



Cumbria Waste Needs Assessment 2022

Capacity Requirement for the Management of Waste in Cumbria

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Executive Summary

This report presents the outcomes of the Waste Needs Assessment (WNA) exercise undertaken by BPP Consulting. The WNA was completed to update the evidence base supporting the preparation of the Waste Chapter of the Cumbria Local Plan. The WNA identifies the need for additional waste management capacity in Cumbria over the extended Plan period (to 2037). It does this by characterising and quantifying the principal waste streams arising in Cumbria and forecasting the amount of waste that needs to be managed over the plan period, taking account of the potential contribution of the existing waste management capacity within Cumbria.

The WNA estimates that a total of over one and a half a million tonnes of wastes arose within Cumbria in 2020 which needs to be planned for. A breakdown of the principal categories of waste arising are shown in Figure 1 below:

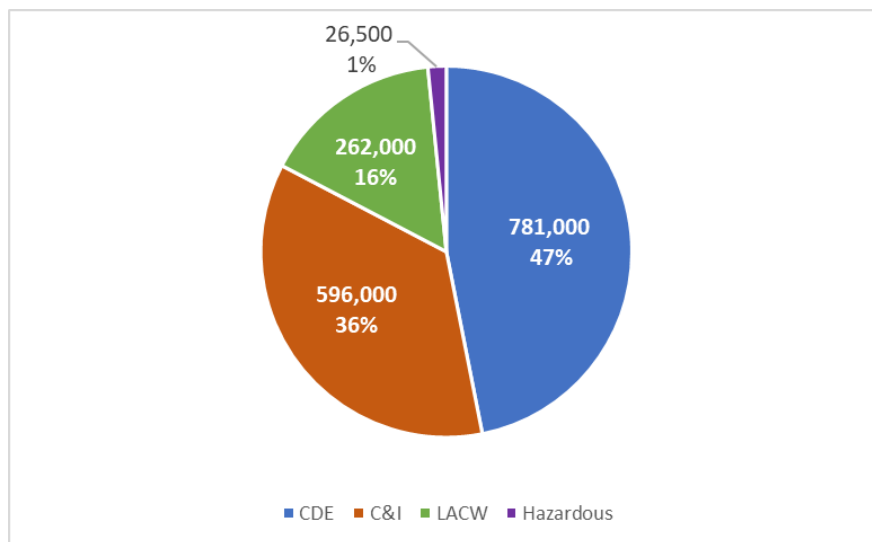


Figure 1: Quantities of Principal Waste Types Arising in Cumbria 2020 (tonnes)

The WNA found that while there appears to be sufficient existing consented capacity to meet recycling/ composting and inert waste management requirements, the principal predicted shortfall in capacity for the plan period is capacity to manage non-inert waste through:

1. 'Other' Recovery;
2. Non-inert Landfill.

The report goes on to present options available to address these shortfalls. Principally they rely on utilisation of capacity in adjacent or nearby Plan areas available over the Plan period or the activation of extant consents. This approach is consistent with initial findings on the availability of capacity in the wider catchment.

Abbreviations

AD	Anaerobic Digestion
C & I	Commercial & Industrial Waste
C, D & E / CDEW	Construction, Demolition & Excavation Waste
DEFRA	Department for Environment, Food and Rural Affairs
EA	Environment Agency
EfW	Energy from Waste
ELV	End-of-Life Vehicle
HWRCS	Household Waste Recycling Centres
IVC	In-Vessel Composting
LAA	Local Aggregate Assessment
LACW	Local Authority Collected Waste
MBT	Mechanical Biological Treatment
MRS	Metal Recycling Site
MRF	Material Recycling Facility
MSW	Municipal Solid Waste
nPPG	national Planning Practice Guidance
NPPW	National Planning Policy for Waste
RDF	Refuse Derived Fuel
SNRHW	Stabilised Non-Reactive Hazardous Waste
VLLW	Very Low-Level Waste
WCA	Waste Collection Authority
WDA	Waste Disposal Authority
WDF	WasteDataFlow
WDI	Waste Data Interrogator
WNA	Waste Needs Assessment
WPA	Waste Planning Authority
WTS	Waste Transfer Station

Glossary of Terms

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.
Bio 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.
Composting	A process in which biodegradable waste (such as green waste and kitchen waste) is broken down in aerobic conditions by naturally occurring micro-organisms to produce a material suitable for use as a soil improver.
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.
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.
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).
Inert Landfill	Landfill site permitted to only accept inert waste for disposal.
In Vessel Composting (IVC)	Composting materials within a closed system. Can be used to treat food and garden waste.

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).
Landfill Directive	European Union requirements restricting the landfilling of biodegradable municipal waste and requiring pre-treatment of all waste to be landfilled and separate disposal of hazardous, and non-hazardous and inert wastes.
Local Aggregate Assessment (LAA)	Annual local aggregate supply and demand assessment conducted by Mineral Planning Authorities which includes a survey of recycled aggregate producers within their particular Plan area.
Local Authority Collected Waste	Waste collected by or on behalf of a local authority. Includes household waste and business waste were 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 waste.
Mass Balance	Method of assessing the quantity of waste that may be converted to recycled aggregate by comparing inputs and outputs for sites reporting through the WDI.
Materials Recycling Facility (MRF)	A facility for sorting recyclable materials from the incoming waste stream.
Mechanical Biological Treatment (MBT)	A waste facility that combines a sorting facility with a form of biological treatment such as composting or anaerobic digestion.
Municipal Solid Waste (MSW)	Household waste and any other waste collected by a waste collection authority such as municipal parks and gardens waste and waste resulting from the clearance of fly-tipped materials.
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 and kitchen 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.
Plan period	The Plan period referred to throughout is the updated period from 2022 to 2037.
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 Waste Local Plan to which this study relates. In this case the county of Cumbria including the Lake District National Park.
Waste Collection Authority (WCA)	A local authority that has a duty to collect household waste. They also have a duty to collect commercial waste if requested to do so and may also collect industrial waste.
Waste Disposal Authority (WDA)	A local authority responsible for managing the waste collected by councils acting as waste collection authorities and the provision of household waste recycling centres. In this case Cumbria County Council.
Waste Planning Authority	The authority responsible for planning for waste within a specific administrative area. In this case Cumbria County Council and the Lake District National Park Authority.
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

This report presents the outcome of the comprehensive Waste Needs Assessment (WNA) exercise undertaken by BPP Consulting. This involves quantifying and characterising the principal waste streams arising in Cumbria and producing forecasts/estimates of the amount of waste that needs to be managed to 2037, whilst taking into account the contribution of currently consented and permitted waste management capacity. This work is undertaken in the context of the National Planning Policy for Waste (NPPW) and the national Planning Practice Guidance (nPPG), which expects that:

"Planned provision of new capacity and its spatial distribution should be based on robust analysis of best available data." (nPPG Para 035).

To achieve this the following steps have been followed:

1. Scope target waste streams;
2. Generate robust baseline waste arisings values;
3. Generate realistic and meaningful forecasts of future waste arisings;
4. Identify appropriate relevant targets for the management of each waste stream (to ensure that waste is managed in accordance with the waste hierarchy);
5. Assess current management capacity in Cumbria;
6. Quantify future capacity needs accounting for cross boundary movements of waste;
7. Establish any associated future gaps in waste management capacity; and
8. Identify land requirements to fill any identified projected gap.

The Waste Needs Assessment consists of the following documents:

1. Local Authority Collected Waste Assessment of Management Requirements to 2037;
2. Commercial & Industrial Waste Assessment of Management Requirements to 2037;
3. Construction, Demolition & Excavation Waste Assessment of Management Requirements to 2037;
4. Hazardous Waste Assessment of Management Requirements to 2037; and
5. Scoping Review of Other Waste which concluded there was no requirement for the capacity needs of these streams to be considered further in this WNA.

1.1 Principal Data Sources

The principal data sources used to generate this Waste Needs Assessment are the Environment Agency's Waste Data Interrogator (WDI), and Hazardous Waste Interrogator (HWI) supplemented by reference to Cumbria council's entries into Waste Data Flow (WDF).

Waste Data Interrogator

Operators of all sites permitted in England to manage waste submit returns on the quantities, types and origin of waste received and, where applicable, destination of waste removed at their sites to the Environment Agency. These returns are collated by the Environment Agency and are included in a national database 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 2020 WDI (composed of data for the calendar year 2020) is the most current version available (version 4 released May 2022). The WDI now includes inputs to facilities such as incinerators which were previously reported separately through the Environment Agency's Waste Incinerator Returns.

Hazardous Waste Interrogator

Producers and managers of hazardous waste must notify the environment agencies (which, depends on the part of the UK) of movements of waste classed as hazardous. This data is collated and reported in the Hazardous Waste Interrogator. Data is currently reported down to receiving local area rather than by receiving site. The HWI 2020 was released in February 2022.

Wastedataflow

Wastedataflow (WDF) is a web-based data entry portal for local authorities to report on local authority waste management arrangements to central Government 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 Environment Agency WDI reports for calendar year the data for Cumbria covering the four quarters of 2020 has been accessed to ensure comparability between datasets.

1.2 Quantities of Waste Produced in Cumbria

The WNA update has found that c1.67 million tonnes of wastes arose within Cumbria in 2020.

The principal components are:

- Local Authority Collected Waste c262,000 tonnes
- Commercial & Industrial Waste c596,000 tonne
- Construction, Demolition & Excavation c781,000 tonnes
- Hazardous Waste c26,500 tonnes

1.3 Use of Best Available Data

As the 2020 data was expected to be distorted by the Covid pandemic, baseline data for 2019 was also generated. Figure 2 presents a comparison between the waste stream values and profiles obtained for 2019 and 2020. This shows that the actual difference was not as great as might have been expected.

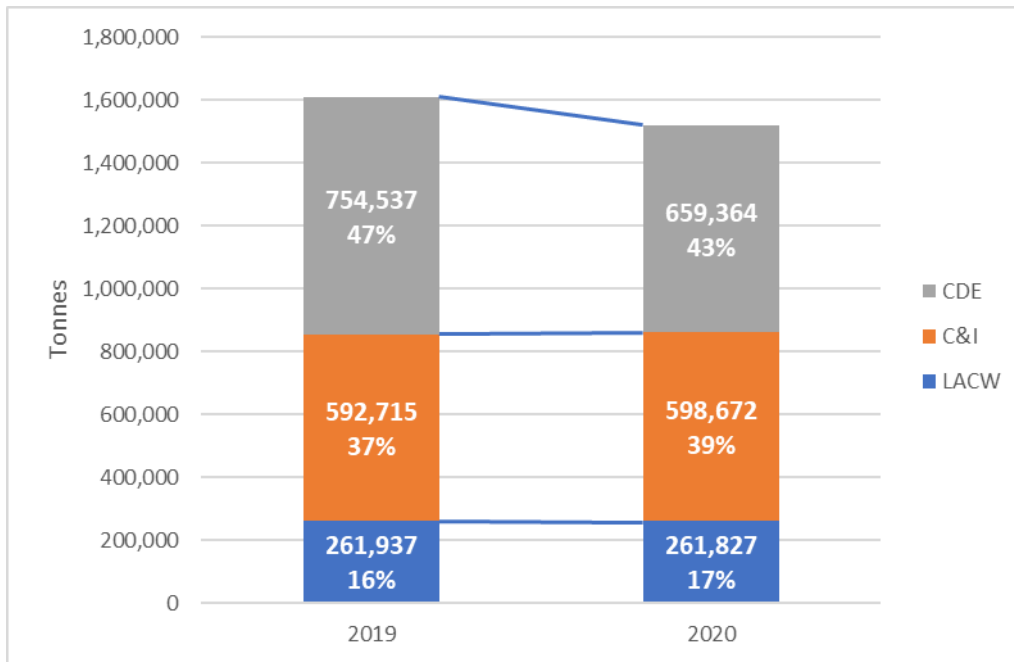


Figure 2: Comparison between Arising Profiles for 2019 and 2020 data

Given the above, and general view that 'best available' equates to most current, the 2020 data has been used as the baseline for the purposes of forecasting future needs in this WNA.

Output Baseline Profile

To 'sense check' the waste stream baseline profile generated in this WNA, it has been compared with that of the previous WNA produced in 2019 and the UK waste stream profile as a whole. C, D & E waste is the largest single principal waste stream produced in the UK at 68%, with C&I waste and LACW being of a similar order of magnitude at 16%¹. This pattern is normally reflected at a local level too, and in the absence of a reason why the situation should be substantially different in Cumbria, a similar profile would be expected to emerge.

¹ Defra Digest of Waste and Resource Statistics – 2019 Edition March 2019

The BPP WNA 2022 applying the baseline data for 2020 found that the values obtained from the analysis give a closer fit with the expected pattern than that indicated in the WNA 2019 as illustrated in Figure 3 below:

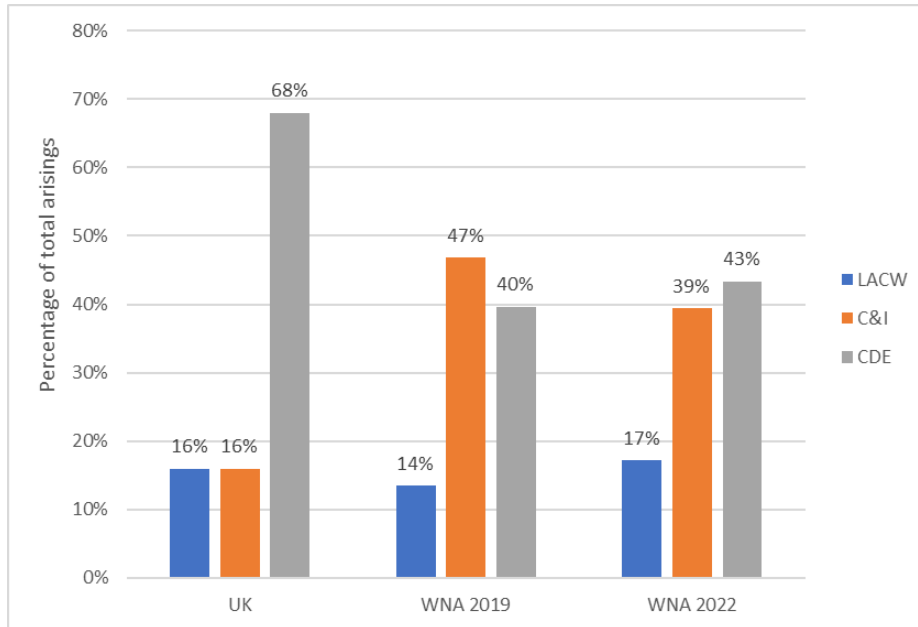


Figure 3: Comparison between Arising Profiles for UK, WNA 2019 and BPP WNA 2022

2. Capacity Assessment Overview

The capacity of waste management facilities in Cumbria has been assessed using data obtained from planning consents (and associated documentation), data for inputs reported through the Environment Agency WDI and consideration of capacity limits set in environmental permits.

Examination of these datasets indicate the following capacity types exist within the Plan area:

- Landfill;
- Organic waste treatment plants (e.g. composting and anaerobic digestion);
- Waste Recycling, including Materials Recycling Facilities (MRF);
- Mechanical Biological Treatment (MBT); and
- Waste Transfer capacity.

Review of the data sources found that there are no consented thermal treatment i.e. Energy from Waste facilities (EfW) in the Plan area and no live applications in the pipeline. Facilities where waste recyclate is reprocessed into product, such as glass-furnaces and paper mills, were not included in this assessment exercise as they are not considered to be waste development and therefore are not provided for through a waste local plan.

2.1 Sources of Facility Capacity Data

Facility capacity data has been collated from review of Cumbria County Council's planning application register plus a review of input data presented in the WDI compiled by the Environment Agency over a 5-year period 2016-2020 (See Appendix 1). To allow for the possibility that the peak operating value is not an absolute limit, a 15% 'freeboard' has been added to the actual input values shown in the WDI. These additions are intended to reflect the maximum realistic throughput of the facility, as opposed to theoretical capacity.

Where the planning permission gives an express limit that is reasonably close to the peak value +15%, this is taken to apply as that represents the consented capacity. Where no limit is specified in planning applications, the peak value recorded over 5 years was taken on the basis that the site could manage that quantity of waste on an ongoing basis +15%. Where the peak input was significantly larger than that consented, the peak input was taken on the basis that the site has the operational capacity to manage this amount of waste. Finally, where the peak input is significantly less than that consented, the peak input is taken on the basis that the site could only manage that quantity of waste on an ongoing basis. Where necessary, reference was also made to the input limits specified in environmental permits in force for the site.

It should be noted that any capacity assessment only presents a snapshot at a particular point in time as the permitted estate is in a state of flux with sites closing and new sites coming on stream over time.

2.2 Assumed void space to tonne conversion factors

Where waste is destined for landfill, it is necessary to account for the fact that mass does not necessarily directly correspond to volume. That is to say 1 tonne of waste may not occupy 1m³ of capacity. The void requirement needs to account for the density of material under consideration.

For the purposes of this exercise, it has been assumed that 1.5 tonnes of inert waste can be accommodated within one cubic metre of void, while a single tonne of non-inert residual waste may be accommodated within one cubic metre of void. This latter value is greater than that of 0.85t/m³ applied historically, as very little raw 'black bag' waste is now sent direct to landfill, most if not all will have undergone some pre-treatment (as required by the Landfill Directive), making it significantly denser than mixed municipal or black bag waste (and similar wastes). It is also assumed that 15% of input to non-inert landfill will be inert waste used for operational and restoration purposes as all such sites will have a requirement for these purposes.

3. Capacity in Cumbria by Management Method

3.1 Landfill Capacity

Non-Inert Waste Disposal Capacity

In order to establish the available void capacity in Cumbria, information sourced from the Environment Agency was primarily used, with supporting information supplied by Cumbria County Council. The operational non-inert landfill sites in Cumbria are listed in Table 1.

Table 1: Remaining landfill void space at Non-inert Landfills in Cumbria

Site Name	Expiry Date	Facility Type Description	Type of waste (WDI 2020)	EA data end of 2020 permitted Void space (m ³)	End of 2020 capacity (tonnes)	Notes
Bennett Bank	2022	Non-Haz	CDE	0	0	Included as permission life extended for final restoration until June 2022, so, some capacity for inert waste. WDI 2020 records input of 28,103 tonnes.
Hespin Wood	October 2039	Non-Haz	LACW, C&I, CDE	1,259,134	976,000 for non-inert 283,500 for inert	15% of total void (1,259,134) = 188,870m ³ *1.5 = 283,305t inert waste input for restoration.
Lillyhall	June 2029	Non-Haz (SNRHW)	CDE	884,636	351,000 for non-inert 234,000 for VLLW 450,000 for inert	The annual amount of inputs is set at 65,000m ³ pa inc. 26,000m ³ of VLLW. 9 years remain at 2020 thus 9*39Kte = 351,000t for non-inert. 9*26Kte = 234,000t for VLLW. <u>Based on the above calculations the site will not be full with non-inert/VLLW by the time the permission expires</u> , thus the capacity for inert waste is c300,000m ³ which equates to 450,000t (an additional 250,000 tonnes above the 15% requirement for inert)
Flusco	2032	Non-Haz (SNRHW)	LACW, C&I, CDE	810,707	<628,500 for non-inert 182,500 for inert	15% of total void (810,707) =121,606m ³ *1.5 = 182,409te of inert waste for restoration. Less than as the site has permission for a SNRHW cell but the WDI reports the site is not receiving any hazardous waste at present.
Total				2,564,477	3,105,500	

Table 1 shows that there is c3,105,500 tonnes of non-inert landfill capacity consented in Cumbria offering the following 'disposal/final fate' capacity:

- Non-inert waste: 1,955,500 tonnes
- Inert waste: 916,000 tonnes
- VLLW: 234,000 tonnes

3.2 Cumbria Non-inert Waste Landfill Capacity

Table 2 shows at the end of 2020 there was 1,955,500 tonnes of capacity for non-inert waste remaining at the three landfills in Cumbria consented to accept non-inert waste plus 916,000 tonnes of inert waste for operational and restoration purposes. In the case of Lillyhall there is an annual input limit, but inputs to the other two sites are not limited in the same way. For the purposes of the capacity assessment exercise set out in Table 18 the remaining capacity for non-inert waste has been assigned to the annual limit at Lillyhall until the expiry of the planning consent which is prior to when the site is full, and as a result it has been assumed the remaining void would be filled with inert waste. After the deduction of Lillyhall the remaining residual waste requiring landfill has been assigned equally between the two other sites until either site is full, which is prior to the expiry of the planning consent.

Table 2: Remaining landfill void space in Cumbria for non-inert and inert waste (tonnes)

Site Name	Capacity (From Table 1)	End of 2020 capacity for inert content ² (tonnes)	End of 2020 capacity for non-inert (tonnes) (a-b)	Notes on annual non-inert inputs
	a	b		
Lillyhall	1,035,000 ³	450,000	351,000 ⁴	39,000
Flusco	811,000	182,500	628,500	Varies annually
Hespin Wood	1,259,500	283,500	976,000	
Total capacity		916,000	1,955,500	

3.3 Inert Waste Permanent Deposit Capacity

There is only one operational inert landfill site in Cumbria shown in Table 3.

Table 3: Consented/ Operational Inert Landfills in Cumbria

Site Name	Expiry Date	Type of waste (WDI 2019)	EA data end of 2020 permitted void space (m ³)	End of 2020 capacity (tonnes) m ³ x1.5	Notes
Roan Edge Landfill	2031	CDE	532,000	798,000	Prior extraction of the mineral reserve is required, nonetheless filling of the voidspace is granted until 2031.
Total			532,000	798,000	

Table 3 shows that there is c798,000 tonnes of inert landfill capacity consented in Cumbria.

² Assuming approximately 15% allocation for inert waste receipts.

³ Entries do not add up to the total capacity due to provision for the VLLW.

⁴ After deduction of 234,000 tonnes capacity reserved for low level radioactive waste.

In addition, there is c916,00 tonnes at Hespin Wood, Lillyhall and Flusco for restoration, giving a total of landfill capacity for inert waste in Cumbria of at least **c1,714,000** tonnes. There is also an unknown amount of capacity for inert waste to complete the restoration of Bennett Bank landfill until 2022 but this is believed to be relatively small.

3.1 Recovery to Land Capacity

There are several permitted recovery to land operations in Cumbria (see Appendix 2 for full listing), those which were assessed to have capacity to receive inert material for recovery are listed in Table 4 below.

Table 4: Permitted Recovery to Land Sites in Cumbria

Site Name & Operator	Issue Date	Permitted Capacity from Waste Recovery Plan (m ³)	Planning Consent (tonnes)	Cumulative inputs to 2020 inc (tonnes)	Calculated remaining capacity (tonnes) b minus e	Notes
Column	a	b	c	d	e	
Silvertop Quarry (Thompsons Of Prudhoe Ltd)	2011	1.5Mm ³ (2,250,000 tonnes)	-	129,430	2,120,570	
Dixton Hill Quarry (D A Harrison)	2014	52,957 (79,436 tonnes)	-	69,878	9,558	Permission for restoration extended to 31 March 2023
Field 3771 Eel Skye (Ashcroft Demolition (Cumbria) Ltd)	2021	?	200,000	91,104	108,896	
Cargo Hill Farm (Allan Richard)	2018	19,376 (28,892 tonnes)	-	16,615	12,277	
Total capacity					2,251,301	

Table 4 shows that there is at least **c2.25M tonnes** of capacity for management of inert waste by recovery to land in Cumbria. The actual capacity may be much greater but it has not been possible to quantify the total capacity given a lack of available data.

3.2 Organic Waste Treatment Capacity

Various types of facility exist for organic waste treatment in Cumbria from anaerobic digestion to open windrow composting. Windrow composting is used primarily for the processing of green waste and other vegetable-based materials. Kitchen and commercial food waste can only be processed in enclosed systems such as in-vessel composting plant (IVC) and AD facilities due to the requirements of the Animal By-Products Regulations.

WDI data for 2020 shows inputs for sites located in Cumbria. These are summarised in Table 5, together with an assessment of operational capacity.

Site Name & Operator	Principal Waste Type Managed	Facility Type	Planning Consent (tonnes pea)	Peak Input +15% (Appendix 1)	Preferred Value	Notes
Eden Organics Composting Site (H & E Trotter Ltd)	Farm Waste & C&I	Open Windrow Composting	-	22,987	22,987	
Hespin Wood (Cumbria Waste Management Ltd)	LACW & C&I		-	114,090	114,090	
Wilson Pit Yard (West Coast Composting Ltd)			25,000	8,979	25,000	
Kirkbride House (Solway Heat & Power Ltd)	Farm Waste	AD	16,000	13,310	16,000	
Possonby Old Hall Farm (Stanley Renewable Energy Ltd)	Farm Waste		-	11,468	11,468	
The Hangar (Agriorganics Ltd)	LACW	IVC	25,000	12,940	25,000	WDF used to calculate peak input
Sinkfall Recycling (Brian Armistead Ltd)		Open Windrow	2,200	6,200	6,200	
Total capacity					220,745	

Table 5: Organic Waste Treatment Capacity in Cumbria

Table 5 shows a total operational organic waste treatment capacity in Cumbria of c221,000 tpa. Note that open windrow capacity makes up c168,500 tonnes of the total capacity which can only be used to process green and vegetable-based wastes, whilst the remaining c52,500 tonnes could receive and process kitchen and commercial food waste although c21,000 tonnes is currently dedicated to agricultural waste processing.

3.3 Recycling Capacity

Material Recycling Facilities (MRF) Capacity

When recyclates such as plastics, metals, paper, cardboard, glass are collected together as mixed streams, or 'comingled', the collected material needs to pass through a materials recycling facility (MRF), to separate the individual material streams for onward reprocessing. A review of the WDI 2020 reveals there are 5 facilities operating as MRF's in Cumbria shown in Table 6 below.

Table 6: Material Recycling Facility Capacity in Cumbria

Site Name & Operator	Principal Waste Type Managed	Planning Consent (tonnes p.a.)	Peak Input +15% (Appendix 1)	Preferred Value	Notes
Hespin Wood (Cumbria Waste Management Ltd)	C&I, CDE and LACW	20,000	52,796	52,796	HWRC wood bulking of c10,000 tonnes
Flusco Pike Landfill (Lakeland Waste Management Ltd)		49,000	150,982	49,000	
Unit 25 - The Hangar (Millers Contracting Ltd)	C&I, Haz and LACW	25,000	69,261	69,261	20,000 tonnes for food waste and 5,000 tonnes for 'green' waste transfer
Kingmoor Recycling Centre (Cumbria Waste Management)	LACW	52,000	7,659	7,659	WDF used to calculate peak input
Distington Materials Recycling Facility (Cumbria Waste Management)	CDE & C&I	120,000	108,204	120,000	
Total capacity				298,716	

Table 6 shows a total operational material recycling capacity in Cumbria stands at **c299,000 tpa**.

Other Recycling Capacity

Whilst the WDI 2020 included 16 sites under the transfer site category, closer examination of the inputs and fates of the outputs of these sites revealed some separation and processing for recycling takes places at all but 1 of the sites. Therefore, those have been included in Table 7 below which lists recycling sites in Cumbria including those classified as treatment sites in the WDI.

Table 7: Recycling Capacity in Cumbria

Site Name & Operator	Principal Waste Type Managed	Facility Type as per EA WDI	Planning Consent	Peak Input +15% (Appendix 1)	Preferred Value	Notes
Ecclerigg Depot (South Lakeland District Council)	LACW	LACW Transfer	?	836	836	Bulking of LACW recycle
J. M. Skips Brownriggs Yard (Jacksons Marine Ltd)	C&I	C&I Skip Hire and Treatment	-	489	489	
Dundee Tyres (Dundee Tyres Ltd)		ELV tyre treatment	?	9,048	9,048	
Sowerby Lodge (Eden Valley Oils Ltd)		Edible Oil Treatment Facility	?	1,587	1,587	
Sandscale Park (J J C Hire Ltd)	CDE	CDE Transfer	156,000	28,114	28,114	Bulking of CDE recycling
Coopers Yard (JJC Hire Ltd)		CDE Transfer/ Treatment	8,600	30,657	19,927	c65% inputs through the WTS deducted from total (inc Table 11)
Esk Quarry (Eddie Wannop Ltd)		CDE Treatment	?	1,887	1,887	Committee report states site output is limited to 30,000 tonnes per year
12 Shap Road Ind Estate (H Wicks Ltd)	CDE and C&I	CDE and C&I Transfer	?	11,756	11,756	CDE and C&I waste recycling. c60% CDE waste inputs
Unit N, Risehow Ind Est (Thompsons Plant Hire Ltd)		C&I Transfer inc Recycled Aggregate Processing	22,700	3,034	8,300	14,400 tonnes of inert waste (inc Table 9) leaving 8,300 tonnes
Hangar 20 Silloth Airfield (D Alan Harrison)		CDE and C&I Transfer	8,000	13,234	13,234	Provision of CDE and C&I recycling
Scarth Road (H Wicks Ltd)			?	27,291	27,291	
Station Yard (Adam Hoyle)			?	1,060	1,060	50% inert and 50% C&I (application form)
7 Pittwood Road, Lillyhall Industrial Estate (Derwent Recycling Services Ltd)		CDE and C&I Treatment	20,000	15,753	20,000	
Unit A, Site 6, Rockcliffe Estate (North West Recycling Ltd)		CDE and C&I Transfer inc Recycled Aggregate Processing	100,000	219,312	153,518	c30% inputs materials suitable for conversion to recycled aggregate deducted from total (inc Table 9)
Ormsgill Yard Materials Recycling Facility (FCC Recycling Ltd)	LACW and C&I	LACW and C&I Transfer	?	35,319	35,319	c2,000 tonnes of LACW to MRF in WDF 2020
Kendal Fell Waste Management Centre (Suez Recycling And Recovery Lancashire Ltd)			?	50,961	50,961	c31,500 tonnes LACW
Unit 2, Lillyhall Ind Estate (Cumbria Recycling Ltd)		WEEE Treatment	?	2,211	2,211	
Sinkfall Recycling (Brian Armistead Ltd)	CDE, C&I and LACW	CDE, C&I and LACW Transfer	?	38,071	31,871	6,200 tonnes for composting deducted from total (inc Table 5)
Total capacity					408,212	

Table 7 shows a total operational recycling capacity in Cumbria of **c408,000 tpa**. Combined with the MRF capacity of c299,000 tpa gives a **total capacity of 707,000 tpa**.

3.4 Metal Recycling Capacity

Scrap metal principally comes from industrial sources along with demolition and construction. In Cumbria there are 6 sites that primarily manage scrap metals and 9 sites that primarily/ exclusively manage End of Life vehicles (ELVs). As ELV's are classed as hazardous waste until they have been depolluted the capacities of sites managing these has been counted in the hazardous waste capacity assessment. The metal recycling sites and their capacities are shown in Table 8 below.

Table 8: Metal Recycling Capacity in Cumbria

Site Name & Operator	Planning Consent	Peak Input +15% (Appendix 1)	Preferred Value
Branthwaite Vehicle Dismantlers (Trevor Brough)	?	8,068	8,068
Canal Head Yard (John Miller And Sons Ltd)	?	8,440	8,440
Morecambe Road (John Morgan & Co Ltd)	?	1,981	1,981
Junction Street (Mountelm Ltd)	?	2,619	2,619
Mintsfeet Road (Lakeland Gold Ltd)	?	1,603	1,603
Sandysike Brickworks (Mountelm Ltd)	?	2,524	2,524
Total capacity			24,723

Table 8 shows a total operational metal recycling capacity in Cumbria of c25,000 tpa. Combined with the recycling capacity of c707,000 tpa gives a **total capacity of 732,000 tpa**.

3.5 Recycled Aggregate Production sites

There are a number of sites where incoming inert C, D & E waste is recycled into aggregate. Reference was made to the latest Local Aggregate Assessment (LAA) where the main recycled aggregate processing facilities are listed in Appendix 6. Table 9 identifies these sites along with the annual throughput found from the register of Cumbria planning applications or calculated from input and output data in the WDI.

Table 9: Recycled Aggregate Production Sites in Cumbria

Site Name & Operator	Consented throughput per annum (tonnes)	Throughput entry from CDE baseline (mass balance)	Preferred value	Notes
Silvertop Quarry (Thompsons of Prudhoe)	100,000	-	100,000	
Diamond Yard (Tony Brown Aggregates Ltd)	7,500	60,619	60,619	Initial planning application (5/04/9007) consented throughput of 7,500 tonnes, capacity is much greater given mass balance amounted to c61,000 tonnes and permitted limit is 75,000tpa– mass balance value taken to represent the operational capacity.
Unit N, Risehow Ind Est (Thompsons Plant Hire Ltd)	14,400	-	14,400	
Flusco Quarry (Lakeland Waste Management Ltd)	60,000	6,395	6,395	Permission to 31 Dec 2031. 75,000 tonnes permit to treat waste to produce soil. 60,000 tonnes consented throughput sourced from the quarry.
Goldmire Quarry (Burlington Aggregates)	30,000	48,349	30,000	
Plots 1 & 2, Penrith Ind Est (Metcalf Plant Hire Ltd)	25,000	-	25,000	
Bonnie Mount Quarry (JEA and SM Burne)	5,000m ³ (7,500 tonnes)	-	7,500	Permission to 7 Oct 2035
Roan Edge Quarry (L & W Wilson Ltd)	6,000m ³ (9,000 tonnes)	-	9,000	Permission to 1 Nov 2031
Hespin Wood Landfill (Cumbria Waste Management Ltd)	60,000	8,391	60,000	Permission until landfilling activity ceases in Oct 2039
McKay Skip & Plant Hire/ KarenHouse (W G Mackay Ltd)	50,000	3,932	50,000	
5 Pittwood Road (Phillip Carruthers Ltd)	75,000	35,920	75,000	
Fairview House (Ashcroft Demolition (Cumbria))	75,000	14,667	75,000	
Risehow Industrial Estate (Thompson's Plant Hire)	14,400	-	14,400	
Units H & L, Knights Drive (Cubby Construction Ltd)	20,000	-	20,000	
Lawson's Recycling Centre (G & A M Lawson Ltd)	60,000	21,580	60,000	
Silloth Recycling Centre (D A Harrison)	5,000	-	5,000	5,000 tonnes of inert waste to be processed – Committee Report
Rockliffe Estate (North West Recycling Ltd)	?	65,794	65,794	Value taken is 30% of peak input
Unit 6 Clawthorpe Hall (Penningtons Quarry Ltd)	25,000	21,232	25,000	
Greenscoe Quarry (Harry Barker Properties Ltd)	-	46,084	46,084	Latest LAA survey in 2018 reported sales of 41,448 tonnes of recycled aggregate. Permission to 1 No 2024
Land At Kingmoor Sidings (Network Rail Infrastructure Ltd)	95,000	117,505	117,505	Track ballast and concrete sleepers for recycled aggregate processing thus not CDE
Overby Quarry (Thomas Armstrong (Aggregates) Ltd)	75,000	9,274	75,000	Permission to 31 Dec 2026
Shap Pink Quarry (Armstrongs Aggregates Ltd)	-	-	4,755	Value taken from WDI peak inputs plus 15% freeboard.
Total capacity			946,452	

Table 9 shows a total operational recycled aggregate capacity in Cumbria of just under a million tpa (c946,500).

3.6 'Other Recovery' Capacity

The term Recovery captures recycling, composting plus the management of waste through other methods including thermal treatment. Given recycling/composting are positioned nearer the top of the Waste Hierarchy than thermal treatment, waste requiring management after recycling/composting has been maximised is considered to go to 'other recovery' i.e., extract the energy value from it, in preference to disposal to landfill.

While some facilities such as MBT plants do not actually undertake 'other recovery', they do facilitate the management of residual waste to maximise the energy value extracted. As such, their capacity is counted as contributing towards 'other recovery'. Within Cumbria there are 2 MBT sites that are contracted to manage LACW until June 2034. On expiry of the contract term the capacity would theoretically be available for C&I waste processing until 2039 when the sites are due to be restored.

There is also permission at Thackwood landfill to develop as a site for processing residual waste for conversion to RDF which could process up to 150,000 tpa, plus permission for an EfW facility to be built at Kingmoor Park, which would receive up to 250,000 tpa, sourced from the MBT plants in Cumbria and beyond and C&I waste generated within Cumbria and the surrounding area. However, given both facilities are still to be built-out, the potential capacity provided has not been relied upon.

Table 10 assesses the combined capacity of these sites.

Table 10: 'Other' Recovery Capacity in Cumbria

Site Name & Operator	Planning Consent	Peak Input +15% (Appendix 1)	Preferred Value	Notes
Northern Resource Park (Hespin Wood)	75,000	79,330	75,000	
Sowerby Woods Resource Park	75,000	65,694	75,000	Design capacity taken but actual throughput is constrained by availability of residual black bag waste
<i>Thackwood</i>	<i>150,000</i>	-	<i>150,000</i>	<i>Permission still to be fully implemented thus no inputs in WDI</i>
<i>Kingmoor Park</i>	<i>250,000</i>		<i>250,000</i>	<i>Permission still to be fully implemented thus no inputs in WDI</i>
Total capacity			550,000	

Given the two MBT plants do not provide final management capacity it might be argued whether their total capacity ought to be counted towards Cumbria's management capacity or just the process loss shown by the mass balance of inputs and outputs taken⁵. However, it is considered justified to do so given the case set out above. Policy can be designed to account for the complementary nature of fuel preparation capacity to EfW capacity.

⁵ These plants also make a contribution towards meeting LACW recycling targets but that is not their primary purpose.

3.7 Transfer Capacity

Waste transfer capacity refers to the reception and bulking of collected wastes, both residual and separated/co-mingled recyclates, for subsequent management at other facilities further afield (waste management or reprocessing). Transfer capacity can be accommodated at dedicated sites or at sites where other waste management activities take place. For example, sites accepting skip waste for recycling may also accept source separated Local Authority Collected Waste (LACW) for onwards transfer. Given the Plan area reliance on out-of-Plan area thermal treatment capacity, provision of accessible/ proximate transfer capacity to receive loads that don't move directly to their end destination as a minimum is of growing importance.

Transfer stations that facilitate recycling by providing bulking capacity as discussed previously, were accounted for as providing recycling capacity. The remaining site was determined to be the only true transfer site as the outputs were predominantly either going to landfill or transfer. This site is shown in Table 11 along with another transfer site where it was possible to apportion the capacity for recycling and transfer due to the ratio of inputs destined for recycling and that for transfer mentioned in planning documents.

Table 11: Transfer Capacity in Cumbria

Site Name & Operator	Principal Waste Type Managed	Planning Consent (tonnes p.a.)	Peak Input +15% (Appendix 1)	Preferred Value
Unit C, Kingmoor Park, Rockcliffe Estate (Cubby Construction Ltd)	CDE	20,000	8,399	20,000
Coopers Yard (JJC Hire Ltd)	CDE	8,600	10,730	10,730
Total Capacity				30,730

In addition to the facilities listed in Table 11, there are 14 household waste recycling sites provided by Cumbria County Council operated under contract by Cumbria Waste Group. Their assessed capacities are shown in Table 12.

Table 12: HWRC Capacity in Cumbria

Site Name & Operator	Permitted capacity	Peak Input +15% (Appendix 1)	Preferred Value
Ambleside (Cumbria Waste Management Ltd)	10,400	1,480	1,480
Bousteads Grassing Carlisle (Cumbria Waste Management Ltd)	24,999	10,552	10,552
Brampton Household Amenity Site (Cumbria Waste Management Ltd)	25,000	2,310	2,310
Clay Flats Workington	24,999	6,572	6,572
Frizington (Cumbria Waste Management Ltd)	24,999	6,135	6,135
Grange (Cumbria Waste Management Ltd)	4,999	1,330	1,330
Kendal (Cumbria Waste Management Ltd)	10,400	5,418	5,418
Kirkby Stephen (Cumbria Waste Management Ltd)	2,499	1,417	1,417
Maryport (Cumbria Waste Management Ltd)	4,999	4,354	4,999
Millom (Cumbria Waste Management Ltd)	2,499	1,525	1,525
Project Furness Household Waste Recycling Centre (Cumbria Waste Management Ltd)	10,400	8,215	10,400
Ulverston Civic Amenity Site (Cumbria Waste Management Ltd)	4,160	3,552	4,160
Wigton (Cumbria Waste Management Ltd)	4,999	2,078	2,078
Flusco (Lakeland Waste Management Ltd)	25,000	6,906	6,906
	Total Capacity	65,282	65,282

HWRC's may be regarded as providing transfer capacity since waste delivered by the public to these sites is bulked and then transported on for onward management. However, as the majority of the inputs (c70%) are segregated on the site to go on for recycling 70% of the capacity of these sites have been counted as contributing towards recycling capacity, 30% toward transfer (for LACW). Applying this to the total capacity in Table 12 gives 45,697 tpa recycling and 19,585 tpa transfer capacity.

3.8 Capacity Summary

Table 13 shows a summary of operating capacity of the different type of facilities investigated in this section. In total at the end of 2020 there was intermediate capacity for managing waste of c1.925M tonnes per annum operating in Cumbria.

Table 13: Intermediate Waste Management Capacity in Cumbria⁶

Capacity Type	Assessed capacity			
	Non-inert waste			Inert
	Recycling	Other Recovery	Transfer	Recycling
MRF	299,000			
Other Recycling	408,000			
Metal Recycling	25,000			
HWRC Recycling	46,000			
Recycled Aggregate				946,500
'Other' Recovery		150,000		
CDE Waste Transfer			31,000	
HWRC Transfer			20,000	
Total	778,000	150,000	51,000	946,500

It should be noted that once the permissions for an EfW facility at Kingmoor and RDF production facility at Thackwood are fully implemented a further c400,000 tonnes of 'other' recovery capacity will be available in Cumbria. However, the current operational capacity in Cumbria is taken to be that shown in Table 13.

⁶ Note that the capacity for organic waste treatment summarised in Table 3 has not been included because it manages a distinct element of the waste streams and is considered to represent a final fate, like landfill.

4. Assessing the Capacity Gap in Cumbria

4.1 Net Self Sufficiency

Having established available capacity within Cumbria, this is then compared with the projected capacity requirements determined in the waste stream specific reports to ascertain if there is any capacity gap, bearing in mind the strategic objective of net self-sufficiency. That is to say, overall, the aim is to provide sufficient capacity to manage the tonnage of waste equivalent to that predicted to arise within Cumbria over the Plan period. This does not necessarily mean that every tonne of waste produced in Cumbria ought to be managed within Cumbria, rather that overall, there should be a balance of provision.

It should be noted that while the assessment of need has been conducted on a waste stream-specific basis within each report, the assessment of capacity cannot be conducted in such a precise way since the same facility may manage waste from a number of different waste streams. For example, sites receiving CDEW for processing may also receive C&I waste and LACW for transfer. This means it is necessary to interpret between the identified needs and the existing available capacity to identify any projected capacity shortfall. It should also be noted that the overall objective of net self sufficiency relates to total arisings from the Plan area.

4.2 Waste Management Requirements

To arrive at management requirements for waste produced in Cumbria, proposed targets have been applied to the forecasts of arisings as presented in the background waste stream specific assessments (reported in the suite of supporting reports). The combined proposed targets are presented in Table 14 below:

Table 14: Cumbria Waste Management Profile at Plan Milestone years (tonnes)⁷

		Waste Management Requirements (Tonnes at Plan Milestone)			
		2022/23	2027/28	2032/33	2037/38
Recycling/ Organic Waste Treatment	LACW	≥55%	≥60%	≥65%	≥70%
	C&I	≥53%	≥57%	≥61%	≥65%
	CDEW (non-inert)	4%	7%	10%	13%
Residual Waste Other Recovery	LACW	18%	15%	12%	26%
	C&I	9%	11%	17%	25%
Residual Waste Non-Inert Landfill	LACW	≤10%	≤8%	≤6%	≤4%
	C&I	≤38%	≤32%	≤22%	≤10%
	CDEW	≤8%	≤6%	≤4%	≤2%
Inert C, D & E waste	Recycled Aggregate	≥85%			
	Recovery to Land				

⁷ All the values in Table 14 are generated through the processes described in the waste stream specific reports that form part of the supporting evidence base to this WNA.

Note on C, D & E waste targets

Given that the type of C, D & E waste management facility required depends on the nature of the C, D & E waste produced in any particular year, it is proposed that rather than make provision for C, D & E waste streams by type, a target combining inert recycling i.e. conversion of hard materials to aggregate and recovery to land i.e. the beneficial use of soft materials, be adopted.

Taking account of the above, the resulting management requirements for LACW, C&I and C, D & E waste forecast to be produced in Cumbria are summarised in Table 15. The progression to the target milestones is compared with actual values observed in 2020.

Table 15: Cumbria Combined Waste Management Requirements at Plan Milestone years (tonnes)

		Actual	Waste Management Requirements (Tonnes at Plan Milestone)					Peak Annual, or Cumulative Landfill Capacity Requirement (tonnes) <i>rounded</i>
			2020	2022/23	2027/28	2032/33	2037/38	
Recycling/Organic Waste Treatment	LACW	129,712	144,000	155,500	167,000	179,000	179,000	
	C&I	299,848	316,500	341,000	366,000	391,000	391,000	
	CDEW (non- inert)	7,811	31,000	55,000	78,000	102,000	102,000	
	Total	437,371	491,500	551,500	611,000	672,000	672,000	
Residual waste Other Recovery	LACW	62,895	47,000	39,000	30,500	66,500	66,500	
	C&I	42,413	54,000	66,000	102,000	150,500	150,500	
	Total	105,308	101,000	105,000	132,500	217,000	217,000	
Residual waste Non-Inert Landfill	LACW	24,888	26,000	21,000	15,500	10,000	348,000	
	C&I	253,402	227,000	192,000	132,000	60,000	2,973,000	
	CDEW	70,299	≤62,500	≤47,000	≤32,000	≤16,000	762,000	
	Total	348,589	313,500	260,000	179,500	86,000	4,083,000	
Aggregate recycling/ Recovery to Land and Inert Landfill	Inert CDE	702,991	>640,000				640,000	

How the forecast waste management capacity requirements identified in Table 15 above might be met is discussed below.

4.3 Non-Inert Waste Recycling & Organic Waste Treatment (Composting)

Recycling and organic waste treatment (aka composting) sit at the same tier of the waste hierarchy and so are considered interchangeable in terms of the movement of waste up the hierarchy and therefore combined targets are proposed. This approach is reflected in the capacity requirements presented in Table 15 above.

The waste management capacity requirements to support the achievement of recycling/organic waste treatment targets for LACW and C&I waste streams varies depending on the collection method used. In particular whether materials are separated at the point of collection, and so are collected using segregated collection vehicles, or whether recyclate is co-mingled at the point of collection. Where materials are source-separated, it is possible for them to be delivered to and bulked up in separate storage areas within a depot/waste transfer station, from where the bulked recyclates may then be transported directly to reprocessors. Alternatively, where materials destined for recycling are collected together ('co-mingled') they will first need to be separated from each other in a MRF and it would be from there that the recyclates would be sent on to reprocessors. Even for co-mingled materials they may be bulked at intermediate sites (transfer stations) before being transported on to a MRF for processing.

Therefore, it should not be assumed that a tonne of waste to be recycled will necessarily require an equivalent tonne of MRF capacity to be provided within a Plan area. As explained above, provision of bulking capacity might suffice for source separated recyclate from the LACW and C&I waste streams in particular.

When the total assessed existing management capacity for recycling and composting of c778,000 tonnes shown in Table 13 is compared with the estimated peak combined recycling/organic waste treatment requirement of 672,000 tpa shown in Table 15, a surplus of capacity is predicted as shown in Table 16. This is ignoring the contribution of 221,000tpa Cumbria's organic waste management capacity could also make towards meeting the combined target. Thus it can be concluded that there is already sufficient capacity to meet the forecast non-inert waste recycling/organic waste treatment requirement over the Plan period.

Table 16: Cumbria Non-Inert Waste Recycling/Composting Capacity Requirement at Plan Milestone years

Source: Table 13 & 15

	Tonnes at Plan Milestone				Peak Requirement (tonnes)
	2022/23	2027/28	2032/33	2037/38	
Recycling /Composting Requirement	491,500	551,500	611,000	672,000	672,000
Plan Area Capacity	778,000	778,000	778,000	778,000	
Shortfall (surplus)	0 (286,500)	0 (226,500)	0 (167,000)	0 (106,000)	

4.4 Residual Non-inert Waste Management Requirements

Predicted management capacity requirements for residual waste at Plan milestone years are shown in Table 15 and repeated below in Table 17. This shows a peak 'Other Recovery' capacity requirement of 217,000 tpa in 2037 and a cumulative landfill requirement of c4.08 million tonnes over the Plan period.

Table 17: Cumbria Residual Non-inert Management Capacity Requirement at Plan Milestone years

Source: Table 15

	Tonnes at Plan Milestone				Peak or Cumulative Capacity Requirement (tonnes)
	2022/23	2027/28	2032/33	2037/38	
Other Recovery	101,000	105,000	132,500	217,000	217,000
Non-inert Landfill	313,500	260,000	179,500	86,000	4,083,000
Total Capacity Requirement at Milestone Years	414,500	365,000	312,000	303,000	

Implications for Cumbria Net-Self Sufficiency for Residual Waste

While there is no obligation for Cumbria to achieve net self-sufficiency for non-inert residual waste management alone throughout the Plan period, given the importance of providing for residual waste management, consideration has been given to the adequacy of the remaining consented non-inert landfill capacity within the county to meet forecast need over the Plan period.

Table 18 below displays the predicted depletion of non-inert landfill void in Cumbria. This is based on the annual deduction of the projected combined tonnages of residual non-inert waste requiring landfill as shown in the individual baseline reports. The depletion profile assumes the following:

- The annual capacity available at Lillyhall landfill for non-inert waste is set at 39,000 tonnes to its consent expiry date of 2029; and,
- the remaining non-inert waste requirement are divided equally between the Flusco and Hespín Landfills.

Table 18 shows Flusco landfill reaches full capacity by 2024 (well in advance of its consent expiry date of 2032) and Hespín Wood reaches full capacity by 2025 (before its consent expiry date of 2039). This indicates that the existing Plan area non-inert waste landfill capacity will be exhausted by 2028, with a shortfall predicted to begin in 2025 with a complete absence of capacity from 2029/30 onwards resulting in a cumulative deficit of c2,126,998 tonnes of non-inert waste landfill capacity at the end of the Plan period.

Table 18: Predicted Depletion of Existing Non-inert Landfill void in Cumbria (tonnes)

NB: cells in amber mark the expiry of the current landfill consent within the Plan period (Hespin Wood expires – 2039)

Year	Annual Landfill Requirement	Assumed inputs to Lillyhall (Table 1)	Inputs to Flusco	Inputs to Hespin Wood	Remaining Capacity for Non-inert (tonnes)	Cumulative shortfall
					1,955,500	
2020/21	348,589	39,000	154,795	154,795	1,606,911	0
2021/22	340,142	39,000	150,571	150,571	1,266,769	0
2022/23	315,506	39,000	138,253	138,253	951,263	0
2023/24	304,237	39,000	132,619	132,619	647,026	0
2024/25	292,966	39,000	52,263	201,703	354,059	0
2025/26	281,696	39,000	-	198,059	117,000	-44,637
2026/27	270,425	39,000	-	-	78,000	-237,062
2027/28	259,155	39,000	-	-	39,000	-457,216
2028/29	243,064	39,000	-	-	0	-700,280
2029/30	226,972	-	-	-	0	-927,253
2030/31	210,882	-	-	-	0	-1,138,135
2031/32	194,790	-	-	-	0	-1,332,925
2032/33	178,699	-	-	-	0	-1,511,624
2033/34	160,158	-	-	-	0	-1,671,782
2034/35	141,616	-	-	-	0	-1,813,398
2035/36	123,075	-	-	-	0	-1,936,473
2036/37	104,533	-	-	-	0	-2,041,005
2037/38	85,992	-	-	-	0	-2,126,998

4.5 Cumbria Non-inert Waste Other Recovery Capacity

The Plan area has 'Other Recovery' capacity of 550,000tpa in the form of two operational MBT plants consented to the end of the Plan period plus a consented but to be implemented RDF production facility and EfW facility (providing a combined capacity of 400,000 tpa).. However, given both facilities are still to be built-out, and Government guidance is to only count built capacity, the potential capacity provided has not been relied upon. Therefore, the waste destined for management by 'Other Recovery' over and above the 150,000 tpa managed through the MBT plants may need to be managed through other facilities which may be located out of the Plan area providing sufficient capacity is available in proximity to Cumbria. this represents 67,000 tonnes in the final period of the Plan period (See Section 5 for further detail).

4.6 Inert Waste Management

Inert waste is managed through two principal routes - recycled to aggregate or soil, or deposited for beneficial purposes on land (recovery to land). Inert waste is also used for the restoration of non-inert landfills which is considered to be a 'recovery' operation rather than 'disposal'.

The value of the use of inert waste in certain applications which involve its deposit on land is recognised in national policy (see the national Waste Management Plan 2021) which classifies the backfilling of mineral workings with inert waste for restoration where there is a planning requirement,

as well as its use in construction, as 'recovery' rather than disposal activities, meaning that such development is preferred to disposal to landfill.

It should be noted that the production of recycled aggregate also contributes towards the Plan area meeting its aggregate supply obligations under the NPPF⁸, so ought to be supported in principle (assuming a available supply of suitable feedstock).

Table 15 indicates that the peak quantity of waste requiring management through a combination of conversion to aggregate, use in recovery to land projects and inert waste to landfill is c640,000t.

Table 9 identifies 22 sites within Cumbria reported as producing recycled aggregate. These sites have combined capacity of 946,500tpa. Table 7 indicates that additional sites recycling mixed C, D & E waste may offer further capacity of c41,000 tpa. Therefore, total C, D & E waste management capacity is estimated to be just under 1 million tpa (987,500 tpa) which is in excess of the identified combined requirement of c640,000tpa plus 102,000 tpa for non-inert CDEW. Hence the forecast management capacity requirement for inert waste can be said to be met by the existing recycled aggregate capacity alone. However, not all inert waste e.g. soils, can be managed in this way and so some provision is needed for the permanent deposit of inert waste to land.

Cumbria has one consented inert waste landfill - Roan Edge Landfill (see Table 2). The assessed remaining void at the end of 2020 was 532,000m³ equating to c798,000 tonnes of inert waste. This site would provide capacity for 11 years from the date of this WNA until its expiry in 2031. In addition, c916,000 tonnes of inert waste is required to complete the restoration of Hespin Wood, Lillyhall and Flusco (see Table 1). Therefore, total capacity available for the management of inert waste requiring deposit to land is estimated to be c1,714,000 tonnes, subject to the expiry of the respective planning consents.

In addition, in 2020 four inert waste recovery to land sites were known to be operating in Cumbria (in 2020) (see Table 4). The activity at each site is permitted as a Recovery to Land operation by the Environment Agency. The total assessed remaining capacity at these sites is 2,251,301 tonnes, with the bulk of this capacity at a single site.

In light of the above it can be concluded that Cumbria will be net self sufficient in the provision of inert waste management capacity over the Plan period.

4.7 Hazardous Waste Management

The background evidence report found that combined capacity offered by facilities within Cumbria managing hazardous waste equates to at least c42,000 tonnes per annum, and this substantially exceeds the peak projected overall annual arising of hazardous waste over the Plan period of c26,500 tonnes. Taking a simple net self sufficiency approach this indicates that there is no need for additional capacity for the management of this stream over the Plan period. However as noted in the stream specific report, hazardous waste is composed of a number of different waste types that have their own management requirements and therefore the resilience of current management arrangements where reliance is placed on out of county capacity ought to be understood better through initiating duty to cooperate enquiries.

⁸ Chapter 17 Facilitating the sustainable supply of minerals (Paragraph 203 to 208) NPPF 2019

4.8 Capacity Gap Summary

The findings from the preceding discussion on waste management capacity gaps in Cumbria are shown in Table 19 below. This highlights a predicted capacity shortfall in provision for residual non inert waste in the form of landfill and 'Other Recovery'.

Table 19: Cumbria combined Capacity Assessment & Capacity Gap Analysis
Underlined values relate to cumulative totals

Capacity Type	Waste Management Capacity Gap (Tonnes at Plan Milestones)				Peak/ Cumulative Requirement (tonnes) rounded
	2022/23	2027/28	2032/33	2037/38	
Recycling & Composting (Table 16)	0	0	0	0	0
Other Recovery	0	0	0	67,000	67,000
Non-inert Landfill (Table 18)	0	221,000	179,500	86,000	<u>-2,127,000</u>
Aggregate Recycling	0	0	0	0	0
Deposit to Land	0	0	0	0	0
Hazardous Waste	0	0	0	0	0

Table 19 shows that there is a predicted shortfall in non-inert landfill capacity at 2027/8 of 221,000 tonnes, which falls to 86,000 tonnes in 2037/8 (due to a projected decline in landfill demand).

In addition, an 'Other Recovery' capacity shortfall emerges in the final years of the Plan period. It is anticipated this remaining requirement will be met through out of county management (as discussed in the following section), but should be monitored closely in light of the existing permissions for RDF processing at Thackwood and EfW at Kingmoor Park (both of which would result in any emerging need for 'other recovery' capacity being met).

It should be noted that the early closure of Lillyhall landfill, combined with its annual limit on non-inert waste inputs, contributes towards the identification of a shortfall in capacity in non-inert landfill capacity. Whilst it has been assumed that some of the void remaining at Lillyhall will be filled with inert waste to aid completion, given the surplus of inert waste management capacity in Cumbria, the use of this void for non-inert waste would be preferable. This might be achieved either by removing or extending the expiry of the consent beyond June 2029 or removing, or increasing, the annual input. These two options were explored to understand the impact on the availability of non-inert landfill capacity to meet the projected requirement (see Appendices 3 and 4). This revealed that removing the annual limit at Lillyhall would postpone the onset of a shortfall by a year with exhaustion occurring in 2027. Both cases allow the void at Lillyhall to be maximised for non-inert waste meaning the unmet cumulative non-inert landfill requirement falls by c167,000 tonnes to c1,960,000 tonnes over the Plan period. It should also be noted that a significant amount of capacity (as set out in Table 1) has been reserved for the management of VLLW and it is recommended that clarification be obtained of whether the volume of this waste stream originally envisaged to be disposed at the site will actually materialise.

5. Sub-Regional Capacities

Given a projected shortfall in 'other' recovery and landfill disposal capacity for non-inert waste within the Plan area in the latter part of the Plan period, consideration has been given to the national policy expectation of waste planning authorities through National Planning Policy for Waste. In relation to identifying the need for waste management facilities this states that:

3. In preparing Local Plans, waste planning authorities should: ...

- *consider the need for additional waste management capacity of more than local significance and reflect any requirement for waste management facilities identified nationally;*
- *take into account any need for waste management, including for disposal of the residues from treated wastes, arising in more than one waste planning authority area but where only a limited number of facilities would be required;*
- *work collaboratively in groups with other waste planning authorities, and in two-tier areas with district authorities, through the statutory duty to cooperate, to provide a suitable network of facilities to deliver sustainable waste management;*
- *consider the extent to which the capacity of existing operational facilities would satisfy any identified need.*

This is intended to ensure that over-provision of capacity does not occur, rather an optimal distribution of capacity is established "to provide a suitable network of facilities to deliver sustainable waste management" that may extend beyond the specific plan area. This is particularly the case when facilities provided have substantially greater capacity than required to meet the needs of the Plan area in which it is located.

Defining the Sub-Region to Cumbria

While waste produced in Cumbria may travel considerable distances, for the purposes of this assessment the plan areas that are contiguous to Cumbria have been considered as forming a sub-region to which Cumbria waste might be expected to travel in the first instance. These areas are listed below:

- Cheshire West & Chester
- Cheshire East
- Warrington
- Greater Manchester
- Lancashire
- Merseyside

5.1 Non-inert Landfill Capacity

The capacity analysis presented in Table 19 identifies an emerging predicted shortfall in non-inert landfill capacity at 2027/8 of 221,000 tonnes, falling to 86,000 tonnes in 2037/8 with a projected cumulative requirement of over 2 million tonnes over the Plan period. Therefore, consideration has also been given to the availability of non-inert landfill capacity in the WPAs contiguous to Cumbria. Environment Agency landfill capacity data, downloaded from the .gov datastore website, shows the

remaining permitted landfill capacity at the end of 2020 for non-inert landfills in the Cumbria sub-region excluding Cumbria itself totals 21,403,745m³.

The remaining void at the end of 2020 may be converted into capacity to accommodate the tonnage of non-inert waste shown in Table 20 below.

Table 20: Remaining Capacity at Permitted non-hazardous Landfill in Cumbria sub-region 2020

Source: .gov datastore website

Type	WPA	Remaining Void m ³ (2020 data)	Capacity (Tonnes)	
			Inert deduction ⁹	Non-Inert ¹⁰
Non-hazardous Merchant Landfill	Lancashire	10,203,701	2,295,833	≤7,907,868
	Cheshire West and Chester	2,757,979	620,545	2,137,434
	Cheshire East	101,765	22,897	78,868
	Warrington	491,000	110,475	380,525
	Greater Manchester	7,849,300	1,766,093	≤6,083,208
			Total	≤16,587,902

Given the expectation that non-inert waste will continue to be diverted from landfill due to various pressures including the landfill tax, it may be assumed that the rate of depletion of void in consented landfill will reduce dramatically. This could serve to conserve remaining void capacity so that Cumbria's predicted cumulative non-inert landfill capacity requirement (2,126,998t), may be accommodated within landfills outside the Plan area. That is predicated on other authorities planning to divert their waste from landfills which remains a national policy priority driven by the landfill tax escalator.

The long-term availability of such capacity for Cumbria's waste ought to be confirmed with the host WPAs before reliance might be placed on it for the Plan period. If such capacity cannot be confirmed this is the most pressing need for Cumbria to meet.

5.2 Energy Recovery Capacity

The introduction and increase in landfill tax for non-inert waste has driven a move away from landfilling in recent years, and few operators are seeking to develop new non-inert landfill capacity. In preference industry has invested in energy from waste capacity, as well as processing technology such as MBT to produce RDF or SRF which may be suitable for use in industrial kilns or exported for power production. There are two such plant operating in Cumbria offering a total capacity of 150,000tpa. This means that a capacity gap only emerges in the latter years of the Plan period, amounting to a total of 67,000 tpa in 2037/8. Hence sufficient capacity to manage this waste needs to be identified.

⁹ Total exceeds void due to density factor of 1.5 applied.

¹⁰ Note non-inert capacity in Lancashire and Greater Manchester includes landfill with SNRHW cell thus capacity for non-inert waste in these WPA may be less than the remaining capacity for both hazardous and non-inert waste.

Whilst there are currently no operational EfW sites located in Cumbria, it should be noted that permission has been granted for an EfW facility to be built at Kingmoor Park, which would receive up to 250,000 tpa, sourced from RDF from the MBT plants in Cumbria and beyond and C&I waste generated within Cumbria and the surrounding area. However, given the facility is still to be built out, the potential capacity provided by the site has not been relied upon, thus a review of sub-regional EfW capacity has still been undertaken. A review of the permitted EfW sites in the Cumbria sub-region reveals a single plant offering over 1 million tonnes of capacity suitable for converting residual municipal or C&I waste into energy as shown in Table 21 below.

Table 21: Permitted EfW Capacity in the Cumbria sub-region

Source: Environment Agency, 2020

Site Name	Site Address	Host WPA	Permitted Capacity (tonnes)
Runcorn EfW Facility	Picow Farm Road, Weston Point, Runcorn	Halton	1,100,000
		Total	1,100,000

A review of the environmental permit reveals the capacity is primarily for RDF and digestate produced from MBT of MSW (aka LACW). This is particularly relevant for Cumbria as a significant quantity of the residual waste requiring further management might be arising from the two MBT plants (post 2034) and the consented RDF facility.

A review of the WDI 2020 reveals c600,000 tonnes was received by the Runcorn EfW facility from Greater Manchester and c200,000 tonnes was received from Cheshire West and Chester which indicates a substantial amount of capacity is committed to meet LACW supply contracts. Hence capacity of c300,000 tonnes appears to be available to take Cumbria waste, having been used by a wide range of WPAs, including those that have EfW plants operating in their areas already. Given the peak quantity of residual waste for which 'other' recovery management capacity might be needed in Cumbria is predicted to be c67,000 tonnes in 2037/38, this would fall within the indicated available capacity at Runcorn EfW facility. The long-term availability of such capacity for Cumbria's waste ought to be confirmed with Halton Borough Council before reliance might be placed on it for the Plan period. If the capacity is not available, given the emerging need late on in the Plan period, the need to consider identifying suitable sites might be deferred to a five-year annual review. This is particularly relevant given the intended Government national target of 50% reduction in residual waste per head by 2042, less than five years after the end of the Plan period.

6. Recommendations

In light of the above findings the following recommendations are made for next steps in the development of the Cumbria Local Plan

Initiate Duty to Cooperate enquiries with WPAs within the identified Cumbria sub-region i.e. Cheshire West and Chester, Cheshire East, Warrington, Greater Manchester and Lancashire hosting the landfill capacity identified in Table 20 and EfW capacity identified in Table 21. This dialogue would establish the facility capacity available throughout the Plan period and whether there is any planning impediment, such as a planning condition restricting the waste supply catchment, that would prevent waste from Cumbria being managed there

Where appropriate the above engagement should be documented by way of Statements of Common Ground as part of the evidence base supporting production of a sound Waste Local Plan.

Consider inviting the operator of Lillyhall landfill to amend the existing planning permission either by extending the permission life or increasing annual inputs (subject to compliance with relevant development management policies relating to potential local impacts).

Establish the intentions of the consent holders for Thackwood RDF and Kingsmoor EfW capacity.

Subject to the outcome of the above:

Consider initiating a call for sites to identify land that might be suitable to accommodate additional capacity that may receive the equivalent tonnage of non-inert residual waste identified as needing management. This equates to a maximum of c153,000 tpa in 2037/8, split between 67,000 tpa of 'other' recovery and 86,000 tonnes of non-inert landfill capacity, with a cumulative need for non-inert landfill to accommodate c2,127,000 tonnes of waste over the Plan period. If non-inert landfill capacity is available out of Cumbria then capacity for non-inert landfill in Cumbria itself would not necessarily have to be provided. In addition, capacity might become available on existing sites through extensions and surcharging so the allocation of additional land might not prove to be necessary.

Joint Cumbria WNA 2022

Appendix 1: Intermediate Site Throughput over 5 years reported through WDI tonnes (peak year identified by green cell)

Site Name + Operator	Site Category	Inputs 2016	Inputs 2017	Inputs 2018	Inputs 2019	Inputs 2020	Peak Input	Plus 15% freeboard
Eden Organics Composting Site (H & E Trotter Ltd)	Organic waste Treatment	18,965	19,413	18,797	19,989	16,732	19,989	22,987
Hespin Wood (Cumbria Waste Management Ltd)		92,179	99,209	84,308	89,458	56,640	99,209	114,090
Wilson Pit Yard (West Coast Composting Ltd)		6,802	6,056	6,136	7,808	6,483	7,808	8,979
Kirkbride House (Solway Heat & Power Ltd)		11,574	11,101	10,865	10,620	11,356	11,574	13,310
Possonby Old Hall Farm (Stanley Renewable Energy Ltd)		0	0	6,280	7,699	9,972	9,972	11,468
The Hangar (Agriorganics Ltd)		4,178	7,360	8,717	10,373	11,252	11,252	12,940
Sinkfall Recycling (Brian Armistead Ltd)		1,122	2,330	2,417	5,391	5,249	5,391	6,200
Hespin Woods (Cumbria Waste Management Ltd)	MRF	44,081	37,459	46,396	49,593	52,796	52,796	60,715
Flusco Pike Landfill (Lakeland Waste Management Ltd)		75,413	74,883	83,199	86,219	131,289	131,289	150,982
Unit 25 - The Hangar (Millers Contracting Ltd)		28,707	69,261	35,964	32,322	53,767	69,261	79,650
Kingmoor Recycling Centre (Cumbria Waste Management)		6,868	5,327	5,090	2,451	2,739	6,868	7,899
Distington Materials Recycling Facility (Cumbria Waste Management)		87,886	94,090	93,425	86,533	82,060	94,090	108,204
Ecclerigg Depot (South Lakeland District Council)	LACW Recycling	692	727	632	727	671	727	836
J. M. Skips Brownriggs Yard (Jacksons Marine Ltd)	C&I Recycling	82	412	425	260	250	425	489
Dundee Tyres (Dundee Tyres Ltd)		7,336	6,610	8,518	7,868	6,703	7,868	9,048
Sowerby Lodge (Eden Valley Oils Ltd)		681	1,378	1,380	1,323	743	1,380	1,587
Sandscale Park (J J C Hire Ltd)	CDE Recycling	-	-	-	24,447	11,469	24,447	28,114
Coopers Yard (JJC Hire Ltd)		26,041	25,524	26,658	4,200	25,967	26,658	30,657
Esk Quarry (Eddie Wannop Ltd)		-	-	-	-	1,641	1,641	1,887
12 Shap Road Ind Estate (H Wicks Ltd)	CDE and C&I Recycling	10,223	9,144	6,915	6,568	1,617	10,223	11,756
Unit N, Risehow Ind Est (Thompsons Plant Hire Ltd)		-	-	2,388	3,034	2,705	3,034	3,489
Hangar 20 Silloth Airfield (D Alan Harrison)		10,840	11,508	10,546	11,089	10,525	11,508	13,234
Scarth Road (H Wicks Ltd)		22,645	18,583	16,095	23,731	12,363	23,731	27,291
Station Yard (Adam Hoyle)		922	883	766	609	612	922	1,060
Pittwood Road, Lillyhall Industrial Estate (Derwent Recycling Services Ltd)		13,698	13,315	13,300	10,807	9,847	13,698	15,753
Unit A, Site 6, Rockcliffe Estate (North West Recycling Ltd)		75,042	116,783	152,315	158,756	190,706	190,706	219,312

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Ormsgill Yard Materials Recycling Facility (FCC Recycling Ltd)	LACW & C&I Recycling	30,712	28,148	28,626	24,222	16,609	30,712	35,319
Kendal Fell Waste Management Centre (Suez Recycling And Recovery Lancashire Ltd)		42,986	44,314	43,042	42,785	42,357	44,314	50,961
Unit 2, Lillyhall Ind Estate (Cumbria Recycling Ltd)		1,923	1,224	1,117	1,364	1,450	1,923	2,211
Sinkfall Recycling (Brian Armistead Ltd)	CDE, C&I & LACW Recycling	16,533	19,689	18,993	19,642	33,105	33,105	38,071
Branthwaite Vehicle Dismantlers (Trevor Brough)	MRS	5,064	7,339	5,186	3,681	608	7,339	8,440
Canal Head Yard (John Miller And Sons Ltd)		346	315	25	1,408	1,723	1,723	1,981
Morecambe Road (John Morgan & Co Ltd)		1,778	2,277	1,830	2,097	2,056	2,277	2,619
Junction Street (Mountelm Ltd)		1,394	1,237	1,233	-	797	1,394	1,603
Mintsfeet Road (Lakeland Gold Ltd)		-	1,713	1,593	1,762	2,580	2,580	2,967
Sandysike Brickworks (Mountelm Ltd)		8,832	7,796	7,700	9,410	7,930	9,410	10,822
Northern Resource Park (Renewi Ltd)	MBT	65,845	65,179	64,190	64,360	68,983	68,983	79,330
Sowerby Woods Resource Park (Renewi Ltd)		50,100	53,960	53,200	51,842	57,125	57,125	65,694
Unit C, Kingmoor Park, Rockcliffe Estate (Cubby Construction Ltd)	CDE Transfer	-	-	8,399	2,118	899	8,399	9,659
Ambleside (Cumbria Waste Management Ltd)	HWRC	1,417	1,314	1,369	1,480	1,420	1,480	1,702
Bousteads Grassing Carlisle (Cumbria Waste Management Ltd)		10,492	10,552	10,134	9,527	6,492	10,552	12,135
Brampton Household Amenity Site (Cumbria Waste Management Ltd)		1,934	2,092	2,308	2,310	2,137	2,310	2,657
Clay Flats Workington		6,539	6,572	6,224	6,278	4,334	6,572	7,558
Frizington (Cumbria Waste Management Ltd)		6,135	5,924	5,845	5,729	4,224	6,135	7,055
Grange (Cumbria Waste Management Ltd)		1,330	1,287	1,193	1,145	764	1,330	1,530
Kendal (Cumbria Waste Management Ltd)		5,418	5,387	5,066	4,913	3,597	5,418	6,231
Kirkby Stephen (Cumbria Waste Management Ltd)		1,285	1,249	1,365	1,417	1,228	1,417	1,630
Maryport (Cumbria Waste Management Ltd)		4,031	3,855	4,010	4,354	3,759	4,354	5,007
Millom (Cumbria Waste Management Ltd)		1,384	1,521	1,525	1,412	1,314	1,525	1,754
Project Furness Household Waste Recycling Centre (Cumbria Waste Management Ltd)		7,564	7,881	8,215	7,747	4,791	8,215	9,447
Ulverston Civic Amenity Site (Cumbria Waste Management Ltd)		3,552	3,319	3,290	3,229	2,641	3,552	4,085
Wigton (Cumbria Waste Management Ltd)		1,923	1,882	1,851	2,078	1,577	2,078	2,390
Flusco (Lakeland Waste Management Ltd)		6,352	6,423	6,459	6,906	4,888	6,906	7,942

Appendix 2: Permitted Recovery to Land Operations in Cumbria

Site Name & Operator	Issue Date	Permitted Capacity from Waste Recovery Plan (m ³)	Planning Consent (tonnes)	Cumulative inputs to 2020 inc (tonnes)	Remaining capacity (tonnes) b minus e	Notes
Column	a	b	c	d	e	
Distington Golf Club (Robert Dickinson)	2012	137,544 (275,088 tonnes)	-	329,181	0	
Silvertop Quarry (Thompsons Of Prudhoe Ltd)	2011	1.5Mm ³ (2,250,000 tonnes)	-	129,430	2,120,570	
Whitehaven Golf Course (Western Lakes Ltd)	2012	30,552 (45,828 tonnes)	-	62,043	0	
Faugh Sandpit No2 (Eddie Wannop Ltd)	2012	?	-	72,678	-	
Overby Quarry (Thomas Armstrong Aggregates Ltd)	2013	?	-	161,594	-	
Rose Garth (Mr & Mrs Bellas)	-	?	-	34,556	-	
Dixton Hill Quarry (D A Harrison)	2014	52,957 (79,436 tonnes)	-	69,878	9,558	Permission for restoration extended to 31 March 2023
Field 3771 Eel Skye (Ashcroft Demolition (Cumbria) Ltd)	2021	?	200,000	91,104	108,896	
Moss Band Farm (AD Waste Transfer)	2016	?	-	49,710	-	
Kendal Auction Mart (L& W Wilson)	2015	?	-	95,747	-	
Thackwood Landfill Site (Waste Transfer Services)	2018	?	-	74,983	-	
Cargo Hill Farm (Allan Richard)	2018	19,376 (28,892 tonnes)	-	16,615	12,277	
Land South of Fisher Farm (Andrew Ladds)	2019	10,500 (21,000 tonnes)	-	39,914	0	
Total capacity					2,251,301	

Method of calculating remaining capacity

Where no waste recovery plans were provided for permitted recovery to land sites, no estimation of remaining capacity could be undertaken.

For those which were provided, the cumulative inputs reported in the WDI from the issue date were deducted from the permitted capacity to calculate any remaining capacity. This revealed 4 out of the 13 sites still had capacity remaining as shown in the table above.

Where the cumulative inputs exceeded the permitted capacity, it was assumed that there is no more capacity remaining. It was noted that some sites reported inputs in 2020, despite their consented capacities being exceeded, however, on closer inspection, the reported inputs were significantly less than previous years, indicating the near cessation of the recovery operation, thus no capacity was taken in this instance.

Appendix 3: Predicted depletion of Non-inert Landfill void in Cumbria (tonnes) if no annual limit on non-inert waste input applies at Lillyhall (inputs equally split three-ways)

NB: cells in amber mark the expiry of the landfill if within the Plan period (Hespin Wood expires – 2039)

Year	Annual Landfill Requirement	Assumed inputs to Lillyhall (Table 1)	Inputs to Flusco	Inputs to Hespin Wood	Remaining Capacity for Non-inert (tonnes)	Cumulative shortfall
					2,122,441	
2020/21	348,589	116,196	116,196	116,196	1,773,852	0
2021/22	340,142	113,381	113,381	113,381	1,433,710	0
2022/23	315,506	105,169	105,169	105,169	1,118,203	0
2023/24	304,237	101,412	101,412	101,412	813,966	0
2024/25	292,966	81,782	192,342	18,842	521,000	0
2025/26	281,696			281,696	239,304	0
2026/27	270,425			239,304	0	-31,121
2027/28	259,155					-290,276
2028/29	243,064					-533,340
2029/30	226,972					-760,312
2030/31	210,882					-971,194
2031/32	194,790					-1,165,984
2032/33	178,699					-1,344,683
2033/34	160,158					-1,504,842
2034/35	141,616					-1,646,457
2035/36	123,075					-1,769,532
2036/37	104,533					-1,874,065
2037/38	85,992					-1,960,057

Appendix 4: Predicted depletion of Non-inert Landfill void in Cumbria (tonnes) if permission is extended at Lillyhall until completion at annual limit (remaining inputs split equally)

NB: cells in amber mark the expiry of the landfill if within the Plan period (Hespin Wood expires – 2039)

Year	Annual Landfill Requirement	Assumed inputs to Lillyhall (Table 1)	Inputs to Flusco	Inputs to Hespin Wood	Remaining Capacity for Non-inert (tonnes)	Cumulative shortfall
					2,122,441	0
2020/21	348,589	39,000	154,795	154,795	1,773,852	0
2021/22	340,142	39,000	150,571	150,571	1,433,710	0
2022/23	315,506	39,000	138,253	138,253	1,118,203	0
2023/24	304,237	39,000	132,619	132,619	813,966	0
2024/25	292,966	39,000	52,263	201,703	521,000	0
2025/26	281,696	39,000	-	198,059	283,941	-44,637
2026/27	270,425	39,000	-	-	244,941	-276,062
2027/28	259,155	39,000	-	-	205,941	-496,216
2028/29	243,064	39,000	-	-	166,941	-700,280
2029/30	226,972	39,000	-	-	127,941	-888,253
2030/31	210,882	39,000	-	-	88,941	-1,060,135
2031/32	194,790	39,000	-	-	49,941	-1,215,925
2032/33	178,699	39,000	-	-	10,941	-1,355,624
2033/34	160,158	-	-	-	0	-1,504,842
2034/35	141,616	-	-	-	0	-1,646,457
2035/36	123,075	-	-	-	0	-1,769,532
2036/37	104,533	-	-	-	0	-1,874,065
2037/38	85,992	-	-	-	0	-1,960,057