



Surrey Waste Capacity Needs Assessment 2022

Management Requirements for Construction, Demolition & Excavation Waste in Surrey 2021-2042

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Abbreviations

Abbreviation	Definition
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
EEFM	East of England Forecasting Model
EfW	Energy from Waste
EWG	European Waste Catalogue
GVA	Gross Value Added
HWRCs	Household Waste Recycling Centres
LACW	Local Authority Collected Waste
MRS	Metal Recycling Site
MRF	Material Recycling Facility
PPG	Planning Practice Guidance
WDF	WasteDataFlow
WDI	Waste Data Interrogator
WCNA	Waste Capacity 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.
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.
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.
Disposal	A deposit of waste to landfill that is for disposal rather than recovery (for restoration or operational purposes).
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.
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).

Term	Definition
	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).
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 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.
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. Management subject to control through EU Directive 2006/21/EC.
'Next step' Site	Some waste to intermediate sites may not undergo any processing, thus are reported as leaving the site leave under the same EWC and are accounted for again at the 'next step' site where it is to be managed.
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.
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.
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 Surrey.
Waste Planning Authority	The authority responsible for planning for waste within a specific administrative area. In this case Surrey County Council

Term	Definition
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. Introduction

Surrey County Council has contracted BPP Consulting to produce an update to the Surrey Waste Capacity Needs Assessment (WCNA) that underpins the preparation of its Minerals and Waste Local Plan.

The WCNA consists of the following documents:

1. Review of Management Requirements for Local Authority Collected Waste;
2. Review of Management Requirements for Commercial & Industrial Waste;
3. Review of Management Requirements for Construction, Demolition & Excavation Waste;
4. Review of Management Requirements for Hazardous Waste;
5. Scoping Review of Management Requirements for Other Waste;
6. Review of waste flows.

This report is concerned with updating the Construction, Demolition and Excavation (C, D & E) waste baseline in Surrey for 2021 and assessing its projected management requirements to 2042.

1.1. Advice on Data

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 (PPG) 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

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 the management of waste arising in their respective administrative i.e. Plan area:

- *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

1.2. Principal Data Sources

The principal data sources used to generate this WCNA are as follows:

Waste Data Interrogator

Operators of sites permitted to manage waste, submit returns on the quantities, types and origin of waste received and, where applicable, destination of waste removed from 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 2021 WDI (version 2 released Nov 2022) consisting of data for the calendar year 2021 is the most current version available at the time of writing and hence is taken to represent the 'best available data'.

Hazardous Waste Interrogator

Producers and managers of hazardous waste must notify the environment agencies (which, depends on which part of the UK) of movements of waste classed as hazardous. This data is collated and reported in the Hazardous Waste Data Interrogator (HWI). Data is currently reported down to receiving local area rather than by receiving site. This means it is necessary to cross check between the HWI and WDI when seeking to identify destination sites for Duty to Co-operate purposes. The HWI for calendar year 2021 was released in September 2022.

Recycled Aggregate Survey Results

Surrey County Council as Mineral Planning Authority for the county of Surrey produces an annual Local Aggregate Assessment (LAA) which includes undertaking an annual operator monitoring survey for recycled aggregates sold at fixed sites within Surrey. This data has been referenced in the assessment of the quantity of Surrey C, D & E waste converted into recycled aggregate, alongside use of the WDI 2021 as per the most recent national guidance on estimating recycled aggregate production developed by Aggregate Working Parties in England¹.

Exemption Register

Some waste operations are exempt from needing an environmental permit, and do therefore not submit returns to the Environment Agency. However, the number of exemptions by type registered in a Plan area can be established through the Environment Agency held exempt register. Of most relevance to C, D & E waste is the 'U1²' exemption which is then used alongside an estimation of the average quantity of waste managed under this exemption contained in a report produced by the Waste Resources Action Programme (WRAP), in 2013³. WRAP was at that time a programme funded largely by Government. This report remains the most current estimation of tonnages of waste managed through this route.

¹ *Recycled Aggregates Data: Guidance on Assessing Levels of Recycled Aggregates* (May 2022)

² The U1 permitting exemption covers the use of limited tonnages of specified inert waste in construction.

³ *Review of the Factors Causing Waste Soil To Be Sent To Landfill; 2007 to 2011* Waste Resources Action Programme (WRAP), 2013

Data Presentation

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 significant figures. Final values discussed in the text are rounded to the nearest 500.
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. Certain computations apply a threshold of >500 tonnes.

2. Estimating C, D & E Waste Arisings Baseline

2.1. Introduction

This section of the report is concerned with estimating arisings of Construction, Demolition and Excavation (C, D & E) waste in Surrey in 2021. From this, future arisings can be forecast for which appropriate targets can be proposed. The current C, D & E waste management capacity is then assessed, with a view to identifying potential future capacity needs for which the Minerals and Waste Local Plan may need to provide.

2.2. Definitions and Context

The adopted Surrey Waste Local Plan (2020) defines Construction, Demolition and Excavation (C, D & E) waste as follows:

“The combined waste produced from earth moving activities, demolition of existing buildings/structures and construction of new buildings/structures. It mostly comprises brick, concrete, hardcore, subsoil and topsoil, but can also include timber, metals and plastics.” (Glossary of Terms).

Currently there is no requirement on businesses to submit records of waste produced and hence estimating quantities of C, D & E waste arisings for a specific Plan Area is a challenge. Two different approaches can be taken to estimate a baseline for C, D & E waste as follows:

- **‘Point of production’** method which uses data based on the construction activity within an area and applying waste production factors (related to the different types of activity such as new build and refurbishment) derived from Site Waste Management Plans (SWMP). However, as construction activity statistics data is no longer produced at a sub-regional i.e. county level it is not possible to reliably replicate this method.
- **‘Point of management’** using data related to C, D & E waste managed. This relies on records of waste delivered to, and removed from, permitted waste management facilities supplemented by data for wastes managed at unpermitted sites that don’t report through the WDI, such as the Environment Agency’s exemption register and recycled aggregate producers. This approach has been used to generate a national methodology for estimating annual C, D & E waste generation for England⁴, which uses information from four key management routes:
 - (1) Waste managed at transfer and treatment facilities (reporting through the Agency WDI)
 - (2) Waste managed by landfill (reporting through the Agency WDI)
 - (3) Waste managed under exemptions (derived from an Environment Agency register and estimated tonnage managed)
 - (4) Waste recycled as aggregate (from a national estimate prepared by the Mineral Products Association)

⁴ Methodology for estimating annual waste generation from construction, demolition and excavation (CD&E) sectors in England (DEFRA., 2012)

3. Estimation Methodology Applied

In order to assess C, D & E waste arisings in Surrey, the national methodology has been modified to reflect local circumstances, in particular the following modifications have been made:

- Values for Plan area waste classed as C, D & E waste managed through permitted sites in 2021 as reported in the WDI with steps taken to avoid possible double counting and capture wastes that may have been reclassified as a consequence of processing through intermediate sites.
- The population of exempt sites registered in Surrey has been established through the Environment Agency held exempt register. Then the estimated value for the quantity of waste managed at the key exemption managing C, D & E waste ('U1') from the government funded study⁵ was applied.
- The quantity of waste converted into recycled aggregate has been based on responses to an annual survey of recycled aggregate producers conducted by Surrey County Council as part of the production of the Surrey LAA cross referenced to the WDI 2021 as per the method included in the national guidance developed by Aggregate Working Parties in England for estimating recycled aggregate production⁶ rather than from national estimates produced by the Mineral Products Association.

For the purposes of this exercise C, D & E waste has been taken to include the following categories of waste as per the List of Waste/European Waste Catalogue:

- (1) Chapter 17 (Construction & Demolition Waste)
- (2) 19 12 09 (minerals such as sand, stones)
- (3) 20 02 02 (soil and stones).;

A check has also been undertaken for any waste classified under EWC 19 13 as this includes remediated soils which should be included in the C, D & E waste arisings total⁷.

⁵ See footnote 2

⁶ *Recycled Aggregates Data: Guidance on Assessing Levels of Recycled Aggregates* (May 2022)

⁷ The WDI 2021 reported c111,500 tonnes from Surrey which has been included in Step 9.

3.1. Inputs to permitted waste management facilities

Step 1: Calculate the tonnage of C, D & E waste from Surrey in the Environment Agency WDI sent to permitted sites.

The total amount of C, D & E waste from Surrey managed at permitted sites (located within and beyond Surrey) reporting through the WDI in 2021 was c1,945,000 tonnes. This comprised c1,365,500 tonnes managed within Surrey, and c579,000 tonnes managed outside Surrey. The breakdown and management routes are shown in Table 1 below.

Table 1: Management of C, D & E Waste from Surrey through Permitted Sites (tonnes)

Source: WDI 2021

	Landfill	Landfill	Landfill	Recovery to Land	Metal Recycling Sites	Transfer	Treatment	Grand Total
	Haz	Non-haz	Inert					
Managed within Surrey	0	87,456	441,195	114,413	495	130,428	591,701	1,365,688
Managed outside Surrey	94	40,382	130,746	33,995	5,310	110,535	258,185	579,248
Totals	94	127,838⁸	571,941	148,408	5,806	240,964	849,886	1,944,936

Step 2: Deduct EWC codes relating to hazardous component of C, D & E waste

Requirements for management of hazardous waste arising in Surrey are accounted for in a separate report⁹. Therefore, the hazardous component of the C, D & E waste stream is deducted to avoid double counting. Of the inputs from Surrey shown in Table 1, a total of 7,192 tonnes was identified as hazardous waste. When deducted this gives a revised total of c1,937,500 tonnes. The revised values are shown in Table 2.

Table 2: Management of non-hazardous C, D & E Waste from Surrey through Permitted Sites (tonnes)

Source: WDI 2021

	Landfill	Landfill	Recovery to Land	Metal Recycling Sites	Transfer	Treatment	Grand Total
	Non-haz	Inert					
Managed within Surrey	83,976	441,195	114,413	495	130,415	591,697	1,362,191
Managed outside Surrey	39,894	130,728	33,995	5,308	109,509	256,119	575,553
Totals	123,870	571,923	148,408	5,803	239,924	847,816	1,937,744

⁸ Inc 3,968 tonnes of hazardous waste going to non-hazardous waste landfill with a separate cell.

⁹ BPP Consulting Surrey WCNA 2022 Hazardous Waste in 2021

Step 3: Quantify waste going to its final fate or leaving the Plan area

Step 3a. C, D & E waste from Surrey managed at permanent deposit sites.

As inputs to Landfill and Recovery to Land involve the permanent deposit of the waste, they are regarded as final points of management (or fate), so these values are taken as final as follows: 695,793 tonnes (combined landfill values in Table 2) + 148,408 tonnes (Recovery to Land value from Table 2) = 844,200 tonnes. Table 3 shows the Surrey C, D & E baseline 2021 arising running total as a cumulative value.

Table 3: Non-hazardous (including inert) C, D & E waste from Surrey – Step 3a (tonnes)

Component	Value	Cumulative Total
Permanent Deposit	844,200	844,200

Step 3b. C, D & E waste from Surrey managed at intermediate sites outside Surrey

As shown in Figure 1 waste from Surrey managed at intermediate sites outside Surrey ceases to be identified as coming from Surrey following receipt at the intermediate management facility ('next step' site).

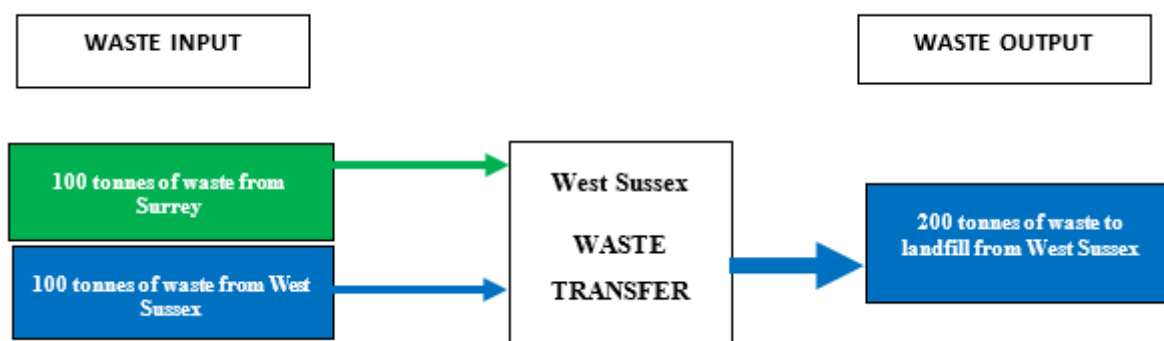


Figure 1: Schematic of how flows of Surrey waste to sites outside Surrey are reported in the WDI.

Hence the tonnage managed at intermediate sites outside Surrey is also taken to be a 'final value' as follows:

5,308 tonnes (out of Plan area MRS from Table 2) + 109,509 tonnes (out of Plan area transfer from Table 2) + 256,119 tonnes (out of Plan area treatment from Table 2) = 370,935 tonnes.

Table 4 shows the C, D & E waste baseline arising running total is now c1,215,000 tonnes.

Table 4: Table 3 plus Surrey waste managed at intermediate sites outside of Surrey (tonnes) – Step 3b

Component	Value	Cumulative Total
Permanent Deposit	844,200	844,200
Managed out of Surrey	370,935	1,215,136

Step 4: Calculate the tonnage of C, D & E waste from Surrey treated in Surrey that may have been subject to reclassification

Having established the quantity of Surrey C, D & E waste going to a final fate or leaving the county as c1,215,000 tonnes (Table 4), the quantity of inputs to intermediate sites within Surrey which may be included in the arisings value also needs to be accounted for.

This value needs to be further interrogated to ensure that it does not:

1. Double count inputs to intermediate sites in Surrey that subsequently get managed at a 'next step' site as Surrey waste and hence over report arisings; nor,
2. misses C, D & E waste that may have been reclassified following processing through these sites and hence under-report arisings This is because waste leaving an intermediate site may be reclassified as a waste from a waste management process (the relevant waste chapter is 'Chapter 19') rather than Chapter 17. This is explained by the following example:

'Intermediate' Site 1 in Surrey receives 100 tonnes of Surrey C, D & E waste.

Following treatment e.g. sorting and some processing, the 100 tonnes gets split into:

- 25 tonnes of soil (classed as Chapter 17 waste) which goes for Recovery to Land at Site 2; The 25 tonnes of soil is therefore also recorded at the point of input to the Recovery to Land site as waste arising in Surrey (regardless of whether Site 2 is within or outside Surrey).
- 50 tonnes of recycled aggregate, sold directly for use as an aggregate; This is counted under the recycled aggregate value obtained via the annual local production survey for the Local Aggregates Assessment but not explicitly in the WDI as it ceases to be waste;
- 25 tonnes of waste classed as Chapter 19 waste due to the incoming waste having been processed and then reclassified as 'waste from waste management processes'.

This is illustrated in Figure 2 below:

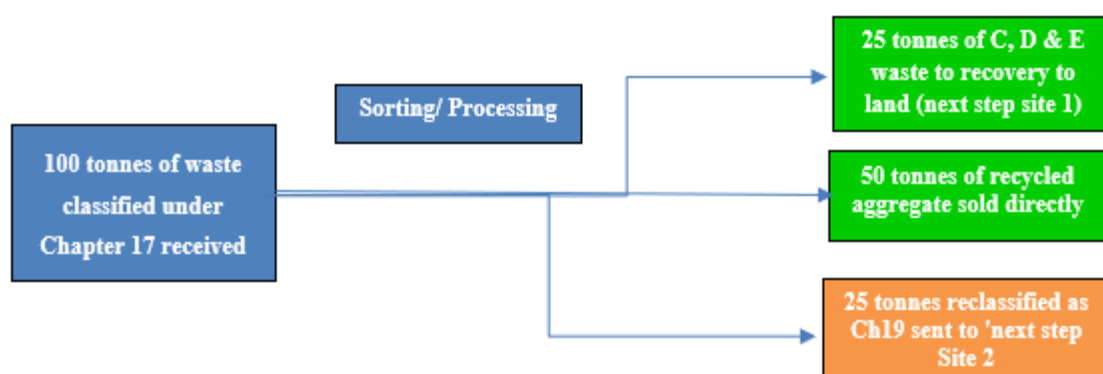


Figure 2: Schematic of intermediate site outputs to track Surrey C, D & E waste fate.

As it is not possible to distinguish inputs to next step/final fate sites as whether they have gone direct from source or via an intermediate site from input data, that element of Chapter 19 waste that came from intermediate sites in Surrey that may have originated from C, D & E waste from Surrey is

estimated. This is done by identifying each Surrey intermediate site that received C, D & E waste from Surrey that also reported Chapter 19 waste as an output.

The proportion of the Chapter 19 output that might be attributed to the input Surrey C, D & E waste was determined as follows:

- 1) Did the site have a shortfall between the C, D & E waste received and removed?
- 2) Did the site have outputs classed under Chapter 19?
- 3) If yes then the percentage of total inputs attributed to Surrey is applied to the outputs of Chapter 19 to give a Chapter 19 'makeup'.

NB: Where the Ch 19 output is greater than the shortfall, only the shortfall value is used. Where the shortfall can't be made up this may be taken to indicate that tonnages of C, D & E Waste have been converted into recycled aggregate which is not generally declared on the permit waste returns and hence reported in the WDI, as it has ceased to be waste.

Applying this method to the Surrey Intermediate sites (Metal Recycling Sites¹⁰, Waste Transfer Stations & Waste Treatment sites) identified as both receiving C, D & E waste from Surrey and producing Chapter 19 waste in 2020 yields the following:

Q1: 27 intermediate waste sites within Surrey were identified as having a shortfall between the inputs and outputs of C, D & E waste of greater than 500 tonnes¹¹.

Q2: Of these sites, 11 had net¹² outputs of waste classified as Chapter 19 of over 500 tonnes as shown in Table 5.

Q3: The percentage inputs from Surrey has been applied to the Chapter 19 outputs to give a total Chapter 19 makeup of 137,880 tonnes to be added to the Surrey C, D & E baseline 2021 arising running total as shown in Table 6.

¹⁰ No shortfall over 500 tonnes between CDE inputs and outputs was found for any MRS sites.

¹¹ 500 tonnes is taken to be a tonnage regarded as significant for the purposes of this exercise.

¹² "Net" being the difference between any inputs of Ch19 and outputs of Ch19 waste.

Table 5: Intermediate sites within Surrey with a shortfall between CDE inputs <500t also reporting an output of waste under Ch 19

Facility Type	Site + Operator ¹³	Shortfall <500t (tonnes)	Net Ch 19 produced (tonnes) WDI 2021	% C, D & E waste input from Surrey	Ch 19 make up (tonnes) (amber box in Fig 2) (If net Ch 19>shortfall, then the shortfall value taken. If net Ch 19<shortfall then the net Ch 19 taken) % from PA*
Treatment	Little Orchard Farm, Britaniacrest Recycling Ltd	112,536	70,903	100%	70,903
Treatment	Ellerton Yard, D J Grab Services Ltd	24,959	13,775	34%	4,675
Treatment	Epsom Chalk Pit, N J B Recycling Ltd	7,970	1,910	100%	1,910
Treatment	Sunnyside, John Gunner & Co Ltd	12,711	1,691	94%	1,589
Treatment	Unit 10, P M Skip Hire Ltd	2,505	1,466	100%	1,466
Treatment	Reigate Road Quarry, J & J Franks Ltd	8,685	6,465	87%	5,649
Treatment	Slyfield Materials Recycling Facility, Chambers Waste Management Plc	32,801	33,814	91%	29,772
Transfer	Kingston Rd, Kt22, D & E Roberts Ltd	19,964	12,382	79%	9,792
Transfer	Haysbridge Farm, EGAP Recycling Ltd	32,229	2,551	51%	1,307
Transfer	The Chalkpit, Epsom Skip Hire	9,475	9,475	100%	9,475
Transfer	The Chalk Pit, P M Skip Hire Ltd	2,367	1,343	100%	1,343
Total					137,880

Table 6: Table 4 plus Chapter 19 (Table 5) (tonnes) – Step 4

Component	Value	Cumulative Total
Permanent Deposit	844,200	844,200
Managed out of Surrey	370,935	1,215,136
Surrey intermediate site net Ch 19 output	137,880	1,353,016

¹³ All sites were also found to be producing recycled aggregate from C, D & E input which is accounted for in a later step.

Step 5: Account for C, D & E waste converted into Recycled Aggregate

This section sets out the calculation to quantity C, D & E waste arising in Surrey used to produce recycled aggregate using methods included in the recently released national guidance developed by Aggregate Working Parties in England for estimating recycled aggregate production¹⁴.

Each year Surrey County Council prepares a Local Aggregates Assessment¹⁵ (LAA) which reports how much aggregate is sold in Surrey and how this relates to the demand for aggregate. In order to establish the contribution made by recycled aggregate to sales of aggregate overall in Surrey, the county council conducts an annual monitoring survey of recycled aggregate producers located at fixed sites within Surrey.

The value presented for combined sales of recycled and secondary aggregate production for 2020 in the latest LAA (published 2021) is 600,000 tonnes¹⁶. However, the LAA value for recycled aggregate production may not correspond directly to C, D & E waste arising in Surrey for the following reasons:

- A proportion of the aggregates sold from Surrey sites may have been produced from C, D & E waste arising from outside Surrey resulting in over-reporting of arisings; and
- the method includes aggregates produced from secondary aggregates derived from non-C, D & E waste, resulting in over-reporting of arisings¹⁷.

It should also be noted that for permitted sites it is a legal requirement under their permit to submit accurate input and output data to the Agency for the WDI. Whereas, it is not a legal requirement to respond to LAA surveys. Therefore, for each site that responded to the 2020 LAA survey that was also found to be reporting through the WDI 2021, the WDI 'mass balance' method (see glossary) was taken in precedence given this report is updating C, D & E waste arisings for 2021. Furthermore, it is likely that the 2020 LAA survey responses were effected by Covid- 19. Therefore, the following steps have been taken to arrive at a value of recycled aggregate produced by Surrey recycled aggregate producers from Surrey C, D & E waste.

It was found that six out of the eight sites that responded to the 2020 LAA survey were also found to be reporting through the WDI 2021. The 'mass balance' value for these sites amounted to 227,223 tonnes. For the remaining two sites, the 2020 LAA survey response adjusted by the percentage inputs from Surrey was taken, this amounted to 11,599 tonnes.

Five sites included in the listing of sites known to be producing recycled aggregate did not respond to the 2020 LAA survey, but had responded to surveys in previous years (three of the five had responded to 2020 survey and the other 2 in 2019). Out of the five sites, four were found to be reporting through the WDI 2021 and so the 'mass balance' value was taken. This amounted to 203,331 tonnes. For the remaining site, the most recent previous year's survey response was taken, this amounted to 50,000 tonnes.

¹⁴ *Recycled Aggregates Data: Guidance on Assessing Levels of Recycled Aggregates* (May 2022)

¹⁵ Local Aggregates Assessment 2021

¹⁶ Derived from Surrey Aggregate Monitoring Survey 2020.

¹⁷ This affects returns for three sites and totals less than 3,000 tonnes.

Further to this, six sites identified through the WDI 2021 'mass balance' method did not appear in the listing of fixed recycled aggregate production sites provided by the County Council. Examination of the operator websites revealed that they were all advertising recycled aggregate supply and so the 'mass balance' value was taken as being representative of recycled aggregate supply. This amounted to a further 114,985 tonnes. When these values are added it gives a total recycled aggregate production value of 657,139 tonnes. A summary of each site and the method applied is shown in Table 7 below.

Table 7: Summary of Recycled Aggregate Production Estimates (tonnes)

Site + Operator	Response to 2020 survey (LAA 2021)	Most recent response to LAA survey in 2019-2020	% Inputs from Surrey in WDI	Recycled Aggregate attributed to Surrey C, D & E waste	WDI 2021 Mass Balance ¹⁸	Preferred Value
Site 1	No	273,316	-	-	4,602	4,602 ¹⁹
Site 2	No	180,127	-	-	195,980	195,980 ²⁰
Site 3	5,000	-	87%	4,369	2,653	2,653 ²¹
Site 4	29,260	-	87%	25,565	70,071	70,071 ²²
Site 5	No	26,195	91%	23,776	2,749	2,749
Site 6	220,000	-	34%	73,998	72,745	72,745
Site 7	60,689	-	100%	60,689	41,633	41,633
Site 8	4,254	-	81%	3,452	_ ²³	3,452
Site 9	10,210	-	79%	8,075	8,044	8,044
Site 10	8,147	-	100%	8,147	_ ²⁴	8,147
Site 11	200,000	-	38%	75,551	82,077	82,077
Site 12	No	63,000	0%	0	0 ²⁵	0
Site 13	No	50,000	-	50,000	-	50,000
Site 14	No	No	34%	-	6,884	6,884
Site 15	No	No	100%	-	8,435	8,435
Site 16	No	No	94%	-	10,453	10,453
Site 17	No	No	100%	-	1,867	1,867
Site 18	No	No	51%	-	15,838	15,838
Site 19	No	No	100%	-	71,508	71,508
Total						657,139

¹⁸ Adjusted for Surrey where data is available.

¹⁹ The WDI reports the site only received 4,602 tonnes of C, D & E waste, therefore this value was taken over the previous LAA survey response. All of this was from the Southeast region (uncodeable) but assumed to have come from Surrey.

²⁰ The WDI reports the site received 195,980 tonnes of suitable C, D & E waste, therefore this value was taken over the previous LAA survey response. All of this was from the Southeast region (uncodeable) but assumed to have come from Surrey. Soil and stones (17 05 04) were excluded from the 'mass balance' method on the basis that soil is retained for restoration purposes on the site (Committee Planning Report., June 2017)

²¹ WDI 2021 mass balance adjusted for WDI origin (Surrey).

²² As in footnote 19.

²³ Shortfall between inputs and outputs positive (more 'out' than 'in'), so no mass balance value calculated.

²⁴ Shortfall between inputs and outputs of less than 500 tonnes.

²⁵ 19,971 tonnes mass balance shortfall all attributed to arisings from Greater London.

This value has been included in the calculation of C, D & E waste arising running total in Table 8. This gives a Surrey C, D & E baseline 2021 arising running total of c2,010,000 tonnes.

Table 8: Surrey C, D & E waste after Step 5

Table 6 results plus Recycled Aggregates

Component	Value (tonnes)	Cumulative Total
Permanent Deposit	844,200	844,200
Out of Surrey Intermediate	370,935	1,215,136
In Plan Area Intermediate Chapter 19	137,880	1,353,016
Recycled Aggregate	657,139	2,010,155

3.2. Surrey C, D & E Waste managed at Exempt sites

Step 6: Estimate the quantity of C, D & E waste managed by exempt waste management activities in Surrey.

The national Planning Practice Guidance (nPPG) advises that: *"..when forecasting construction and demolition waste arisings, the following may be relevant:*

- the fact that a sizeable proportion of construction and demolition waste arisings are managed or re-used on-site, or exempt sites, so it is critical that some provision is made for unseen capacity in this way."* (emphasis added)

Paragraph: 033 Reference ID: 28-033-20141016

Regulations were introduced in 2011 which dramatically reduced the maximum quantities of waste that could be managed by activities for which exemptions, rather than environmental permits, could be relied upon, and so the quantity of C, D & E waste managed through exempt activities has reduced substantially. However, as a quantity of C, D, & E waste is still managed by exempt activities, it is still appropriate to give consideration to the contribution some activities may make to management of this stream, and hence to the calculation of arisings.

Exempt activities registered under Paragraph U1 (use of waste in the construction) generally account for the management of the most significant quantities of C, D & E waste by exempt activities. A government funded report²⁶ estimated a mean value for the quantity of waste managed by an activity registered under U1 as 600 tonnes.

The following steps ensure that management of C, D & E waste managed by activities registered under paragraph U1 is taken into account in the assessment of C, D & E waste arisings in Surrey.

Table 9: Number of activities in Surrey registered as exempt under paragraph U1 2019 to 2021

	2019	2020	2021	Total	3-yr Average
Paragraph U1	110	87	68	265	88

²⁶ Refer to footnote 3

Exemption registrations are valid for 3 years, and hence the total population of exempt activities identified in Table 9 above includes any site registered between January 2019 and December 2021. However, a survey of exempt activities undertaken by Surrey County Council in 2017²⁷ indicated that those registered under paragraph U1 tend to be used on a ‘one-off’ basis. In theory, it is possible that all the activities registered between January 2019 and December 2021 were utilised in 2021 and so the total number could be used to estimate arisings, however this is considered unlikely and so instead the total number registered was divided by three to generate a mean annual value of 88 for the number of U1 exempt activities actually active in Surrey in 2021.

From the mean number of exempt activities registered under paragraph U1, and applying the WRAP report value of 600 tonnes per exemption, it is estimated that the total quantity of C, D & E waste managed by such activities in Surrey in 2021 was 53,000 tonnes. This value has been included in the Surrey C, D & E baseline arising running total. As shown in Table 10, this results in a Surrey C, D & E baseline 2021 arising running total of c2,063,000 tonnes.

Table 10: Surrey C, D & E waste after Step 6

Table 8 plus Exemptions

Component	Value (tonnes)	Cumulative Total
Permanent Deposit	844,200	844,200
Out of Surrey Intermediate	370,935	1,215,136
In Plan Area Intermediate Chapter 19	137,880	1,353,016
Recycled Aggregate	657,139	2,010,155
Exemptions	53,000	2,063,155

²⁷ Waste Permitting Exemption Telephone Survey for Surrey

Step 7: Account for tonnages not attributed below regional level

The WDI 2021 reports four sites located in the Plan area as having received inputs of C, D & E waste not coded below regional level. For one site, a factor has been applied to the unattributed C, D & E waste based on the percentage of total C, D & E inputs already attributed to the Plan area received at the site. For the remaining 3 sites, a spatial analysis has been undertaken by applying a 13-mile distance zone (or ‘catchment’) around each site as per the previous WNA. This generates the distribution shown in Figure 3 below.

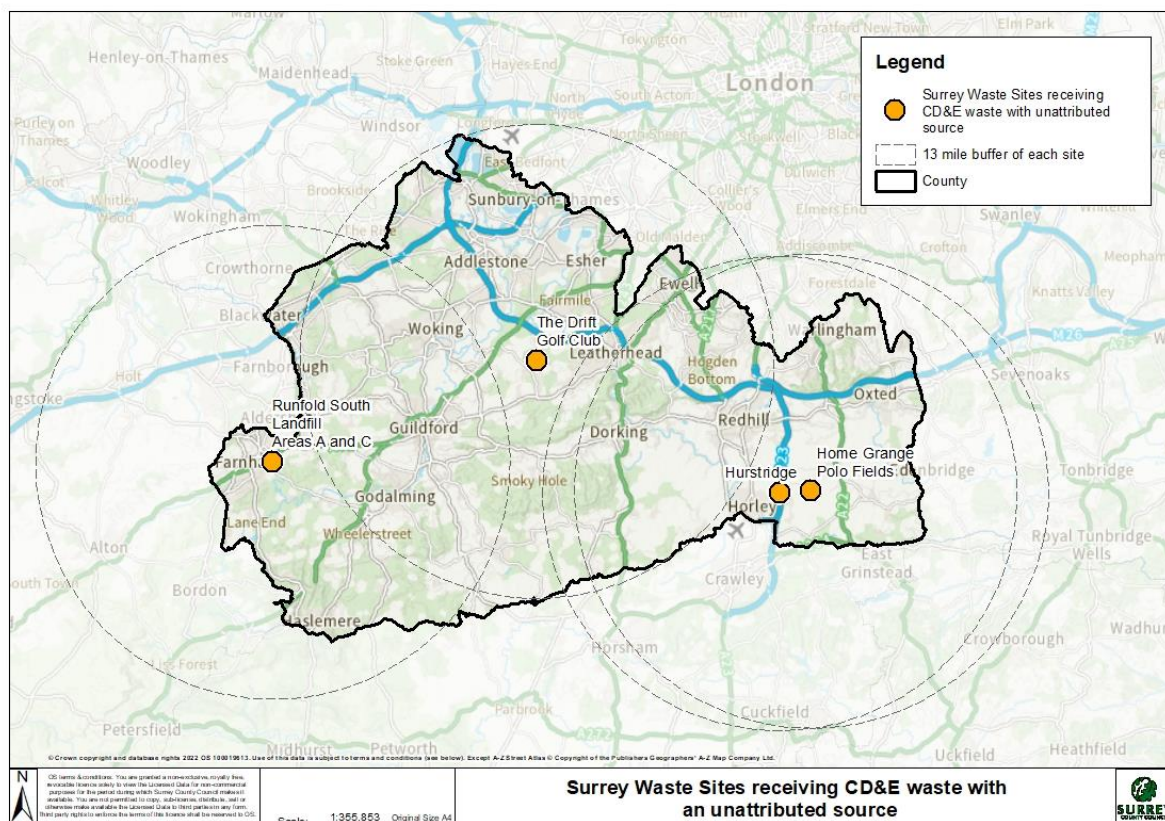


Figure 3: Surrey Waste Sites receiving unattributed C, D & E waste with a 13-mile buffer

A visual assessment of the proportion of each site's catchment that falls within Surrey to the unattributed tonnage values shown in Table 11 gives the values shown in Table 11.

Table 11: C, D & E Waste inputs (>500t) to Plan area sites not attributed below regional level

Site & Operator	CDEW Received (tonnes) uncodeable below Regional Level	% of total C, D & E inputs actually from Surrey	Approx. % of site catchment within Surrey	Derived Value (tonnes)	Notes
Runfold South Landfill Area, SUEZ Recycling and Recovery UK Ltd	67,809	0%	45%	30,514	Other waste streams effectively coded under Surrey.
Unit 4, Simvic	660	16%		108	
Home Grange Polo Fields, T J S Services Ltd	4,165	0%	50%	2,083	All inputs uncodeable
Land/premises At, Chapel Road, R S Etherington Ltd	15,402	0%	70%	10,781	All inputs uncodeable
Total					43,486

This gives a total unattributed waste tonnage attributed to the Plan area of 43,486 tonnes. This value has been included in the Surrey C, D & E baseline 2021 arising running total in Table 12. This results in a Surrey C, D & E baseline 2021 arising running total of c2,106,500 tonnes.

Table 12: Surrey C, D & E waste after Step 7

Table 10 plus unattributed

Component	Value (tonnes)	Cumulative Total
Permanent Deposit	844,200	844,200
Out of Surrey Intermediate	370,935	1,215,136
In Plan Area Intermediate Chapter 19	137,880	1,353,016
Recycled Aggregate	657,139	2,010,155
Exemptions	53,000	2,063,155
Unattributed	43,486	2,106,640

Step 8: Addition of remediated soils

The WDI 2021 reports 111,662 tonnes of remediated soil (EWC 19 13 02) was received at Patteson Court Landfill site in Redhill from Surrey in 2021. Given this waste will originate from C, D & E waste, it has been included in the Surrey C, D & E waste baseline arising. However, it should be noted that some of this waste will have undergone processing at the soil treatment facility at Patteson Court prior to its final deposit. Therefore, there may be a degree of double counting (c17,000 tonnes in 2021). This gives a final Surrey C, D & E waste baseline 2021 arisings of c2,218,500 tonnes as shown in Table 13.

Table 13: Surrey C, D & E waste after Step 8

Table 12 plus remediated soils

Component	Value (tonnes)	Cumulative Total
Permanent Deposit	844,200	844,200
Out of Surrey Intermediate	370,935	1,215,136
In Plan Area Intermediate Chapter 19	137,880	1,353,016
Recycled Aggregate	657,139	2,010,155
Exemptions	53,000	2,063,155
Unattributed	43,486	2,106,640
Remediated Soil	111,662	2,218,302

3.3. Comparison with previous baseline arisings estimates

Historical values generated are shown in Table 14 below for comparative purposes.

Table 14: C, D & E Waste Arisings Estimates for Surrey (2015-2021)

Source	Surrey baseline update	Surrey baseline update	WNA	Surrey baseline update	Surrey baseline update	Surrey baseline update	BPP Update
Data Year	2015	2016	2017	2018	2019	2020	2021
Value (tpa)	1,972,000	2,038,500	2,494,000	2,440,000	2,871,337	1,891,860	2,218,500
% Annual difference		+3.4%	+22.3%	-2.2%	+17.7%	-34.1%	+17.3%

The value of c2,218,500 tonnes in 2021 compares with a value of c1,891,860 tonnes in 2020 and c1,972,000 tonnes in 2015. This indicates a 12.5% increase over a six-year period and an increase of 17.3% from 2020 to 2021. It is worth noting that the construction industry will have been affected by the national lockdown as a result of the Covid 19 pandemic in 2020, which may have contributed towards the suppression of the arising value for 2020 with the substantial increase reflecting a bounce-back in activity in 2021. While the annual data indicates a high degree of variability over the 6-year period, the mean annual growth rate is c4% per annum.

Direct comparison between the baseline values obtained for 2020 vs 2021 are shown in comparative Table 15 below.

Table 15: Comparison between 2020 and 2021 baseline by component

Step	2020 Value	2021 Value	Difference
Permanent Deposit	526,816	915,935	+389,119
Out of Surrey Intermediate	344,160	370,935	+26,775
In Plan Area Intermediate Chapter 19 output	97,817	137,880	+40,063
Recycled Aggregate	589,071	577,679	+11,392
Exemptions	114,000	53,000	-61,000
Unattributed	103,469	43,486	-59,983
Remediated soil	116,526	111,662	-4,864
Total	1,891,859	2,210,577	+318,718

As the predominant difference between the values for 2020 and 2021 is the increase tonnage sent to permanent deposit, a further analysis has been undertaken of destination sites in an attempt to understand this upturn in inputs better. This is set out in Table 16 below.

Table 16: Inputs to permanent deposit destination sites 2020 vs 2021 (>10,000 tonnes)

Facility Type	Site Name	2020 Input	2021 Input	Difference	Comments
Inert Landfill	Alton Road Sandpit	151,345	244,632	+93,287	
Inert Landfill	Kingsmead Landfill	39,168	94,317	+55,149	
Inert Landfill	Betchworth Sand Quarry Landfill	65,280	79,881	+14,602	
Inert Landfill	Oxted Quarry Landfill	45,277	57,056	+11,779	
Inert Landfill	Homefield Landfill	5,656	38,845	+33,189	
Inert Landfill	Hindhay Quarry	0	20,328	+20,328	
Inert Landfill	Homers Farm Inert Landfill	0	20,205	+20,205	Permit issued in Dec 2020
Inert Landfill	Horton Brook Quarry	10,440	1,245	-9,195	
Inert Landfill	Reading Quarry	11,982	5,906	-6,075	
Non-haz (SNRHW) LF	Redhill Landfill Site	104,968	83,976	-20,992	
Non-haz (SNRHW) LF	Colnbrook Landfill	0	20,712	+20,712	
Recovery to Land	Cranleigh Brick And Tile	42,560	49,175	+6,615	
Recovery to Land	Runfold Central Area	0	36,352	+36,352	Permit issued in May 2021
Recovery to Land	South Godstone Quarry	1,623	28,886	+27,263	Permit issued in Sept 2020
Recovery to Land	Wexham Park Golf Club	0	22,748	+22,748	

4. Forecasting Future C, D & E Waste Growth

The approach taken in the previous WNA 2019 supporting the adopted Surrey Waste Local Plan (2020) was to assume a zero-growth rate for the Plan period. This was in line with the nPPG advice when looking to forecast C, D & E waste:

“Waste planning authorities should start from the basis that net arisings of construction and demolition waste will remain constant over time as there is likely to be a reduced evidence base on which forward projections can be based for construction and demolition wastes.”

Hence the starting point for any assessment is that there will be no growth in arisings in the forecast period.

An assessment of house building and infrastructure set out in the Surrey LAA 2021 to assess future demand for aggregate indicates the following:

“New housing may be considered a useful proxy for overall aggregate demand. Clearly a significant uplift in housing construction is anticipated in Surrey up to 2031 and this could result in an average yearly completion rate of the order of 35% above that achieved during the previous decade (Surrey Infrastructure Study, 2017), but it is not clear whether this rate of construction will materialise and what impact it will have on aggregate demand.”

Given the uncertainty associated with housing growth this may still justify a static growth rate, all other things being equal.

NPPG recommends that an assessment of major infrastructure projects also be undertaken to test the static growth assumption on a Plan area basis. An assessment of the impact of the planned major infrastructure projects identified in the LAA 2021, on Surrey C, D & E waste arisings is presented in Table 17.

Table 17: Planned Major Infrastructure

Source: LAA 2021

Major Infrastructure projects	Impact on C, D & E waste arisings RAG assessment	Notes
Redevelopment of Junction 10 Wisley Interchange		This is a Nationally Significant Infrastructure Project (NSIP) and the C, D & E waste arising from this scheme is likely to represent 1.4% of the Waste Arisings Baseline (1,972,000 tpa - Surrey Waste Needs Assessment 2017). Uncontaminated soil from excavations will be reused within the scheme, where appropriate. Therefore, the magnitude of impact when assessed against the Waste Arisings Baseline is likely to be minor.
A3 and A320 corridor improvements		Related to the Junction 10 Wisley development. The majority of the A320 scheme is being undertaken under Permitted Development Rights by the Highway Authority.
23 major transport schemes planned to tackle areas of significant congestion in town centres and to improve and modernise key road junctions		There is no information on the level of impact on C, D & E waste arisings these planned infrastructure projects will have. However, it is assumed that they will come forward over a number of years and given the increasing emphasis on the application of the Waste Hierarchy, it is likely that they will not make a substantive difference to waste arisings over the Plan period.
New schools		
Major Rail infrastructure improvements		

Conclusion

C, D & E waste arisings will vary from year to year according to when the specific projects listed in Table 17 proceed, and the nature of the waste will depend on whether such projects are located on previously developed or greenfield land. Given the previous WNA applied a zero-growth rate through the Plan period, despite the two years of positive growth shown by previous C, D & E waste baseline arisings (see Table 14), it is considered that a zero-growth rate would remain justified.

5. Profiling Existing C, D & E Waste Management Methods

5.1. Backfilling of mineral workings

The WDI allocates tonnages to sites by permit category granted by the Environment Agency. Where a site involving the permanent deposit of waste to land has been determined by the Agency to not qualify for a recovery to land environmental permit under its guidance, it will be classed as a landfill in the WDI. In that situation inputs to sites involving backfilling of mineral workings are classed against the landfill category in the WDI. However, given that activities such as backfilling of mineral workings are classed as recovery according to Government guidance on the waste hierarchy²⁸, and sites where this takes place may be classed as a landfills for permitting purposes, there can be a mismatch between the values shown as having gone to landfill and the waste hierarchy orientated targets that might be set out in the Waste Local Plan. Table 18 sets out how the datasets for those sites have been disaggregated to distinguish a 'disposal to landfill' value from a 'recovered' value (assuming that all inert waste have actually been used in restoration or to meet operational needs and therefore do not represent 'disposals' as discussed below).

Table 18: Allocation of Quantities of reported C, D & E waste from Surrey to Management Categories in 2021

Excluding 19 12 12 as it is addressed in Table 19

Non-Inert Landfill (Table 2)	Non-Inert Landfill (Table 2)	Inert Landfill (Table 2)	Recovery to Land (Table 2)	Exemptions (Table 10)
Non-inert	Inert			
0	235,532	571,923	148,408	53,000
Disposed to Landfill	Assumed to be Recovered	Assumed to be Recovered	Assumed to be Recovered	Assumed to be Recovered

Table 18 shows that all Chapter 17 waste received at non-inert landfill was in fact inert material; mainly soils and stones classed under EWC 17 05 04 and waste from soil remediation under EWC 19 13 02. Given the relatively low gate fee charged for this material relative to non-inert waste, much of this is likely to be used as restoration material so ought to be classed as recovery even though the receiving site has not qualified for a recovery environmental permit.

Table 19 presents the management profile arrived at using the 2021 baseline of c2,218,500 tonnes.

²⁸ Guidance on applying the Waste Hierarchy (DEFRA., June 2011)

Table 19: C, D & E Waste Management Profile Actual Data 2021

Route	Purpose	Tonnes	% of known
Recycling & Reuse	Recycled Aggregate (Table 8)	657,139	
Recycling & Reuse	Subtotal	657,139	30%
Recovery	Exemptions	53,000	
Recovery	Use of Waste/ Recovery to Land	148,408	
Recovery	Inert landfill + inert waste to non-inert landfill	807,455	
Recovery	Subtotal	1,008,962	45%
Non-Inert Landfill	Disposals of Chapter 17 to non-inert landfill	0	
Non-Inert Landfill	Chapter 19 outputs (76% to landfill) ²⁹	134,950	
Non-Inert Landfill	Subtotal	134,950	6%
Unknown	Treatment (remainder)	417,351	19%
	Total	2,218,302	

Table 19 gives the following management profile for C, D & E waste arising in Surrey in 2021:

- 30% re-used and recycled;
- 45% recovered in some other way;
- 6% disposed to landfill;
- 19% managed by intermediate treatment (status unknown)

5.2. C, D & E Waste Composition

The principal distinction in the C, D & E waste stream in terms of management (and so targets) is between inert and non-inert materials, with a further possible distinction between hard and soft inert materials. By considering what type of material would be suitable for which component of the management profile shown in Table 19 above, it is possible to arrive at an indicative breakdown by material type shown in Table 20. This can inform the setting of appropriate targets as some types of material are only suited to particular types of management method. For example, only hard inert

²⁹ Taking the reported fate of 19 12 12 outputs to landfill from the sites listed in Table 5 and adjusting by the % inputs from Surrey.

material can be converted into recycled aggregate, and generally material used in backfill will be soft materials such as soils and sub-soils.

Table 20: C, D & E Waste Composition from Management Profile Actual Data 2021

Hierarchy Tier	Management Route	Inert	Inert	Non Inert/ Mixed
		Hard	Soft	
Recycling/Reuse	Recycled Aggregate	657,139	0	0
Other Recovery	Exemptions	0	53,000	0
Other Recovery	Use of Waste/ Recovery to Land	0	148,408	0
Other Recovery	Inert Landfill + inert waste to non-inert landfill	14,747	792,708	0
Disposal	Non-Inert Landfill	0	0	0
Disposal	Chapter 19 outputs	0	0	134,950
Unknown	Treatment	0	0	417,351
	Totals	671,886	994,115	552,301
	Breakdown	30%	45%	25%

In the absence of specific data, all waste going to 'Treatment' has been assumed to be non-inert. This gives an overall inert content of 75%, with up to 25% being classified non-inert initially³⁰.

This profile has a reasonable fit with composition data which indicates c. 20% of C, D & E waste may be non-inert³¹.

³⁰ 'initially' because the bulk of this waste will be a mixture of inert and non-inert components to undergo treatment, which will separate these components out. When inert materials are mixed with non-inert materials the whole amount is to be classified as non-inert until separated into its constituent parts.

³¹ It is assumed that 20% of the CDE waste stream comprises non-inert materials (from breakdown in report by BPP Consulting on Construction, Demolition and Excavation Waste in Oxfordshire, February 2014, page 7)

6. Management Targets

The revised EU Waste Framework Directive set a minimum target of 70% by weight of non-hazardous Construction & Demolition waste prepared for re-use, recycling and other material recovery by 2020³².

It should be noted that:

- while backfilling operations using waste to substitute other fill materials may be counted towards the target. i.e. backfilling of mineral workings may be classed as recovery;
- naturally occurring material categorised under EWC 17 05 04 (soil & stones) is excluded from the target. i.e. its use is unconstrained by targets.

The Surrey C, D & E waste management profile arrived at for 2021 in Table 21 indicates that a 75% recycling, reuse and other recovery rate is already being achieved for Surrey's C, D & E waste. The current adopted Surrey Waste Local Plan sets an 80% recycling target by 2035, however, given a 75% rate is already being achieved, this suggests a 'floor' of 80% C, D & E waste recovery target can be achieved earlier in the Plan period and hence has been set for the next plan milestone through to 2042, with a reducing 'ceiling' on landfilling to zero waste to landfill by 2042.

It should be noted that the recently adopted Environment Act target of 50% reduction in residual waste by 2042 includes C, D & E waste residues³³.

The remainder is shown to be managed through treatment that may for example reduce the quantity of stone present in trommel fines disposed to landfill (increasing the tonnage of inert material recovered as recycled aggregate). Hence treatment is taken to be an intermediate step between recovery and disposal to landfill.

Table 21: Proposed targets (floors & ceilings) for C, D & E Waste Management

Component		2021	2026	2031	2036	2042
Inert	Recycled Aggregate and Recovery to Land inc exemptions and inert landfill (floor)	75%	≥80%	≥80%	≥80%	≥80%
Non-inert	Treatment	19%	16%	18%	19%	20%
Non-inert	Remainder to Landfill (ceiling)	6%	4%	2%	1%	0%

³² The UK Government has committed to achieving targets set in the revised Waste Framework Directive even though the UK has now left the EU.

³³ Delivering on the Environment Act: new targets announced and ambitious plans for nature recovery (Gov.UK., March 2022)

6.1. Projected Management Requirement for Surrey's C, D & E Waste

Applying the management targets in Table 21 to the 2021 baseline value gives the predicted management requirement at each of the Plan Milestone years shown in Table 22. For example, the non-inert waste treatment target in Table 21 for 2036 of 19% has been applied to the Surrey baseline value to give a value of c421,500 tonnes of non-inert C, D & E waste requiring treatment.

Table 22: C, D & E Waste Targets Applied to Forecast at Plan Milestone years (tonnes)

Component		2021	2026	2031	2036	2042	Difference/ Cumulative requirement
Inert	Recycling/ Reuse/ Recovery	1,666,001	≥1,774,642	≥1,774,642	≥1,774,642	≥1,774,642	-
Non-inert	Treatment	417,351	354,928	399,294	421,477	443,660	+26,309
Non-inert	Remainder to Landfill	134,950	88,732	44,366	22,183	0	931,690

Table 22 shows combined recovery capacity for inert waste will need to remain at c1,774,500 tonnes throughout the Plan period for the proposed target/floor to be met, while the ability to treat at least c443,500 tonnes of non-inert waste will be required by the end of the Plan period to ensure that the ceiling of zero waste to landfill is met. If the residual component of the C, D & E waste stream goes to landfill in accordance with the progression indicated by the targets/ceiling in Table 22, this would result in a cumulative non-hazardous landfill requirement of c931,500 tonnes to the end of the Plan period as shown in Table 23 below. This material is less suited to diversion to EfW due its less combustible nature, but is suited to pre-treatment to reduce its quantity over time.

Table 23: Projected Residual C, D & E Waste Non Haz Landfill Requirement (tonnes)

Year	Tpa	Tonnes Cumulative
2023	116,463	116,463
2024	107,219	223,682
2025	97,976	321,657
2026	88,732	410,389
2027	79,859	490,248
2028	70,986	561,234
2029	62,112	623,346
2030	53,239	676,586
2031	44,366	720,952
2032	39,929	760,881
2033	35,493	796,374
2034	31,056	827,430
2035	26,620	854,050
2036	22,183	876,233
2037	18,486	894,719
2038	14,789	909,507
2039	11,092	920,599
2040	7,394	927,993
2041	3,697	931,690
2042	0	931,690