



## **Bournemouth, Dorset & Poole Councils**

Bournemouth, Dorset & Poole Draft Waste Plan

Baseline for Commercial & Industrial Waste &  
Construction, Demolition & Excavation Waste  
Generated in Bournemouth, Dorset & Poole

Report: Final Issue

Version 1.2

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# 1 Estimating C&I Waste Baseline Arisings

## 1.1 Introduction

This section of the report supports production of Bournemouth, Dorset & Poole Draft Waste Plan and, in particular, is concerned with estimating current arisings for Commercial and Industrial (C&I) Waste in the Plan area. From this arisings would be forecast and then any capacity gap against proposed future profile of management to be promote through the Plan policies will be assessed.

National Planning Practice Guidance chapter on waste states that: "Planned provision of new capacity and its spatial distribution should be based on robust analysis of best available data." (emphasis added) (Para 035). Therefore, this exercise involves a robust analysis to identify what might be considered to be the "best available data" relating to C&I waste.

## 1.2 Context

The draft Waste Local Plan July 2015 defines C&I waste as follows:

*...waste which is produced during commercial and industrial activities. This type of waste varies according to the make-up of the local economy but can be similar in composition to LACW, including recyclates, organic and residual wastes."*

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 Plan area, 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 approach now forms the basis for the Defra 'Reconcile' method used to estimate C&I waste arisings at national level<sup>1</sup> 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.
- 'Point of production' using data based on the profile of businesses within an area and the application of waste production factors (related to the different business profiles). This method was used in the Defra national survey undertaken in 2009 that informed the previous approach to national estimates<sup>2</sup>. This method also incorporates hazardous waste so there is some risk of double counting.

*Background Paper 1 – Waste Arisings and Projections July 2015* used the national survey data for 2009 which applied the 'point of production' method. This method generated a total baseline estimate value of around 460,000 tonnes of C&I waste arising in the Plan area for 2009.

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<sup>1</sup> DEFRA 2014, New Methodology to Estimate Waste Generation by the Commercial and Industrial Sector in England

<sup>2</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>

### 1.3 Methodology

The methodology used to estimate this updated baseline C&I waste arisings value (to be used as a starting point for forecasting C&I waste arisings) is based on the national 'Reconcile' methodology, adapted to reflect local circumstances<sup>3</sup>. This methodology considers a number of datasets, in totality, to capture quantities of commercial and industrial waste that are managed rather than produced, through:

- (1) Permitted waste management facilities (reporting through Environment Agency Waste Data Interrogator & where relevant data available for waste sent to Energy from Waste plants<sup>4</sup>);
- (2) exempt facilities (extrapolating from the register of facilities exempt from the need for an Environmental Permit); and,
- (3) taking into account the quantity sent directly for export, in this case outside the Plan area.

Deductions are made to eliminate:

- (4) Waste streams covered elsewhere in the WNA such as Agricultural, Mining, Construction, Demolition & Excavation Waste (C, D & E), wastewater and hazardous waste included in the datasets; and
- (5) Local authority collected waste managed through WDI reporting facilities (as reported through WasteDataFlow<sup>5</sup>).
- (6) Waste managed through HWRCs.

Computations are also carried out to avoid double counting of waste inputs to 'intermediate' facilities<sup>6</sup> within the Plan area.

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<sup>3</sup> The methodology has been reviewed by Defra waste statisticians responsible for developing the Reconcile national method.

<sup>4</sup> Provided on request from the Environment Agency

<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

### 1.3.1 Inputs to permitted facilities

**Step 1: Make deductions in waste recorded in the Waste Data Interrogator as arising from the Plan Area to eliminate non C&I waste streams.**

The starting point is to download all data relating to waste arising from the Plan area in the Environment Agency Waste Data Interrogator. This is displayed by management route in Table 1 below. This shows that the total quantity of waste arising from the Plan area managed through permitted sites reporting through the WDI for 2015 stood at 2.135 million tonnes.

**Table 1: Waste Arising from the Plan area (tonnes)**  
*Source WDI 2015*

	Landfill	Metal Recycling Sites	Transfer	Treatment	Recovery to Land	Grand Total
<b>Plan area arisings managed at Plan area sites</b>	182,073	52,273	408,216	1,111,408	96,834	1,850,803
<b>Plan area arisings managed at sites outside Plan area</b>	42,030	33,987	96,069	89,626	22,690	284,402
<b>Totals</b>	<b>224,103</b>	<b>86,260</b>	<b>504,285</b>	<b>1,201,034</b>	<b>119,523</b>	<b>2,135,205</b>

Waste identified under waste codes considered to represent C, D & E Waste (EWC Chapter 17 plus EWC 191209 & 200202) and therefore accounted for in the separate estimates of C, D & E waste need to be deducted from the totals in Table 1. . The quantities remaining after this deduction are displayed by management route in Table 2 below and this shows that the quantity of waste arising is reduced to just under 1.3 million tonnes. The reduction is c856.000 tonnes.

**Table 2: Waste Arising from the Plan area minus C, D & E Waste (tonnes).**  
*Source: WDI 2015*

	Landfill	Metal Recycling Sites	Transfer	Treatment	Recovery to Land	Grand Total
<b>Plan area arisings managed at Plan area sites</b>	141,640	49,745	276,774	625,523	0	1,093,682
<b>Plan area arisings managed at sites outside Plan area</b>	24,129	32,188	38,728	83,683	7,179	185,907
<b>Totals</b>	<b>165,769</b>	<b>81,932</b>	<b>315,503</b>	<b>709,206</b>	<b>7,179</b>	<b>1,279,589</b>

Waste identified under waste codes considered to represent Agricultural Waste (EWC Chapter 02 01), mining (EWC Chapter 01) and hazardous waste (All codes with \*) are accounted for separately and so are also deducted. The tonnages remaining after this deduction are displayed by management route in Table 3 which shows that the quantity of waste arising is reduced to just over 1.2 million tonnes.



**Table 3: Waste Arising from the Plan area minus C, D & E Waste, agricultural, mining & hazardous waste (tonnes).**

Source: WDI 2015.

	Landfill	Metal Recycling Sites	Transfer	Treatment	Recovery to Land	Grand Total
Plan area arisings managed at Plan area sites	141,640	26,160	274,277	606,957	0	1,049,034
Plan area arisings managed at sites outside Plan area	23,762	31,400	38,026	66,836	7,179	167,203
<b>Totals</b>	<b>165,402</b>	<b>57,560</b>	<b>312,303</b>	<b>673,793</b>	<b>7,179</b>	<b>1,216,237</b>

### 1.3.2 Deduct Local Authority Collected Waste

Local Authority Collected Waste (LACW) is not distinguishable from Commercial and Industrial Waste by reference to EWC Codes. It is, however, possible to cross reference data from Wastedataflow (WDF), the online reporting portal for waste collection and disposal authorities. This allows the quantities of waste managed through specific sites to be ascertained. Cross referencing between the sites identified in WDF and the category assigned where that site is listed in the WDI enables attribution to specific routes, as follows:

**Table 4: Local Authority Collected Waste Received at Facilities included in WDI Count for Waste Arising from the Plan area (tonnes).**

Source: WasteDataFlow 2015 & WDI 2015

	Landfill	Metal Recycling Sites	Treatment				Subtotal Total	Transfer	Grand Total
			Organic (Compost & AD)	MBT	Physical	MRF			
Plan area arisings managed at Plan area sites	61,311	6,578	76,101	108,183	13,503	0	<b>264,676</b>	<i>170,629<sup>7</sup></i>	435,305
Plan area arisings managed at sites outside Plan area within England <sup>8</sup>	11,900	4,802	0	0	2,650	31,182	<b>50,534</b>	0	50,534
<b>Totals</b>	<b>72,211</b>	<b>11,380</b>	<b>76,101</b>	<b>108,183</b>	<b>16,153</b>	<b>31,182</b>	<b>315,210</b>	<b>170,629</b>	<b>485,839</b>

Footnote to Table: The entries shown in italics relate to waste that has been transferred on so include an element of double counting so the actual tonnage managed is exceeded.

<sup>7</sup> Majority of input is recorded as input elsewhere except for source separated recyclables going direct to reprocessors (c20,000t) and mixed recyclables sent to MRF outside England (Shotton Wales c26,000t)

<sup>8</sup> Inputs of Plan area waste to facilities outside England are not reported through the WDI. Therefore movements of mixed recyclables to Shotton MRF located in Flintshire Wales are not counted.

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When values displayed in Table 4 are deducted from the values in Table 3 the remaining value is just under 793,000 tonnes as shown in the grand total of Table 5 below. This may be referred to as the 'gross C&I waste arising' value.

**Table 5: Gross C&I Waste Arising from The Plan area (tonnes) .**

*Source: Table 3 minus Table 4.*

	Landfill	Metal Recycling Sites	Transfer	Treatment	Recovery to Land	Grand Total
<b>Plan area arisings managed at Plan area sites</b>	80,329	43,167	106,145	427,736	0	657,377
<b>Plan area arisings managed at sites outside Plan area</b>	12,229	27,386	38,728	49,851	7,179	135,373
<b>Totals</b>	<b>92,558</b>	<b>70,552</b>	<b>144,874</b>	<b>477,587</b>	<b>7,179</b>	<b>792,750</b>

### *Step 2: Make deduction for specific wastes accounted for separately (rather than complete streams)*

Landfill leachate was not counted in the previous C&I Point of Production survey data and is expressly excluded from the national reporting method as Defra considers counting wastes generated by the waste management facilities from processes handling wastes generated elsewhere in the economy to be double counting under this overall waste stream<sup>9</sup>. Based on this, the value for landfill leachate (all waste classed under EWC Code 19 07 03) from the Plan area managed at permitted facilities has also been deducted. This is calculated to be 45,793 tonnes of waste, all but 1,868t managed at water treatment works within the Plan area.

Table 6 shows that deducting these values gives a revised headline value of just under 706,000 tonnes.

**Table 6: Gross C&I Waste Arising from The Plan area (tonnes)**

*Source: Table 5 minus Step 2 values*

	Landfill	Metal Recycling Sites	Transfer	Treatment	Recovery to Land	Grand Total
<b>Plan area arisings managed at Plan area sites</b>	80,329	43,167	106,145	383,811	0	613,452
<b>Plan area arisings managed at sites outside Plan area</b>	12,229	27,386	38,728	6,854	7,179	92,376
<b>Totals</b>	<b>92,558</b>	<b>70,552</b>	<b>144,874</b>	<b>390,665</b>	<b>7,179</b>	<b>705,828</b>

<sup>9</sup> See footnote 1 of DEFRA Waste Data Overview May 2011.

**Step 3: Make adjustments to account for intermediate sites (inc. waste transfer stations).**

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

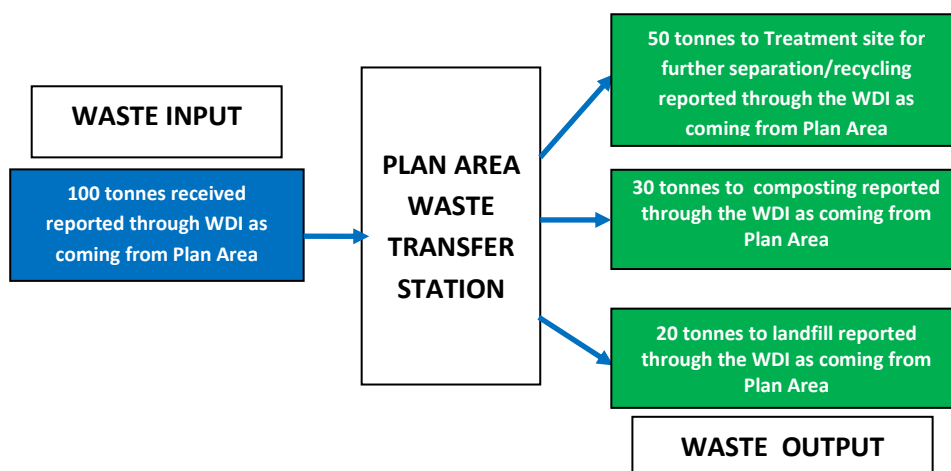
1. Double counting - the same waste being recorded once as an input from the Plan area to an initial facility in the Plan area, and then again as an input from the Plan area to a further facility (if it goes for onward management) and;
2. Loss of some waste - as a consequence of residues from the processing of waste arising at intermediate sites like MRFs where some outputs may be recoded from the original source of inputs i.e. the source identity gets lost, are not distorting the final C&I waste arisings value, .

*Step 3a: Deduct movements of waste arising in The Plan area to transfer stations within The Plan area:*

The national methodology (the ‘Reconcile’ method) discounts inputs to all types of transfer facility recorded in the WDI covering:

- Non-Hazardous Waste Transfer,
- Hazardous Waste Transfer,
- Clinical Waste Transfer and
- Inert Waste Transfer

Applying this approach to The Plan area means that all C&I waste inputs to sites operating as transfer facilities within The Plan area should be deducted. This is on the basis that if the waste is only being transferred there is no processing of the waste into a product which would not be reported through the WDI. Hence there is no loss of waste in the movement of waste into and out of the site. Therefore it may be assumed that all the output waste is accounted for at an onward destination either outside The Plan area or at a final management facility within The Plan area<sup>10</sup>. Hence inputs to these sites should not be counted if double counting is to be avoided. Illustrated in Figure 1 below:



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

The same principle applies to Metal Recycling Sites, where waste input will be transferred on to facilities that convert material to scrap suitable for use in steel works at home or aboard.

<sup>10</sup> If it goes to another intermediate site within the Plan area the same approach applies.

Therefore the value for inputs to metal recycling sites and transfer of waste within The Plan area has been reduced to zero giving a revised gross C&I waste headline value of just over 550,000t after deductions at this stage in the computational process. This is shown in Table 7 below.

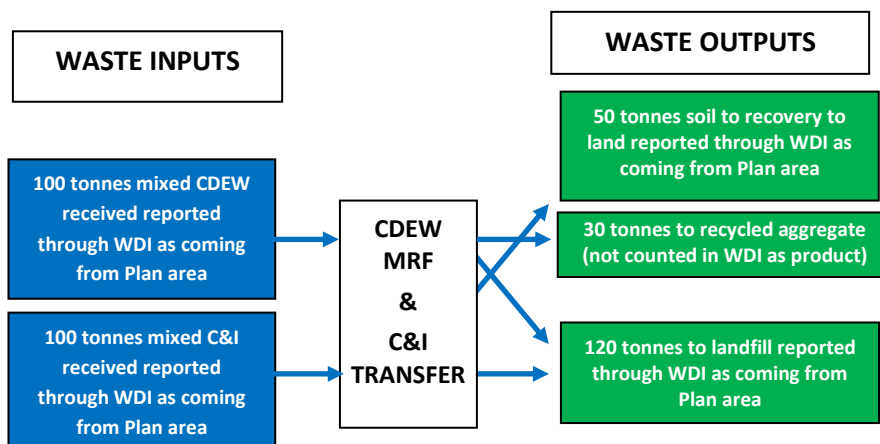
**Table 7: Gross C&I Waste Arising from The Plan area (tonnes)**

*Source: Table 6 minus The Plan area WTS Step 3a*

	Landfill	Metal Recycling Sites	Transfer	Treatment	Recovery to Land	Grand Total
<b>Plan area arisings managed at Plan area sites</b>	80,329	0	0	383,811	0	464,140
<b>Plan area arisings managed at sites outside Plan area</b>	12,229	27,386	38,728	6,854	7,179	92,376
<b>Totals</b>	<b>92,558</b>	<b>27,386</b>	<b>38,728</b>	<b>390,665</b>	<b>7,179</b>	<b>556,516</b>

*Step 3b Deduct inputs of C&I waste to Treatment sites whose outputs are managed at 'downstream' permitted sites to avoid double counting*

There are also a number of intermediate sites classed as 'Transfer/Treatment' under the Treatment Category of the EA WDI which also need to be assessed to ensure reporting of waste movements to these sites does not result in double counting (see Figure 2 below). As with Transfer Stations these sites may receive both C, D & E waste as well as C&I waste and they may be classed as 'treatment' sites solely because of the processes applied to treat C, D & E waste only, while the mixed C&I waste is simply transferred - with perhaps some minor manual processing removing key recyclable components. This adds a further layer of complexity to the computation as illustrated in Figure 2 below:



**Figure 2: Schematic of Flows for Sites operating CDEW Treatment & C&I Waste Transfer Showing Potential Double Counting of Wastes in WDI**

As some of these sites may receive both CDEW, LACW and C&I waste, the LACW and CDEW input element has been deducted. The actual inputs of 'remaining waste' to these sites in the Plan area in 2015 is shown in Table 8 below.

**Table 8: Quantities of 'Remaining' Waste from the Plan area received at sites classified as Treatment sites within The Plan area receiving 500t or more, after deductions.**

*Source: WDI 2015 & WDF 2015.*

Facility Type	Site Name	Total (tonnes)
Biological Treatment	B V Dairy	39,262
	Berry Hill W W T Works	55,055
	Bournemouth Holdenhurst Riverside Avenue S T W	13,094
	Cabot Lane WWTW	108,617
	<b>Total</b>	<b>216,028</b>
Organic Waste Treatment	Rainbarrow Farm A D Facility	2,652
	Eco Piddlehinton	11,964
	Parley Waste Management Facility	22,169
	<b>Total</b>	<b>36,785</b>
Material Recycling Facility	Canford Recycling Centre	<b>33,764</b>
Physical Treatment	Holme Sand & Ballast Llp Masters North	<b>5,268</b>
Waste Transfer/Treatment	FDS Waste, Clapcotts Yard	3,187
	Shukco 350 Ltd Manning's Heath Transfer Station	14,985
	<b>Total</b>	<b>18.172</b>

Inputs of waste to the types of facility included in the 'Treatment category' shown in Table 7 (column 5) to be considered further. For the sake of clarity, the entry in Table 7 for Treatment in the Plan area (line 2 column 5) has been subdivided to reflect the different types of facility that fall under the 'Treatment' category as follows:

- Biological treatment,
- Organic Waste Treatment,
- MRFs,
- Physical Treatment sites; and
- Waste Transfer/ Treatment.

This breakdown is shown in Table 9 below:

**Table 9: ‘Remaining’ Waste Arising from The Plan area managed at Treatment Facilities (showing different types of treatment in The Plan area).**

*Source: WDI 2015*

	Biological Treatment	Organic Waste Treatment	Material Recycling Facility	Physical Treatment	Transfer/treatment	Sub Total
Plan area to Plan area	216,028	36,785	33,764	5,268	18,172	310,016
Plan area to Elsewhere	6,854					6,854
<b>Totals</b>						<b>316,870</b>

To determine the quantity of C&I waste from The Plan area actually managed at each type of facility requires consideration of inputs and outputs to each as below:

#### 1.3.2.1 Biological treatment sites

Examination of inputs and outputs of waste at the four biological treatment sites in The Plan area<sup>11</sup> taking 'remaining waste' arising in The Plan area shows that three of the four sites reported removals of waste. In all of these cases the removals of waste are at substantially reduced levels to the inputs of waste which is to be expected given that the waste inputs are being subjected to biological treatment which may involve breakdown of waste as well as dealing primarily with liquid waste which means that the bulk of the output will be discharged as a liquid under a consent to either sewer or a watercourse rather than physically removed. Discharges of treated liquid waste are not recorded or reported as outputs through the WDI.

In the case of this type of facility the danger of double counting of inputs and outputs to other facilities exists. However, since the primary destinations of the solid waste output (sludge) will either be application to land or to energy from waste (sludge fired power station), neither of which are reported through the WDI, the actual prospect is considered to be minimal. Therefore no deduction has been made to adjust for the prospect of double counting of waste managed at this type of facility.

#### 1.3.2.2 Organic Waste Treatment sites

Examination of inputs and outputs of waste at the three sites in The Plan area reported as taking 'remaining waste' from The Plan area is shown in Table 10 below. In most cases the removals of waste are at substantially reduced levels to the inputs of waste which is to be expected given that the waste inputs are being converted to compost which is considered to be a product not a waste and so is not required to be recorded and reported through the WDI. The residue from composting will tend to go to landfill so presents a risk of double counting through the WDI. Therefore a deduction is made to account for these residues and the calculation of this is shown in Table 10 below.

<sup>11</sup> Only inputs to sites in Kent as outputs from sites receiving Kent waste located outside Kent will be recorded as coming from the site's host WPA i.e. somewhere other than Kent

**Table 10: Inputs & Outputs of Waste at Organic Waste Treatment Sites in The Plan area receiving 'remaining' waste from The Plan area.**

Source: WDI 2015.

Site Name	Input of Waste (tonnes)			Total Outputs	% Output attributable to The Plan area C&I input	Net C&I managed (tonnes)
	From Outside The Plan area	From Within The Plan area	Of which % from non LACW			
	a	b	c	d	(b/(a+b)) x c	
Rainbarrow Farm A D Facility	65%	35%	100%	26,719	35%	9,252
Eco Piddlehinton	0%	100%	45%	23,434	45%	10,525
Parley Waste Management	0%	100%	12%	162,834	12%	19,146

Table 10 shows that:

1. 65% of waste inputs to Rainbarrow Farm are from outside The Plan area and waste outputs total 26,719 tonnes. To avoid double counting the output is deducted 'pro rata' (to account for the fact that 65% of inputs are from beyond The Plan area). No inputs from LACW sources are reported. Therefore 9,252 tonnes (26,719 x35%) was deducted from the input value to avoid double counting. However as that exceeds the input value this indicates no C&I waste from The Plan area is managed through the site. This exceedance is attributable to the fact that the AD plant also processes energy crops inputs of which is not recorded as an input in the WDI
2. 100% of inputs to Eco Piddlehinton are from The Plan area and of this 45% is not attributable to LACW sources. It also reports producing outputs of total quantity of 23,434 tonnes. However this is identified as going to an 'unknown' fate and because this is an AD plant, it is highly likely that any output will be applied to land under a deployment, which is not recorded in the WDI. Therefore no double counting deduction needs to be made and the input value of 11,964 tonnes of C&I waste from the Plan area managed through the site remains.
3. 100% of inputs to Parley WM are from The Plan area and of this 88% comes from LACW sources. It also reports producing outputs of total quantity of 162,834 tonnes. To avoid double counting this output is deducted (to account for the fact that 88% of The Plan area inputs are sourced from LACW). . Therefore 19,146 tonnes is deducted from the input value of 22,169 tonnes leaving 3,023 tonnes of C&I waste from The Plan area managed through the site.

Therefore the total quantity of waste for the Plan area Organic Waste Treatment sites to be deducted 19,146t tonnes from 36,785 tonnes = 17,639 tonnes adjusted value.

### 1.3.3 Intermediate Treatment Sites

Unlike organic waste treatment sites, for which the majority of inputs are converted to product and hence act as a final fate for input waste, these sites act as intermediate sites from which output materials go on for further management. Therefore a different computation is undertaken to balance between recorded C&I inputs and outputs to gain a net C&I value.

#### 1.3.3.1 Plan Area Sites classed as Material Recycling Facilities (MRFs)

Examination of inputs and outputs of remaining waste at the only Material Recycling Facility in the Plan area reported as taking significant quantities (taken as over 500 tonnes) of 'remaining' waste from the Plan area is shown in Table 11.

**Table 11: Total Inputs & Outputs of Waste at The Plan area MRFs receiving 'remaining' waste from The Plan area during 2015**

Source: WDI 2015

Site Name	Input Total (tonnes)	Output Total (tonnes)	Inputs minus Outputs (diff)	Input of C&I waste from The Plan area after deductions (as in Table 8)
Canford Recycling Centre	51,024	49,115	+1,909	<b>33,764</b>

The final step is to assess the fate and destination of outputs to determine if it is likely the outputs of the site will be counted within the permitted system elsewhere. However, before doing so it is necessary to pro-rata the outputs attributable to the Plan area waste inputs as a proportion that these inputs represent of the total input to the site minus the CDEW and hazardous input element.

**Table 12: % Inputs to The Plan area MRF represented by 'remaining' waste from The Plan area**

Source: WDI 2015

Site Name	Total Input after deductions	Plan area contribution (Table 8)	% The Plan area contribution of total input
Canford Recycling Centre	39,786	33,764	85%

Table 12 summarises the fate and destination of outputs of the site with outputs pro-rata'd to reflect % of The Plan area inputs for each fate.

**Table 13: Fate and Destination of non CDEW & non Hazardous Outputs from The Plan area MRFs (500t plus) Source : WDI 2015**

Site		Fate		
		Landfill	Incinerator	Recovery
Canford Recycling Centre	Total	22,367	121	1,463
	From the Plan area (% in Table 12)	18,981	103	1,241
	<b>Grand Total from The Plan area</b>	18,981	103	1,241



The following rules have been applied:

1. Where an output is going to landfill, transfer or treatment within the UK, it is assumed that this input will be recorded at the 'next step site' so it is deducted from the total.
2. Where an output is going for recovery or incineration, it has been assumed that this input will not be recorded at the 'next step site' as sites where waste is recovered or burnt do not report through the WDI and hence the value has been retained to count toward the baseline value. This is on the basis that examination of the data indicates the terms 'recovery' and 'incineration' have been used interchangeably when reporting wood and RDF going for export;
3. Therefore, the following quantity is deducted

Landfill            18,981 tonnes

Revised total for The Plan area MRF site = 14,783 tonnes (33,764 (Table 8) minus 18,981 landfill deduction.

### 1.3.3.2 Plan Area Sites classed as Physical Treatment sites

Examination of inputs and outputs of remaining waste for the 8 sites classed under this type in the Plan area reported as taking significant quantities (plus 500 tonnes) of C&I waste from the Plan area is shown in Table 13.

**Table 14: Inputs & Outputs of The Plan area Physical Treatment site receiving 'remaining' waste from the Plan area (Table 8)**

*Source : WDI 2015*

Site Name	Input Total	Output Total	Diff	<i>The Plan area input after deductions (as in Table 8)</i>
Holme Sand & Ballast Llp Masters North	44,985	0	44,985	<b>5,268</b>

This shows that the site reported sending no waste out in 2015.

The following should be borne in mind when interpreting the data presented:

1. This site predominantly received C,D & E waste. It appears to be a recycled aggregate production site which explains the substantial difference between inputs recorded as waste and outputs given that the recycled aggregate produced would not be classed, and hence recorded, as waste leaving the site. The only reason why it appears in this listing is that it has recorded accepting waste concrete & concrete sludge (EWC 10 13 14) and waste gravel and crushed rock (EWC 01 04 08).

Having initially determined if it is likely the inputs of the site will already have been counted within the permitted system elsewhere, the final step would be to assess whether outputs of this site might also be double counted. Since no outputs are recorded this cannot be the case so no deduction is made so the total for 'remaining' waste from the Plan area managed at Physical Treatment sites in the Plan area remains at 5,268 tonnes (Table 8) .

**1.3.3.3 Plan Area Sites classed as Transfer/ Treatment sites**

Examination of inputs and outputs of remaining waste for the 2 sites classed under this type in the Plan area reported as taking significant quantities (plus 500 tonnes) of 'remaining' waste from the Plan area is shown in Table 15.

**Table 15: Inputs & Outputs of The Plan area Physico Chemical Treatment sites receiving 'remaining' waste from The Plan area (Table 8)**

Source : WDI 2015

Site Name	Input Total	Output Total	Diff	The Plan area input after deductions (as Table 8)
FDS Waste, Clapcotts Yard	22,864	28,571	-5,708	<b>3,187</b>
Shukco 350 Ltd, Manning's Heath Transfer Station	16,968	17,267	-299	<b>14,985</b>

This shows that both sites reported an increase in waste outputs to inputs suggesting that no loss has occurred in processing

**Table 16: % Inputs to The Plan area Physico Chemical Treatment Sites represented by 'remaining' waste from The Plan area**

Source: WDI 2015

Site Name	Total Input after deductions	The Plan area contribution (Table 15)	The Plan area as % of total input
FDS Waste, Clapcotts Yard	3,187	3,187	100%
Shukco 350 Ltd, Manning's Heath Transfer Station	16,615	14,985	90%

Table 17 summarises the fate and destination of outputs of each of the sites with outputs pro-rata'ed to reflect % of the Plan area inputs for each fate.

**Table 17: Fate and Destination of non CDEW & non Hazardous Outputs from The Plan area Transfer/ Treatment Sites**

Source: WDI 2015

Site		Fate			
		Landfill	Transfer	Recovery	Unknown
FDS Waste, Clapcotts Yard	Total	2,663		1,837	
	From the Plan area (% in Table 16)	2,663		1,837	
Shukco 350 Ltd, Manning's Heath Transfer Station	Total	1,709	218	13,374	26
	From the Plan area (% in Table 16)	1,538	196	12,037	23
	<b>Total from The Plan area</b>	<b>4,201</b>	<b>196</b>	<b>13,874</b>	<b>23</b>

The same rules as applied to the MRF computation have been applied with no output recorded as going outside the UK:

Therefore, the following quantity is deducted

Landfill	4,201 tonnes
Transfer	196 tonnes
<u>Total</u>	<u>4,397 tonnes</u>

Revised total for the Plan area Transfer/ Treatment sites = 13,775 tonnes (18,172 tonnes (Table 8) minus 4,397 t).

**The combined effect of all the adjustments for Plan Area Treatment sites (Step 3b) is shown in Table 18.**

**Table 18: Management Routes of 'remaining' waste arising from the Plan area minus double counting adjustments with Treatment type distinction.**

*Source: Table 9 minus Step 3b values*

	Biological Treatment	Organic Waste Treatment	Material Recycling Facility	Physical Treatment	Transfer/ treatment	Sub Total
<b>Plan area to Plan area (Table 9)</b>	216,028	36,785	33,764	5,268	18,172	<b>310,016</b>
<i>Minus double counting deductions</i>	0	19,146t	18,981	0	4,397	<b>23,378</b>
<b>Revised Plan area to Plan area</b>	216,028	17,639	14,783	5,268	13,775	<b>267,493</b>
<b>Plan area to Elsewhere</b>	6,854					<b>6,854</b>
<b>Totals</b>						<b>274,347</b>

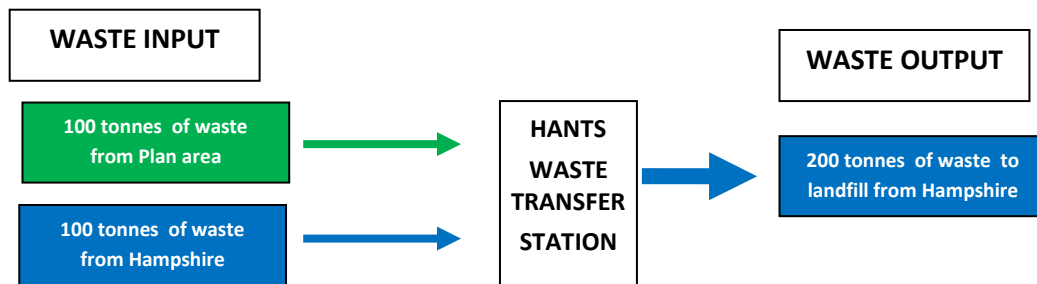
The revised value for 'remaining' waste arising in the Plan area that is managed at Treatment sites (274,347 t) is taken into account in the overall assessment of C&I arisings in Table 19.

**Table 19: Management Routes of 'Remaining' Waste Arising from The Plan area after deductions.**

*Source: Table 18 plus Table 7*

	Landfill	Metal Recycling Sites	Transfer	Treatment	Recovery to Land	Grand Total
<b>Plan area arisings managed at Plan area sites</b>	80,329	0	0	274,347	0	354,676
<b>Plan area arisings managed at sites outside Plan area</b>	12,229	27,386	38,728	6,854	7,179	92,376
<b>Totals</b>	<b>92,558</b>	<b>27,386</b>	<b>38,728</b>	<b>281,201</b>	<b>7,179</b>	<b>447,052</b>

Note that Waste going to facilities outside the Plan Area is counted as if it has gone to a final fate since any subsequent waste produced will be classified as coming from the Plan Area within which the receiving facility is located. For example 100 t of waste from Dorset going to a transfer station in Hampshire will be classed as waste from Dorset on arrival at the transfer station, but then will be recorded as waste from Hampshire on receipt at its next (final) destination. This is illustrated in Figure 3.



**Figure 3: Schematic of How Flows to Sites outside the Plan Area are recorded in WDI**

The headline value for C&I waste from the Plan area following the above stages is now 447,000 tonnes.

### 1.3.4 Additions

The following additional stages are needed to account for arisings not managed through facilities reporting through the WDI.

#### *Step 4: Add Inputs made to Energy from Waste (EfW) where surplus over LACW exists*

There are no operational EfW plants in the Plan area. Examination of a separate EA dataset on inputs to incineration plant indicates that just over 5,000 tonnes waste, attributed to the Plan area, was sent to the Ardley EfW operated by Viridor. A check of the WasteDataFlow dataset for LACW arising from The Plan area indicates a similar tonnage going for EfW and therefore this input has been discounted.

#### *Step 5: Accounting for waste managed through Exemptions*

Inputs to facilities exempt from environmental permitting are not reported and so, to account for waste managed through such facilities, an estimate would normally be made using details of registered exemptions. However in order to avoid double counting of waste managed through exemptions that then goes to permitted sites reporting through WDI, or indeed waste that has left a permitted site for onward management through exemption, it is necessary to assess whether exemptions are 'stand-alone' and if so whether they would be managing waste from the C&I stream - as opposed to LACW or CDEW. For example., the national Reconcile method<sup>12</sup> considered whether each specific exemption is likely to handle a significant amount of C&I waste, and if so whether it might make a notable contribution to C&I waste generation estimates. However, this approach is subject to revision considering that most waste passing through exempt sites will have either arisen from, or go to, a permitted site and as such will be reported through the WDI at some point in its management. Therefore no addition has been made for this category of activity.

## 1.4 Conclusion

The outcome of this process is that a total value of 447,000 tonnes of 'remaining' waste was generated in the Plan area in 2015. This is the value recommended to be used for forward planning purposes for C&I waste arising in the Plan area. This compares with an estimate value of around 460,000 tonnes of C&I waste arising in the Plan area for 2009.

<sup>12</sup> DEFRA 2014, New Methodology to Estimate Waste Generation by the Commercial and Industrial Sector in England

## 2 Estimating C, D & E Waste Baseline Arisings

### 2.1 Introduction

This section of the report is concerned with estimating current arisings for Construction, Demolition & Excavation (C, D & E) Waste in the Plan area. From this arisings would be forecast and then any capacity gap against proposed future profile of management to be promote through the Plan policies will be assessed.

National Planning Practice Guidance chapter on waste states that: "Planned provision of new capacity and its spatial distribution should be based on robust analysis of best available data." (emphasis added) (Para 035). Therefore, this exercise involves a robust analysis to identify what might be considered to be the "best available data" relating to C, D & E waste.

### 2.2 Context

The draft Waste Local Plan July 2015 defines C, D & E waste as follows:

*... waste arising from the construction of buildings and civil infrastructure, total or partial demolition of buildings, road planings and maintenance. It is typically made up of non-contaminated soil, rubble, bricks and tiles. It can also contain non-inert waste such as wood and soil that contains vegetation or has become mixed together and may also include some hazardous materials such as solvents and asbestos.."*

There is no requirement on businesses to submit records of waste produced and hence estimating quantities of Construction, Demolition & Excavation waste arisings for a specific Plan area is a challenge. Two different approaches can be taken to estimate a baseline as follows:

- The 'Point of management' method which uses data related to the management of C, D & E waste. This is a Defra method 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 and recycled aggregate production. Defra has developed a methodology for measuring C, D & E Waste arisings across the UK to report on progress made towards meeting the revised Waste Framework Directive (rWFD) target to recover 70% C&D waste by 2020<sup>13</sup>.
- The '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). This method was originally piloted by the East of England Regional Assembly (2010). Construction activity statistics data is no longer produced at a sub-regional level and so it is not possible to reliably replicate this method.

*Background Paper 1 – Waste Arisings and Projections July 2015* used the Agency WDI data to generate a value of 403,700 tonnes arising in the Plan area for 2013.

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<sup>13</sup> Methodology for estimating annual waste generation from the Construction, Demolition and Excavation (C, D & E) Sectors in England 20th March 2012

### 2.3 Methodology

The national methodology for estimating annual waste generation from the Construction, Demolition and Excavation (C, D & E) Sectors for England (the ‘Point of management’ method), uses information from four key management routes:

- (1) Waste managed at transfer and treatment facilities (reporting through Environment Agency WDI)
- (2) Waste managed by landfill (reporting through Environment Agency WDI)
- (3) Waste managed under exemptions
- (4) Waste recycled as aggregate (from a national estimate prepared by the Mineral Products Association)

To assess C, D & E waste arisings in The Plan area, the national methodology was modified to take into account local circumstances. In particular:

- Values for The Plan area waste classed as C,D & E waste managed through permitted sites in 2015 as reported the WDI with steps taken to deduct possible double counting and capture wastes that may have been reclassified as a consequence of processing through intermediate sites.
- The number of exempt waste sites registered in the Plan area.

This has been established as follows:

- Establish the population of registered exemptions by reference to the Environment Agency ‘register of exemptions’.
- Applying an estimated value for the quantity of waste managed at the key exemption managing C, D & E waste (U1) from the WRAP 2013 report<sup>14</sup>
- The quantity of waste converted to recycled aggregate in the Plan area.

This value has been based on the value used in the Plan area Local Aggregate Assessment (2016) derived via an annual local production survey.

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<sup>14</sup> WRAP, 2013, Review of the Factors Causing Waste Soil To Be Sent To Landfill; 2007 to 2011

### **2.3.1 Inputs of C, D & E waste to permitted facilities (within and beyond the Plan area)**

The principal source dataset used is the Environment Agency WDI 2015 (WDI). This was interrogated using the following Steps:

Step 1: Calculate the tonnage of non-hazardous/inert C, D & E waste from the Plan area sent to final fate (landfill & recovery to land) and intermediate sites outside the Plan area (ceasing to be identified as Plan area waste and hence regarded as going to a final fate for the purposes of this exercise);

Step 2: Calculate the tonnage of non-hazardous/inert C, D & E waste from the Plan area which is treated in the Plan area (and hence may either be subject to double counting or reclassification).

Hazardous waste is excluded as it is specifically taken account of in the separate report on Hazardous Waste.

*Step 1: Calculate the tonnage of C, D & E waste from The Plan area sent to final fate (landfill & recovery to land) and intermediate sites outside The Plan area (ceasing to be identified as Plan area waste). This to include the following categories of waste as per 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).*

The WDI 2015 reports that total C, D & E waste from the Plan area managed in permitted facilities reporting through the WDI as just under 1 million tonnes (0.86mt) . The breakdown and management routes are shown in Table 20 below.

Table 20: Management of C, D & E Waste from the Plan area through Permitted Sites

*Source: WDI 2015*

	<b>Landfill</b>	<b>Recovery to Land</b>	<b>Transfer</b>	<b>Treatment</b>	<b>Metal Recycling Sites</b>	<b>Grand Total</b>
<b>Plan area to Plan area</b>	40,432	96,834	131,442	485,885	2,528	757,121
<b>Plan area to elsewhere</b>	17,901	15,511	57,340	5,943	1,799	98,494
<b>Totals</b>	58,334	112,344	188,782	491,828	4,327	855,616

Of this waste, 3,550 tonnes were identified as hazardous waste of which 3,235 t was managed beyond the Plan area and 315 tonnes managed within the Plan area. Hazardous waste can be discounted as the requirements for management of this waste stream are dealt with separately and addressed in a separate report .

The revised total for management of C, D & E waste from the Plan area managed at facilities beyond the Plan area is therefore 95,260 tonnes, and that managed at facilities within the Plan area reduced to 756,289 tonnes. The amended values are shown in Table 21 below.



**Table 21:** Management of C, D & E Waste from the Plan area through Permitted Sites excluding hazardous waste

*Source: WDI 2015*

	Landfill	Recovery to Land <sup>15</sup>	Transfer	Treatment	Metal Recycling Sites	Grand Total
<b>Plan area to Plan area</b>	40,432	96,834	131,078	485,416	2,528	756,289
<b>Plan area to elsewhere</b>	15,184	15,511	57,247	5,518	1,799	95,260
<b>Totals</b>	55,617	112,344	188,325	490,934	4,327	851,548

### 2.3.2 Inputs of Plan area C, D & E waste to permitted facilities in the Plan area

*Step 2: Calculate the tonnage of C, D & E waste from the Plan area in the Environment Agency WDI which is considered to have gone to a final fate.*

Waste managed by Landfill and that managed through 'Recovery to Land' involve its permanent deposit and therefore is regarded as having reached its final fate and so these values are taken as final values.

The value for the C, D & E waste managed 'out of the Plan area' is also taken as a final value since once this waste enters an intermediate facility outside the county, it is regarded as waste arising from the WPA area hosting that facility as any resultant residue coming out will be attributed to the host WPA and not The Plan area..

An initial arisings value which is comprised of the values for waste which has reached its final destination and that which is managed beyond the Plan area is calculated as follows:  $(55,617 + 112,344) + (57,247 + 5,518 + 1,799) = 232,526t$ .

**Table 22:** The Plan area C,D & E waste regarded as going for final fate

Component	Value (tonnes)	Cumulative Total
Permanent Deposit	167,961	167,961
Out of The Plan area Intermediate	64,565	232,526

<sup>15</sup> C, D & E waste managed by 'Recovery to Land' is waste reported as being managed at sites which are registered as in the 'on/in land' reporting category of the WDI. This is waste deposited for beneficial purposes

**Table 23:** Management of C, D & E Waste from The Plan area through Permitted Sites excluding hazardous waste

*Source: WDI 2015*

	Landfill	Recovery to Land <sup>16</sup>	Transfer	Treatment	Metal Recycling Sites
<b>The Plan area to The Plan area</b>			131,078	485,416	2,528
<b>The Plan area to elsewhere</b>					

*Step 3 accounting for waste arising managed at intermediate sites*

Having established the quantity of Plan area C,D & E waste going to a final fate or leaving the county as c232,500 tonnes (Table 22), the inputs to intermediate sites in the Plan area need to also be accounted for. These are the remaining entries shown in the amber cells in Table 23 above, totalling 619,022 tonnes.

These need to be further interrogated to ensure that this value does not:

1. double count inputs to intermediate sites that subsequently get managed at another site as The Plan area 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’).. This is explained by the following example:

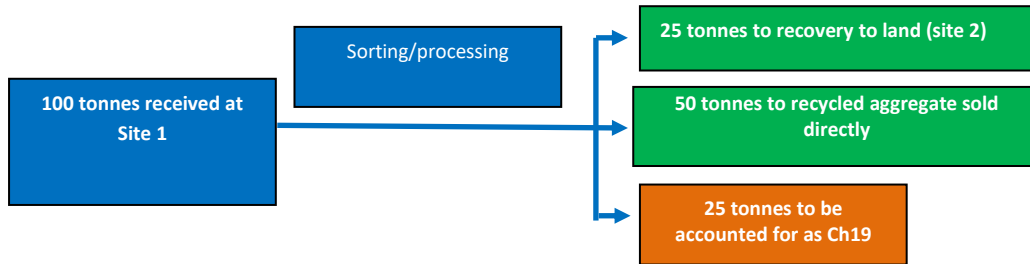
‘Intermediate’ Site 1 in the Plan area receives 100 tonnes of Plan area C, D & E waste.

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

- 25 tonnes of soil (classed as Chapter 17 waste) which is moved onto for Recovery to Land 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 the Plan area (regardless of whether Site 2 is within or outside the Plan area).
- 50 tonnes of recycled aggregate, sold directly; This is counted under the recycled aggregate value obtained via the annual local production survey for the Local Aggregates Assessment;
- 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.

<sup>16</sup> C, D & E waste managed by ‘Recovery to Land’ is waste reported as being managed at sites which are registered as in the ‘on/in land’ reporting category of the WDI. This is waste deposited for beneficial purposes

- This is illustrated in Figure 3 below:



**Figure 4:** Schematic of Intermediate site outputs.

Therefore that element of Chapter 19 waste that came from intermediate sites in the Plan area that may have arisen from C, D & E waste coming from the Plan area needs to be estimated. This is done by identifying each intermediate site that received C, D & E waste from the Plan area that also reported Chapter 19 waste as an output. The proportion of the Chapter 19 output that might be attributed to the input The Plan area C, D & E waste was determined as follows

1. Does the site receive C, D & E waste from the Plan area?
2. Does the site have outputs classed under Chapter 19?
3. Does the total of C, D & E waste outputs amount to less than the C, D & E waste inputs?
4. What is the difference/shortfall and can that be made up by Chapter 19 waste?

NB: Where the shortfall can't be made up this may indicate that tonnages of C, D & E Waste are converted into recycled aggregate which is not generally declared on the permit waste returns.

Applying this method to the Plan area Waste Transfer Stations identified as both receiving C, D & E waste from the Plan area and producing Chapter 19 waste in 2015 yields the following.

Q1 & 2: 4 waste transfer sites identified as receiving C, D & E waste from the Plan area and having outputs classed under Chapter 19.

Q 3 &4: Findings as follows:

**Table 24: Permitted Waste Transfer Sites within the Plan area managing Non -hazardous C, D & E Waste from the Plan area and producing Chapter 19 waste for which a CDEW input /output shortfall of 500t+ exists (Step 1)**

	<b>C, D &amp; E Waste inputs</b>	<b>C, D &amp; E Waste outputs</b>	<b>Shortfall (tonnes)</b>
Broadcroft Quarry	4,945	5,243	0
A & D Skips Hines Pitt	15,499	9,435	6,064
Commercial Recycling Mannings Heath Road	1,098	1,682	0

**Table 25: Permitted Waste Transfer Sites within The Plan area managing Non- hazardous C, D & E Waste from The Plan area and producing Chapter 19 waste (Step 2)**

	<b>Shortfall (tonnes) (Table 5)</b>	<b>Ch 19 (tonnes)</b>	<b>% C, D &amp; E Waste from The Plan area</b>	<b>Make Up (tonnes)</b>
Broadcroft Quarry	0			
A & D Skips Hines Pitt	6,064	2,749	98%	2,686
Commercial Recycling Mannings Heath Road	0			
<b>Total</b>				<b>2,686</b>

This gives a total Chapter 19 make up of 2,686 tonnes.

Applying the same method to the Plan area Waste Treatment Sites identified as both receiving C, D & E waste from the Plan area and producing Chapter 19 waste in 2015 yields the following.

Q1&2 :4 waste treatment sites. identified as receiving C, D & E from the Plan area and having outputs classed under Ch19.

Q3 &4 : Findings as follows:

**Table 26: Permitted Waste Treatment Sites within The Plan area managing Non - hazardous C, D & E Waste from The Plan area and producing Chapter 19 waste (Step 1)**

	<b>C, D &amp; E Waste inputs</b>	<b>C, D &amp; E Waste outputs</b>	<b>Shortfall (tonnes)</b>
Canford Inert Recycling Centre	234,686	7,432	227,255
Canford Recycling Centre	11,152	25,070	0
FDS Waste, Clapcotts Yard	19,677	24,072	0
Parley Waste Management	84,911	95,964	0

**Table 27: Permitted Waste Treatment Sites within The Plan area managing Non- hazardous C, D & E Waste from The Plan area and producing Chapter 19 waste (Step 2)**

	<b>Shortfall (tonnes) (Table 7)</b>	<b>Ch 19 (tonnes)</b>	<b>% C, D &amp; E Waste from The Plan area</b>	<b>Make Up (tonnes)</b>
Canford Inert Recycling Centre	227,255	22,292	94%	20,850
Canford Recycling Centre	0			
FDS Waste, Clapcotts Yard	0			
Parley Waste Management	0			
<b>Total</b>				<b>20,850</b>

This gives a total Chapter 19 make up of **20,850 tonnes**.

This gives a total Chapter 19 make up totalling **23,537 tonnes** (2,686+20,850).

**Table 28: Table 22 plus Chapter 19**

<b>Component</b>	<b>Value (tonnes)</b>	<b>Cumulative Total</b>
<b>Permanent Deposit</b>	167,961	167,961
<b>Out of The Plan area Intermediate</b>	64,565	232,526
<b>In Plan Area Intermediate Chapter 19</b>	23,537	256,063

### 2.3.3 Recycled Aggregate Production

*Step 5: Data from the Plan area Local aggregate Assessment for recycled aggregate production.*

This section sets out how the calculation accounts for the quantity of C, D & E waste arising in The Plan area that is used to produce recycled aggregate. Once established, this quantity is included in the overall calculation of C, D & E waste baseline arisings value.

Each year The Plan area County Council prepares a 'Local Aggregates Assessment (LAA) which reports on how much aggregate is produced and how this relates to the demand for aggregate. In order to establish the contribution made by recycled aggregate to the production of aggregate overall, the council conducts an annual survey of recycled aggregate producers of the quantity of recycled aggregate sold.

The value presented for recycled aggregate production in the latest LAA is 412,000 tonnes (for 2015). This value has been included in the calculation of C, D & E waste arising overall. As shown in Table 29, this results in a overall value for C, D & E waste production in the Plan area of 0.67 mt.

Table 29: Table 28 plus Recycling Aggregate

<b>Component</b>	<b>Value (tonnes)</b>	<b>Cumulative Total</b>
<b>Permanent Deposit</b>	167,961	167,961
<b>Out of The Plan area Intermediate</b>	64,565	232,526
<b>In Plan Area Intermediate Chapter 19</b>	23,537	256,063
<b>Recycled Aggregate</b>	412,000	668,063

### 2.3.4 The Plan area C, D & E Waste managed at Exempt sites

*Step 6: Estimate the quantity of waste managed by exempt waste management activities in The Plan area.*

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 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) potentially account for the management of the most significant quantities of C, D & E waste by exempt activities. A

report produced for WRAP<sup>17</sup> 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 the Plan area. The number of registered U1 exemptions involving waste from non-agricultural origins in 2015 was 507. However only 38 of these were registered in 2015, with the bulk of registrations relating to 2013. Research undertaken by Surrey County Council indicates that U1 registrations tend to be single event or one-off. Therefore it was decided to only take the 2015 registrations towards the count. ....

From the number of exempt activities registered under paragraph U1, and using a value of 600 tonnes per exemption, it is estimated that the total quantity of C, D & E waste managed by such activities in the Plan area is 22,800 tonnes. This value has been included in the calculation of C, D & E waste arising overall. As shown in Table 30, this results in an overall value for C, D & E waste production in the Plan area of 690,863 tonnes.

Table 30: Table 29 plus Exemptions

<b>Component</b>	<b>Value (tonnes)</b>	<b>Cumulative Total</b>
<b>Permanent Deposit</b>	167,961	167,961
<b>Out of The Plan area Intermediate</b>	64,565	232,526
<b>In Plan Area Intermediate Chapter 19</b>	23,537	256,063
<b>Recycled Aggregate</b>	412,000	668,063
<b>Exemptions</b>	22,800	690,863

## 2.4 Conclusion

The outcome of this process is that a total value of **691,000 tonnes** of C,D & E waste was generated in the Plan area in 2015. This is the value recommended to be used for forward planning purposes for C,D & E waste arising in the Plan area. This compares with an estimated value of around 403,700 tonnes arising in the Plan area for 2013 based on WDI data alone.

<sup>17</sup> WRAP, 2013, *Review of the Factors Causing Waste Soil To Be Sent To Landfill; 2007 to 2011*