approach and overarching governance and management to enable an innovative form of waste collection services to be successfully implemented.

The performance of Eddington started to be monitored about 4 years ago, but this was interrupted by the pandemic. The monitoring will continue to enable further analysis on the waste collection operation and its outcomes to determine what further lessons can be learnt. Nevertheless, the early indications of how Eddington is operating is positive and should inform future developments like NEC.

Possible Alternative Approach – ENVAC system

As an alternative approach the ENVAC system has been used extensively elsewhere in Europe and closer to home at the Wembley redevelopment. Higher density development is required to make such a system viable. At Wembley there is a gross density of 122dph (average across the masterplan area), but this includes the stadium development and as such the overall NET density is higher than 122dph. The 'Housing Design Handbook' by Levitt et al (2018) says that 'it is hard to imagine the system being economic in developments of less than 100-150dph'. Densities at NEC are on average 100 dph (ranging from 70dph to 300dph) so potentially suitable. According to the ENVAC website it reduces 'waste collection lorry miles by up to 90%'.

Preferred Approach and Reason

The draft AAP seeks to support the objectives of sustainable waste management and will require all new development to address waste management from design and construction stage through to end use, ensuring that it is managed towards the upper end of the waste hierarchy and recycling rates are maximised. To this end it is

important that one primary collection system is used, rather than a mix, to aid the efficient operation.

In recent years Greater Cambridge has successfully managed the volume of general waste going to landfill and increased recycling rates. The Councils therefore remain committed to the existing systems for the segregation of waste at source. However, as higher density flatted development becomes more prominent, the number of bins required can be unsightly and cause obstruction, whilst the disposal of recycling and organic waste can cause nuisance in terms of noise and odour.

Therefore, more innovative systems should be explored for North East Cambridge to overcome these issues. The Greater Cambridge Waste Service (GCWS), based on 4 years of collections and site monitoring at Eddington, has seen how well an underground system of waste management and collection can perform from an operational and resident's perspective. The GCWS therefore considers North East Cambridge to be suitable for implementation of the same underground waste system. This would require the underground waste provision to be integrated into the development as part of the early masterplanning process to inform the design of the public realm and streets to secure functionality of the system and to ensure the above ground elements do not give rise to visual and amenity impacts.

This system should cater for general rubbish, dry mixed recycling (possibly divided between two bins), and separate food waste. It may also be possible that houses could also use this same disposal point where appropriate. If these houses have gardens (or the ground floor flats have gardens they are responsible for) then provision needs to be made for the collection of garden and food waste separate from each other.

Prior to implementing an underground system, advice should be sought on the specifications of the system, including bin type and size, servicing requirements, access arrangements and measures to be applied to optimise efficiency.

If comprehensively demonstrated that underground banks are not feasible, consideration should be given to the use of a system such as that provided by

ENVAC in Wembley (installed in 2008) and Barking and Dagenham in London (Autumn 2019). This system still uses communal waste drop off points, as per the Eddington site, but instead of many individual bunkers below each receptacle, these drop off points are linked via underground pipes to a central collection hub and so the underground infrastructure is substantial. Once a certain amount of waste is deposited, the waste is sucked along the pipes to this central hub and means all waste is picked up from one location by the Council.

Barking is only the second site in the UK to use this technology, following the installation of the system at Wembley in 2008. Globally over 1,000 locations – from use the Envac waste management set up https://www.envacgroup.com/.

If neither underground banks or ENVAC are demonstrated feasible, the default position will be to the current communal bin storage facilities within flatted development. However, consideration should still be given to maximising separation at source, including consideration to either waste collection points on each floor or to a chute system that provides ease of disposal and waste separation.

Regardless of the type of waste management system to be employed, consideration should also be given to the collection and disposal of bulkier household items. This should be provided as a separate space from the general municipal and managed by a building body corporation, with collection arrangements agreed with GCWS or a registered waste operator.

It is further recommended that the Bring Banks Sites are underground as it reduces antisocial behaviour around these community facilities.

Following the Councils agreement of the AAP proposed submission document discussions will continue between the Greater Cambridge Shared Planning Service and GCWMS about the provision of more detailed advice on waste collection in high density development to inform the Development Management process.

It will be important to explore how a coordinated area wide approach can be implemented for NEC as a whole including some form of overarching governance and management for these waste collection services.

The current waste collection policy can be found on the Council website: https://www.cambridge.gov.uk/bin-collection-performance-and-policy

The RECAP Supplementary Planning Document needs reviewing and does not fully reflect the latest guidance from the GCWS. This is currently being reviewed. Until a revised version is published it should be considered in line with up to date guidance on the website: https://www.cambridge.gov.uk/recycling-and-waste-guide-for-developers

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