



Cumberland and Westmorland & Furness Joint Waste Needs Assessment 2025/26

Management Requirements for Local Authority Collected Waste in Cumberland and Westmorland & Furness to 2045

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Abbreviations and Glossary

Abbreviations

Abbreviation	Term
AD	Anaerobic Digestion
C & I	Commercial & Industrial Waste
C, D & E / CDEW	Construction, Demolition & Excavation Waste
DEFRA	Department for Environment, Food and Rural Affairs
DMR	Dry mixed recyclables
EA	Environment Agency
EfW	Energy from Waste
EWC	European Waste Catalogue
GVA	Gross value added
HWRCs	Household Waste Recycling Centres
LACW	Local Authority Collected Waste
MBT	Mechanical Biological Treatment
MRS	Metal Recycling Site
MRF	Material Recycling Facility
MWMS	Municipal Waste Management Strategy
RDF	Refuse Derived Fuel
WCA	Waste Collection Authority
WDA	Waste Disposal Authority
WDF	WasteDataFlow
WDI	Waste Data Interrogator
WIR	Waste Incinerator Returns
WNA	Waste Needs Assessment
WPA	Waste Planning Authority
WTS	Waste Transfer Station

Glossary of Terms

Term	Definition
Agricultural Waste	Waste produced on a 'farm' in the course of 'farming'. Agricultural waste takes both 'natural' (or organic) and 'non- natural' forms e.g. plastics and metal.
Anaerobic Digestion	A process to manage organic matter including green waste and food waste broken down by bacteria in the absence of air, producing a gas (biogas) and nutrient rich solid or liquid (digestate). The biogas can be used to generate energy either in a furnace, gas engine, turbine or to power vehicles, and digestate can be applied to land as a fertiliser.
Biodegradable waste	Waste that can break down over time due to natural biological action/processes, such as food, garden waste and paper.
Commercial Waste	Waste from factories or premises used for the purpose of trade or business, sport, recreation or entertainment
Controlled Waste	Waste subject to controls emanating from the EU Waste Framework Directive.
Construction, Demolition & Excavation Waste	Waste arising from the building process comprising demolition and site clearance waste and builders' waste from the construction/demolition of buildings and infrastructure. Includes masonry, rubble and timber.
Defra	The UK Government department responsible for developing national waste management policy.
Energy from Waste	The conversion of the calorific value of waste into energy, normally heat or electricity through applying thermal treatment of some sort. May also include the production of gas that can be used to generate energy.
Environment Agency	The body responsible for the regulation of waste management activities through issuing permits to control activities that handle or produce waste. It also provides up-to-date information on waste management matters and deals with other matters such as water issues including flood protection.
European Waste Catalogue (EWC)	Comprehensive listing of wastes divided into 20 chapters, most of which are industry-based, although some are based on materials and processes. Each waste type is assigned a unique six-digit code. Otherwise referred to as List of Waste (LoW).
Exemptions	Certain activities exempt from the need to obtain an environmental permit. Each exemption has specific limits and conditions that must be complied with to remain valid. Exemptions must be registered with the Environment Agency. Each registration lasts 3 years.
Green waste	Biodegradable plant waste from gardens and parks such as grass and hedge trimmings, from domestic and commercial sources suitable for composting.
Gross value added	Gross value added (GVA) measures the contribution made to an economy by one individual producer, industry, sector or region. The figure is used in the calculation of gross domestic product (GDP)
Hazardous Waste Landfill	Sites where hazardous waste may be disposed by landfill. This can be a dedicated site or a single cell within a non-hazardous landfill, which has been specifically designed and designated for depositing hazardous waste.
Hazardous Waste	Waste requiring special management under the Hazardous Waste Regulations 2005 due to posing potential risk to public health or the environment (when improperly treated, stored, transported or disposed). This can be due to the quantity, concentration, or characteristics of the waste.
Household Waste	Waste from households collected through kerbside rounds, bulky items collected from households and waste delivered by householders to household waste recycling centres and "bring recycling sites". along with waste from street sweepings, and public litter bins.
Incineration	The controlled combustion of waste. Energy may also be recovered in the form of heat (see Energy from Waste).
Industrial Waste	Waste arising from any factory and from any premises occupied by an industry (excluding mines and quarries).
Kerbside Collection	The collection of recyclate and waste from households.

Landfill (including land raising)	The permanent disposal of waste to land, by the filling of voids or similar features, or the construction of landforms above ground level (land-raising).
Local Authority Collected Waste	Waste collected by or on behalf of a local authority. Includes household waste and business waste where collected by a local authority and non-municipal fractions such as construction and demolition waste delivered to HWRCs. LACW is the definition used in statistical publications, which previously referred to municipal (solid) waste (MSW).
Materials Recycling Facility (MRF)	A facility for sorting recyclable materials.
Mechanical Biological Treatment (MBT)	A waste facility that combines a sorting facility with a form of biological treatment such as composting or anaerobic digestion.
Mining Waste	Waste from extractive operations (i.e. waste from extraction and processing of mineral resources) including materials that must be removed to gain access to mineral resources, such as topsoil, overburden and waste rock, as well as tailings remaining after minerals have been extracted from the ore.
Municipal Solid Waste (MSW) (from 2010)	Local Authority Collected Waste plus any wastes similar in nature and composition including that collected from businesses by private waste collection companies. (Term used for reporting against retained EU Directives only).
Non-Hazardous Waste Landfill	A landfill permitted to accept non-inert (biodegradable) wastes e.g. municipal and commercial and industrial waste and other non-hazardous (including inert) wastes. May only accept hazardous waste if a special cell is constructed.
Open Windrow Composting	A process in which biodegradable waste (such as green waste) is broken down in an open air environment (aerobic conditions) by naturally occurring micro-organisms to produce a material suitable for use as a soil improver.
Other Recovery	Processes such as energy from waste that recover value from waste other than recycling or composting. Sits below recycling in the waste hierarchy, but above disposal.
Recovery	Subjecting waste to processes that recover value including recycling, composting or thermal treatment to recover energy.
Recycling	The reprocessing of materials extracted from the waste stream either into the same product or a different one.
Refuse Derived Fuel	A fuel produced to a contract specification by processing the combustible fraction of waste.
Residual Waste	Waste remaining after materials for re-use, recycling and composting/organic waste treatment e.g. anaerobic digestion have been removed.
The Plan area	The area subject to the Local Plan to which this study relates. In this case the Districts of Cumberland and Westmorland & Furness which together formed the former county of Cumbria.
Waste Collection Authority (WCA)	A local authority that has a duty to collect household waste. WCAs also have a duty to collect commercial waste if requested to do so and may also collect industrial waste. In this case both Cumberland and Westmorland & Furness councils.
Waste Data Interrogator	Annual dataset published by the Environment Agency reporting quantities and types of waste managed at permitted waste management facilities in England.
Waste Disposal Authority (WDA)	A local authority responsible for managing the waste collected by waste collection authorities and the provision of household waste recycling centres. In this case both Cumberland and Westmorland & Furness councils
Waste Minimisation / Reduction	The most desirable way of managing waste according to the Waste Hierarchy, by avoiding the production of waste in the first place.
Waste Needs Assessment	Forecasts waste that will require management by different means in a WPA area over a certain period of time, assesses capacity of the existing facilities available to manage this waste and considers the need for additional facilities to meet the forecast management needs. This underpins the preparation of planning policies for waste.
Waste Planning Authority	The authority responsible for planning for waste within a specific administrative area. In this case both Cumberland and Westmorland & Furness councils
Waste Transfer Station	A site to which waste is delivered for sorting or baling prior to transfer to another place for recycling, treatment or disposal.

1. Purpose

1.1 In 2022 BPP Consulting produced a Waste Needs Assessment (WNA) for Cumbria as a whole for Cumbria County Council, using data for 2020. Since then, in 2023 Cumbria County Council has been split into two unitary authorities, Cumberland Council and Westmorland & Furness Council (W&F). This report forms part of a suite of documents that presents the outputs of the Cumberland and Westmorland & Furness Joint WNA 2025 consisting of the following documents:

1. Local Authority Collected Waste Management Requirements to 2045;
2. Commercial & Industrial Waste Management Requirements to 2045;
3. Construction, Demolition & Excavation Waste Management Requirements to 2045;
4. Hazardous Waste Management Requirements to 2045; and
5. Scoping Review of Other Waste Management Requirements.

This report relates to the management requirements for Local Authority Collected Waste (LACW) in Cumberland and Westmorland & Furness in combination, as its management is subject to a single contract. This has been assessed by projecting LACW arisings from the baseline year of 2023 forward to 2045.

Principal Data Sources

1.2 The principal data sources used to generate the underlying evidence for this report are the Environment Agency's Waste Data Interrogator (WDI) and Defra's Wastedataflow (WDF).

Waste Data Interrogator

1.3 Operators of all sites permitted to manage waste submit returns on the quantities, types and origin of waste received and, where applicable, destination of waste removed at their sites. These returns are collated by the Environment Agency and are included in a national dataset known as the Waste Data Interrogator (WDI). This is released approximately nine months after the end of the calendar year to which the data relates. The 2023 WDI (composed of data for the calendar year 2023) is the current version available (version 1 released Sept 2024) at the time of writing. The WDI now includes inputs to facilities such as incinerators which previously were reported separately through the Environment Agency's Waste Incinerator Returns up to 2020.

Wastedataflow

1.4 Wastedataflow (WDF) is a web-based data entry portal for local authorities to report on local authority waste management arrangements to central Government (Defra) on a quarterly basis. The data input is used to report on national recycling and landfill diversion performance as well as local authority league tables on recycling rates etc following independent quality checking. While Councils normally report in financial years, as the EA WDI reports for calendar year the data covering the four quarters of 2023 has been used to ensure comparability between datasets.

Advice on Data

1.5 The principal source of advice with respect to the use of data to inform production of a plan evidence base is the national Planning Practice Guidance available at <https://www.gov.uk/guidance/waste>. This states that:

"Assessing waste management needs for Local Plan making is likely to involve:

- *understanding waste arisings from within the planning authority area, including imports and exports*
- *identifying the waste management capacity gaps in total and by particular waste streams*
- *forecasting the waste arisings both at the end of the period that is being planned for and interim dates*
- *assessing the waste management capacity required to deal with forecast arisings at the interim dates and end of the plan period."*

Paragraph: 022 Reference ID: 28-022-20141016

1.6 It includes a section entitled " Using data to monitor and forecast waste needs", which articulates the following principles should waste planning authorities adopt when using data to plan for waste management:

- *Make clear assumptions on how data were handled, as well as their impact (including on forecasting)*
- *Provide data to an appropriate level of significance, based on their explicit assumptions. In practice, data quoted to more than 2 or 3 significant figures will not be helpful and spurious accuracy stemming from precise figures should be avoided*
- *Plan for a range of each type of waste rather than a specific single figure."*

Paragraph: 036 Reference ID: 28-036-20141016 Revision date: 16 10 2014

1.7 In order to respect the need to avoid "spurious accuracy", the following approach has been taken:

1. Where actual tonnage data has been accessed, this has been used in the computations.
2. Where data has been subject to computation, this has been included to 3 sf.
3. Where percentages have been used to generate data, the percentages are presented as whole numbers, however the computations actually use the full value. This means that values presented may not always precisely correspond to the values computed when applying the percentage value presented in this report.
4. Final values have been corrected to nearest five hundred.

2. Introduction

- 2.1 This section of the report is concerned with updating the baseline value and growth rate to be used for forecasting future arisings of Local Authority Collected Waste (LACW) in Cumbria as a whole. The report is also concerned with establishing the current LACW management profile and assessing appropriate targets in order to identify potential future capacity requirements that may need to be planned for.

Definition

- 2.2 In the UK, until 2010, the term Municipal Solid Waste (MSW) was taken as meaning waste collected by local authorities (mainly from households). However, to ensure consistency with the EU definition of municipal waste used in the Landfill Directive, in 2010, the UK expanded the definition to include not just waste from households but any wastes similar in nature and composition and so, for the first time in the UK, municipal waste included wastes arising from businesses providing it is of a similar type.
- 2.3 In light of this, it was necessary to establish a new term for waste for which local authorities have responsibility to collect/manage, 'Local Authority Collected Waste' (LACW). LACW includes 'household waste' (waste collected from homes produced by householders (collected household waste) and waste deposited at Household Waste Recycling Centres (HWRCs), plus commercial waste collected by or on behalf of Councils, plus street sweepings, litter and fly tipped materials. In general, the non-household waste fraction of LACW represents around 5% of total LACW arisings.
- 2.4 It should be noted that even though hazardous waste is accounted for separately, arisings in the LACW stream have not been discounted from the totals on the basis that the tonnage received was insignificant (c300 tonnes in 2023).

Waste Disposal Authorities

- 2.5 The Cumberland and Westmorland & Furness Councils each has the responsibility as the Waste Disposal Authority (WDA) for the final management of Local Authority Collected Waste arising within their respective area of jurisdiction. In 2009, Cumbria County Council as WDA entered into a 25-Year Public Private Partnership (PPP) contract for the management of LACW arising across Cumbria through to 2034. This contract is currently held by Biffa Waste Services.
- 2.6 As both Councils are unitary authorities, they also have responsibility as Waste Collection Authority to provide collection services for waste and recyclable materials, collected directly from householders for their respective areas. This includes residual, recycling, garden, and bulky waste collections, as well as managing local recycling centres (known as bring sites) and making contractual arrangements for sorting of recyclable materials. Waste collection authorities are also responsible for street cleansing services, including the removal of street litter, fly-tipping, leaf fall and debris. These services are either carried out by direct labour or contracted out to third party waste collection companies. Given that the data available only covers the first year of each Councils' existence, historical data presented relates to Cumbria as a whole.

3. Cumbria LACW Management Profile

3.1 The change in the way LACW arising in Cumbria has been managed over the last decade is shown in Figure 1 below.

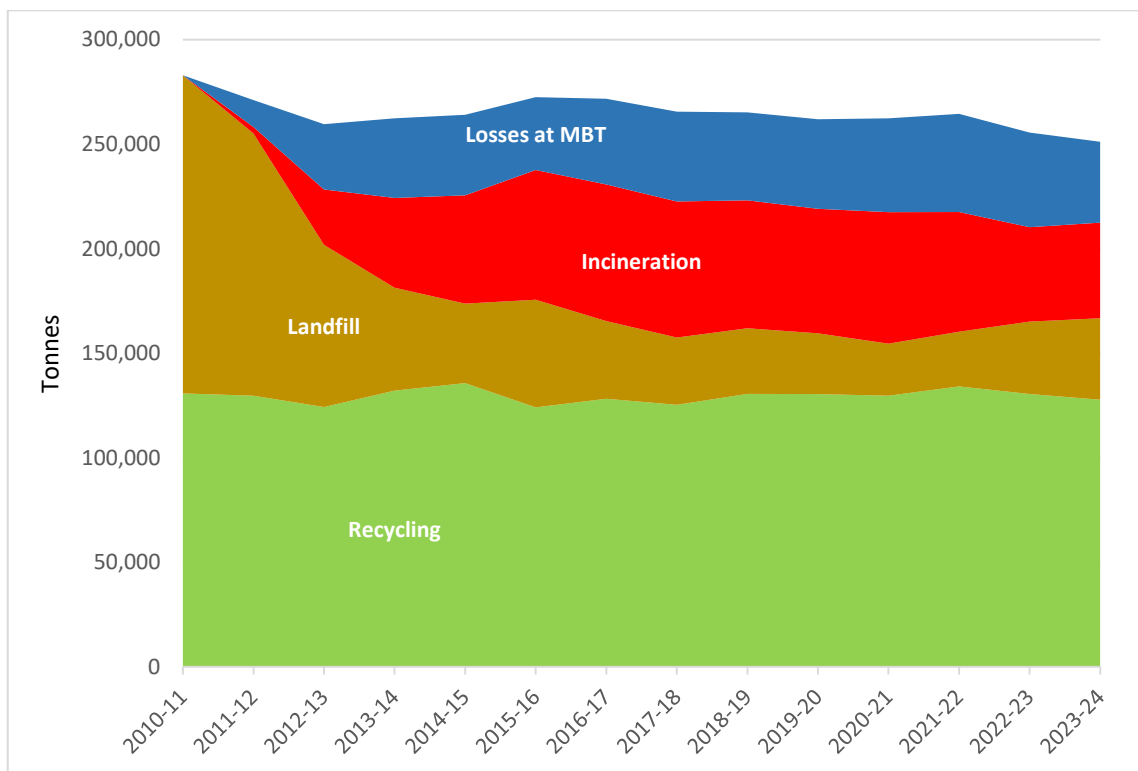


Figure 1: Management Profile for Cumberland and Westmorland & Furness LACW 2010/11 – 2023/24 (tonnes)

3.2 Figure 1 shows that the LACW management profile between 2010/11 and 2023/24 is underpinned by recycling and composting which peaked in 2014/15 and stabilised from 2015/16 onwards with an average rate of c50% (c130,000 tpa) and peak of 51% from 2021-22 onwards. It also shows the transition in final management method for residual waste (waste remaining after recycling/ composting), from landfill to incineration with landfill reducing and incineration increasing from 2010/11 to 2020/21 but then landfill increasing to 16% in 2023/24 and incineration falling with the difference being accounted for by losses at the two MBT plants where collected LACW undergoes pre-treatment for final management predominately via incineration.

4. LACW forecast

4.1 The following have been taken into account in projecting future LACW arisings in Cumberland and Westmorland & Furness in combination over the Plan period:

- National Planning Practice Guidance (nPPG)
- National forecast of LACW growth in England
- Historical pattern of LACW arisings in Cumberland and Westmorland & Furness
- Interim Cumbria Joint Municipal Waste Management Strategy 2022-26.

These are discussed below.

Planning Practice Guidance

4.2 The national Planning Practice Guidance (PPG)¹ states the following in relation to forecasting future municipal waste arisings (now referred to as LACW):

"How should waste planning authorities forecast future municipal waste arisings?"

Forecasts of future municipal waste arisings are normally central to the development of Municipal Waste Management Strategies.

It will be helpful to examine municipal waste arisings according to source (i.e. household collections, civic amenity site wastes, trade waste etc.). This may allow growth to be attributed to particular factors and to inform future forecasts.

A 'growth profile', setting out the assumed rate of change in waste arisings may be a useful starting point for forecasting municipal waste arisings. The growth profile should be based on two factors:

- *household or population growth; and*
- *waste arisings per household or per capita.*

How is a growth profile prepared?"

A growth profile is prepared through a staged process:

- *calculate arisings per head by dividing annual arisings by population or household data to establish short- and long-term average annual growth rates per household and*
- *factor in a range of different scenarios, e.g. constant rate of growth, progressively lowering growth rates due to waste minimisation initiatives.*

The final forecast can then be modelled with scenarios based on the long- and short-term rate of growth per household, together with household forecasts."

4.3 It is notable that the examples of growth scenarios given in PPG refer to either a constant rate or lowering of growth rates i.e. there is no mention of the possibility of a rising growth rate, suggesting that the Government does not see increasing growth in LACW as a scenario to be modelled.

4.4 In the previous WNA 2021 for Cumbria prepared by BPP Consulting, arisings in 2037 were projected to be c255,500 tonnes which resulted from a gradual decrease of c7,000 tonnes from the 2020 figure of 262,000 tonnes.

¹ Ref.: Revision date: 16 10 2014 Paragraph: 029 & 30 Reference ID: 28-029-20141016

National forecast of LACW growth in England

4.5 DEFRA published a study of Future Waste Arisings in England² in 2021. This includes the most current national growth forecast published by Government for the LACW waste stream (amongst others). The method used to produce a forecast for LACW waste nationally involved the development of a model³ using external variables such as population growth and Regional Gross Disposable Household Income trends (GDHI) to project LACW growth. Three scenarios were constructed (central, lower and upper) but for the purposes of this exercise the central forecast is referred to. The graph resulting from the forecast produced is reproduced as Figure 2 below.

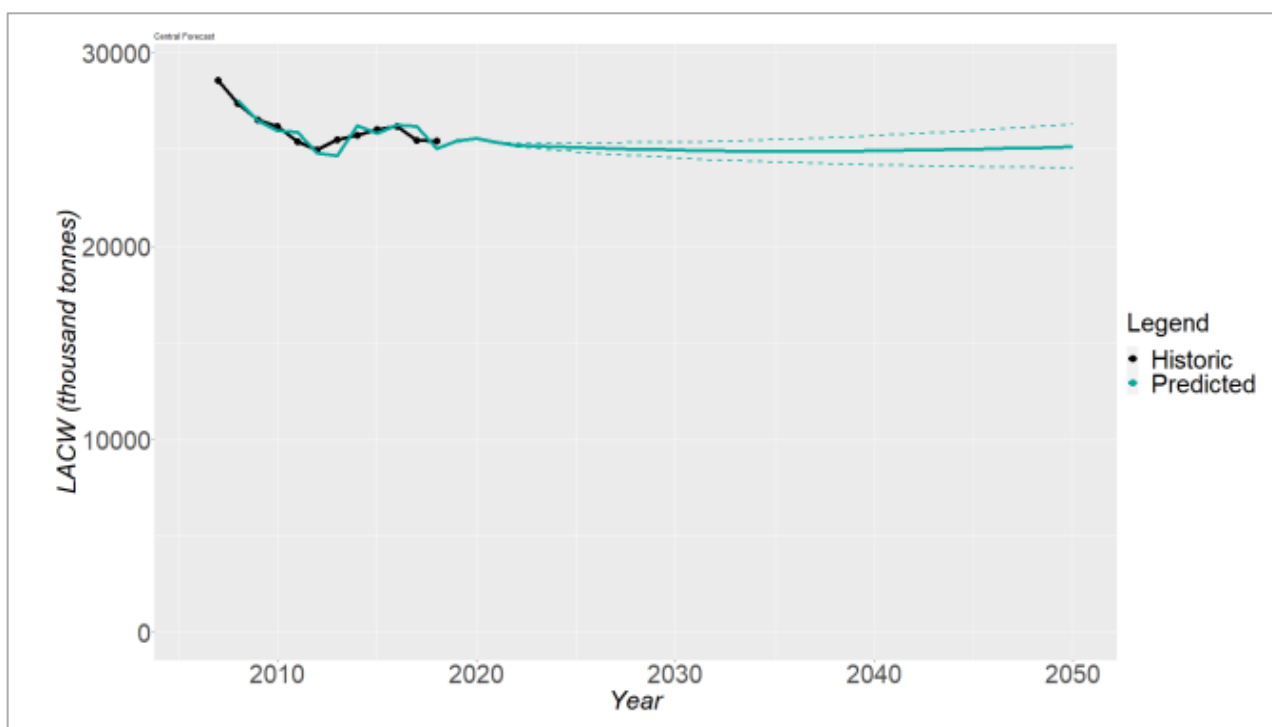


Figure 2: Central Local Authority Collected Waste Arisings Forecast for England (2020-2050)

Source: Future Waste Arisings, for DEFRA (2021)

4.6 Figure 2 shows that nationally, LACW arisings are predicted to increase slightly in 2020 and then decrease marginally from 2022 to 2035, with a slight upswing from 2035 to 2050. The growth rate indicated at 5-year intervals from 2020 is shown in Table 1 below:

Table 1: Defra National LACW Forecast 5-year Growth Rates

Year	2020	2025	2030	2035	2040	2045	2050
5-year growth rate	-	-2.12%	-0.18%	-0.54%	+0.37%	+0.18%	+0.54%

² 'Future Waste Arisings' Eunomia, April 2021

³ This is different to a standard time-series forecast as it includes lagged dependent variables

4.7 The DEFRA 2021 report provides a feel for the direction in which growth in LACW in Cumberland and Westmorland & Furness may be headed, but it should of course be noted that the report is intended to provide a national picture, and so presents an average of what is predicted to happen across England. Thus, it masks any regional or local differences, such as varying levels of prosperity and associated consumption. It should be noted that the forecasts presented in the DEFRA 2021 report were used as the basis for modelling of the achievement of targets related to the policy goals of national Resources & Waste Strategy published in 2018⁴ and the Environment Act and the Simpler Recycling initiative, and so represents the forecast of LACW that is driving national policy that in turn can reasonably be expected to impact LACW arising locally in Cumberland and Westmorland & Furness.

Historical Pattern of LACW Arising in Cumbria

4.8 The applicability of the conclusions of the 2021 DEFRA report on future LACW arisings to the situation in Cumberland and Westmorland & Furness, can be tested by considering the observed pattern of LACW arisings in Cumberland and Westmorland & Furness over the past decade, as shown in Figure 3 below. The average annual growth rate over this period is minus 0.42% as shown in Table 2.

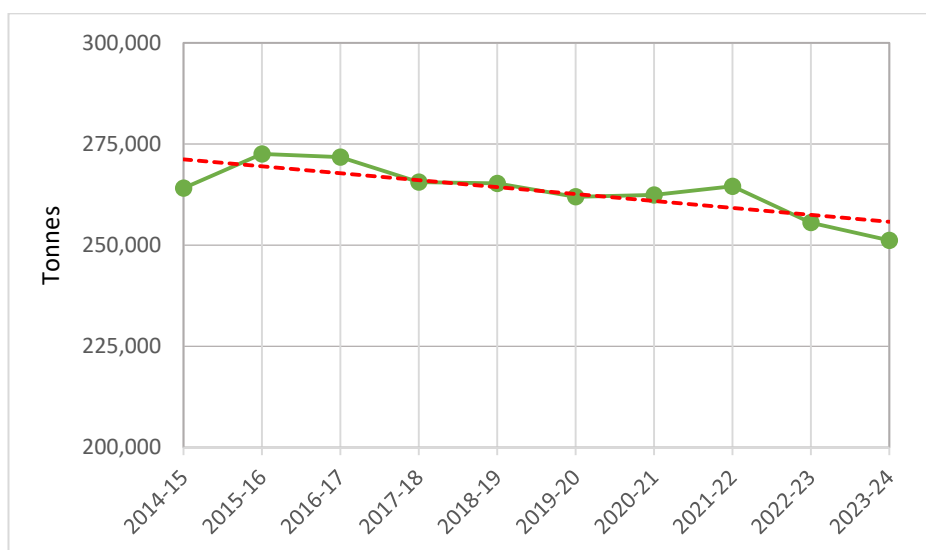


Figure 3: Trend in LACW Arisings in Cumberland and Westmorland & Furness 2014/15 to 2023/24

*Dashed red line is a trend line that indicates an average annual growth rate of -0.42 over the period.
(y axis not set to zero)*

⁴ Our Waste, Our Resources: A Strategy for England, Department for Environment, Food & Rural Affairs, December 2018.

Table 2: Cumbria LACW arisings between 2014/15 and 2023/24 including 5yr growth rates

Year	Total	Annual growth rate	5-year growth rate
2014-15	264,066	0.64%	0.23%
2015-16	272,500	3.19%	
2016-17	271,726	-0.28%	
2017-18	265,554	-2.27%	
2018-19	265,223	-0.12%	
2019-20	261,937	-1.24%	-1.07%
2020-21	262,369	0.16%	
2021-22	264,509	0.82%	
2022-23	255,562	-3.38%	
2023-24	251,158	-1.72%	
	Average Growth Rate	-0.42%	

4.9 Historical data for LACW arisings (Figure 3 and Table 2) shows an overall declining trend in arisings from 2014/15 to 2023/24 with an average annual growth rate over the period of minus 0.42%. LACW arisings temporarily experienced a short period of positive growth in the years 2014/15 and 2015/16 at 0.64% and 3.19% respectively and again in 2020/21 and 2021/22 of 0.16% and 0.82%. The overall pace of decline has increased slightly in the final 5-year period suggesting an established trend. The decline in the tonnage of LACW arising in Cumberland and Westmorland & Furness may be due to a number of factors including local service changes and waste minimisation initiatives such as subsidised provision of home composting bins.

4.10 In contrast to this as shown in Figure 4, Cumberland and Westmorland & Furness household numbers have gradually increased between 2014/15 and 2023/24 by an average of 0.65% per annum. LACW arisings also increased from 2014/15 to 2016/17 by 2.9% but have since then been declining with a small peak in 2021/22, however, post 2017/18 there does not appear to be any correlation between the trends. This suggests that while there was a relationship between growth in household numbers and growth in LACW initially, a growth profile based on the assumption that there is a linear relationship between growth in household numbers and growth in total LACW arisings would not be robust, given the multiple variables that can influence LACW arisings.

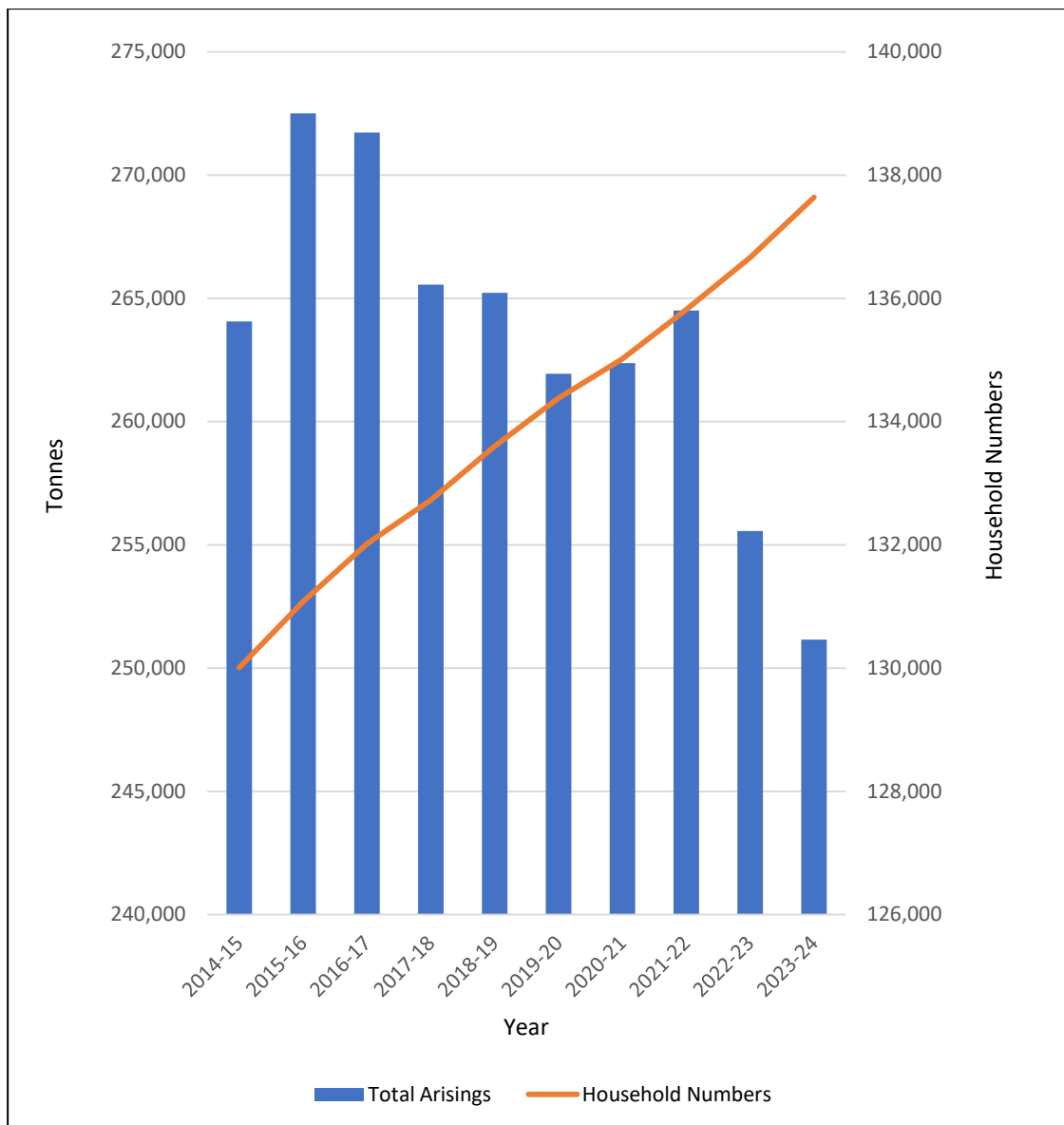


Figure 4: Total LACW arising (bar chart) vs household numbers (red line) 2014/15 to 2023/24
(y axis not set to zero)

Cumbria Joint Municipal Waste Management Strategy

4.11 PPG identifies the Municipal Waste Strategy (MWS) produced by collaboration between the WDA and WCAs in an area as a source of LACW growth forecasts. However, the Cumbria Joint Municipal Waste Management Strategy 2007-2020 only ran to 2020. The Interim Cumbria Joint Municipal Waste Management Strategy 2022-26 prepared by the Cumbria Strategic Waste Partnership (CSWP) a partnership between the six WCAs and the County Council as WDA as it existed at the time, is currently the most recent statement of LACW strategy from either Council.

4.12 This includes the following objectives relevant to this WNA:

1. To
 - a. contribute to the 55% Recycling Rate for Local Authority Collected Waste (LACW) including kerbside, bring sites and HWRCs by 2025,
 - b. to drive waste further up the waste hierarchy,
 - c. reduce recyclables within the residual stream and
 - d. reduce the carbon footprint of waste collected;
2. To reduce the overall amount of LACW sent to landfill;
3. Implement the reduction in carbon emissions arising from LACW by 2026 against the 2021 baseline, implementing the Waste Reduction Group's High-Level Roadmap and action plan towards the 2037 Net Zero target for Cumbria;
4. To begin the roll-out of separate food waste collections (across the county), where possible, and engage with value chain partners to explore and assess appropriate processing capacity and capabilities, including Anaerobic Digestion (AD).

5. Generating a Forecast for LACW

5.1 The method proposed in the PPG suggests that a growth profile is based on growth in household numbers and waste arisings per household and/or population growth and waste arisings per capita, which can then be modelled with a range of different scenarios e.g. constant rate of growth and progressively lowering growth rates due to waste minimisation.

Building a Growth Profile

5.2 A growth profile can be established by following the guidance in PPG on a step-by-step basis:

- Step 1 – Establish short-term average annual growth rates per household/population
- Step 2 – Establish long-term average annual growth rates per household/population

This is done (as indicated by PPG) by dividing annual arisings by population or household numbers data. Figure 5 below shows the results of this exercise by population.

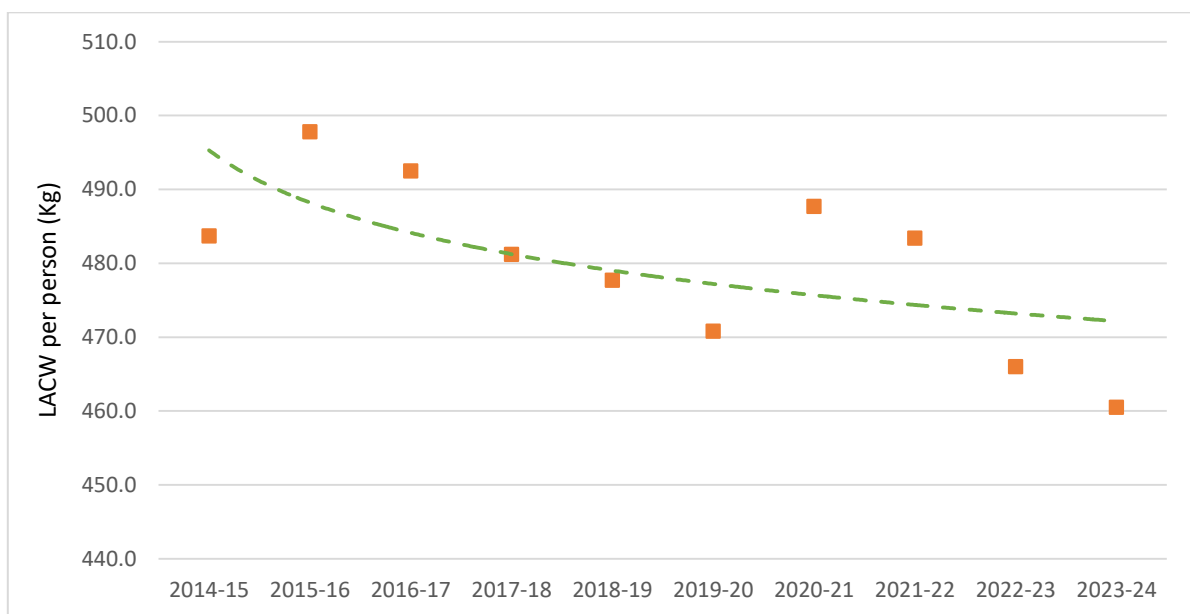


Figure 5: LACW per person in Cumbria 2014/15 to 2023/24

Green dashed line is a trendline NB: y axis not at zero.

5.3 It is evident from Figure 5 that while per head LACW arisings have experienced large fluctuations over the decade, they have been declining overall as shown by the trend line (to approximately 460 kg per person in 2023/24). This yields the following:

- the average compound annual growth rate for LACW arisings per person for the period 2014/15 to 2023/24 is minus 0.52% (the long-term growth rate);
- the average compound annual growth rate for LACW arisings per person for the 5-year period 2018/19 to 2023/24 is minus 0.71% (short-term growth rate).

5.4 The next step is to add the average compound growth rates (for both the short and long-term) for LACW arisings per person to the population growth forecast downloaded from the ONS website⁵. Table 3 presents the outcome of this.

Table 3: Population growth forecast and the long and short-term growth rates in LACW arisings for Cumbria as a whole.

Years	Population growth forecast	Long term population forecast (minus 0.52%) plus population growth forecast value	Short terms population forecast (minus 0.71%) plus population growth forecast value
2023/24	0.37%	-0.15%	-0.33%
2024/25	0.37%	-0.15%	-0.34%
2025/26	0.25%	-0.27%	-0.46%
2026/27	0.22%	-0.30%	-0.49%
2027/28	0.21%	-0.31%	-0.50%
2028/29	0.21%	-0.31%	-0.49%
2029/30	0.22%	-0.30%	-0.49%
2030/31	0.22%	-0.30%	-0.49%
2031/32	0.21%	-0.31%	-0.50%
2032/33	0.21%	-0.31%	-0.50%
2033/34	0.20%	-0.32%	-0.50%
2034/35	0.20%	-0.32%	-0.51%
2035/36	0.18%	-0.34%	-0.52%
2036/37	0.18%	-0.34%	-0.53%
2037/38	0.18%	-0.34%	-0.53%
2038/39	0.18%	-0.34%	-0.53%
2039/40	0.18%	-0.34%	-0.53%
2040/41	0.18%	-0.34%	-0.53%
2041/42	0.18%	-0.34%	-0.53%
2042/43	0.19%	-0.33%	-0.52%
2043/44	0.19%	-0.33%	-0.52%
2044/45	0.19%	-0.33%	-0.52%
2045/46	0.18%	-0.34%	-0.52%

5.5 This shows that both the long term and short-term growth rates remain negative from 2023/24 to 2044/45 when the projected population growth rates are added.

⁵ [Population projections by components of change for regions and local authorities, England - Office for National Statistics](#)

5.6 For the purpose of this exercise, the long and short-term growth rate for LACW arisings has been applied to the baseline LACW arisings value for 2023 along with the following set of growth factors to create a cone of possibilities:

- DEFRA National Forecast of LACW at 5-year intervals;
- Historical LACW Growth of minus 0.42% per annum (see Table 2).

5.7 The predicted arisings applying the above growth rates to the most recent LACW arisings value for 2023/24 i.e. baseline, are plotted in Figure 6 below.

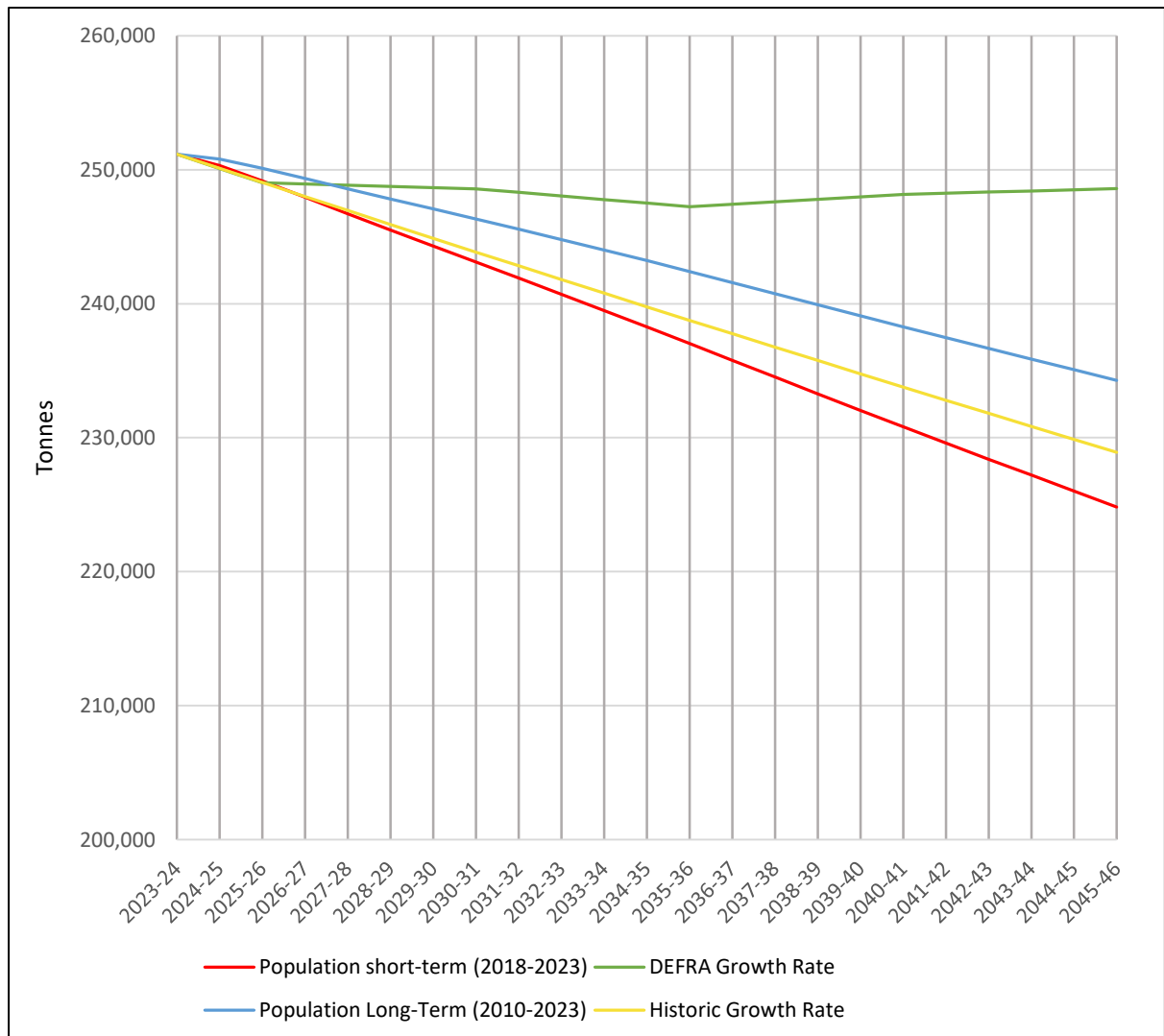


Figure 6: LACW arisings forecasts for Cumbria as a whole (using 2023/24 baseline)
(x axis not at zero)

5.8 All four scenarios are showing a declining LACW trajectory. This suggests that the most likely zone within which the actual trajectory will fall will be bounded by the DEFRA growth rate (green line) and the Population Short-Term Growth Rate (red line). Therefore, a value of around 237,000 tonnes at 2045 is considered most likely, which would equate to a minus 5.1% decrease over the Plan period.

5.9 The corresponding values are presented in Table 4 below.

Table 4: Initial forecast values for Cumbria LACW arisings (tonnes)

Years	Historic Growth Rate projection	DEFRA Growth Rate	Population	Population
			Long-Term arisings forecast	Short-Term arisings forecast
2023/24	251,158	251,158	251,158	251,158
2024/25	250,101	250,093	250,782	250,314
2025/26	249,048	249,028	250,099	249,166
2026/27	248,000	248,938	249,350	247,955
2027/28	246,956	248,848	248,570	246,717
2028/29	245,916	248,758	247,809	245,502
2029/30	244,881	248,668	247,069	244,311
2030/31	243,850	248,578	246,319	243,114
2031/32	242,824	248,309	245,557	241,909
2032/33	241,802	248,041	244,790	240,702
2033/34	240,784	247,772	244,012	239,489
2034/35	239,770	247,504	243,224	238,268
2035/36	238,761	247,235	242,402	237,019
2036/37	237,756	247,418	241,567	235,761
2037/38	236,755	247,601	240,745	234,519
2038/39	235,759	247,784	239,917	233,275
2039/40	234,766	247,967	239,094	232,040
2040/41	233,778	248,150	238,271	230,809
2041/42	232,794	248,239	237,455	229,589
2042/43	231,814	248,329	236,661	228,392
2043/44	230,838	248,418	235,870	227,204
2044/45	229,867	248,507	235,080	226,019
2044/45	228,899	248,597	234,286	224,835

Relating forecasts to waste per population arisings

5.10 In order to gauge how realistic the proposed forecasts might be, the waste per head of population factors implied by each scenario at 2045 have been calculated and then compared against the actual waste per head of population factor in 2045 of 0.45t/p. This is shown in Table 5 below.

Table 5: Waste per head of population factors for Cumbria implied by the chosen scenarios at 2045 compared to 2023 actual and the percentage change year on year implied (tonnes)

Forecast	Waste arisings per head of population factor at 2045 (t/p)	Difference from actual in 2023 over 22 years (t/p)	Percentage annual change implied
Historic	0.44	-0.05	-0.44%
DEFRA	0.47	-0.03	-0.07%
Long-Term Growth	0.45	-0.05	-0.32%
Short-Term Growth	0.44	-0.06	-0.52%
Central value from cone of possibilities	0.45	-0.05	-0.30%

Findings

5.11 The findings from the comparison shown in Table 5 are as follows:

- The historic data scenario implies a reduction of 0.05 tonnes per person over the Plan period. This equates to a -0.44% fall in LACW arisings per person year on year;
- the national DEFRA central forecast implies a reduction of 0.03 tonnes in per person LACW arisings over the Plan period. This equates to a -0.07% fall per person year on year;
- the long-term growth scenario implies a reduction of 0.05 tonnes in per person LACW arisings over the Plan period. This equates to a -0.32% fall per person per year;
- the short-term growth scenario implies an increase of 0.06 tonnes per person over the Plan period. This equates to a 0.52% fall per person year on year;
- the central value from the cone of possibilities forecast implies a reduction of 0.05 tonnes of LACW per person over the Plan period. This equates to a -0.30% fall per household year on year.

5.12 The above analysis suggests the LACW arisings per person factor could vary year on year between -0.52% and -0.07%. The cone of possibilities central forecast which predicts a fall in average LACW per person of -0.45% per year giving an overall a fall of c-0.23% over the Plan period is considered to be the most realistic scenario. This yields the central scenario (Central Scenario – orange) shown in Figure 7.



Figure 7: ‘Cone of Possibilities’ for LACW forecast for Cumbria as a whole with Central Scenario (tonnes per annum)

Forecast Conclusion

5.13 Using the baseline arising value for 2023/24 and a ‘cone of possibilities’ central growth scenario generates a trajectory that tracks a path between the Population Short-Term growth and actual Historic growth trends in LACW arisings for Cumbria as a whole. Therefore, it is recommended to apply this -0.23% per annum growth rate when considering future LACW management capacity needs. Using this scenario results in projected LACW arisings by 2045 of c237,000 tonnes, a decrease of c14,500 tonnes on the 2023/24 value. The forecast arisings each year are shown in Table 6 below.

Table 6: Forecast LACW arisings each year using the preferred Central Scenario (tonnes)

Year	Preferred Central Scenario
2023/24	251,158
2024/25	250,502
2025/26	249,845
2026/27	249,189
2027/28	248,532
2028/29	247,876
2029/30	247,219
2030/31	246,563
2031/32	245,906
2032/33	245,250
2033/34	244,593
2034/35	243,937
2035/36	243,280
2036/37	242,624
2037/38	241,967
2038/39	241,311
2039/40	240,654
2040/41	239,998
2041/42	239,342
2042/43	238,685
2043/44	238,029
2044/45	237,372
2045/46	236,716

6. Cumbria LACW Future Management Capacity Needs

6.1 Examination of LACW management data reported in the WDF 2023 indicates the following:

- Of the c169,000t of LACW recycled, reused and composted, all source segregated recyclate (c54,000 tonnes) meets its final fate beyond Cumbria via aggregation points (either HWRCs or WTS) located in Cumberland and Westmorland & Furness;
- Around 53,500t was composted, of which the majority was managed within Cumberland and Westmorland & Furness (c52,500t).
- Of the c219,000 tonnes of residual waste produced, the majority was managed at the two MBT facilities⁶ (c115,000t) located within Cumbria with c35,500t sent to landfill and c68,000t managed as RDF (post MBT treatment) within and beyond Cumberland and Westmorland & Furness.

Final destinations (fates) and quantities of LACW managed at these destinations in 2023 are summarised in Table 7 below:

Table 7: Final Fate Destinations and tonnages for Cumberland and Westmorland & Furness LACW arisings 2023 (500t+)

Waste type	Final Destination Site	In Cumberland and Westmorland & Furness	Outside Cumberland and Westmorland & Furness	Facility type
Residual	Lancashire Waste Recycling		11,388	RDF for export
	Hapton Valley Estate		35,577	
	Hapton Trading		11,072	
	Hespin Wood landfill	23,935		Landfill
	Flusco landfill	6,372		
	Bennett Bank landfill	5,112		
	Northern Resource Park	64,059		MBT
	Sowerby Wood Resource Park	51,181		
	Millers Contracting	5,474		Residual MRF
	Morris & Co Handlers		586	
	North West Recycling	3,970		
Total residual waste		218,726		
Dry Mixed Recyclables	Barrow Waste	1,541		MRF
	Hespin Wood landfill	12,664		
	Kingmoor Recycling Centre	634		
	Midlands Biomass & Recycling LLP		1,938	
	North West Recycling Ltd	2,712		
	Ormsgill Yar	744		
Source Segregated Recyclables	A W M - West Yorkshire		5,717	Metal recycling
	EMR		1,815	
	Morris & Co Handlers		2,522	
	Palm Paper		2,198	Paper recycling
	Partington Paper Mill		2,597	
	Parry & Evans		504	
	U P M - Kymmene		21,181	Plastic
	Junction Works		3,843	

⁶ Note that inputs to the two resource park MBT sites are italicised in Table 7 as they only provide intermediate treatment prior either to landfill or RDF so present a risk of double counting

				recycling
	Manisty Wharf		2,312	Glass recycling
	U R M (U K)		1,009	
	Parkwood Road		438	
	Newhouse Glass Recycling Facility		9,674	Other recycling
	Northern Plasterboard Recycling Ltd		2,845	
Rubble	Diamond Yard	2,546		Aggregate Recycling
WEEE	Cumbria Recycling Ltd	1,749		WEEE processing
	Morcambe Metals Ltd		14,222	
Wood	Hespin Wood Landfill Site	20,064		Wood Recycling
Mixed green and food waste	Hespin Wood Landfill Site	38,618		Composting
	Iron House Farm		892	
	Maltby Restoration	4,436		
	Millers Contracting	9,605		IVC
Recycled, reused or composted total		169,021		

7. Existing LACW Management Profile

7.1 To establish realistic future management targets which then informs future capacity requirements it is first necessary to understand how the LACW produced in Cumberland and Westmorland & Furness respectively is currently managed. Table 8 below shows the management profile using 2023/24 data.

Table 8: Current LACW Management Profile in Cumberland and Westmorland & Furness

Source: Defra 2023/24

Route	Tonnes	%
Total Arisings	251,158	
Recycling/ Composting	127,795	50.9%
Energy from Waste following MBT	45,733	18.2%
Landfill	38,951	15.5%
<i>Intermediate treatment (MBT)</i>	<i>38,680</i>	<i>15.4%</i>

7.2 Table 8 shows that the actual percentage of LACW recycled/ composted in 2023/24 stood at c51%, while the amount sent to Energy from Waste following MBT stood at 18%, landfill stood at c15.5% while tonnage sent for MBT prior to other routes stood at 15%.

8. Waste Management Targets

8.1 Having established the existing management profile for LACW arising in Cumbria as a whole, the next step is to consider what management profile may be desirable and achievable and therefore what waste management targets ought to be set in the Plan to achieve that management profile.

8.2 The national Resource & Waste Strategy, includes the following targets for municipal waste (LACW plus part of C waste):

- 65% recycling by 2035; and
- 10% limit of landfilling by 2035.

LACW is all classed as municipal waste (along with waste of a similar nature). Therefore, the targets shown in Table 9 below are proposed.

8.3 It should be noted that if the LACW currently managed through MBT, did not go to MBT, the additional tonnage represented by the process loss would require management through other means. Given that there is an established trajectory for recycling/composting and landfill, it has been factored into the 'other recovery' requirement on a contingency basis. Therefore, the current amount of LACW managed at the MBT plants in Cumbria has been held constant to maximise the use of the MBT to contract expiry in 2034/5, before use of other 'other recovery' capacity. After the 2035/36 milestone MBT is taken to have ceased to contribute with the remainder shifting to management through 'other' recovery..

Table 9: Proposed Targets for LACW Management in Cumberland and Westmorland & Furness

Italicised entries are actual values

		Milestone Year					
		2020/21	2023/24	2030/31	2035/36	2040/41	2045/46
Recycling/composting (floor)		49.4%	50.9%	60%	65%	70%	70%
Other Recovery	MBT treatment	17%	15%	16%	16%	0%	0%
	Other Recovery (remainder)	24%	18%	16%	13%	26%	26%
Landfill (ceiling)		9.5%	15.5%	8%	6%	4%	4%

Applying the proposed targets to the preferred forecast gives the following capacity requirement in Table 10:

Table 10: Future Management Profile for Forecast Cumbria LACW Arisings (tonnes)

Years	Forecast Arisings	Recycling/ composting	MBT losses	Other Recovery	Landfill
2023/24	251,158	127,795	38,680	45,733	38,951
2024/25	250,502	130,673	38,680	44,989	36,204
2025/26	249,845	133,550	38,680	44,245	33,458
2026/27	249,189	136,428	38,680	43,502	30,711
2027/28	248,532	139,305	38,680	42,758	27,965
2028/29	247,876	142,183	38,680	42,014	25,218
2029/30	247,219	144,222	38,680	40,345	24,193
2030/31	246,563	147,938	38,680	40,527	19,725
2031/32	245,906	149,977	38,680	38,858	18,699
2032/33	245,250	152,015	38,680	37,189	17,674
2033/34	244,593	158,986	9,670	35,520	16,648
2034/35	243,937	160,959	0	33,851	15,622
2035/36	243,280	158,132	0	32,182	14,597
2036/37	242,624	160,105	0	38,225	13,597
2037/38	241,967	162,079	0	44,269	12,598
2038/39	241,311	164,052	0	50,312	11,599
2039/40	240,654	166,025	0	56,356	10,599
2041/42	239,998	167,999	0	62,399	9,600
2042/43	239,342	167,631	0	62,263	9,579
2043/44	238,685	167,263	0	62,126	9,558
2044/45	238,029	166,896	0	61,990	9,537
2045/46	237,372	166,160	0	61,717	9,495

Capacity Requirements

8.4 Many types of waste processing facilities are capital intensive so provision is heavily influenced by economies of scale in construction and operation. This results in fewer, larger, facilities being developed that may service larger than local i.e. sub-regional (or regional) markets. Therefore, plans to maintain or increase recycling rates may not necessarily involve provision of specific additional recycling separation capacity at waste management facilities located within Cumberland and Westmorland & Furness. Rather, provision of sites with space where source segregated materials can be bulked up for onward management/sorting at out of Plan area sub regional facilities, may be more deliverable. These bulking sites may occupy a smaller footprint than a treatment facility and may be accommodated on existing waste transfer/depot type sites if space is available. The same might be said of food waste management capacity, where local bulking capacity might feed more remote AD capacity.

8.5 This would leave the management requirement for residual waste as follows:

- Additional 'Other recovery' requirement taking the process loss contribution of the MBT plants only, of c46,000 tonnes at 2023/24 reducing to c32,000 tonnes in 2035/36 and then increasing to c62,000 tonnes at the end of the Plan period due to the cessation of use of the MBT plants in 2034. This is on the worst-case basis that the MBT plants only provide a bulk reduction of LACW of c39,000 tonnes reducing to c10,000 tonnes in 2033 to account for the contract ending in June 2034; and
- cumulative non-inert landfill requirement of c416,500 tonnes over the Plan period (to 2045) with a peak annual demand of c39,000 tonnes reducing to c9,500 tonnes.

The implications of these requirements are considered further in the combined Capacity Assessment Report.