



# **Surrey Waste Capacity Needs Assessment 2022**

## **Commercial & Industrial Waste Management Requirements in Surrey to 2042**

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## Abbreviations

Abbreviations	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
EfW	Energy from Waste
EWC	European Waste Catalogue
HWRCs	Household Waste Recycling Centres
LACW	Local Authority Collected Waste
MRS	Metal Recycling Site
MRF	Material Recycling Facility
RDF	Refuse Derived Fuel
WCNA	Waste Capacity Needs Assessment
WDF	WasteDataFlow
WDI	Waste Data Interrogator
WIR	Waste Incinerator Returns
WPA	Waste Planning Authority
WTS	Waste Transfer Station

## Glossary of Terms

Term	Definition
<b>Agricultural Waste</b>	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.
<b>Anaerobic Digestion</b>	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.
<b>Bio waste</b>	Waste that can break down over time due to natural biological action/processes, such as food, garden waste and paper.
<b>Commercial Waste</b>	Waste from factories or premises used for the purpose of trade or business, sport, recreation or entertainment.
<b>Construction, Demolition &amp; Excavation Waste</b>	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.
<b>Defra</b>	The UK Government department responsible for developing national waste management policy.
<b>Energy from Waste</b>	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.
<b>Environment Agency</b>	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.
<b>European Waste Catalogue (EWC)</b>	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).
<b>Exemptions</b>	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.
<b>Green waste</b>	Biodegradable plant waste from gardens and parks such as grass and hedge trimmings, from domestic and commercial sources suitable for composting.
<b>Hazardous Waste Landfill</b>	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.
<b>Hazardous Waste</b>	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.
<b>Household Waste</b>	Waste from households collected through kerbside rounds, bulky items collected from households and waste delivered by householders to household waste

Term	Definition
	recycling centres and "bring recycling sites". along with waste from street sweepings, and public litter bins.
<b>Incineration</b>	The controlled combustion of waste. Energy may also be recovered in the form of heat (see Energy from Waste).
<b>Industrial Waste</b>	Waste arising from any factory and from any premises occupied by an industry (excluding mines and quarries).
<b>Landfill (including land raising)</b>	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).
<b>Landfill Directive</b>	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.
<b>Local Authority Collected Waste</b>	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.
<b>Mass Balance</b>	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.
<b>Materials Recycling Facility (MRF)</b>	A facility for sorting recyclable materials from the incoming waste stream.
<b>Mining Waste</b>	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.
<b>'Next step' Site</b>	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.
<b>Non-Hazardous Waste Landfill</b>	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.
<b>Recovery</b>	Subjecting waste to processes that recover value including recycling, composting or thermal treatment to recover energy.
<b>Recycling</b>	The reprocessing of materials extracted from the waste stream either into the same product or a different one.
<b>Refuse Derived Fuel</b>	A fuel produced to a contract specification by processing the combustible fraction of waste.
<b>Residual Waste</b>	Waste remaining after materials for re-use, recycling and composting/organic waste treatment e.g. anaerobic digestion have been removed.
<b>The Plan area</b>	The area subject to the Waste Local Plan to which this study relates. In this case the county of Surrey.
<b>Waste Planning Authority</b>	The authority responsible for planning for waste within a specific administrative area. In this case Surrey County Council.



Term	Definition
<b>Waste Transfer Station</b>	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 the Surrey Waste Capacity Needs Assessment (WCNA) that underpins the review and update of the Surrey 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.
7. Overview of Management Requirements.

This report is concerned with updating the Commercial and Industrial (C&I) waste baseline for Surrey at 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 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 waste management:

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

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

## 1.2 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'<sup>1</sup>.

### **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 EA WDI reports for calendar year the data for Surrey covering the four quarters of 2021 has been accessed to ensure comparability between datasets.

### **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 sf. 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

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<sup>1</sup> Note that version 3 has since been released in January 2023.

## 2 Estimating Surrey C&I Waste Baseline Arisings

### 2.1 Context

There is no requirement on businesses to submit records of waste produced and hence estimating quantities of Commercial and Industrial waste arisings for a specific waste planning area such as Surrey, with any degree of accuracy, is a challenge. Two different approaches can be taken to estimate a baseline for C&I waste as follows:

- ‘Point of management’ using data related to the management of C&I waste. This is primarily based on records of waste delivered to, and removed from, permitted waste facilities submitted by operators to the Environment Agency (EA). The EA collates this data in its ‘Waste Data Interrogator’ (WDI) on an annual (calendar year) basis. This data is supplemented by data for wastes managed at permitted sites that don’t report through the WDI. This data now forms the basis for the ‘Reconcile’ method used to estimate C&I waste arisings at national level<sup>2</sup>.
- ‘Point of production’ using data based on the profile of businesses within an Area and applying waste production factors (related to the different business profiles). This method was used in the national survey undertaken in 2009 that informed the previous approach to national estimates<sup>3</sup>.

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<sup>2</sup> DEFRA 2014, New Methodology to Estimate Waste Generation by the Commercial and Industrial Sector in England as amended by Commercial and Industrial Waste Arisings Methodology Revisions for England October 2018

<sup>3</sup> Commercial and Industrial Waste Survey 2009: Final Report, Defra May 2011, Available: <http://archive.defra.gov.uk/evidence/statistics/environment/waste/documents/commercial-industrialwaste101216.pdf>

### 3 Methodology

The methodology used to estimate an updated baseline C&I waste arisings value (to be used as a starting point for forecasting C&I waste arisings in Surrey) is based on the national 'Reconcile' methodology, adapted to reflect local circumstances<sup>4</sup>. This national methodology considers a number of datasets, in totality, to capture quantities of C&I waste that are managed rather than produced through:

- (1) Permitted waste management facilities (reporting through Environment Agency Waste Data Interrogator (WDI) which since 2019 includes data for waste sent to Energy from Waste plants);
- (2) taking into account the proportion sent directly for export outside the UK.

Deductions are made to eliminate:

- (3) Non-relevant waste streams such as Agricultural, Mining, Construction, Demolition & Excavation Waste (C, D & E), wastewater, and hazardous waste included in the datasets; and
- (4) Local Authority Collected Waste (LACW) [reported through WDF<sup>5</sup>].

In summary the methodology applies the following calculation:

*C & I waste arising = (Inputs to permitted facilities + inputs to energy from waste + exports) - (C, D & E waste + mining + agricultural + wastewater + hazardous waste + LACW)*

For the purposes of estimating the baseline arisings for Surrey C&I waste, the above method has been adapted to reflect a local approach including computations to avoid double counting of waste inputs to 'intermediate' facilities<sup>6</sup> within Surrey as well as interrogation of anomalous values.

#### Terminology

While this report is concerned with the management of C&I waste arisings it should be noted that waste arising from businesses that is similar in nature and composition to household waste is included under the term 'municipal waste' and is normally classified under EWC Chapter 20. National analysis of waste composition studies indicates that a significant proportion of waste generated by businesses not collected by Local Authorities falls within this definition. Most recent estimates for England as a whole found that around 43% of the total C&I waste stream may be waste of a type classed as municipal<sup>7</sup> and 60% of the commercial waste stream alone. This means that national targets set for municipal waste encompass both LACW and a significant proportion of the C&I waste stream. LACW and C&I waste may be managed at the same facilities and hence consideration of management requirements have been combined in the subsequent assessment.

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<sup>4</sup> The methodology has been reviewed by Defra waste statisticians responsible for developing the Reconcile national method.

<sup>5</sup> <http://www.wastedataflow.org/>

<sup>6</sup> Intermediate facilities are those which do not provide the final fate of waste. That is waste received leaves for onward management at other facilities elsewhere either having been subjected to some form of treatment or just simply bulked up e.g. transfer stations

<sup>7</sup> National Municipal Waste Composition, England 2017 WRAP January 2020

### 3.1.1 Inputs to permitted facilities

**Step 1: Waste Data Interrogator quantity of waste from Surrey with deductions to eliminate non-C&I waste streams.**

The starting point is to download all data relating to all types of waste identified as coming from Surrey in the Environment Agency Waste Data Interrogator (WDI). This is displayed by management route in Table 1 below<sup>8</sup>. This shows that the total quantity of waste identified as coming from Surrey managed through permitted sites reporting through the WDI for 2021 was just under 3.6 million tonnes.

**Table 1: Waste Arising from Surrey (tonnes)**

*Source WDI 2021*

	Landfill	Metal Recycling Sites	Recovery to Land	Transfer	Treatment	Grand Total
<b>Surrey to Surrey</b>	766,236	4,046	114,413	458,912	932,567	<b>2,276,174</b>
<b>Surrey to elsewhere</b>	216,241	38,175	34,188	336,997	693,635	<b>1,319,236</b>
<b>Totals</b>	<b>982,478</b>	<b>42,221</b>	<b>148,600</b>	<b>795,909</b>	<b>1,626,203</b>	<b>3,595,410</b>

Waste identified under waste codes considered to represent C, D & E Waste (Chapter 17 plus EWC 19 12 09 & 20 02 02<sup>9</sup>) and therefore accounted for in the separate estimates of C, D & E waste (See BPP Consulting report on C, D & E Waste) are deducted from this total. The quantities remaining after this deduction are displayed by management route in Table 2 below. This shows that the quantity of waste identified as arisings from Surrey is reduced by c1,937,500 tonnes to c1,657,500 tonnes.

**Table 2: Waste Arising from Surrey minus C, D & E Waste (tonnes).**

*Source: WDI 2021*

	Landfill	Metal Recycling Sites	Recovery to Land	Transfer	Treatment	Grand Total
<b>Surrey to Surrey</b>	241,066	3,551	0	328,497	340,870	<b>913,983</b>
<b>Surrey to elsewhere</b>	45,619	32,867	193	227,488	437,516	<b>743,683</b>
<b>Totals</b>	<b>286,685</b>	<b>36,418</b>	<b>193</b>	<b>555,985</b>	<b>778,386</b>	<b>1,657,666</b>

Waste identified under waste codes considered to represent Agricultural Waste (Chapter 02 01), mining (Chapter 01) and hazardous waste (All codes with \*) are accounted for separately and so are also deducted. The quantities remaining after this deduction are displayed by management route in Table 3 which shows that the quantity of waste identified as arisings from Surrey is reduced by c44,000 tonnes to c1,613,500 tonnes.

<sup>8</sup> It should be noted that waste inputs to a number of other categories of facility are reported through the WDI since 2019, but for the sake of comparability these have been excluded from the above table. They are accounted for as appropriate at subsequent steps of the methodology.

<sup>9</sup> Note that a check for EWC 19 13 02 (remediated soils) is also undertaken. This is done at Step 3.

**Table 3: Waste Arising from Surrey minus C, D & E Waste, agricultural, mining & hazardous waste.**
*Source: WDI 2021*

	Landfill	Metal Recycling Sites	Recovery to Land	Transfer	Treatment	Grand Total
<b>Surrey to Surrey</b>	237,406	91	0	326,760	338,999	<b>903,255</b>
<b>Surrey to elsewhere</b>	45,011	32,114	193	216,492	416,428	<b>710,237</b>
<b>Totals</b>	<b>282,417</b>	<b>32,205</b>	<b>193<sup>10</sup></b>	<b>543,251</b>	<b>755,427</b>	<b>1,613,492</b>

### 3.1.2 Accounting for Local Authority Collected Waste

While LACW is not distinguishable from C&I by reference to EWC Codes, it is possible by cross referencing data from the WDF, to ascertain the quantities of LACW managed through specific sites. Cross checking between the sites identified and the category assigned where listed in the WDI enables attribution to specific routes, as follows:

**Table 4: LACW Received at Facilities included in WDI Count for Waste Arising from Surrey.**
*Source: WDF 2021 Cross checked with WDI 2021*

	Landfill	Metal Recycling Sites	Transfer	Treatment	Grand Total
<b>Surrey to Surrey</b>	27,938	0	323,494	162,416 <sup>11</sup>	<b>513,848</b>
<b>Surrey to Elsewhere</b>	17,015	2,092	140,588 <sup>12</sup>	104,223	<b>263,918</b>
<b>Totals</b>	<b>44,953</b>	<b>2,092</b>	<b>464,082</b>	<b>266,639</b>	<b>777,766</b>

When values displayed in Table 4 are deducted from the values in Table 3 the remaining value is c835,500 tonnes as shown in total Table 5 below. This may be referred to as the 'gross C&I waste arising' value.

**Table 5: Gross C&I Waste Arising from Surrey.**
*Source: Table 3 minus Table 4.*

	Landfill	Metal Recycling Sites	Recovery to Land	Transfer	Treatment	Grand Total
<b>Surrey to Surrey</b>	209,468	91	0	3,265	176,583	<b>389,407</b>
<b>Surrey to elsewhere</b>	27,995	30,023	193	75,904	312,205	<b>446,319</b>
<b>Totals</b>	<b>237,463</b>	<b>30,114</b>	<b>193</b>	<b>79,169</b>	<b>488,787</b>	<b>835,726</b>

<sup>10</sup> Use of organic material for restoration at a former landfill site. Another use of C&I waste as recovery to land could be paper sludge applied for agricultural benefit.

<sup>11</sup> Includes inputs to Earlswood WTS/HWRC and Leatherhead MRF.

<sup>12</sup> Applying factors from previous WNA by Surrey CC which represent the proportion of input arising from Surrey LACW.

***Step 2: Deduct specific wastes accounted for separately (rather than complete streams)***

Landfill leachate (EWC 19 07 03) and sludges from waste water treatment plants (EWC 19 08 05) are expressly excluded from the national Reconcile reporting method, as Defra considers counting wastes generated by waste management facilities from processes handling wastes generated elsewhere in the economy to be double counting under this overall waste stream. Based on this, the value for leachate and wastewater sludges from Surrey managed at permitted facilities has also been deducted. This is calculated to be 175,079 tonnes of waste, of which 68,903 tonnes was managed at Surrey treatment sites.

Septic tank sludge (EWC 20 03 04) has also been included in the deduction process at this stage as given that septic tank sludge originates from households, it is considered appropriate to deduct it on the basis that it will be managed through waste water treatment facilities rather than conventional waste management facilities. This is calculated to be 1,518 tonnes.

Deducting these values gives a running baseline arising value of c659,000 tonnes as shown in Table 6.

**Table 6: Gross C&I Waste Arising from Surrey**

*Source: Table 5 minus Step 2 values*

	Landfill	Metal Recycling Sites	Recovery to Land	Transfer	Treatment	Grand Total
<b>Surrey to Surrey</b>	208,592	91	0	3,265	107,679	<b>319,628</b>
<b>Surrey to elsewhere</b>	27,389	30,023	193	74,423	207,474	<b>339,501</b>
<b>Totals</b>	<b>235,981</b>	<b>30,114</b>	<b>193</b>	<b>77,688</b>	<b>315,154</b>	<b>659,129</b>

***Step 3: Deduct remediated soils***

The separate BPP Consulting report on C, D & E Waste includes remediated soil (EWC 19 13 02) received at Patteson Court Landfill site, on the basis the waste will have originated from construction activity. Therefore, 111,662 tonnes has been deducted from the total arisings value, bringing the running baseline arising value to c547,500 tonnes as shown in Table 7.

**Table 7: Adjusted C&I Waste Arising from Surrey**

*Source: Table 6 minus remediated soils*

	Landfill	Metal Recycling Sites	Recovery to Land	Transfer	Treatment	Grand Total
<b>Surrey to Surrey</b>	96,930	91	0	3,265	107,679	<b>207,966</b>
<b>Surrey to elsewhere</b>	27,389	30,023	193	74,423	207,474	<b>339,501</b>
<b>Totals</b>	<b>124,319</b>	<b>30,114</b>	<b>193</b>	<b>77,688</b>	<b>315,154</b>	<b>547,467</b>



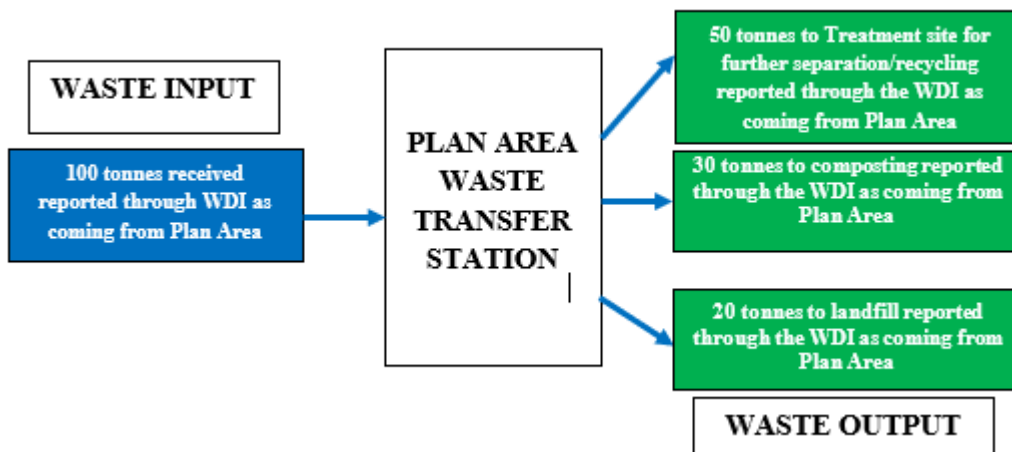
**Step 4: Account for any double counting subtracting value for intermediate sites (inc. waste transfer stations).**

Adjustments may be needed to address recording waste at intermediate sites to account for:

- Double counting - the same waste being recorded once as an input from Surrey to an initial facility in Surrey, and then again as an input from Surrey to a further or 'next step' facility if it goes for onward management; and
- Loss of some waste - as a consequence of residues from the processing of waste arising at intermediate sites like MRFs where some outputs may be recoded from the original source of inputs i.e., the original source identity gets lost.

**4a. Deduct movements of waste arising in Surrey to transfer stations within Surrey**

The national methodology (the 'Reconcile' method) discounts inputs to all types of transfer facility, i.e. sites at which waste is solely received and bulked up for onward management recorded in the WDI on the basis that if the waste is only being transferred there is no processing of the waste occurring which would change its characteristics. Hence there is in theory no loss of waste in the movement of waste into and out of such sites and there is a risk of double counting the same tonnage of waste managed through such sites at the 'next step' site. This is illustrated in Figure 1 below:



**Figure 1: Schematic of Flows for Waste Transfer Stations Showing Double Counting of Wastes in WDI**

However, analysis on the input and output data shows that relatively few sites classed as transfer stations under the Environment Agency permitting classification actually only operate purely as waste transfer stations. In addition the next step management of inputs to metal recycling sites may be through routes that do not report through the WDI, e.g. exported to steel works abroad or delivered directly to reprocessing sites in England. While the national method includes estimates for exports and movements to reprocessors, it is not possible to disaggregate this data down to Plan Area level. Therefore, the outputs from both transfer and MRS within Surrey that received waste from Surrey in 2021 have been further analysed to determine whether outputs do in fact go to destinations that would otherwise be captured in the WDI or not, and if so whether they are in fact double-counted.

Since 2019, non-hazardous transfer sites and treatment sites have been classified as transfer/ treatment sites in the WDI but are categorised as transfer overall. Therefore, this step applies to both transfer sites and sites falling under the classification of transfer/ treatment in the WDI.

1. The principal sites within the Plan Area classed as Waste Transfer Stations and MRS<sup>13</sup> receiving significant tonnages (>500t) of C&I waste were identified.
2. Then the principal outputs (>500t) of these sites were analysed by EWC code and destination.
3. For each tonnage of output waste, the input data listed in the WDI by receiving WPA and EWC code was cross checked to confirm if a comparable or greater tonnage of that waste type was declared as being received in the destination WPA area.
4. Where a greater or comparable tonnage did not appear as an input, the difference between any input value and the Plan Area site output value was recorded on the basis that where a shortfall in the WDI entry was identified that means the tonnage needs to be counted at the WTS, otherwise it will be lost (unless it appears in another dataset e.g. incineration).
5. Where a greater or comparable tonnage did appear as an input, the WTS site input was taken as having been accounted at the 'next step' site and therefore was deducted to avoid double counting.

The outcome of the analysis for each waste type (EWC) and named destination (WPA) found that the bulk of outputs from Plan Area transfer sites can be accounted for at 'next step' sites, and the only shortfall indicated relates to 666 tonnes of mixed municipal waste that was sent to Buckinghamshire for onward management. Therefore, instead of zeroing the values displayed (on the basis that the tonnages are managed through 'next step' facilities reporting through WDI), the shortfall tonnage derived from the above computation exercise, i.e. 666 tonnes for WTS has been inserted instead. Given no significant tonnages of C&I were sent to MRS, this value has been set to zero. This gives a revised running baseline value of c545,000 tonnes as shown in Table 8 below.

**Table 8: Adjusted C&I Waste Arising from Surrey**

*Source: Table 7 adjusted for step 4a values*

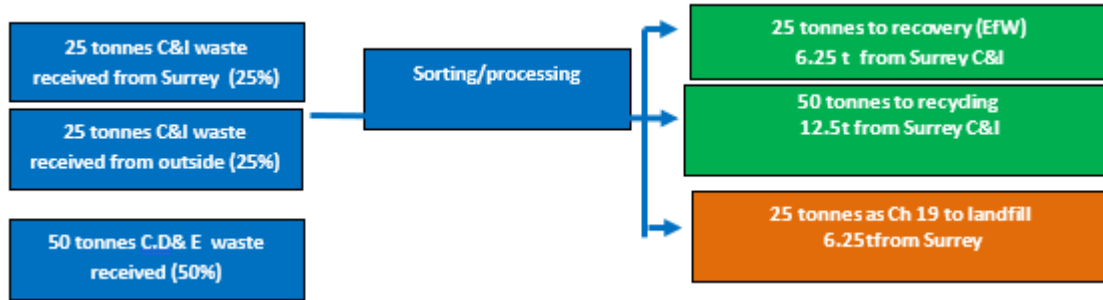
	Landfill	Metal Recycling Sites	Recovery to Land	Transfer	Treatment	Grand Total
<b>Surrey to Surrey</b>	96,930	0	0	666	107,679	<b>205,276</b>
<b>Surrey to elsewhere</b>	27,389	30,023	193	74,423	207,474	<b>339,501</b>
<b>Totals</b>	<b>124,319</b>	<b>30,023</b>	<b>193</b>	<b>75,089</b>	<b>315,154</b>	<b>544,777</b>

#### **4b. Deduct waste from intermediate facilities coded under 19 12 12 and 19 12 10**

Outputs from facilities that treat waste prior to its final fate such as Material Recovery Facilities (MRF) and Mechanical Biological Treatment (MBT) plant, for example, was deducted from the national estimates. These are likely to be coded under EWC Chapter 19 (Wastes from Waste Management Facilities). For the purposes of applying this method to Surrey, it is deducted for intermediate sites.

<sup>13</sup> Note that no MRS within Surrey reported any significant tonnages of C&I waste in the WDI 2021

The principal stream of concern is wastes coded as refuse derived fuel (RDF) under EWC code 19 12 10 and that resulting from mechanical treatment, coded under EWC 19 12 12. Analysis of the waste removals data in the WDI for intermediate sites within Surrey indicates that the net output of these Surrey waste types in 2021 was 153,380 tonnes. The % inputs of C, D & E waste to intermediate sites within Surrey was then applied to the net output of 19 12 12 and 19 12 10. The remainder was taken to represent C&I waste. This was then apportioned by the proportion of inputs going to intermediate sites within Surrey that came from Surrey. This is illustrated by Figure 2 below:



**Figure 2: Schematic of Intermediate site outputs**

The result of this calculation is 38,421 tonnes of 19 12 12 and 19 12 10 output attributed to Surrey C&I waste. This value is then deducted from the total arisings value split across transfer and treatment sites, bringing the total running baseline arising value to c510,000 tonnes as shown in Table 9.

**Table 9: Adjusted C&I Waste Arising from Surrey**

*Source: Table 8 minus 4b values*

	Landfill	Metal Recycling Sites	Recovery to Land	Transfer	Treatment	Grand Total
<b>Surrey to Surrey</b>	96,930	0	0	0 <sup>14</sup>	73,707	<b>170,637</b>
<b>Surrey to elsewhere</b>	27,389	30,023	193	74,423	207,474	<b>339,501</b>
<b>Totals</b>	<b>124,319</b>	<b>30,023</b>	<b>193</b>	<b>74,423</b>	<b>281,181</b>	<b>510,138</b>

<sup>14</sup> Note that Surrey to Surrey transfer value has been set to 0 as Step 4a deduction to 666t, combined with the Step 4b deduction would result in negative value.

**Step 5: Deduct incineration or pyrolysis of waste residue EWC sub chapter**

Non-hazardous residues from the thermal treatment of waste (EWC code 19 01 02<sup>15</sup> + 19 01 12) need to be deducted to avoid double counting of EfW capacity which is accounted for in Step 6. In the WDI 2021 this amounted to 10,904 tonnes managed outside Surrey at transfer and treatment sites. This has been deducted from the total arisings value, bringing the total arising value down to c499,000 tonnes as shown in Table 10.

**Table 10: Adjusted C&I Waste Arising from Surrey**

Source: Table 9 minus thermal treatment residues

	Landfill	Metal Recycling Sites	Recovery to Land	Transfer	Treatment	Grand Total
<b>Surrey to Surrey</b>	96,930	0	0	0	73,707	<b>170,637</b>
<b>Surrey to elsewhere</b>	27,389	30,023	193	74,407	196,586	<b>328,597</b>
<b>Totals</b>	<b>124,319</b>	<b>30,023</b>	<b>193</b>	<b>74,407</b>	<b>270,293</b>	<b>499,235</b>

### 3.1.3 Additions

**Step 6: Add Inputs to Energy from Waste (EfW)**

Examination of Agency data for inputs to EfW facilities indicates that 365,855 tonnes of waste attributed to Surrey, was sent for thermal treatment to principally 6 EfW plants, plus a cement kiln and 2 biomass power stations in England (and hence reported in the WDI). The 365,855 tonnes attributed to Surrey includes 117,122 tonnes of waste going for incineration at the Charlton Lane Shepperton site, which has been deducted from the total given the site is dedicated to managing LACW<sup>16</sup>. Furthermore, the 2 biomass power stations were found to be receiving all wood waste classified under Ch19, which the WDI shows largely arose from sites managing LACW<sup>17</sup>, has also been deducted from the total.

All inputs to the cement kiln at Ketton Cement Works are Refuse Derived Fuel (RDF) (EWC 19 12 10). It was discovered that the only site in Surrey identified as sending substantial tonnages of 19 12 10 for incineration to locations in the vicinity of Rutland was a site called Oakleaf Farm<sup>18</sup>. All inputs of waste to Oakleaf Farm are reported as process residues (EWC 19 12 12) and RDF (19 12 10), of which c99% came from outside Surrey. Given that this waste did not originate from within Surrey it should not be counted towards the Surrey C&I waste arisings baseline and has therefore been deducted. The small amount (c1,000 tonnes) which did originate from Surrey was found to have originated from 2 intermediate sites that both received LACW and therefore this has also been deducted. Given the total tonnage sent from Oakleaf Farm to the vicinity of Ketton Works

<sup>15</sup> Note no inputs of 19 01 02 were reported from Surrey to anywhere in the WDI 2021

<sup>16</sup> The WDI lists all waste received at Charlton Lane under incineration, despite there being multiple operational capacities: a HWRC, AD facility, recyclables bulking facility.

<sup>17</sup> It was found that Surrey site outputs of 19 12 07 came predominantly from HWRC's managing LACW,

<sup>18</sup> This site specialises in processing process residues from other waste management sites and producing SRF/RDF. It declared its principal incineration outlet to be in Lincolnshire which is adjacent to Rutland, and in the absence of a corresponding tonnage reported as an input to an incineration plant in Lincolnshire in the WDI, this site has been taken to be the source of the bulk of the Rutland site input reported as coming from Surrey.

(Lincolnshire) was 60,366 tonnes, this has been deducted from the total input to Ketton Works value coming from Surrey of 89,665 tonnes.

Table 11 sets out the facilities and remaining tonnages:

**Table 11: Facilities receiving >1,000t of Surrey Waste for incineration/EfW**

*Source: WDI 2021*

Facility WPA	Site Name	Tonnes
Kent	Kemsley Generating Station	56,479
Kent	Allington incinerator	55,125
Rutland	Ketton Works (cement works)	29,299
Central Bedfordshire	Rookery Pit ERF	12,806
Slough	Lakeside EfW	7,234
Sutton	Beddington ERF	2,780
South Gloucestershire	Sevenside ERF	2,551
	<b>Total</b>	<b>166,273</b>

Other EfW plants receiving waste from Surrey each received less than 1,000 tonnes, totalling 1,774 tonnes, making total waste received at EfW facilities 168,047 tonnes.

Since the WDF reported 107,056 tonnes of Surrey LACW went to EfW in 2021, that leaves 60,991 tonnes of C&I waste from Surrey going to EfW to be added to the total arising value to arrive at an overall value of c560,000 tonnes as shown in Table 12.

**Table 12: Adjusted C&I Waste Arising from Surrey**

*Source: Table 10 plus EfW*

	Landfill	Metal Recycling Sites	Recovery to Land	Transfer	Treatment	EfW	Grand Total
<b>Surrey to Surrey</b>	96,930	0	0	0	73,707	0	<b>170,637</b>
<b>Surrey to elsewhere</b>	27,389	30,023	193	74,407	196,586	60,991	<b>389,588</b>
<b>Totals</b>	<b>124,319</b>	<b>30,023</b>	<b>193</b>	<b>74,407</b>	<b>270,293</b>	<b>60,991</b>	<b>560,226</b>

### ***Step 7: Interrogation of values***

Whilst undertaking the 2020 update, outputs of waste coded under 19 12 12 from the Britaniacrest site at Little Orchard Farm sent to landfill were deducted given 91% of total inputs were C, D & E waste, and hence counted in the C, D & E waste baseline. In the WDI 2021, therefore, 75,574 tonnes of 19 12 12 has been deducted from the Surrey to Surrey landfill total. This results in a total overall C&I baseline value of c484,500 tonnes in 2021 as shown in Table 13.

**Table 13: Gross C&I Waste Arising from Surrey**

Source: Table 12 minus 19 12 12 from Britaniacrest deducted from Surrey landfill

	Landfill	Metal Recycling Sites	Recovery to Land	Transfer	Treatment	EfW	Grand Total
<b>Surrey to Surrey</b>	21,356	0	0	0	73,707	0	<b>95,063</b>
<b>Surrey to elsewhere</b>	27,389	30,023	193	74,407	196,586	60,991	<b>389,588</b>
<b>Totals</b>	<b>48,746</b>	<b>30,023</b>	<b>193</b>	<b>74,407</b>	<b>270,293</b>	<b>60,991</b>	<b>484,652</b>

### 3.2 Comparison with previous baseline arisings estimates

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

**Table 14: C&I Waste Arising Estimates for Surrey (2015 - 2021)**

Source	Surrey baseline update	Surrey baseline update	Surrey baseline update	Surrey baseline update	Surrey baseline update	Surrey baseline update	BPP Update	SUM
Data Year	2015	2016	2017	2018	2019	2020	2021	
<b>Value (tpa)</b>	588,000 <sup>19</sup>	481,000 <sup>20</sup>	593,000 <sup>21</sup>	582,000 <sup>22</sup>	485,000 (414,500 <sup>23</sup> )	476,500 (396,500 <sup>24</sup> )	544,866 <sup>25</sup> (484,500)	
<b>% Annual difference</b>		-18.2%	+23.3%	-1.9%	-16.7%	-1.8%	+1.7%	
<b>Adjusted % Annual difference</b>		-18.2%	+23.3%	-1.9%	-28.8%	-4.3%	22.2%	
<b>Annual 6 yr average</b>								Minus 1.28%

The value of c545,000 tonnes in 2021 compares with a value of c476,500 tonnes in 2020 and c588,000 tonnes in 2015. This indicates a 7.31% decrease over a six-year period and an average annual growth rate of minus 0.14% per annum. However if the values post adjustment for Ketton Works inputs are taken, an average annual growth rate of minus 1.28% per annum arises.

<sup>19</sup> Assumed no inputs to Ketton Cement Works in 2015 given no inputs until 2019 and Oakleaf Farm receiving issue of permit in 2019.

<sup>20</sup> No inputs to Ketton Cement Works from Surrey reported in the incinerator returns 2016.

<sup>21</sup> No inputs to Ketton Cement Works from Surrey reported in the incinerator returns 2017.

<sup>22</sup> No inputs to Ketton Cement Works from Surrey reported in the incinerator returns 2018.

<sup>23</sup> All inputs to Ketton Cement Works deducted given outputs from Oakleaf Farm of 19 12 10 are larger.

<sup>24</sup> With outputs from Oakleaf Farm 19 12 10 deducted from Ketton Cement Works input value.

<sup>25</sup> Table 13 baseline plus outputs from Oakleaf Farm of 60,366 tonnes reinstated for parity across 2019, 2020 & 2021 data.

## 4 Forecasting Future C&I Waste Growth

The nPPG states when looking to forecast C&I waste:

*"Waste planning authorities can prepare growth profiles, similar to municipal waste, to forecast future commercial and industrial waste arisings. In doing so, however, they should;*

- *set out clear assumptions on which they make their forecast, and if necessary, forecast on the basis of different assumptions to provide a range of waste to be managed;*
- *be clear on rate of growth in arisings being assumed. Waste planning authorities should assume a certain level of growth in waste arisings unless there is clear evidence to demonstrate otherwise."*

*Paragraph: 032 Reference ID: 28-032-20141016 Revision date: 16 10 2014*

Hence the nPPG anticipates the application of a positive growth rate.

### 4.1 Updating the Plan Forecast

When updating the C&I waste forecast for Surrey, the following have been considered:

- the preferred forecast used in the previous WNA;
- Historical C&I waste arisings in Surrey; and
- National DEFRA forecast of C&I waste in England.

### 4.2 Previous WNA 2019 C&I Forecast

The 2019 WNA estimated an annual growth rate of C&I waste using information in the Surrey Local Economic Assessment (LEA)<sup>26</sup>. This produced several scenarios with a medium to high growth profile and one scenario with zero growth. This produced a range of values between 682,000 tonnes and 1,055,000 tonnes by 2035. To allow flexibility in the Plan, the previous WNA took the peak value of 1,055,000 tonnes forward for the purposes of assessing the need for additional waste management capacity. This was based on a forecast growth rate of 3.04% per annum to 2035.

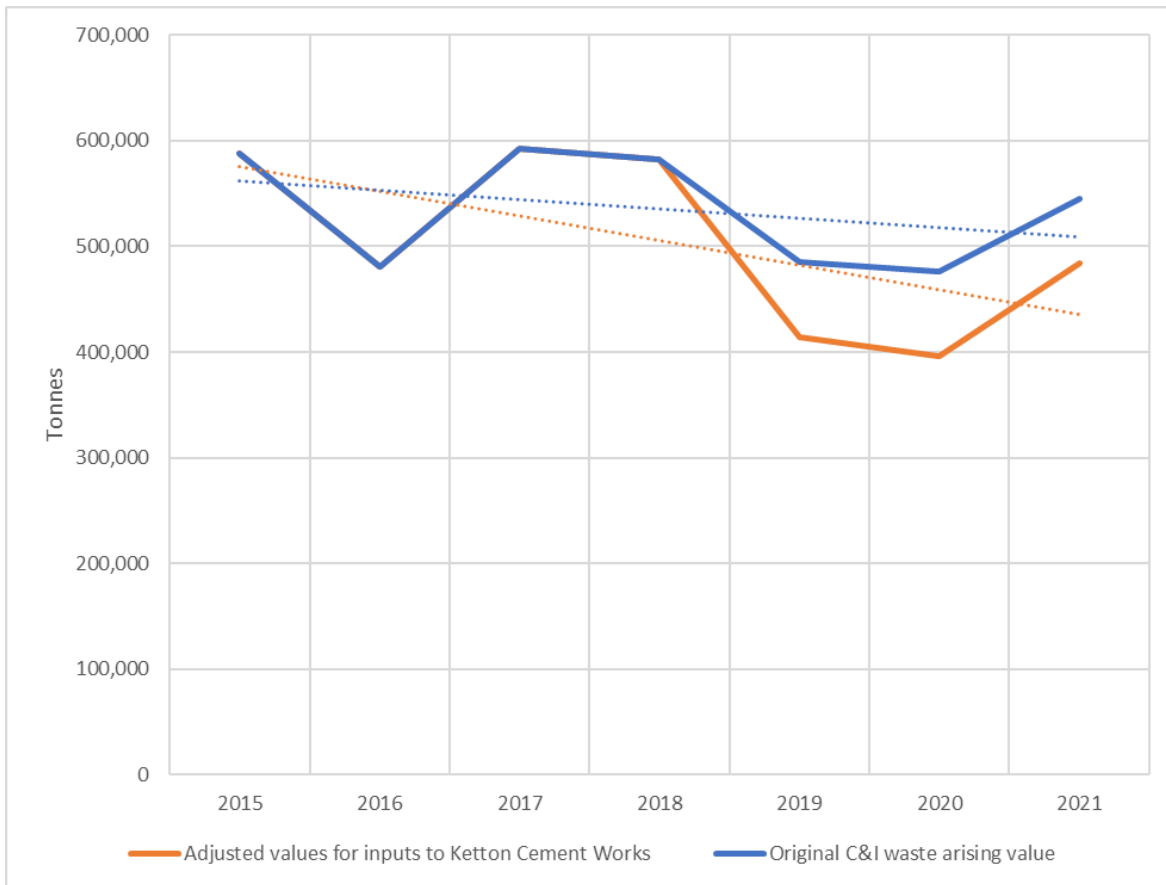
### 4.3 Historical Pattern of C&I waste Arisings in Surrey

The calculated C&I waste arisings in Surrey from 2015-2021 has been graphed as shown in Figure 3.

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<sup>26</sup> Forecasts and future scenarios for the economy of Surrey: an update to the work done in 2010. A Final Report to Surrey County Council. June 2013. [https://www.surreycc.gov.uk/\\_\\_data/assets/pdf\\_file/0003/27075/Economic-Scenarios-UpdateFinal-Report-June-2013.pd](https://www.surreycc.gov.uk/__data/assets/pdf_file/0003/27075/Economic-Scenarios-UpdateFinal-Report-June-2013.pd)





**Figure 3: Trend in C&I waste Arisings in Surrey 2015 to 2021 original C&I waste arising and adjusted values for inputs to Ketton Cement Works**  
(orange and blue dotted lines are the respective trend lines)

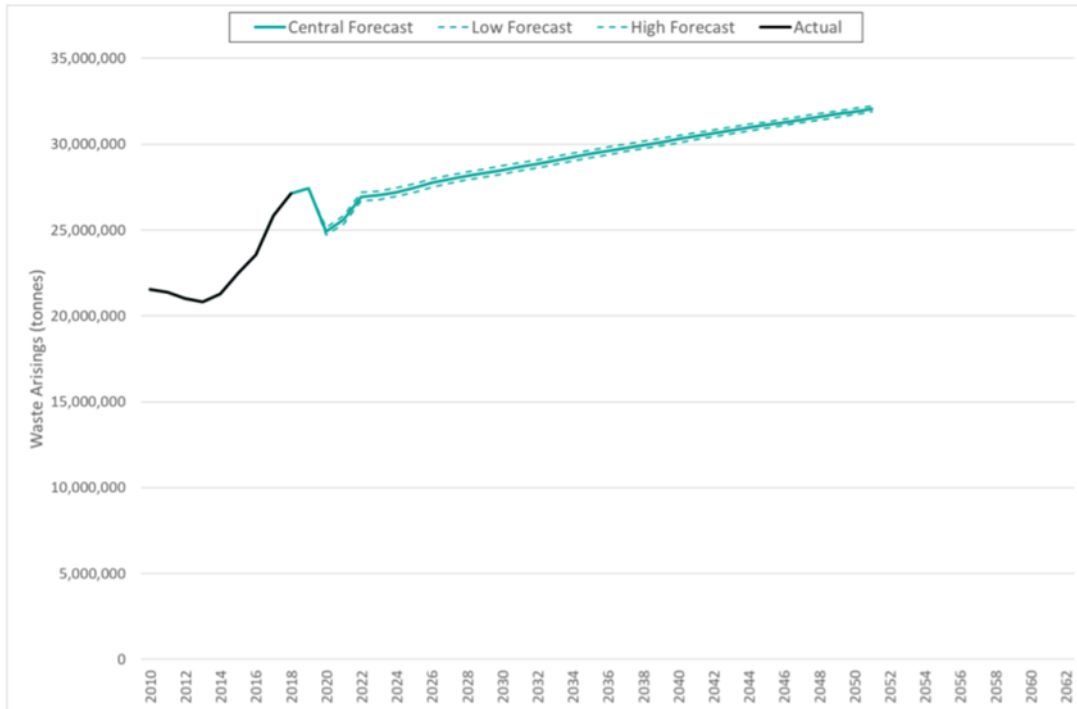
Figure 3 shows an overall declining trend in C&I waste arisings from 2015 to 2021 under both datasets, with average annual growth rates for the original C&I waste arisings value and adjusted C&I waste arisings value adjusted for inputs to Ketton Cement Works of minus 0.14% and minus 1.28% per annum respectively.

#### 4.4 DEFRA Analysis of Future C&I Waste Growth

Defra commissioned a Future Waste Arisings report in 2020<sup>27</sup> published in 2021. This includes the most current national growth forecast for the C&I waste stream in England. The method used to produce a forecasting model for C&I waste included development of a time-series forecast for gross value added (GVA) for the commercial sector and separately for the industrial sector, which was then used to generate C&I waste arisings forecasts. The forecasts also incorporate the impact of growth in the number of businesses nationally on C&I waste arisings by combining data on waste generated per business size and sector and adjusting the GVA to waste ratios using the growth in the number of businesses in each sector by size respectively. Two forecasts were modelled for England from 2019 to 2050: one for commercial waste arisings (refer to Figure 4) and the other for industrial waste arisings (refer to Figure 5). The resultant graphs are reproduced as Figures 4 and 5 respectively.

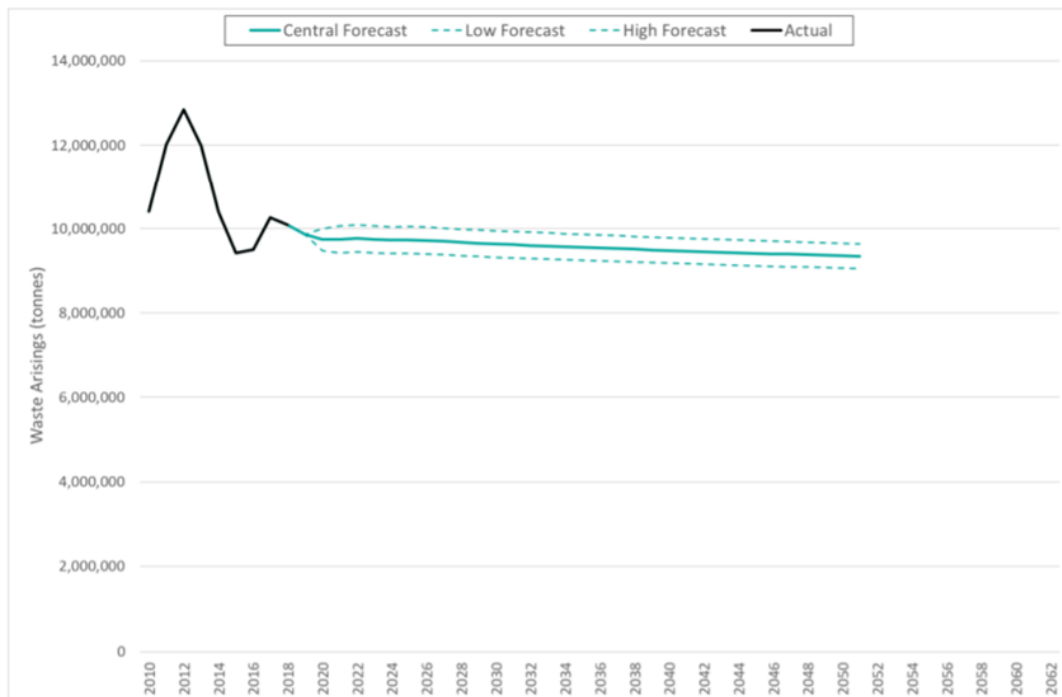
<sup>27</sup> 'Future Waste Arisings' DEFRA, April 2021





**Figure 4: Commercial Waste Arisings Forecasts for England (2019-2050)**

*Source: Future Waste Arisings, produced for DEFRA (2021)*



**Figure 5: Industrial Waste Arisings Forecasts for England (2019-2050)**

*Source: Future Waste Arisings, produced for DEFRA (2021)*

Figures 4 and 5 present central, low and high forecast waste arisings for the commercial and industrial sectors respectively albeit within a narrow range. Commercial waste arisings are projected to increase steadily from 2022 to 2050, whilst industrial waste arisings are projected to progressively fall from 2022 to 2050.

In order to assess how the national forecasts may be taken into account when forecasting Surrey's C&I waste arisings, data points have been extracted for the 2022-2042 period as that is the period which this WCNA covers. For the purpose of this exercise, the national central forecast values were used. See Appendix 1 for how the growth rates were ascertained using national central forecast values.

The average annual growth rate generated in the period 2022 to 2042 was +0.68% per annum for commercial waste and -0.21% per annum for industrial waste respectively. These can now be weighted according to the percentage contribution waste from commercial sources and that from industrial sources are considered to make to the overall baseline arising value for Surrey.

The Defra commissioned Commercial and Industrial Waste Survey 2009<sup>28</sup>, provides a split of waste arisings by the commercial and industrial sector and by region. So as to avoid the tonnage of ash from the now closed coal power stations that operated in the South East in 2009 distorting the results, a factor of 28% was applied to the waste arisings from this sector as per the ADAS Study into Commercial and Industrial Waste Arisings 2009<sup>29</sup> which indicates that the mineral waste component of arisings from the power and utilities sector accounted for 72% of arisings. This generates a C&I waste arisings split in the South East of 27% industrial and 73% commercial waste. Therefore, a combined C&I waste growth rate has been calculated as follows:

- Commercial waste represents 73% of C&I waste arisings: 73% of +0.68% = 0.50%
- Industrial waste represents 27% of C&I waste arisings: 27% of -0.21% = -0.06%

$$\mathbf{0.50 + -0.06\% = 0.44\%}$$

Therefore, +0.44% growth rate per annum has been applied to the 2021 C&I baseline value to forecast arisings to 2042 as shown in Table 15 below.

**Table 15: C&I waste forecast for Surrey applying Growth Factor of +0.44% p.a. to 2021 baseline**

	<b>2021</b>	<b>2026</b>	<b>2031</b>	<b>2036</b>	<b>2042</b>
<b>Tonnes</b>	484,652	495,317	506,218	517,359	531,021

Table 16 shows that applying the growth factor of +0.44% per annum to the 2021 baseline value, C&I waste arisings are expected to rise by c46,500 tonnes to c531,000 tonnes by the end of the Plan period. The DEFRA 2021 report provides a feel for the direction in which growth in LACW in Surrey may be headed, but it should of course be noted that the report is intended to provide a national picture, and so presents an average of what is predicted to happen across England.

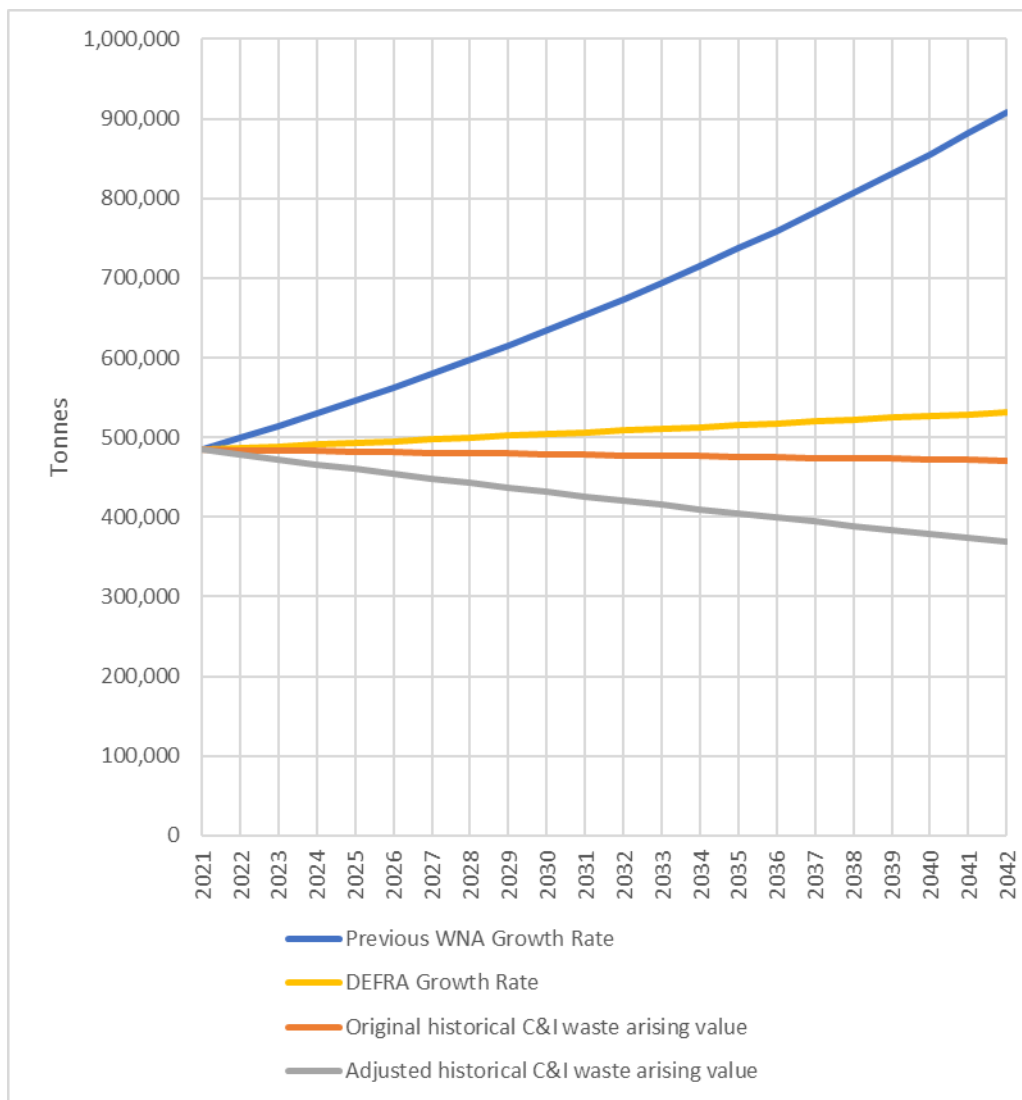
<sup>28</sup> Commercial and Industrial Waste Survey 2009 Final Report (DEFRA., December 2010)

<sup>29</sup> Study into Commercial and Industrial Waste Arisings (ADAS., April 2009)

#### 4.5 Generating a Forecast for C&I Waste

The method set out in the nPPG to generate Plan area level C&I waste forecast proposes that a growth profile be based on different assumptions to produce a range of values. Therefore, as per the discussions above the following set of growth factors have been applied to the 2021 baseline arisings value of c484,500 tonnes to create a cone of possibilities plotted in Figure 6 below:

- Previous WNA growth factor of plus 3.04% per annum extrapolated to 2042;
- Historical C&I waste arisings growth factors of minus 0.14% and adjusted historical C&I waste arisings value of minus 1.28% per annum and;
- Combined DEFRA National Forecast of plus 0.44% per annum.



**Figure 6: Surrey C&I Waste Arisings Forecasts (using 2021 baseline)**

Two out of the four scenarios are showing a rising C&I waste arisings trajectory, whilst the other two show a falling C&I waste arisings trajectory. The corresponding values are presented in Table 16.

**Table 16: Forecast Values for Surrey C&I Waste Arisings (Tonnes)**

	<b>Previous Surrey WNA Growth Rate</b>	<b>National Forecast Growth Rate</b>	<b>Original historical Surrey C&amp;I waste arising value</b>	<b>Adjusted historical Surrey C&amp;I waste arising value</b>
<b>2021</b>	484,652	484,652	484,652	484,652
<b>2022</b>	499,377	486,785	483,996	478,435
<b>2023</b>	514,551	488,927	483,342	472,299
<b>2024</b>	530,185	491,079	482,689	466,241
<b>2025</b>	546,295	493,241	482,036	460,260
<b>2026</b>	562,893	495,412	481,385	454,357
<b>2027</b>	579,997	497,592	480,734	448,529
<b>2028</b>	597,620	499,782	480,084	442,776
<b>2029</b>	615,778	501,982	479,436	437,097
<b>2030</b>	634,488	504,192	478,787	431,490
<b>2031</b>	653,767	506,411	478,140	425,956
<b>2032</b>	673,631	508,640	477,494	420,492
<b>2033</b>	694,099	510,879	476,849	415,099
<b>2034</b>	715,189	513,127	476,204	409,775
<b>2035</b>	736,919	515,386	475,560	404,519
<b>2036</b>	759,310	517,654	474,917	399,330
<b>2037</b>	782,382	519,933	474,276	394,208
<b>2038</b>	806,154	522,221	473,634	389,152
<b>2039</b>	830,648	524,520	472,994	384,160
<b>2040</b>	855,887	526,828	472,355	379,233
<b>2041</b>	881,893	529,147	471,716	374,369
<b>2042</b>	908,689	531,476	471,079	369,567

Figure 6 suggests that the cone of possibility within which the actual trajectory will fall is bounded by the previous WNA forecast projection (blue line) and the adjusted historical C&I waste arisings forecast projection (grey line). However, given the previous WNA was based on a predicted level of economic growth which since the WNA 2019 (relying on 2017 data) was published has been shown to be overly optimistic, and the other three scenarios show much lower and negative growth profiles, this scenario is regarded as an outlier. On this basis, it is recommended that the DEFRA growth is taken forward for planning purposes as it allows for modest growth and confers some flexibility in the Plan. This would equate to a rise in arisings of plus 9.66% over the Plan period (at +0.66% per annum). This also reflects the fact that C&I waste arisings are expected to decouple from economic growth as the UK economy becomes more service based.

#### **4.6 Forecast Conclusion**

Using the baseline arising value for 2021 and the DEFRA C&I waste growth scenario generates a trajectory that tracks a path between the previous WNA growth rate forecast (blue line) and adjusted historical C&I waste arisings forecast (grey line). This produces an annual growth rate of 0.66%.

Using this scenario results in projected C&I waste arisings in 2042 of c531,500 tonnes, an increase of c47,000 tonnes on the 2021 value. This compares with a range of 682,000 tonnes and 1,055,000 tonnes by 2035 projected in the Surrey WNA 2019.

## 5 Projected Management Requirements

Determination of how C&I waste produced in Surrey might be managed requires assessment of how this waste is currently managed and then projecting how any future Plan intends the waste to be managed through exerting influence on the types of capacity developed during the Plan period.

### 5.1 Baseline Profile

The management profile presented in Table 17 below is based on the management data available through the WDI 2021. Since the WDI does not have an exclusive 'recycling' category it is not possible to establish how much of the waste managed goes on for recycling. Therefore, the principal known fates considered are those management types that would represent a final fate reported in the WDI as follows. That is:

- Composting and AD
- Landfill
- EfW and Recovery to Land (together combined as 'other' recovery)

#### 5.1.1 Composting and AD

As shown in Table 17, in 2021, it was estimated that c79,500 tonnes of C&I waste was composted or sent to AD facilities (c1,000 tonnes to AD sites and c78,500 tonnes to composting sites).

#### 5.1.2 Landfill

As shown in Table 17 below, in 2021, it was estimated that c48,500 tonnes of C&I waste arising in Surrey was sent to landfill.

#### 5.1.3 'Other' Recovery

As shown in Table 17, in 2021, it was estimated that c61,000 tonnes of C&I waste arising in Surrey was recovered of which almost all went to EfW facilities (60,991 tonnes) and the remaining 193<sup>30</sup> tonnes was managed via recovery to land.

#### 5.1.4 Recycling

The difference between the sum of the tonnages for the above categories and the baseline value has been taken to represent the tonnage that went on for recycling via permitted facilities. In 2021 this amounted to c295,095 tonnes as shown in Table 17 below. Given recycling and composting are at the same level of the Waste Hierarchy, they have been considered together as %.

**Table 17: Computed C&I Waste Management Profile**

Route	Tonnes	%
Total Arisings	484,652	
Landfill	48,746	10%
'Other' Recovery	61,183	13%
Composting and AD	79,627	77%
<i>Recycling &amp; Reuse (remainder)</i>	374,723	

<sup>30</sup> Biodegradable waste

## 6 Management Targets

Having established an existing management profile, the next step is to consider what management profile may be desirable and achievable and therefore what waste management targets ought to be set in the Plan to achieve that management profile.

There are no express national government targets for the management of C&I waste alone. However, the recently adopted EU Circular Economy Plan<sup>31</sup>, to which the UK government has confirmed its commitment<sup>32</sup>, includes the following targets for municipal waste:

- 55% recycling floor by 2025; and
- 60% recycling floor by 2030; and
- 65% recycling floor by 2035; plus
- 10% ceiling limit on landfilling by 2035.

Municipal waste is LACW plus waste of a similar nature. It has been estimated that up to 60% of commercial waste could fall within that definition<sup>33</sup>. As it was found that 73% of Surrey's C&I waste arisings represents commercial waste, applying 60% to 73% of the total C&I waste arisings amounts to c212,500 tonnes. The Surrey C&I waste management profile arrived at for 2021 in Table 17 indicates that significantly more C&I waste was recycled at c374,500 tonnes, hence surpassing the 65% recycling target for non household municipal waste by 2035. It also surpasses the 75% C&I recycling target by 2035 set in the current adopted Surrey Waste Local Plan. Furthermore, given the Environment Act target for a reduction of residual waste of 50% by 2042, going beyond the current recycling target may be necessary. Based on this, the targets for C&I waste in Table 18 below are proposed.

**Table 18: Proposed Targets for C&I Waste Management in Surrey**

Milestone Year	2021	2026	2031	2036	2042
Recycling/composting	77%	≥80%	≥80%	≥80%	≥80%
Other Recovery	13%	12%	14%	16%	18%
Remainder to Landfill	10%	≤8%	≤6%	≤4%	≤2%

<sup>31</sup> A new Circular Economy Action Plan, European Commission December 2015

<sup>32</sup> <https://www.gov.uk/government/publications/circular-economy-package-policy-statement/circular-economy-package-policy-statement>

<sup>33</sup> See footnote 6.

### 6.1 Projected Management Requirement for Surrey C&I Waste

Applying the proposed target values in Table 18 to the C&I waste forecast as shown in Table 16 gives the management requirements displayed in Table 19 below.

**Table 19: Proposed targets (floors & ceilings) for C&I Waste Management (tonnes)**

					Plan Period Peak/Cumulative Capacity Requirement
Milestone Year	2026	2031	2036	2042	
Recycling/Composting Target (Floor)	417,145	446,569	475,993	511,302	511,302 (peak)
Remainder to Landfill Target (Ceiling)	41,715	33,493	23,800	12,783	601,825 (cumulative)
Other Recovery inc Recovery to Land Remainder	62,572	78,150	95,199	115,043	115,043 (peak)

Table 19 shows recycling and composting capacity for C&I waste will need to manage a peak of c511,500 tonnes by the end of the Plan period for the proposed target/floor to be met. The application of the proposed targets is forecast to result in a declining need for landfill and a cumulative non-inert landfill requirement of c602,000 tonnes over the Plan period as shown in Table 20 below.

**Table 20: Projected Residual C&I Waste Non Haz Landfill Requirement (tonnes)**

Year	Tpa	Tonnes Cumulative
2023	45,933	45,933
2024	44,527	90,460
2025	43,121	133,581
2026	41,715	175,295
2027	40,070	215,366
2028	38,426	253,791
2029	36,781	290,573
2030	35,137	325,710
2031	33,493	359,203
2032	31,554	390,757
2033	29,615	420,372
2034	27,677	448,049
2035	25,738	473,787
2036	23,800	497,587
2037	21,963	519,550
2038	20,127	539,678
2039	18,291	557,969
2040	16,455	574,424
2041	14,619	589,043
2042	12,783	<b>601,825</b>



## Appendix 1: Data from National forecast and annual growth rates applied

Year	Commercial	Growth rate	Industrial	Growth rate
<b>2022</b>	26,885,177		9,857,143	
<b>2024</b>	27,031,316	0.27%	9,821,429	-0.18%
<b>2026</b>	27,635,753	1.12%	9,750,000	-0.36%
<b>2028</b>	28,036,798	0.73%	9,714,286	-0.18%
<b>2030</b>	28,437,563	0.71%	9,642,857	-0.37%
<b>2032</b>	28,787,095	0.61%	9,607,143	-0.19%
<b>2034</b>	29,187,580	0.70%	9,571,429	-0.19%
<b>2036</b>	29,588,484	0.69%	9,535,714	-0.19%
<b>2038</b>	29,956,522	0.62%	9,500,000	-0.19%
<b>2040</b>	30,378,261	0.70%	9,464,286	-0.19%
<b>2042</b>	30,789,655	0.68%	9,451,327	-0.07%
<b>Average growth rate p.a.</b>		<b>+0.68%</b>		<b>-0.21%</b>