



# **Bournemouth, Dorset and Poole Waste Plan**

## **Background Paper 1 Waste Arisings and Projections**

**November 2017**

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## Introduction

**1.1** This report presents information on arisings, growth and, where relevant, current waste management contracts, for dealing with the four major waste streams: municipal solid waste/local authority collected waste; commercial and industrial waste; construction, demolition and excavation waste; and hazardous waste. Trends in arisings for the four waste streams are considered before ways of estimating future arisings are considered. Projections are made based on a number of scenarios for each waste stream. This information forms an important part of the evidence base for the Waste Plan.

### What is waste?

**1.2** Waste is defined as "any substance or object which the holder discards or intends or is required to discard"<sup>(1)</sup>. Waste is broadly categorised into three groups, namely:

- Inert waste - which does not undergo any significant physical chemical or biological transformations when disposed of and is not harmful to the environment;
- Non-hazardous waste - which doesn't have any significant hazardous properties, however may be biodegradable; and
- Hazardous waste - which has hazardous properties and poses a greater risk to the environment and human health than non-hazardous waste.

**1.3** There is a range of different waste streams, some of which fall within one of the three waste groups, others of which will contain elements of more than one type of waste. The five major waste streams which are monitored in England and Wales are local authority collected waste; commercial and industrial waste; construction, demolition and excavation waste; hazardous waste; and agricultural waste. Other waste streams which the Waste Plan will cover include waste water and sewage and radioactive waste.

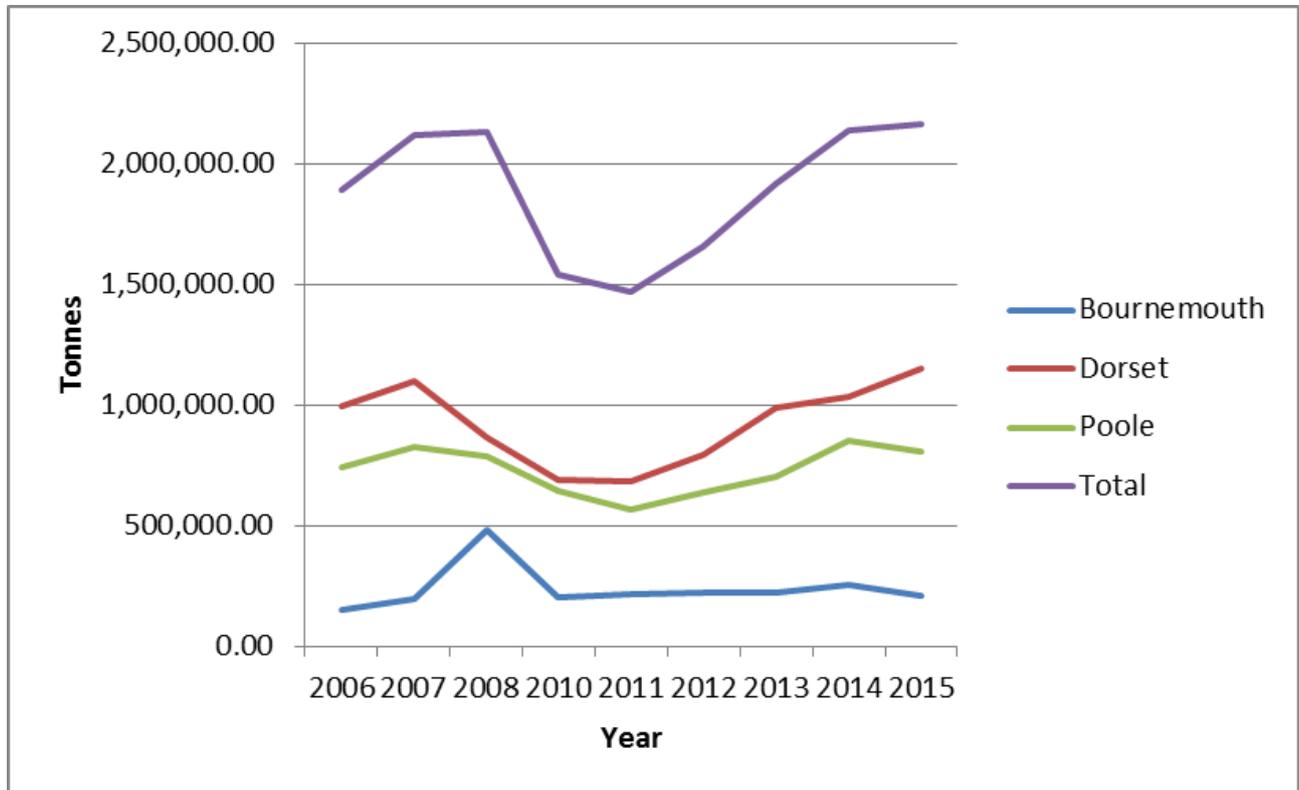
### Headline trends

**1.4** The total amount of waste managed in the sub-region had been generally declining over recent years to 2012. The trend has been an increase in total waste managed from 2012 to 2014, plateauing out to 2015, as illustrated in Figure 1. The trends are explored in more detail for the four major waste streams in the following sections of this report.

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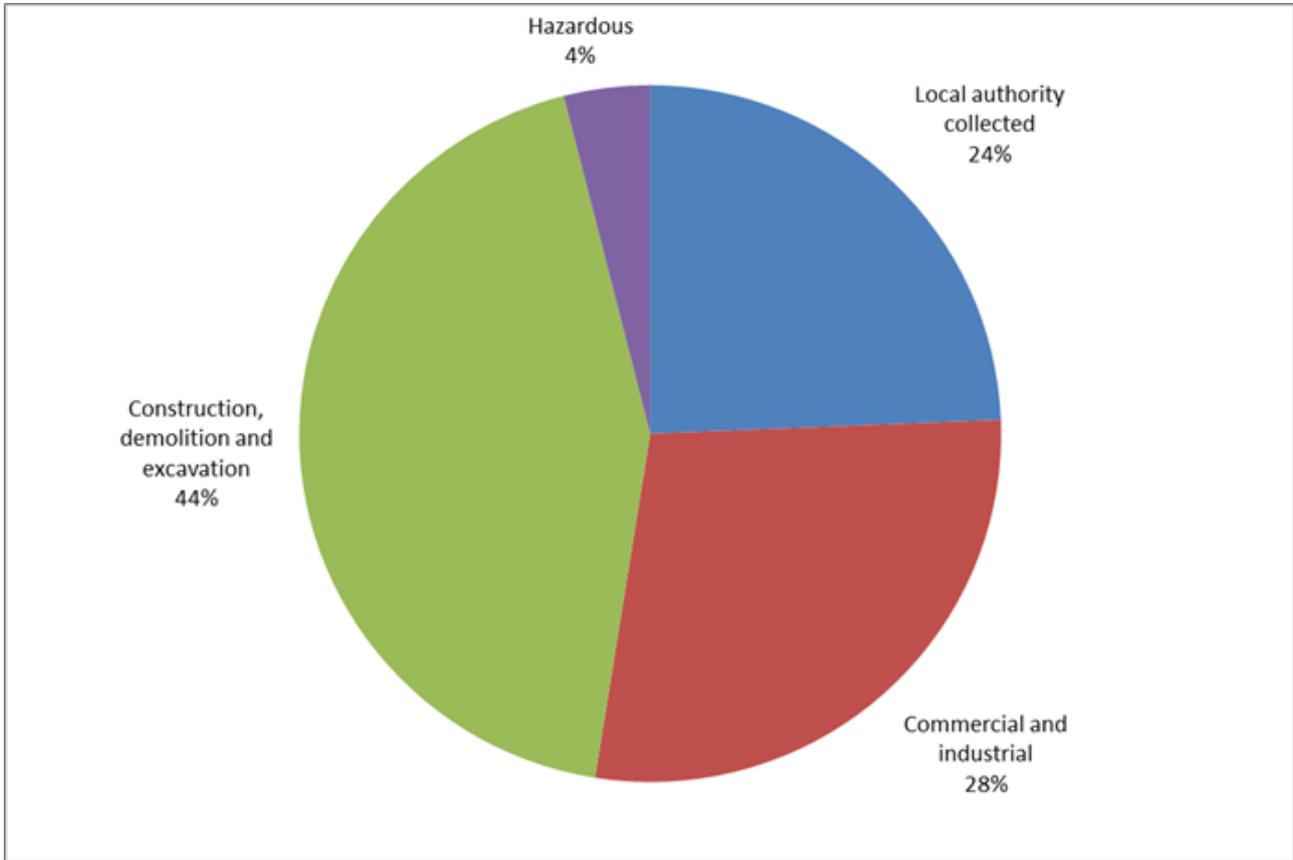
1 Directive 2008/98/EC on waste (Waste Framework Directive)

**Figure 1 Total Waste Managed in Bournemouth, Dorset & Poole**



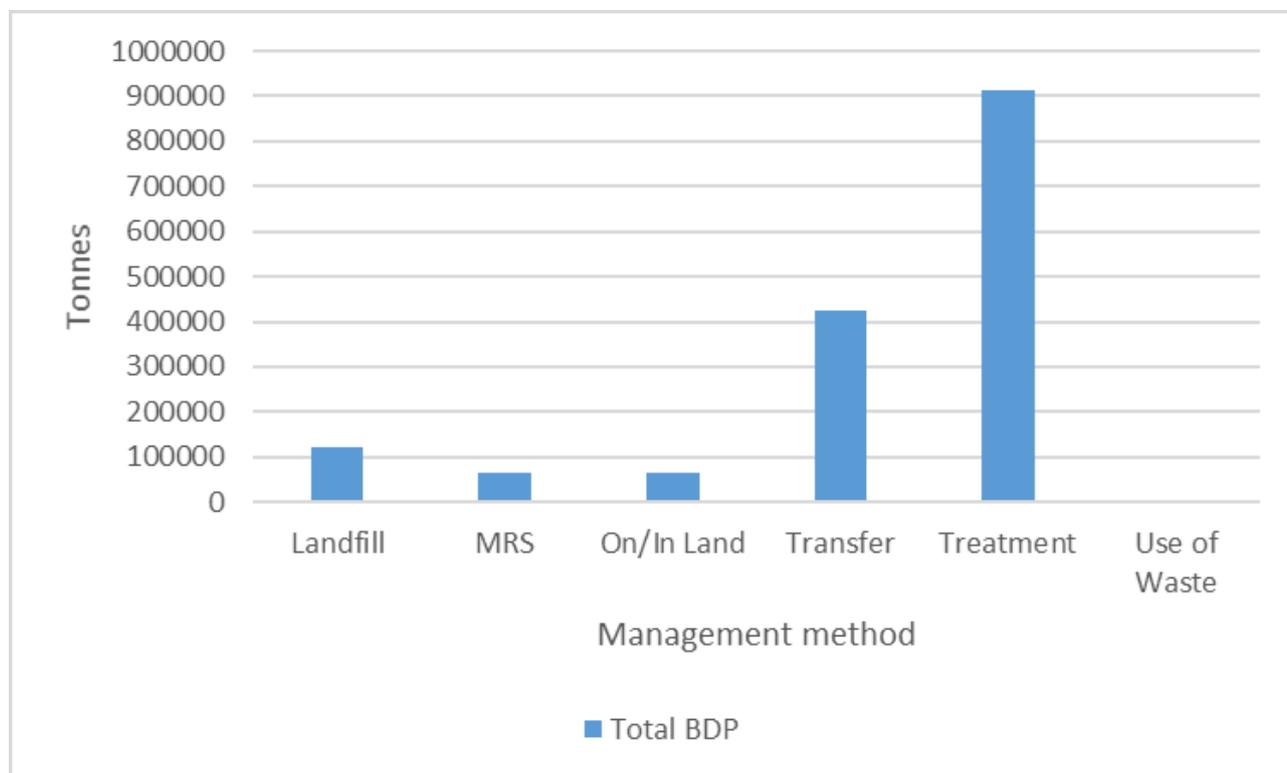
**1.5** Figure 2 shows that construction, demolition and excavation waste forms the largest proportion of waste generated with just under half of Dorset, Bournemouth and Poole's waste arisings comprising this waste stream in 2015. Local authority collected waste and commercial and industrial waste comprise similar proportions at around a quarter each; whilst hazardous waste forms only 4% of total waste arisings.

**Figure 2 Proportions of waste arisings in Bournemouth, Dorset & Poole (2015)**



**1.6** Figure 3 shows how waste arising in Bournemouth, Dorset and Poole was managed in 2015. Around 122,000 tonnes of waste originating from Bournemouth, Dorset and Poole was landfilled and around 911,400 tonnes was managed at treatment facilities.

**Figure 3 How waste originating in Bournemouth, Dorset and Poole is managed (2015)**



Source: Waste Data Interrogator (2015). Note: Does not include waste with origin "WPA Not Codeable".

**Waste forecasts summary - How much waste will be produced in the future?**

1.7 The following chapters discuss the different types of waste and how we expect the amounts to increase over the Plan period. Table 1 summarises the estimated amount of waste that is expected to be produced for the plan period, up to 2033, based on the scenarios taken forward in the Waste Plan.

**Table 1 Estimated waste arisings to 2033**

Waste stream	Estimated tonnes of waste per annum (to nearest 100 tonnes)				
	Estimated growth per annum (average)	2018	2023	2028	2033
Local authority collected waste	0.9%	394,300	413,800	433,300	448,900
Commercial & industrial waste	1.2%	460,900	491,700	520,500	554,600
Construction, demolition and excavation waste	3.7%	801,800	1,005,200	1,173,400	1,357,700
Hazardous waste	1.6%	61,500	69,000	76,500	84,000

	Estimated tonnes of waste per annum <i>(to nearest 100 tonnes)</i>				
Waste stream	Estimated growth per annum (average)	2018	2023	2028	2033
<b>Total:</b>		1,718,500	1,979,700	2,203,700	2,445,200

**1.8** Where relevant the following chapters include information that was used to support the various stages of the Waste Plan - the Draft Waste Plan (2015), the Draft Waste Plan Update (2016) and the Pre-Submission Draft (2017). The baseline data that supports the Plan has been updated as preparation of the Plan has taken place, to ensure that the Plan is underpinned by the best, most up to date evidence base. This has resulted in revisions to the forecasts and projections set out as the Plan has developed. This is outlined in the following chapters.



**2.1** The term “Local Authority Collected Waste” (LACW) is used in this report to refer to the waste that is collected and managed by Dorset Waste Partnership (DWP)<sup>(2)</sup>, Bournemouth Borough Council and the Borough of Poole. Local authority collected waste is primarily household waste collected from the doorstep. It also includes waste brought to household recycling centres and bring sites, as well as commercial waste collected by arrangement with the local council. It also includes wastes such as street sweepings, beach cleansing, fly-tipping and park wastes.

**2.2** The term municipal solid waste (MSW) has been used historically and is defined as “waste from households, as well as other waste, which, because of its nature or composition, is similar to waste from households”. In practise, this includes a significant proportion of waste from commercial and industrial sources.

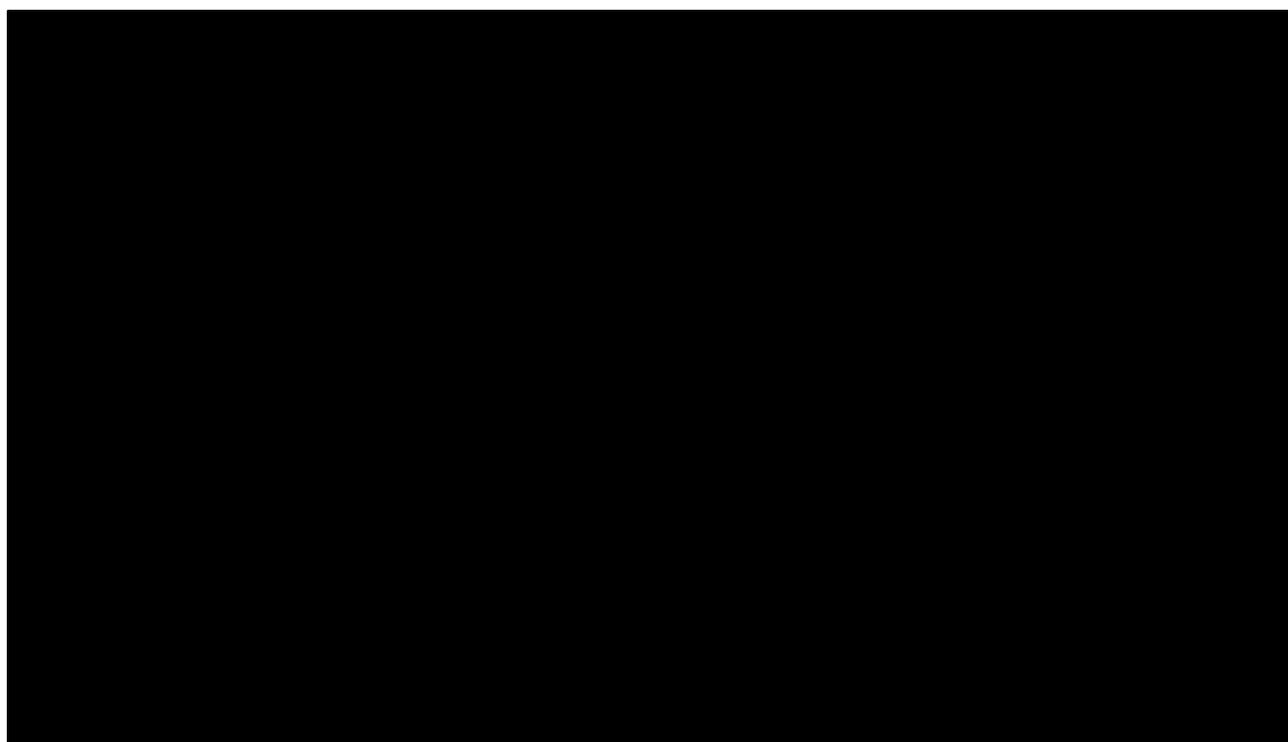
## National data

**2.3** Arisings of local authority collected waste in England fell from 2007/2008 to 2013/14. From 2013/14 there has been a slight increase in overall arisings, as shown in Figure 4.

**2.4** In 2014/15, 25.8 million tonnes was generated, of which:

- 43% was recycled or composted
- 30% was treated with energy recovery
- 25% was landfilled
- 0.1% was incinerated without energy recovery.<sup>(3)</sup>

**Figure 4 Management of local authority collected waste in England 2000 - 2015**



2 Dorset Waste Partnership was officially launched on 1 April 2011, bringing together waste, recycling and street cleaning services from the seven Dorset councils

3 Local Authority Collected Waste Management Statistics 2015 - [https://data.gov.uk/dataset/local\\_authority\\_collected\\_waste\\_management\\_statistics](https://data.gov.uk/dataset/local_authority_collected_waste_management_statistics)

Source: [https://data.gov.uk/dataset/local\\_authority\\_collected\\_waste\\_management\\_statistics](https://data.gov.uk/dataset/local_authority_collected_waste_management_statistics)

**2.5** Latest information states that waste arising from households in the UK decreased by 0.4% between 2014 and 2015 with the 2015 tonnage being a decrease of 1% since 2010.<sup>(4)</sup>

### Local data

**2.6** Arisings of local authority collected waste in Dorset, Bournemouth and Poole for the previous eight years are shown in Table 2. LACW arisings make up about a quarter of total waste arisings in Bournemouth, Dorset and Poole, totalling just under 400,000 tonnes in 2015/16.

**Table 2 Local authority collected waste arisings (tonnes)**

	2008/2009	2009/2010	2010/2011	2011/2012	2012/2013	2013/14	2014/15	2015/16
<b>Dorset</b>	221,402	216,897	213,257	212,687	206,030	214,298	217,183	218,436
<b>Bournemouth</b>	86,370	86,413	85,622	85,999	85,760	90,965	95,234	98,795
<b>Poole</b>	76,745	77,516	76,939	74,933	73,072	84,537	81822	79820
<b>Total</b>	<b>384,517</b>	<b>380,826</b>	<b>375,818</b>	<b>373,619</b>	<b>364,862</b>	<b>389,800</b>	<b>394,239</b>	<b>397,051</b>

**2.7** Table 2 shows a downward trend in waste arisings to 2012/13, followed by an overall increase over the next three years. This mirrors the national trend. Arisings decreased at a rate of around between 1% and 4% per annum between 2008/09 and 2012/13. The greatest decrease can be seen in the latter of this period. This can be attributed to a reduction in the amount of household waste produced as a result of waste reduction and recycling initiatives, such as the 'Big Bin, Little Bin' service in Bournemouth (see below), as well as economic conditions slowing down consumption. Arisings then increased by 3% overall in 2013/14 and continued to increase more slowly over the next two years. Total arisings in Poole started to decrease again during these two years.

**2.8** Unsurprisingly the management methods for LACW have also changed over recent years. Recycling rates have increased and final disposal to landfill has steadily decreased. Current percentages are shown in Table 3.

**Table 3 LACW management methods (2015/16)**

	Reuse, recycled & composted	Landfill	Residual waste treatment
<b>Dorset Waste Partnership</b>	60%	21%	5%
<b>Bournemouth</b>	44%	12%	29%
<b>Poole</b>	42%	18%	6%

4 Digest of Waste & Resource Statistics - March 2017 edition (Defra), available at [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/607416/Digest\\_of\\_Waste\\_and\\_Resource\\_Statistics\\_2017\\_rev.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/607416/Digest_of_Waste_and_Resource_Statistics_2017_rev.pdf)

**2.9** For Dorset Waste Partnership (DWP), of the 218,400 tonnes of local authority collected waste generated in 2015/16, 60% was reused, recycled or composted, around 21% was landfilled and 5% was managed through energy from waste.

**2.10** Bournemouth Borough Council recorded a slightly lower rate of 44% reused, recycled or composted, a much lower rate of waste sent to landfill of 12% and a higher rate of 29% was managed through energy from waste (which includes mechanical biological treatment).

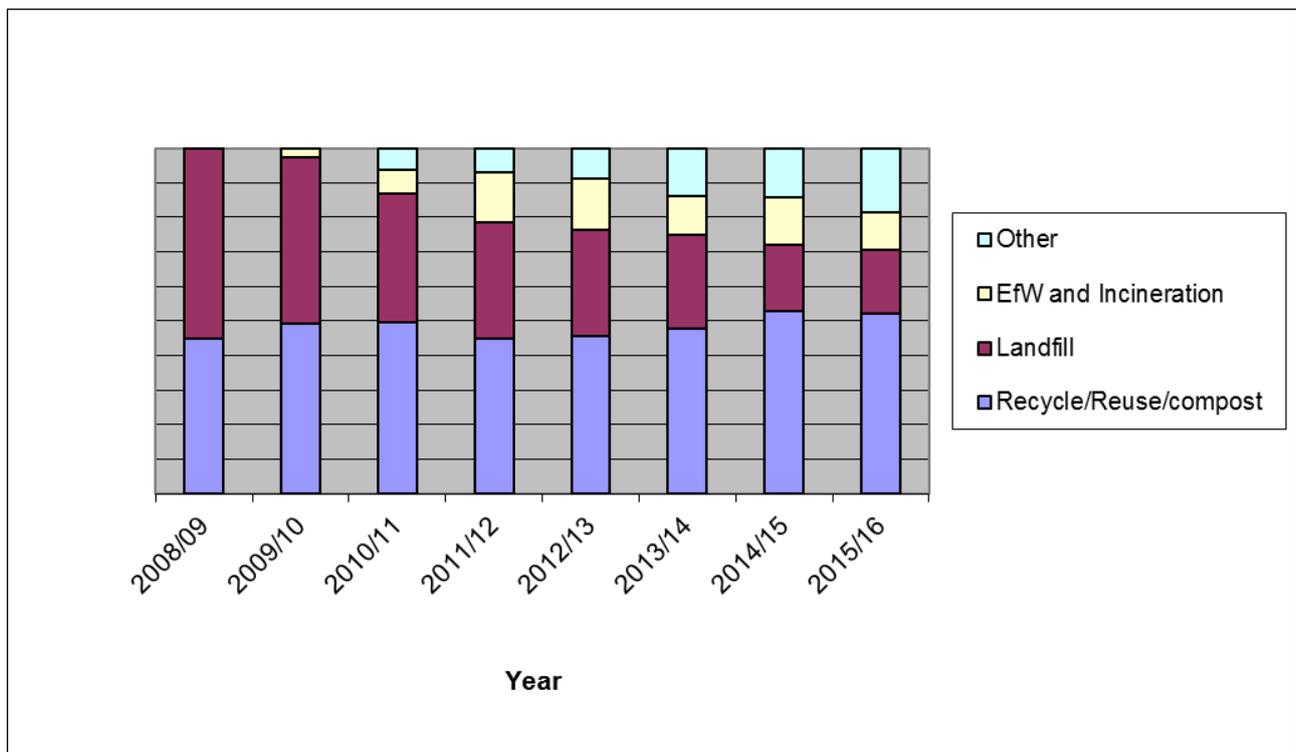
**2.11** For the Borough of Poole 42% was reused, recycled or composted, 18% was sent to landfill and 6% was managed through energy from waste.

**2.12** For comparison, the total tonnage of waste managed by local authorities in England was 25.8 million tonnes in 2014/15. Of this 43% was recycled (including composting/reuse) and 25% was sent to landfill. Local authority managed waste going for incineration with energy recovery accounted for 30%<sup>(3)</sup>

**2.13** Dorset, Bournemouth and Poole are therefore currently performing well with generally higher levels of recycling and composting and lower levels of waste landfilled than at the national level. Dorset and Poole are however managing less waste through incineration with energy recovery than nationally.

**2.14** Recycling rates for local authority collected waste have increased substantially in Dorset, Bournemouth and Poole over recent years, whilst the proportion of waste being landfilled has been decreasing, as illustrated below.

**Figure 5 Management methods for local authority collected waste in Dorset, Bournemouth & Poole (2008-2015)**



**2.15** Due to legislative drivers the shift in how waste is managed is likely to continue. For example, certain materials such as wood and food are being diverted from the residual waste stream and sent for treatment, recycling, composting and recovery instead. There are also many factors that will influence quantities of waste arising over the Plan period including household consumption habits. The Plan will need to be flexible enough to accommodate changes.

### **Waste management strategies**

**2.16** Growth in waste arisings is assessed and predicted at a local level through the waste management strategies of the three authorities.

**2.17** The Joint Municipal Waste Management Strategy for Dorset 2008-2033 has recently been updated. The update was presented and approved at the DWP Joint Committee in March 2017 and forms an addendum to the full strategy. The review provides an update on the 'Recycle for Dorset' service explaining that it has helped increase Dorset's recycling rate, drive down costs and reduce waste to landfill. The review explains that between 2008 and 2013/14 waste growth was in a period of decline. Since then it has started to increase with average growth at 1.3%. Taking into consideration housing and population, waste growth has been estimated at between 0.8% and 2.7%. For the purposes of planning services and budgets, DWP are currently assuming a 2% growth rate for waste arisings.

**2.18** The Bournemouth Municipal Waste Management Strategy (2011) notes a downward trend in municipal waste arisings, over the period 2005-2010, with around 50% recycled, composted or reused. The strategy assumed a growth rate in arisings of 0.5 - 1%, taking into account population increase, whilst the current actual status was 0% growth. At the time Bournemouth Borough Council was predicting a decrease as collection service enhancements are rolled in 2014. The Borough of Poole's 2008 revised waste strategy recommends using a 1% growth rate assumption for population and behavioural growth.

**2.19** The Bournemouth, Dorset and Poole Waste Plan has considered past waste arisings, economic growth, had discussions with the three authorities and consultation with the waste industry in order to consider an appropriate level of growth in local authority collected waste over the Plan period. An understanding of growth and existing capacity has enabled an assessment of the need for additional waste management facilities to be undertaken. Further details on forecasting is set out below.

### **Current collections and contracts**

#### **Dorset Waste Partnership (DWP)**

**2.20** The Dorset Waste Partnership has implemented a standard waste and recycling collection service across the seven Dorset district and borough councils, branded 'Recycle for Dorset'. The collection comprises a 240-litre wheelie bin for paper, cardboard, plastics, tins, cans and aerosols; a green recycling box for glass bottles and jars and a small reusable bag for batteries, all collected fortnightly. It also includes weekly collection of food waste and fortnightly collection of 'black bag' rubbish from a 140l wheelie bin. There is an optional chargeable collection of garden waste. The scheme has been fully operational since the end of 2015. The Dorset Waste Partnership has aspirations through this scheme to: drive down costs by £2m a year, increase Dorset's recycling and composting rate to 65% by 2025 and reduce the amount of waste sent to landfill sites.

**2.21** Across Dorset, there are eleven Household Recycling Centres, three of which include waste transfer facilities (Blandford, Sherborne and Bridport). These facilities are operated by W&S Recycling on behalf of DWP. Some limited sorting and bulking of recyclates takes place at the Hurn Material

Recycling Facility (MRF), north-west of Bournemouth Airport, and the Hybris MRF, at Crossways. Both are small operations which facilitate the onward movement of recyclates. They are not fully equipped to manage the Recycle for Dorset co-mingled recyclates collection. Recyclates are currently sent to the Shotton materials recycling facility in Flintshire, North Wales.

**2.22** Dorset Waste Partnership has contracts with Eco Sustainable Solutions and Down End Farm for the management of green and wood waste. Eco Sustainable Solutions' anaerobic digestion plant at Piddlehinton manages the collected food waste.

**2.23** For non-recyclable (residual) waste, Dorset Waste Partnership has a number of waste disposal contractors. DWP has a contract to use New Earth Solutions mechanical biological treatment plant at Canford, Poole to 2021 and for small scale bulky waste to be managed at the same site by Commercial Recycling Limited to 2020. It also has a contract with Viridor for managing residual waste to 2020, which is being sent to landfill at Dimmer landfill site in Somerset. This is expected to continue to early 2018, following which the waste will go to Walpole landfill site, also in Somerset. There is also a contract with Veolia for managing residual waste at Blue Haze landfill site in Hampshire to 2020 and Marchwood energy from waste facility in Southampton to 2021.

### Poole

**2.24** In Poole, there is a fortnightly kerbside collection of co-mingled recyclates (240litre) and a fortnightly rubbish collection in smaller (180litre) bins. There is an optional chargeable collection for green waste. Borough of Poole has a transfer station and Household Recycling Centre at Nuffield. Poole's waste disposal contractor until 2027 is Viridor, which operates this facility on Borough of Poole's behalf. Recyclates are taken here for bulking up and onward transfer to Crayford materials recycling facility in the London Borough of Bexley as part of Poole's contract with Viridor. Black bag waste is also transferred via the Nuffield site, before being treated at New Earth Solutions' MBT facility in Poole or the Lakeside energy from waste facility in Slough.

### Bournemouth

**2.25** In Bournemouth, a 'Big Bin, Little Bin' collection scheme has been in operation since 2006. Since April 2017 this has comprised an alternate weeks fortnightly co-mingled recyclates collection (240litres) and rubbish collection (140litres). There is also a weekly food collection service with the option of a large 23 litre container or a 12 litre container, as well as a seasonal 'opt-in' green waste collection.

**2.26** Bournemouth has a Household Recycling Centre, Millhams, located at Longham on the northern edge of Bournemouth. Recyclates are dealt with by Viridor via the Nuffield Household Recycling Centre in Poole in the same way as Poole's recyclates. Bournemouth Borough Council has a contract with New Earth Solutions to treat its residual waste at the New Earth Solutions MBT facility at Canford. Eco Sustainable Solutions' anaerobic digestion plant at Piddlehinton manages the collected food waste.

### Forecasting future arisings

**2.27** The Waste Plan needs to consider how waste arisings may change over the plan period and subsequently address how this will impact upon the need for new or enhanced waste management capacity and facilities. Predicting future waste arisings is challenging, particularly when looking as far ahead as 2033. Arisings are dependent upon a number of variable factors, such as economic performance, behavioural change and policy drivers, many of which are difficult to predict or foresee in the long term.

**2.28** The Waste Plan Issues Paper (published for consultation in 2013) suggested a level of growth of local authority collected waste of 1% for Dorset throughout the Plan period and 0% for Bournemouth and Poole. These figures were based on information from the three waste management authorities at the time.

**2.29** Although there were no strong concerns from stakeholders over the levels of growth presented, it was generally considered that there should be more flexibility built into the plan, particularly for Bournemouth and Poole where 0% growth was being assumed. This might not account for housing growth.

**2.30** Further discussions with the three waste management authorities concurred that as the economy starts to pick up, levels of waste are also likely to rise. There are factors that are common to all three authorities and some that depend on the individual circumstances, including the collection regimes and how well these are established across the County. Further details on the key issues that were considered when developing a series of appropriate growth scenarios for local authority collected waste can be found in Appendix 1.

## Baseline

**2.31** For the Draft Waste Plan 2015 and Draft Waste Plan Update 2016, 2013/14 was used as the baseline year. Total arisings for 2013/2014 and calculations on tonnages of waste per household for this year are presented below. The three scenarios for growth presented in the Draft Waste Plan 2015 were based on the baseline of 2013/14. Section x below presents the three scenarios based on this baseline.

**2.32** The latest figures on actual arisings of local authority collected waste are from 2015/16 and so the baseline has been updated, with the Waste Plan Pre-Submission Draft using the updated baseline. Total arisings and calculations on tonnages of waste per household for 2015/16 are therefore also presented later in this chapter. Projections for the preferred medium growth scenario have been revised based on this baseline.

## Draft Waste Plan (2015)

### 2013/14 Baseline

**2.33** Table 4 shows the amount of local authority collected waste for each administrative area, excluding trade waste.

**Table 4 Local authority collected waste (less trade waste) - 2013/14**

	Dorset	Bournemouth	Poole	Total
<b>Total LACW 2013/14</b>	194,060	83,179	75,265	352,505

**2.34** Table 5 shows the breakdown of local authority collected waste by category, used to make projections in arisings for different waste types. These categories represent the management methods and therefore enable us to consider the need for capacity for different facilities.

**Table 5 Waste arisings by type (2013/14) (tonnes)**

	Dorset	Bournemouth	Poole	Total
<b>Total Arisings</b>	194,060	83,179	75,266	<b>352,505</b>
Recyclates	54,547	20,379	16,939	<b>91,865</b>
Food Waste	11,715	5700	0	<b>17,415</b>
Green Waste	32,250	17,916	10,036	<b>60,202</b>
Wood Waste	9,376	3,124	3,582	<b>16,082</b>
Residual	69,837	35,587	39,689	<b>145,113</b>
Bulky Waste	16,335	474	5,020	<b>21,829</b>

### Developing a range of three possible waste growth scenarios

**2.35** The following three growth scenarios were developed to consider a low, medium and high rate of waste growth throughout the plan period. Growth has been linked to housing numbers, predicted housing growth and growth in the tonnage of waste each household produces.

- **Low Waste Growth** – this scenario assumed zero growth in waste arisings per household, but built in planned housing as proposed by the relevant District/Borough Local Plans/Core Strategies. Therefore the tonnage of waste per household calculated for the baseline year remains the same throughout the plan period.
- **Medium Waste Growth** – this scenario took into account increased housing as explained above. However, this scenario also built in an increased tonnage of waste per household. This tonnage was based on an average of the last 5 years. In order to avoid an unrealistic jump in tonnage from the baseline year to the first projected year, the increased tonnage per household (based on the 5 year average) was staggered over a five year period from 2014/15 to 2018/19. Therefore the full effect of the five year average tonnage waste per household is felt from 2018/19 onwards.
- **High Waste Growth** – Again this scenario took into account increased housing throughout the plan period. This scenario also built in an increased tonnage of waste per household. This tonnage was based on the highest recorded figure of the last 10 years. As above, in order to avoid an unrealistic jump in tonnage from the baseline year to the first projected year, the increased tonnage per household (highest figure of the last ten years) was staggered over a five year period. Therefore the full effect of the high tonnage waste per household is felt from 2018/19 onwards.

### Growth in waste arisings per household

**2.36** The number of houses in Bournemouth, Dorset and Poole in the baseline year 2013/14 was used to calculate tonnage of waste arising per household. Table 6 sets out the housing numbers, followed by the tonnage per household, for the three authorities. The actual tonnage per household in the baseline year has been projected in different ways for three different scenarios (low, medium and high), throughout the plan period.

**2.37** Table 6 shows how the tonnage of waste per household was calculated for the 2013/14 baseline year.

**Table 6 Waste tonnage per household**

	Dorset	Bournemouth	Poole	Total
<b>Housing Numbers 2013/14</b>	196,860	88,100.00	67,400.00	352,360
<b>Baseline Year</b>				
<b>Tonnage per household 2013/14</b>	0.99	0.94	1.12	N/A
<b>Low Growth Scenario</b>				
<b>Medium Growth</b>				
<b>Tonnage per household – average 2009 – 2013</b>	1.14	1.16	1.22	N/A
<b>High Growth</b>				
<b>Tonnage per household – highest of the last ten years.</b>	1.33	1.52	1.45	N/A

In order to avoid an unrealistic jump in tonnage from the baseline year to the first projected year, the increased tonnage per household (based on the 5 year average) is staggered over a five year period from 2015/16 to 2020/21. Therefore the full effect of the five year average tonnage of waste per household is felt from 2020/21 onwards.

Growth in waste arisings based on housing projections

**2.38** Growth in local authority collected waste has also been linked to housing numbers and predicted housing growth.

**2.39** Housing growth projections were taken from the relevant district and borough Core Strategies and Local Plans. Proposed housing numbers were based on joint Strategic Housing Market Assessments (SHMA), updated in 2011. Further information on how the proposed housing development figures were calculated can be found in Appendix 2.

**2.40** The average annual rates of development, used in the projections for the Draft Waste Plan 2015, are summarised in Table 7. Since preparation of the Draft Waste Plan 2015 the authorities in the Eastern Dorset Housing Market Area have undertaken a review of the housing figures in their local plans - see below for update.

**Table 7 Average rate of housing development (2015)**

Local Authority	Average rate of development to be built to 2031 (dwellings per annum)
Bournemouth Borough Council - Core Strategy	689
Borough of Poole - Core Strategy	541
Dorset (inc. information from all relevant plans and strategies)	1,815

**2.41** Given that the housing development figures are based on up to date Local Plans/Core Strategies, these figures were included in the projected housing growth consistently in all three growth scenarios. It may be that the housing is not developed, as proposed, however it is considered appropriate to plan for the maximum level of housing that is being planned for during the plan period.

#### Summary of the three growth scenarios

**2.42** Table 8 sets out the amount of local authority collected waste that could be expected to arise, based on the three scenarios from the 2013/14 baseline, at intervals during the Plan period and shows the average percentage growth for each scenario. These figures were presented in the Draft Waste Plan (2015).

**Table 8 Bournemouth, Dorset and Poole Projected arisings of local authority collected waste (tonnes)**

	Baseline (2013/14)	2016	2021	2026	2031	Average annual
Low Growth	352,505	358,592	373,812	389,031	404,250	0.81%
Medium Growth	352,505	380,440	437,774	451,911	469,582	1.66%
High Growth	352,505	412,221	526,932	543,896	565,100	2.70%

#### Which is the most appropriate scenario?

**2.43** The key factors that are likely to impact on waste growth are housing or population growth, legislative factors and economic factors. Due to legislative drivers, certain materials such as wood & food will be diverted from the residual waste stream and sent for treatment, recycling, composting & recovery instead. Therefore, although we may not see a reduction in the overall waste arisings, we will see a shift in how the waste is dealt with, i.e. less residual waste being landfilled and more materials being recovered, recycled & composted.

**2.44** The low growth scenario only factors in increased housing as planned by the district and boroughs. Historical data illustrates that waste growth is very much linked to economic growth. Therefore, we should anticipate that waste growth will increase. Reliance on the low waste growth scenario could result in the under provision of capacity for waste arisings.

**2.45** The high growth scenario uses the highest recorded household waste arising figure for each of the three authorities. Highest levels of household waste arisings were recorded during 2005 to 2007. This was during a housing boom and therefore may be unrepresentative of waste arisings in years to come. The general trend, for all three authorities, has been a steady reduction in waste per household over the last ten years. Although indications are, over recent years, that waste arisings are beginning to grow, it is questionable whether it is appropriate to plan for an increase to the levels suggested through the high scenario. The high growth scenario includes an added increase based on planned housing. It may be that the high scenario proposed is too high and that levels of waste arisings would be very unlikely to reach the levels projected.

**2.46** In January 2015 views were sought from the waste industry and other key stakeholders on the proposed waste growth forecasting methodology and the three scenarios explained above. Generally, there was agreement that it would be appropriate to plan for a medium level of growth for local authority collected waste, which equated to 1.66% average annual growth throughout the plan period.

**2.47** The **medium growth scenario** was used as a basis to project future arisings in the Draft Waste Plan (July 2015). This was considered to build into the Plan an element of flexibility if housing development does not reach planned levels. The medium scenario also allows for an increased tonnage of waste per household which might occur as the economy improves.

**2.48** Table 9 shows the estimated total arisings of the different waste types at intervals during the Plan period using the medium growth scenario, used for the Draft Waste Plan 2015<sup>(5)</sup>.

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5 Projections by waste type presented in the Draft Waste Plan 2015 were combined with those for commercial and industrial waste

**Table 9 Bournemouth, Dorset and Poole Projected arisings of local authority collected waste by type (tonnes) - Medium growth scenario**

Waste Type	Baseline (2013/2014)	2015/2016	2020/2021	2025/2026	2030/2031
Recyclates	91,865	99,222	114,220	117,931	122,568
Food Waste	17,415	18,961	36,346	37,498	38,938
Green Waste	60,202	65,142	75,222	77,642	80,666
Wood Waste	16,082	17,340	19,919	20,566	21,347
Residual	145,113	156,311	165,278	170,593	177,237
Bulky Waste	21,829	23,456	26,789	27,682	28,798

**2.49** The actual tonnage of the different waste types collected in the baseline year was used to calculate the percentage split for each waste type, listed in Table 8. This enables an estimation to be made of the total quantity of waste that will need to be managed for the different waste types, which are typically managed at different types of facilities.

#### Draft Waste Plan Update 2016

**2.50** The Draft Waste Plan Update, published in May 2016, included an update on the projections for local authority collected waste due to an extension of the Plan period to 2032 and the availability of revised housing figures. The medium growth scenario was maintained.

**2.51** After the preparation of the Draft Waste Plan 2015, the authorities in the Eastern Dorset Housing Market Area (Bournemouth, Poole, Christchurch, East Dorset, North Dorset and Purbeck) undertook a review of the housing figures in their Local Plans. The overall figures for objectively assessed need in the eastern Dorset strategic housing market assessment <sup>(6)</sup> indicated a higher rate of development was needed that had been achieved under current plans. These higher levels of development were therefore built into our projections for arisings of local authority collected waste.

**2.52** Table 10 summarises the average annual rates of development, used in the projections for the Draft Waste Plan 2016.

**Table 10 Average rate of housing development (updated October 2015)**

Local Authority	Average rate of development to be built to 2032 (dwellings per annum)
Bournemouth Borough Council - Core Strategy	979

<sup>6</sup> *Eastern Dorset 2015 Strategic Housing Market Assessment* (GL Hearn Ltd (October 2015) available at: <https://www.dorset.gov.uk/media/210466/Eastern-Dorset-SHMA-Final-Report-2015.pdf>)

Local Authority	Average rate of development to be built to 2032 (dwellings per annum)
Borough of Poole - Core Strategy	710
Dorset (inc. information from all relevant plans and strategies)	1,969

**2.53** Further information on how the revised housing development projection figures were calculated can be found in Appendix 3.

**2.54** Table 11 shows the updated projections using the medium growth scenario, as presented in the Draft Waste Plan Update (2016).

**Table 11 Updated projections for arisings of local authority collected waste (tonnes)**

	2016	2021	2026	2031	2032	Average annual
<b>Total arisings (Medium Growth)</b>	393,647	437,920	454,725	475,732	479,732	1.69%

**2.55** The projections were split by waste type to reassess the need for additional capacity or facilities, as set out in Draft Waste Plan Update (2016).

### Waste Plan Pre-Submission Draft (2017)

#### Updating the baseline

**2.56** The latest figures on waste arisings are from 2015/16. The baseline has therefore been updated for the Waste Plan Pre-Submission Draft. The latest figures on existing household numbers available are from 2014/15 and so it has been necessary to use a projected housing number for 2015/16.

**2.57** The updated baseline of 2015/16 has been used for the purposes of projecting waste arisings for local authority collected waste, using the preferred medium growth scenario. The tables below show the the total arisings of local authority waste for the baseline year in the three authorities and the quantities of each main type of waste that make up the total. These categories represent the management methods and therefore enable us to consider the need for capacity for different types of facilities.

**Table 12 Local Authority Collected Waste 2015/16 (tonnes)**

	Dorset	Bournemouth	Poole	Total
<b>Total LACW</b>	219,292	98,795	79,820	397,907

	Dorset	Bournemouth	Poole	Total
Trade waste	9,159	10,119	9,205	28,483
Total excluding trade waste	210,133	88,676	70,615	369,424

**2.58** In the original calculations based on the 2013/14 baseline, trade waste was taken away from the total arisings figure. This was to enable more accurate figures for tonnage of waste per household to be calculated.

**2.59** When updating the baseline and projections for the Pre-Submission Draft, trade waste was again taken away from the total arisings in order to calculate the figure for tonnage of waste per household. However, the arisings of trade waste for each authority were then added into the residual stream for the purposes of projecting. This is because the majority of trade waste is residual. For Dorset Waste Partnership, two other categories of waste are also recorded, namely 'rubble' and 'other municipal' (comprising park wastes, plasterboards, flytipped waste and beach cleansing). The 'other municipal' category, comprising approximately 2000 tonnes, has been added to the residual stream for the purposes of projecting. The 'rubble' category, comprising approximately 10,000 tonnes, has been added to our inert waste projections (see chapter 4).

**2.60** Table 12 shows the breakdown of local authority collected waste by category, used to make projections in arisings for different waste types. These categories represent the management methods and therefore enable us to consider the need for capacity for different facilities.

**Table 13 Waste arisings by type (2015/16) (tonnes)**

	Dorset	Bournemouth	Poole	Total
<b>Total Arisings</b>	<b>208,689*</b>	<b>98,795</b>	<b>79,820</b>	<b>387,788</b>
Recyclates	57,160	22,132	19,063	98,356
Food Waste	14,992	6,190	0	21,183
Green Waste	37,090	19,457	10,945	67,493
Wood Waste	10,338	3,392	3,238	16,969
Residual	71,221	47,106	46,450	164,777
Bulky Waste	17,888	515	124	18,526

**2.61** \*Excludes 'rubble' - this category has been added to projections for inert waste.

### Preferred growth scenario

**2.62** The preferred scenario for the Waste Plan is the **Medium Growth Scenario**. This makes provision for planned housing development and allows for an increased tonnage of waste per household, which may occur with economic growth. The medium growth scenario is the basis for projections of local authority collected waste arisings set out in the Waste Plan Pre-Submission Draft.

#### Growth in tonnage per household

**2.63** Tonnage of waste per household using the updated baseline of 2015/16 for the preferred growth scenario is shown in Table 14.

**Table 14 Tonnage per household (Medium Growth Scenario)**

	Dorset	Bournemouth	Poole
<b>Housing Numbers 2015/16 (Projected)</b>	200,238	89,912	68,515
<b>Tonnage per household for baseline year (Medium Growth Scenario)</b>	1.08	1.01	1.11

**2.64** The preferred scenario (medium growth) uses the average waste tonnage of the previous 5 years to establish tonnage per household. This has been calculated for each of the three authorities using the updated baseline figures.

**2.65** Using the updated baseline of 2015/16 has resulted in a slightly lower tonnage per household figure than was calculated previously. This is because the tonnage per household for 2014/15 and 2015/16 was generally lower, resulting in a lower five year average than when the 2013/14 baseline was used.

Growth in housing

**2.66** Housing projections were updated in for the Draft Waste Plan 2016 to take account of an updated Strategic Housing Market Assessment for the Eastern Dorset area, as explained earlier in this chapter. Table 14 above summarises the average rates of housing development proposed, which are used in our projections. Further details of housing projections are included in Appendix 3.

Summary of projections for local authority collected waste.

**2.67** Table 15 sets out the total amount of local authority collected waste that can be expected to arise and the estimated total arisings of the different waste types at intervals during the Plan period.

**Table 15 Bournemouth, Dorset and Poole projected arisings for local authority collected waste (tonnes)**

	Baseline (2015/16)	2018/19	2023/24	2028/29	2032/33	Average annual
<b>Total arisings</b>	<b>387,800</b>	<b>394,300</b>	<b>413,800</b>	<b>433,300</b>	<b>448,900</b>	<b>0.9%</b>
<b>Recyclates</b>	98,300	102,300	107,300	112,300	116,400	
<b>Food waste</b>	21,200	18,000	18,900	19,700	20,400	
<b>Green waste</b>	67,500	71,300	74,900	78,400	81,200	
<b>Wood waste</b>	17,000	18,000	18,900	19,700	20,400	
<b>Residual waste</b>	164,800	164,900	173,200	181,400	187,900	
<b>Bulky waste</b>	18,500	19,800	20,800	21,800	22,500	

**2.68** The total arisings for local authority collected waste were projected based on the tonnage per household and the projected housing numbers for each authority area. The actual tonnage of the different waste types collected in the baseline year (2015/16) was used to calculate the percentage split for each waste type, listed in Table 15. This enables an estimation to be made of the total quantity of waste that will need to be managed for the different waste types, which are typically managed at different types of facilities.

**2.69** In most cases it has been assumed that this percentage split will continue throughout the Plan period (up to 2033). However, knowledge of the local waste collection authorities was used to adjust the tonnages of the different types of waste where appropriate. Specifically, Borough of Poole has in place a target to increase its recycling rate to 50% by 2018/19. A 5% increase in recyclates has therefore been incorporated over the four year period from 2015/15 to 2018/19, and conversely a 5% reduction in residual waste has been incorporated over the same period. The recycling rate target has been attributed to the recyclates category only (as opposed to also including composting) because the increase is expected to result from the introduction of the fortnightly refuse collection. Poole does not collect food waste separately and so no change is expected for the composting component (included when calculating recycling rates).

**Local authority collected waste in Bournemouth, Dorset and Poole is projected to grow at an average annual rate of 1%**

This makes provision for planned housing development and allows for an increased tonnage of waste per household, which may occur with economic growth. The average tonnage of waste per household over the five year period 2011-2015 and the average rate of housing development planned for by the district and borough councils were used as a basis for the projections.

**3.1** Commercial and industrial (C&I) waste is waste arising from premises that are used wholly or mainly for trade, business, sport, recreation or entertainment; and waste from a factory or from any premises used for or in connection with provision of public transport, public supply of gas, water, electricity or sewerage services, or provision to the public of postal or communication services.

**3.2** For the purposes of the Waste Plan, commercial and industrial waste includes agricultural waste i.e. all wastes that are discarded from agricultural premises except on-farm animal and plant wastes, which fall outside the scope of the Waste Plan.

**3.3** There are currently no systems in the UK that require C&I waste to be reported by type, sector and management method.

**3.4** There are also other problems with forecasting C&I waste arisings and growth <sup>(7)</sup>, including:

- C&I waste is highly dependent on the economic stability of the business sector in which it arises;
- C&I waste is largely organised in a patchwork of short term spot market collection and treatment contracts driven by competitive gate fees;
- C&I waste producers do not have the same obligations as Local Authority Collected Municipal Solid Waste (LACMSW) managers to track and report their arising waste;
- C&I waste producers are a highly diverse group, with many more variables than household waste producers;
- C&I waste is collected and managed by a wide variety of operators of all scales; and
- although many businesses are implementing resource efficient practices, the speed and scale of uptake is vastly variable, unpredictable and under reported.

**3.5** Estimations on commercial and industrial waste arisings therefore need to be treated with some caution.

## National data

### 2009 Defra Survey

**3.6** A national survey on commercial and industrial waste was undertaken for Defra in 2009. The Commercial and Industrial Waste Survey 2009 <sup>(8)</sup> provides the most reliable and comprehensive set of national data for C&I waste, although should still be treated with caution. It identified that 47.9 million tonnes of waste were generated by businesses in 2009. The industrial sector accounted for 24.1 million tonnes and the commercial sector 23.8 million tonnes. Waste arisings had declined for both sectors since 2002/2003, by 36% for industrial wastes and 21% for commercial wastes. The survey estimated that 52% of C&I waste was recycled or reused in 2009, compared to 42% in 2002/2003. A total of 11.3 million tonnes (24%) of C&I waste was sent to landfill in 2009, compared to 41% in 2002/2003.

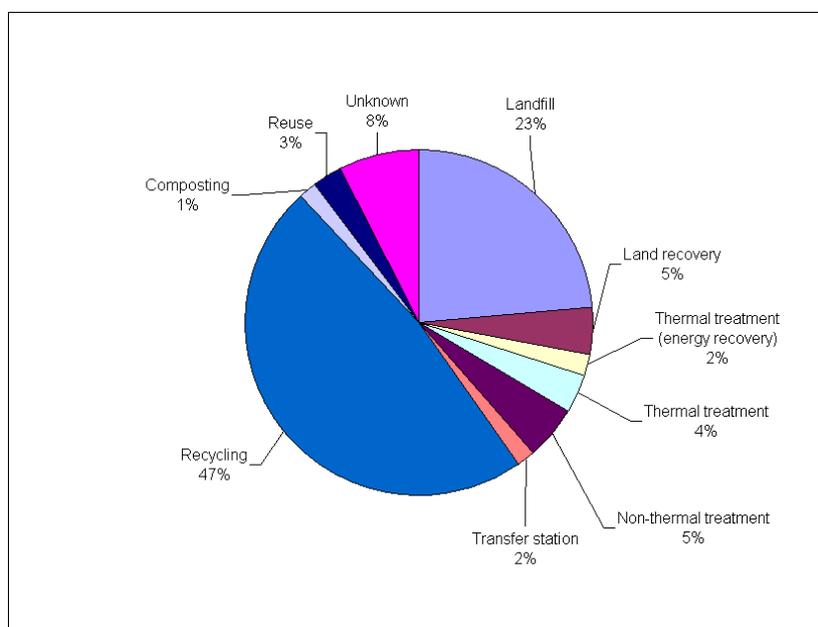
**3.7** Figure 6 shows the proportions of commercial and industrial waste managed by various methods.

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7 as highlighted in CIWM (2013) 'Commercial and Industrial Waste in the UK and Ireland'

8 Defra (May 2011)

**Figure 6 Waste Management Methods for Commercial & Industrial Waste**



**3.8** Concern has been expressed by some waste planning authorities in England that the quantities of waste arisings given in the survey are lower than expected. This may in part be due to the fact that the survey was carried out in a period of severe recession, but may also be due to the fact that the survey used a different methodology to previous surveys.

**3.9** Since the 2009 survey, work was undertaken for Defra on a revised methodology for estimating C&I waste arisings. Using a new methodology for estimating arisings based on existing datasets, the baseline year data was adjusted, estimating arisings of 37.8 million tonnes of C&I waste in England in 2009.<sup>(9)</sup> Using the new methodology, the revised estimate for 2009 is 21% lower than the previous estimate for 2009 of 47.9 million tonnes (using the survey based approach reported in the Commercial and Industrial Waste Survey 2009). C&I arisings for the years up to 2012 were also estimated, however the figures have since been superseded as set out below.

**Updated estimations of arisings of commercial and industrial waste**

**3.10** Defra has calculated revised figures for commercial and industrial waste for the UK and England as part of the Waste Statistics Regulations returns for 2010 to 2014.<sup>(10)</sup> Whilst it is noted that C&I waste generation is extremely difficult to estimate owing to data limitations and data gaps<sup>(11)</sup> and that estimates therefore have a much higher level of uncertainty than figures for local authority collected waste, four years worth of figures have now been produced using the same methodology.

**3.11** Table 16 shows the total C&I waste generated in England up to 2014, as published by Defra.

9 Jacobs (2014) New methodology to estimate waste generation by the commercial and industrial sector in England

10 UK Statistics on Waste (Defra, 2016).

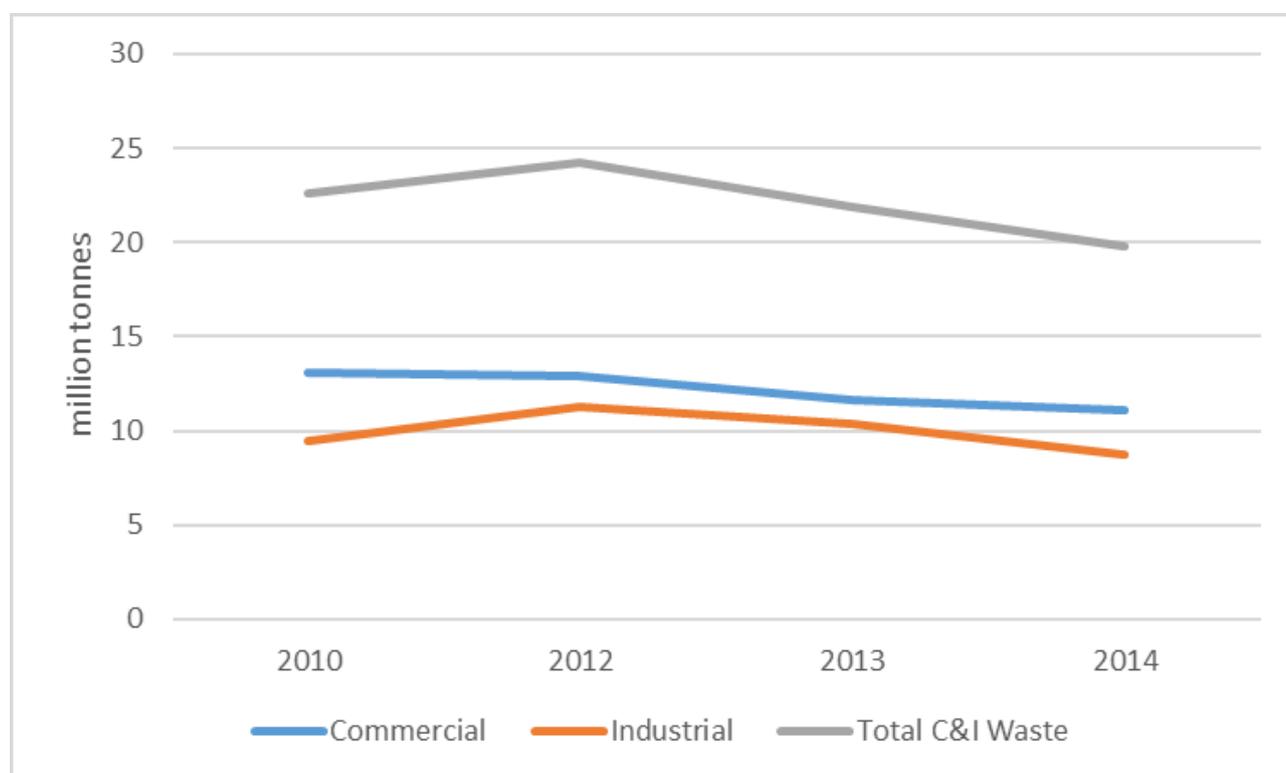
11 for example, there is no reporting requirement for operators using waste exemptions

**Table 16 Total waste arisings from the commercial and industrial sectors for England (million tonnes)**

	Commercial	Industrial	Total C&I Waste
2010	13.1	9.5	22.6
2011	<i>Estimates not available</i>		
2012	12.9	11.3	24.2
2013	11.6	10.4	21.9
2014	11.1	8.7	19.8

Source: UK Statistics on Waste (Defra, 2016).

**3.12** Total C&I waste for 2014 is estimated to be 19.8 million tonnes, with more than half being from commercial sources. Following a rise in total arisings from 2010 to 2012, overall C&I waste production has decreased since 2012, as illustrated in Figure 7.

**Figure 7 Commercial and industrial waste arisings in England**

**3.13** It should be noted that estimations for England for 2010 and 2012 have been revised substantially from previous publications due to methodological improvements. Defra state that this is 'mainly due to the identification and subsequent removal of tonnages that are likely to have been double counted.' For 2010, estimations have changed from 38.9 million tonnes (as published in the Jacobs' 2014 Report) to 22.6 million tonnes; whilst estimations for 2012 have altered from 43.8 million tonnes to 24.2 million tonnes.

**3.14** The Chartered Institute of Waste Management published a report in 2013 suggesting that England was producing a fairly stable amount of C&I waste of 50 million tonnes per annum.<sup>(12)</sup> The study projected a relatively stable trend of C&I arisings to 2020 for England, showing a small increase in the tonnage of C&I waste arising year on year.

### Local data

**3.15** There is no definitive source of local data on arisings for commercial and industrial waste. The Waste Planning Authority has considered three different sources (or baselines). Firstly, the survey carried out by Defra in 2009, secondly Defra's revised national estimates for 2010-2014, and thirdly returns figures available through the Environment Agency's Waste Data Interrogator.

#### 2009 Defra Survey

**3.16** The 2009 Defra survey identified that South West England generated 3.7 million tonnes of C&I waste in 2009. Of this amount, almost 0.5 million tonnes of C&I waste was generated in Bournemouth, Dorset and Poole in 2009. Table 18 shows how this waste was managed.

**Table 17 Commercial & Industrial Waste Arisings (2009)**

	Dorset	Bournemouth	Poole	Total
<b>Total Arisings</b>	247,000	76,000	137,000	<b>460,000</b>
<b>Waste Management Method</b>				
<b>Reuse</b>	9,000	1,000	3,000	<b>13,000</b>
<b>Recycling</b>	113,000	36,000	85,000	<b>234,000</b>
<b>Composting</b>	2,000	1,000	4,000	<b>7,000</b>
<b>Transfer</b>	12,000	4,000	6,000	<b>22,000</b>
<b>Energy recovery</b>	2,000	<500	1,000	<b>3,000</b>
<b>Landfill</b>	60,000	25,000	26,000	<b>111,000</b>
<b>Other (includes land recovery, thermal and non-thermal treatment and unknown).</b>	49,000	9,500	12,000	<b>70,500</b>

**3.17** Of the total commercial and industrial waste arisings recorded in 2009 for Dorset, Bournemouth and Poole:

- Around 54% was recycled or composted
- 3% was reused
- 24% was disposed of by landfill
- 0.7% was treated with energy recovery
- 5% was transferred onwards

12 Commercial and Industrial Waste in the UK and Ireland (CIWM 2013)

**3.18** This is in line with the national figures, illustrated in Figure 6.

### Calculation of arisings in Bournemouth, Dorset and Poole in 2015

**3.19** Due to the limitations and age of the Defra survey, it was considered appropriate to undertake work to establish an updated baseline of C&I arisings for Bournemouth, Dorset and Poole.

**3.20** Basic estimations of C&I waste arisings can be obtained from the Waste Data Interrogate (WDI), which records waste delivered to, and removed, from permitted facilities and submitted by operators to the Environment Agency. Figures are available on the total amount of household, industrial and commercial waste originating from Bournemouth, Dorset and Poole annually. As household, industrial and commercial waste is grouped together in the WDI, the total arisings figure for local authority waste has been subtracted for each year to give an indication of the trends in C&I arisings for the sub-region, as set out in Table 18.

**Table 18 Commercial and industrial waste arisings - Waste Data Interrogator**

Year	Arisings (tonnes)
2009	255,667
2010	393,391
2011	405,429
2012	366,284
2013	358,408
2014	513,646

*Source: Waste Data Interrogators 2009 - 2014*

**3.21** Table 18 shows an increase in arisings from 2009 to 2011, following a decrease to 2013. There is a sharp increase in arisings for 2014.

**3.22** To establish a robust baseline however, a greater analysis of the figures obtained from the WDI is required. The approach taken was to look at 'point of management' data, using Defra's 'reconcile' method, adapted to reflect local circumstances, to estimate arisings of C&I waste. This is primarily based on data of records of waste delivered to, and removed from, permitted waste facilities, available through the Waste Data Interrogator (WDI) on an annual basis. The data is supplemented by data for wastes managed at permitted sites and exempt sites that don't report through the WDI and adjustments are made to take account of local authority collected waste, waste managed through household recycling centres and waste streams covered elsewhere.

**3.23** The methodology and full calculations for establishing a baseline for 2015 are set out in a separate report prepared by BPP Consulting, entitled 'Bournemouth, Dorset & Poole Draft Waste Plan: Baseline for Commercial & Industrial Waste & Construction, Demolition and Excavation Waste Generated in Bournemouth, Dorset and Poole' (October 2017) and available to view on [www.dorsetforyou.com/waste-plan](http://www.dorsetforyou.com/waste-plan)

**3.24** The study established that in 2015, around 447,000 tonnes of commercial and industrial waste was produced in Bournemouth, Dorset and Poole.

### Management in Dorset, Bournemouth and Poole

**3.25** C&I waste is managed at a range of sites within and outside of Dorset, according to market and availability of facilities. Some commercial waste is collected by the local authority or dealt with by them via the household recycling centres, some of which accept commercial waste. Bournemouth, Dorset and Poole each collected around 10,000 tonnes of commercial waste (or 'trade waste') in 2015/16. This portion of waste is classed as local authority collected waste, discussed in Chapter 2. The majority of commercial waste is however dealt with directly through the waste management facilities themselves, or through an intermediary private collection company.

**3.26** There are a number of treatment facilities within the plan area that accept C&I waste, including those which are also contracted to deal with Dorset, Bournemouth and Poole's local authority collected waste, as described in Chapter 2. Further facilities deal only with C&I waste, including Canford Recycling Centre in Poole and two materials recycling facilities operated by SITA at Mannings Heath, Poole and Binnegar, Wareham (currently mothballed). Waste management facilities in Dorset are discussed in further detail in Background Paper 2 - Waste Plan Site Selection.

### Forecasting future arisings

**3.27** It is necessary to estimate arisings of commercial and industrial waste for the Plan period in order that the Waste Plan can make sufficient provision.

**3.28** The Waste Plan Issues Paper suggested a level of growth of 0% in C&I waste arisings over the Plan period. This was broadly in line with what was suggested for local authority collected waste.

**3.29** Consultees however favoured an approach whereby C&I waste arisings would respond to trends in the economy. The Planning Practice Guidance also states that 'waste planning authorities should assume a certain level of growth in waste arisings unless there is clear evidence to demonstrate otherwise'. As the key driver for arisings in C&I waste is considered to be economic growth it was considered appropriate to consider some growth in arisings.

### Baseline

**3.30** For the Draft Waste Plan 2015 and Draft Waste Plan Update 2016, 2009 was used as the baseline year as this was the most up to date information available, from the Defra national survey. Total arisings for 2009 and the proportions for different waste categories for this year are presented below. The three scenarios for growth presented in the Draft Waste Plan 2015 were based on the baseline of 2009.

**3.31** An updated baseline figure for C&I arisings in 2015 was calculated to inform the Waste Plan Pre-Submission Draft. Total arisings and proportions for different waste categories are therefore also presented later in this chapter. Projections for the preferred low growth scenario have been revised based on this baseline.

### Draft Waste Plan (2015)

#### Baseline

**3.32** The baseline figures for C&I waste arisings were taken from the 2009 Defra national survey, summarised above. The survey provides estimated arisings in Bournemouth, Dorset and Poole for 2009. Although there are two more recent studies, as described above (Jacobs, 2014 and CIWM, 2013), neither provide an estimate for arisings of C&I waste at the local level. For this reason, the 2009 survey was used to provide baseline figures of C&I waste arisings for the purposes of the Draft

Waste Plan. It was recognised that this could mean that the baseline was an overestimate when compared with that provided in the Jacobs' 2014 study, however this provides additional flexibility to the forecasts.

**3.33** Table 19 shows the baseline figure, which was broken down into categories of waste to be used as the baseline for forecasting arisings.

**Table 19 Commercial & Industrial Waste Arisings Baseline (2009)**

Waste category	How the baseline figure was determined	Baseline figure (tonnes)
Total arisings	Total arisings figure for Bournemouth, Dorset & Poole	460,000
Recyclables	Amount of C&I waste that was recycled in 2009 according to the Defra study	234,000
Organic	The actual amount of organic material occurring in the C&I waste stream according to the Defra study. Comprises the categories "Animal & vegetable wastes" and "common sludge".	64,500
Residual	Amount that was managed by landfill, energy recovery, thermal and non- thermal treatment, according to the Defra study	148,500
Other	Other C&I wastes not falling into any of the above categories	13,000

### Developing a range of three possible waste growth scenarios

**3.34** Commercial and industrial waste is similar in composition to local authority collected waste and can be expected to follow a similar pattern of growth. Historically, economic growth has been considered a key driver for the growth of arisings of C&I waste, with this waste stream responding to changes in the economy. This was reflected in the PPS10 Companion Guide, which suggested that *"continued economic growth will tend to lead to increases in waste arisings, as this is a result of greater activity in the provision of goods and services all of which will produce wastes"* (Annex D, Para 21). It is therefore considered reasonable to assume that commercial and industrial waste arisings can be expected to respond to trends in the economy.

**3.35** This assumption formed the basis for the development of the future growth scenarios for C&I waste. This assumption was generally supported by consultees during consultation on the Waste Plan Issues Paper in 2013..

**3.36** Nevertheless, the Government has a clear objective to decouple economic growth from waste arisings in the future<sup>(13)</sup>. Meanwhile, recent research on commercial and industrial waste growth also projects a fairly stable production of this waste stream to 2020<sup>(14)</sup>, whilst latest Defra figures shows a decrease in total arisings at the national level from 2012 to 2014 - see Figure 7 earlier in this chapter.

13 Government Review of Waste Policy in England 2011 (Defra 2011)

14 CIWM (2013) *Commercial and Industrial Waste in the UK and Republic of Ireland*

**3.37** Taking these matters into account, three alternative scenarios were developed. Scenario 1 assumed that arisings will grow at the projected rate of economic growth, whilst scenarios 2 and 3 assumed that C&I waste arisings will grow but at a slower rate than economic growth. The scenarios and resulting forecasts at intervals during the Plan period, as used to inform the Draft Waste Plan (2015) are summarised in Table 20. This is further explained below.

**Table 20 Projections for Commercial and Industrial Waste Arisings (tonnes)\* (Draft Waste Plan 2015 - superseded)**

	2016	2021	2026	2031
<b>Scenario 1 - 'High growth'</b>				
Commercial and industrial waste arisings will grow at the projected rate of economic growth (VA)	501,891	565,340	631,796	698,625
<b>Scenario 2 - 'Medium growth'</b>				
Commercial and industrial waste arisings will grow at 75% of the rate of economic growth (VA)	488,858	534,654	581,266	626,913
<b>Scenario 3 - 'Low growth'</b>				
Commercial and industrial waste arisings will grow at 50% of the rate of economic growth (VA)	476,097	505,476	534,526	562,228

*\*The scenarios assume that arisings per £million of Value Added (VA) remain constant.*

**3.38** In order to consider economic growth over the plan period, projected Value Added (VA) for Bournemouth, Dorset and Poole was used. Assuming that arisings per £million of Value Added (VA) remain constant at 35.3 tonnes per £m (at constant 2010 prices so there is no inflationary effect), estimates for future arisings can be based on projected VA for the Plan area. It should be noted that the Plan area corresponds to the Dorset Local Economic Partnership (LEP) area.

**3.39** The VA projections used were from the Local Economy Forecasting Model (LEFM) for Dorset (2014), produced by Cambridge Econometrics for the Dorset LEP. The model provides a projection for VA growth for the LEP area (comprising the Dorset County Council, Bournemouth Borough Council and Borough of Poole administrative areas).

**3.40** The LEFM is a custom built computer package designed to enable users to produce their own economic projections for local areas within the UK. The package has been developed jointly by Cambridge Econometrics (CE) and the Institute for Employment Research (IER) and builds on their forecasting and analytical work at the national and regional levels. The local model includes projections of VA and employment to 2025.

**3.41** As the latest LEFM projections go up to 2025, the projected VA growth was used to project C&I waste arisings up to 2025. Beyond 2025, it was necessary to extrapolate the figures to 2031 in order to align with the Waste Plan's end date. Further estimates to 2031 were extrapolated by Dorset County Council assuming VA growth would be stable at 2.1% per annum (as recommended by Cambridge Econometrics and based on their last projected rate for 2024-25). Extrapolations are subject to greater uncertainty, so the projections past 2025 need to be treated with extra caution.

**3.42** The projections set out need to be treated with caution and can only be regarded as best estimates for several reasons. Principally, as discussed above, data on C&I waste arisings is inherently patchy. The 2009 Commercial and Industrial Waste Survey was used as the baseline data for our projections. Whilst considered the best available data at the time, it was acknowledged that this provides only a very limited base data set capturing a snapshot in time as opposed to showing any trends.

**3.43** Additionally, economic growth forecasts are themselves based on a range of assumptions. Therefore projections will be accompanied with a certain degree of uncertainty.

#### Forecasts of the different waste types occurring within C&I waste

**3.44** In order to effectively plan for sufficient waste management capacity, further projections were made based on the different types of waste within this waste stream that will need to be managed, namely recyclables, residual waste and organic waste (green and food waste). This is because these different types of waste are managed in different ways. This reflects the approach taken for local authority collected waste.

**3.45** Table 21 shows the forecasts for the different types of waste occurring within the C&I waste stream at intervals during the plan period.

**Table 21 Forecasts for C&I Waste by Waste Type (Draft Waste Plan 2015 - superseded)**

	2016	2021	2026	2031
<b>Scenario 1: High growth</b>	<b>501,891</b>	<b>565,340</b>	<b>631,796</b>	<b>698,625</b>
Recyclables	255,964	288,323	322,216	356,299
Organic - Green waste	17,566	19,787	22,113	24,452
Organic - Food waste	17,566	19,787	22,113	24,452
Residual	143,039	161,122	180,062	199,108
Other	14,204	15,999	17,880	19,771
<b>Scenario 2: Medium growth</b>	<b>488,858</b>	<b>534,654</b>	<b>581,266</b>	<b>626,913</b>
Recyclables	249,318	272,674	296,446	319,726
Organic - Green waste	17,110	18,713	20,344	21,942
Organic - Food waste	17,110	18,713	20,344	21,942
Residual	139,325	152,376	165,661	178,670
Other	13,835	15,131	16,450	17,742
<b>Scenario 3: Low growth</b>	<b>476,097</b>	<b>505,476</b>	<b>534,526</b>	<b>562,228</b>
Recyclables	242,810	257,793	272,608	286,736

	2016	2021	2026	2031
Organic - Green waste	16,663	17,692	18,708	19,678
Organic - Food waste	16,663	17,692	18,708	19,678
Residual	135,688	144,061	152,340	160,235
Other	13,474	14,305	15,127	15,911

**3.46** The various categories of waste were proportioned from the total arisings figure.

**3.47** The proportion of recyclables within the waste stream is 51% of the total. It has been assumed that this proportion will remain stable.

**3.48** The organic proportion has been calculated as the actual amount of organic material occurring in the C&I waste stream according to the Defra study. This amounts to 14% of the total C&I waste arisings for Bournemouth, Dorset and Poole. However, for the purposes of projecting, it has been assumed that only half of the total organic waste will be captured and dealt with separately (therefore 7% of the total arisings) - and that this will remain constant. Of this, it is assumed that 75% will be food waste, and the remainder green waste. It should be noted that in reality this capture rate may not be achieved.

**3.49** The proportion comprising residual waste in the baseline year is 32% of total arisings. This is the proportion that was stated to be managed through landfill, energy recovery, thermal and non-thermal treatment in the baseline year. It is assumed that the organic waste captured will be diverted from the residual waste element, but that it is unlikely that we will capture the full amount of the organic portion of C&I waste. Therefore it has been assumed that there will be a capture rate of organic material from the residual stream of 50%, as mentioned above. Residual arisings have therefore been projected taking away half of the projected organic arisings. This equates to the residual waste proportion comprising about 25% of the total C&I arisings. This gives greater flexibility and ensures that the Plan is not under-providing for residual waste management capacity.

### Which is the most appropriate scenario?

**3.50** The **low growth scenario** was taken forward in the Draft Waste Plan 2015. This scenario forecast around 562,000 tonnes of commercial and industrial waste arisings occurring by 2031 (as shown in Table 21 above). This is an increase of nearly 100,000 tonnes per annum on current arisings.

**3.51** The key driver for levels of arisings for C&I waste is economic growth. However, the Government objective to decouple waste growth from economic growth is being implemented and research suggested that nationally, C&I waste arisings were fairly stable.<sup>(14)</sup> Latest Defra figures however actually show a decrease in total arisings at the national level from 2012 to 2014 (see Figure 7 earlier in this chapter).

**3.52** The Chartered Institute of Waste Management (CIWM) study<sup>(14)</sup> looked at issues with existing C&I data, made projections for future C&I arisings and collected industry viewpoints on future waste data and capacity nationally. The report suggests that England is producing a fairly stable amount of C&I waste of just under 50 million tonnes per annum and projects a relatively stable trend of C&I arisings to 2020 for England, showing a small increase in the tonnage of C&I waste arising year on year. The rise is, however, only around 0.1% per annum. Although this study only projects to 2020, it provided the most up to date assessment of trends and it is stated that key stakeholders confirmed that slow incremental growth in C&I waste should be expected.

**3.53** As noted above, forecasting arisings of commercial and industrial waste should be treated with caution due to the inherently patchy baselines. The baseline for C&I arisings used may be seen as an overestimate when compared to adjusted figures provided by the Defra report 'New methodology to estimate waste generation by the commercial and industrial sector in England', (2014). The Low Growth scenario therefore projected for arisings based on a higher amount than may have actually occurred in the baseline year of 2009.

**3.54** It was noted that any projections are also subject to future uncertainty factors, such as levels of economic growth and the impact of waste prevention and resource efficiency practices, programmes and campaigns. Dorset also has a strong tourism and hospitality industry and predicted growth within this sector may also see an increase in waste arisings. Additionally Defra's 2014 report indicates some growth in C&I arisings between 2009 and 2012. It is therefore considered appropriate to build a degree of flexibility into the Waste Plan.

**3.55** The Low Growth scenario provided for growth of 1.12% (well over the national projections discussed above) and was considered to build in sufficient flexibility to ensure that sufficient capacity is provided to manage this waste stream.

### **Draft Waste Plan Update (2016)**

**3.56** The Draft Waste Plan Update (2016) maintained the use of the 2009 baseline, established through the Draft Waste Plan (2015). The Plan period was extended to 2032 and the forecasts for commercial and industrial waste arisings extrapolated accordingly. This gave rise to a slight increase in the average annual rate of growth of arisings, which was stated as 1.13%.

### **Pre-Submission Draft (2017)**

#### **Baseline**

**3.57** Due to the limitations and age of the 2009 Defra survey, it was considered appropriate to undertake work to establish an updated baseline of C&I arisings for Bournemouth, Dorset and Poole, to inform the Waste Plan Pre-Submission Draft. The latest available data from the Environment Agency's Waste Data Interrogator was for the 2015 calendar year and so an updated baseline year of 2015 was used and a figure for C&I arisings for the sub-region for that year calculated.

**3.58** As discussed earlier in this chapter, a calculation was made using the 'Reconcile' methodology, adapted to reflect local circumstances. A separate report is available outlining the methodology and full calculation for establishing a 2015 baseline. <sup>(15)</sup>

**3.59** An updated baseline for 2015 was established of around 447,000 tonnes of commercial and industrial waste produced in Bournemouth, Dorset and Poole. This headline figure was broken down into different waste categories, based on how the waste would be managed, in order to forecast arisings over the Plan period. The proportions for each category were based on the proportions obtained from the 2009 Defra study, as outlined earlier in this chapter and therefore maintaining the approach undertaken in the Draft Waste Plan (2015).

#### **Forecasts**

**3.60** A low growth scenario was maintained, however this was updated using the new 2015 baseline for arisings and also updated economic forecasting - the 2015 Local Economic Forecasting Model.

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15 BPP Consulting (October 2017) 'Bournemouth, Dorset & Poole Draft Waste Plan: Baseline for Commercial & Industrial Waste & Construction, Demolition and Excavation Waste Generated in Bournemouth, Dorset and Poole'

**3.61** Additionally, the approach was developed to take account of economic forecasting in a more robust way. Previously, the growth scenarios assumed that arisings per £million of Value Added (VA) would remain constant but that economic growth would be suppressed as a way of forecasting arisings at a reduced rate of economic growth. However, it was considered that a revised approach whereby economic growth occurs as forecast but arisings per £million of Value Added reduce would be more appropriate, given that the economic forecasting model has been robustly developed and tested. The revised scenario therefore assumes that arisings per £million of VA will reduce to 85% of the 2015 level, by the end of the Plan period. This equates to an average annual percentage growth in C&I waste arisings of 1.2%, which is a similar level to the forecasts presented in the Draft Waste Plan.

**3.62** The forecasts at intervals during the Plan period are shown in Table 22.

**Table 22 Forecasts for C&I waste by waste type (Pre-Submission Draft 2017)**

	2015 (Baseline)	2018	2023	2028	2033
Total arisings	447,000	460,900	491,700	520,500	554,600
Recyclables	244,300	251,900	268,800	284,500	303,200
Organic - Green waste	16,800	17,500	18,600	19,500	20,800
Organic - Food waste	50,300	51,900	55,900	58,600	62,400
Residual	119,800	123,500	131,700	139,500	148,600
Other	12,700	13,000	13,900	14,700	15,700

**3.63** These forecasts have been combined with the forecasts for local authority collected waste in order to establish total projected arisings of non-hazardous waste, since the two waste streams are managed at the same types of facility. It should be noted that the 'other' category was added to the residual waste category when forecasting the need for new facilities, representing a 'worst case scenario' in terms of the need facilities to manage residual waste.

**Commercial and industrial waste is projected to grow at an average annual rate of 1.2%.**

This is based on the assumption that commercial and industrial waste arisings will grow with economic growth. However, the Government objective to decouple waste growth with economic growth and recent research suggesting that commercial and industrial waste arisings are fairly stable nationally have also been taken into account. The local economic forecasting model (2015) was used as a basis for the projections and it is projected that arisings will grow at 85% the rate of economic growth by 2033.

**4.1** Construction, demolition and excavation waste is waste arising from the construction, repair, maintenance and demolition of buildings and structures. It mostly includes brick, concrete, hardcore, subsoil and topsoil, but can include quantities of timber, metal and plastics.

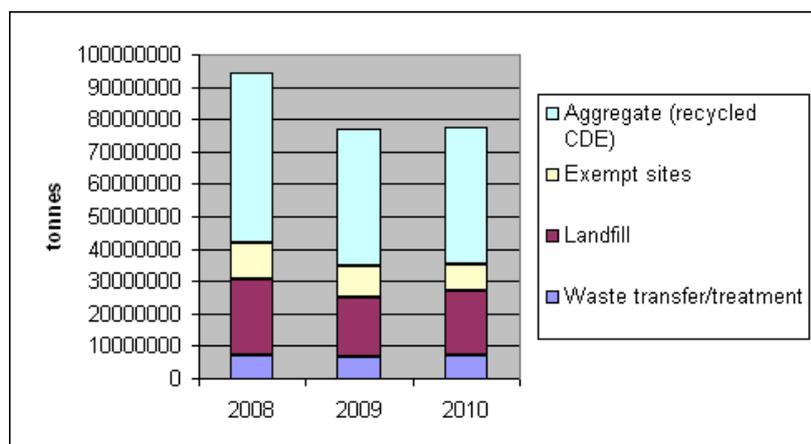
**National data**

**4.2** The construction, demolition and excavation sector is the largest contributing sector to total waste generation in England. The sector generated 77.4 million tonnes of waste in 2010, of which:

- 42 million tonnes (55%) was recycled
- 20 million tonnes (26%) was sent to landfill
- 7 million tonnes (9%) went to treatment or transfer sites
- 8 million tonnes (11%) was spread on registered exempt sites (such as land reclamation, agricultural improvement or infrastructure projects) <sup>(16)</sup>

**4.3** Figure 8 shows that the overall arisings of CDE waste generally decreased from 2008 - 2010. The proportions recycled and sent to landfill remained constant.

**Figure 8 Construction, Demolition & Excavation Waste Management**



Source: Construction, demolition and excavation waste generation estimate: England 2008 to 2010 (Defra 2012)

**4.4** Updated figures on arisings of construction, demolition and excavation waste for 2012 and 2014 were published by Defra in 2016, as set out in Table 23. They show an increasing trend since 2010.

**Table 23 Estimates of construction, demolition and excavation waste arisings for England**

Total arisings (million tonnes)	
2012	93.8

16 Construction, demolition and excavation waste generation estimate: England 2008 to 2010 (Defra 2012)

<i>Total arisings (million tonnes)</i>	
2014	107.6

Source: UK Statistics on Waste (Defra 2016)

## Local data

**4.5** Data for CDE waste is not so readily available locally. A national survey was published by Capita Symonds in 2007<sup>(17)</sup>, which provided estimates of arisings at the regional level for 2005. The study estimated that 9,482,424 tonnes of CDE waste was generated in the South West in 2005. Total estimated arisings in Wiltshire and Dorset combined were 2,011,727 tonnes.

**4.6** National estimates have since been compiled by Defra using existing data sources and adapted methodologies to estimate the amount of waste generated by the construction, demolition and excavation sectors, as referred to above. These estimates of CDE arisings are shown in Table 23. It is possible to apportion these national estimates to the regional and sub-regional levels based on the level of construction activity in those areas (calculated as gross value added of the construction industry by area) or by population. Although a crude estimate, these methods have been used to give a best available indication of local and regional arisings and are included in Table 14. The two methods of apportioning CDE waste arisings give a similar result, suggesting that CDE waste arisings in 2010 were around 1 million tonnes.

**Table 24 Construction, Demolition & Excavation Waste Arisings**

	2008	2009	2010
England*	94,545,906	76,969,901	77,375,430
South West (GVA)	8,877,257	7,256,124	7,447,000
South West (Population)	9,542,381	7,759,039	7,812,054
Dorset, Bournemouth & Poole (GVA)	1,224,419	964,985	1,018,599
Dorset, Bournemouth & Poole (Population)	1,293,540	1,051,811	1,058,998

\*Source: Construction, demolition and excavation waste generation estimate: England 2008 to 2010 (Defra 2012) at <https://www.gov.uk/government/publications/construction-and-demolition-waste>

## Calculation of arisings in Bournemouth, Dorset and Poole in 2015

**4.7** Data from operator returns provided by the Environment Agency provides another means of investigating trends in CDE waste. However, this information relates only to sites where permits have been granted. It can be assumed that much CDE waste is also recycled and/or re-used where it is

17 Survey of Arisings and Use of Alternatives to Primary Aggregates in England 2005 - Construction, Demolition and Excavation Waste (CLG, 2007)

generated, i.e. on construction sites; or is dealt with at registered exempt sites (usually for agricultural improvement or land reclamation). This means it will not need to be managed at a waste facility and so data on these quantities is not available from the Environment Agency. The information that is available from the Environment Agency (through the Waste Data Interrogator) is only a proportion of the construction, demolition and excavation waste that is produced.

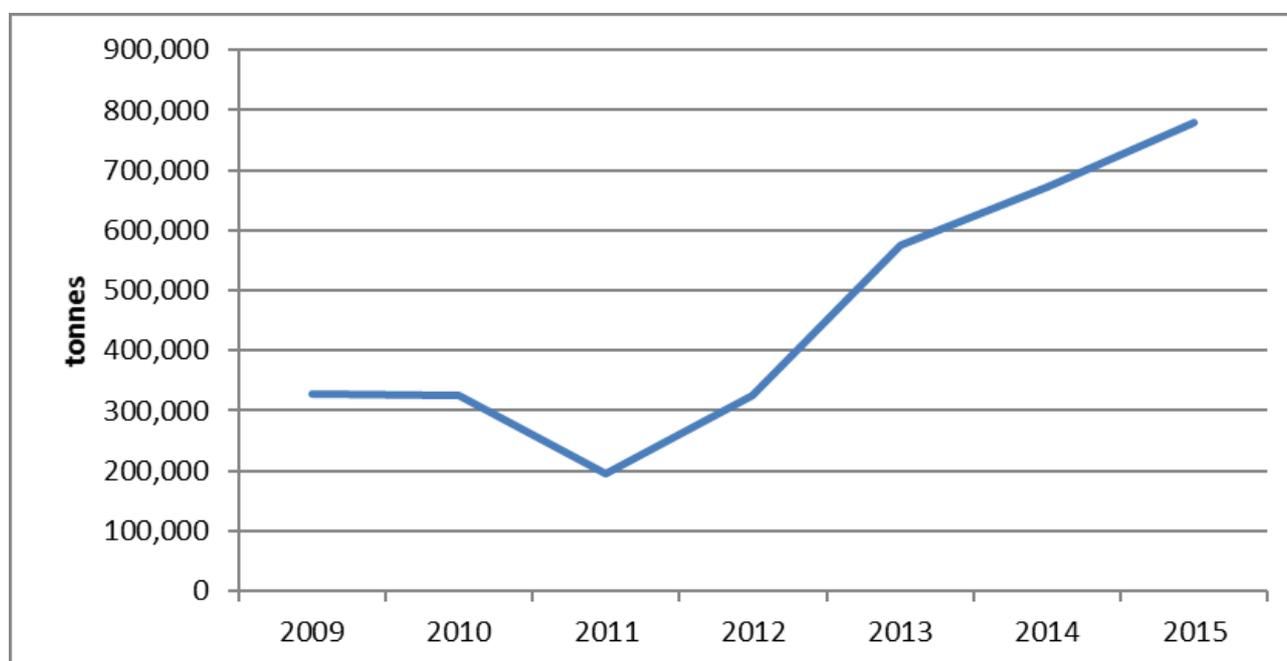
**4.8** Table 25 shows a general increase in the amount of CDE waste managed from 2011, prior to which there was a downward trend. It can be seen that the majority of waste dealt with at inert waste facilities in the county originates from within the county. This is to be expected given its relatively low value. The data relates to the amount of CDE waste dealt with at waste management facilities in Dorset as opposed to that arising from within Dorset. Nevertheless, it does give an indication of recent trends in the quantities of such material.

**Table 25 Construction, Demolition and Excavation Waste Managed in Dorset, Bournemouth and Poole**

Year	Total tonnes received	Tonnes received excluding transfer facilities	% of waste arising from within BDP	% of waste arising from outside BDP
2009	507,877	326,994	54%	46%
2010	475,870	326,084	82%	18%
2011	377,540	194,156	43%	57%
2012	475,870	326,084	82%	18%
2013	734,512	574,602	68%	32%
2014	837,690	672,020	81%	19%
2015	937,090	779,640	81%	19%

Source: Environment Agency Waste Data Interrogators 2009 - 2015

**Figure 9 Inert/CDE Waste Managed at Facilities in Bournemouth, Dorset & Poole (2009 - 2015)**



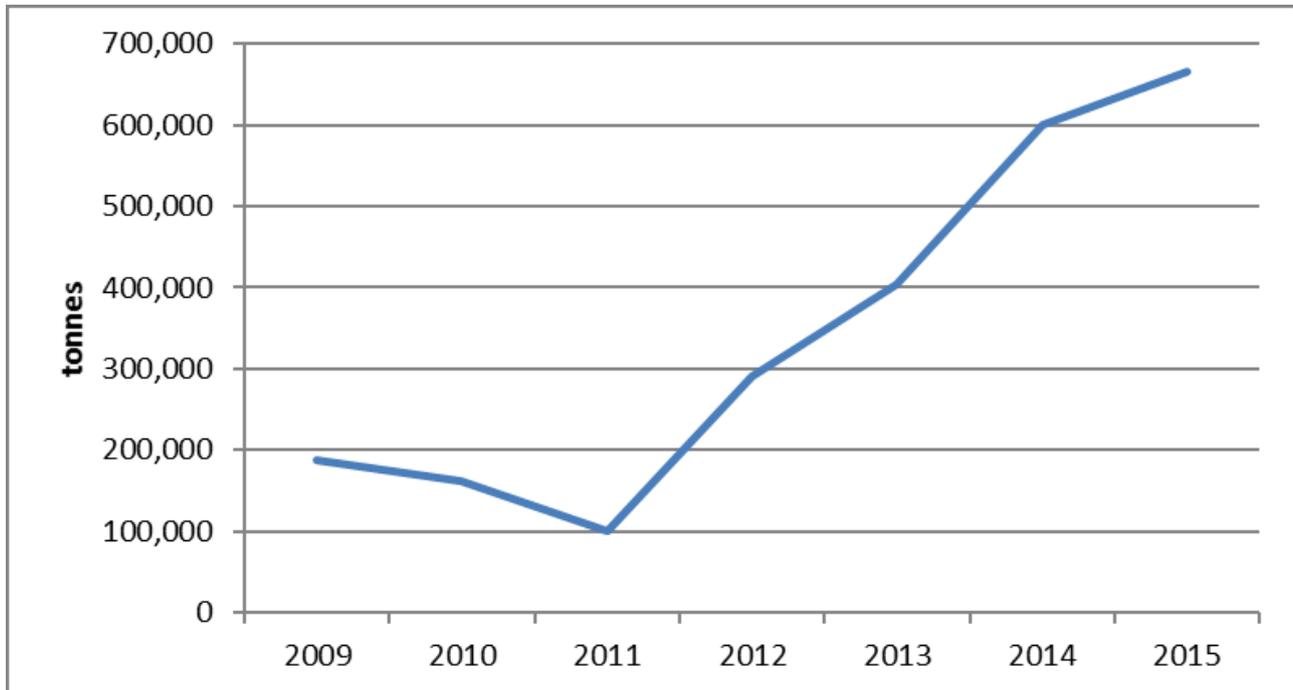
**4.9** Table 26 shows the amount of inert/CDE waste managed at waste management facilities that originated in Bournemouth, Dorset and Poole. These figures are useful in giving an indication of arisings that actually need to be managed as opposed to total arisings, a large proportion of which are not dealt with through waste management facilities. Figures both including and excluding waste managed at transfer facilities are shown, however it should be noted that when transfer facilities are included, an element of double counting occurs. Table 26 shows a general decline in the amount of CDE waste managed up to 2012, when an increase in arisings started to occur. This increasing trend continues, with a slight decrease in the total arisings in 2015 although this is not reflected when transfer is excluded from the figure.

**Table 26 CDE Waste Arising in Bournemouth, Dorset & Poole**

Year	Inert/CDE waste originating in Bournemouth, Dorset & Poole (tonnes)	Inert/CDE waste originating in Bournemouth, Dorset & Poole, excluding transfer (tonnes)
2009	373,200	186,900
2010	365,500	162,600
2011	301,000	100,000
2012	467,400	291,700
2013	589,500	403,700
2014	880,000	600,500
2015	854,700	666,200

Source: Environment Agency Waste Data Interrogators 2009 - 2015 (Excludes waste categorised as 'WPA Not Codeable')

**Figure 10 Inert waste arising from Bournemouth, Dorset & Poole 2009 - 2015**



**4.10** To establish a robust baseline however, a greater analysis of the figures obtained from the WDI is required. The approach taken was to look at 'point of management' data, using a national methodology for estimating CDE waste generation, taking into account local circumstances. Information from four key management routes was used: waste managed at transfer and treatment facilities, landfill, under exemption and recycled as aggregate. CDE waste originating in Bournemouth, Dorset and Poole and managed through permitted sites was analysed with steps taken to deduct double counting and capture wastes that may have been reclassified. Additionally, the methodology looked at exempt sites and the quantity of waste converted to recycled aggregate.

**4.11** The methodology and full calculations for establishing a baseline for 2015 are set out in a separate report prepared by BPP Consulting, entitled 'Bournemouth, Dorset & Poole Draft Waste Plan: Baseline for Commercial & Industrial Waste & Construction, Demolition and Excavation Waste Generated in Bournemouth, Dorset and Poole' (October 2017) and available to view on [www.dorsetforyou.com/waste-plan](http://www.dorsetforyou.com/waste-plan)

**4.12** The study established that in 2015, around 691,000 tonnes of construction, demolition and excavation waste was produced in Bournemouth, Dorset and Poole.

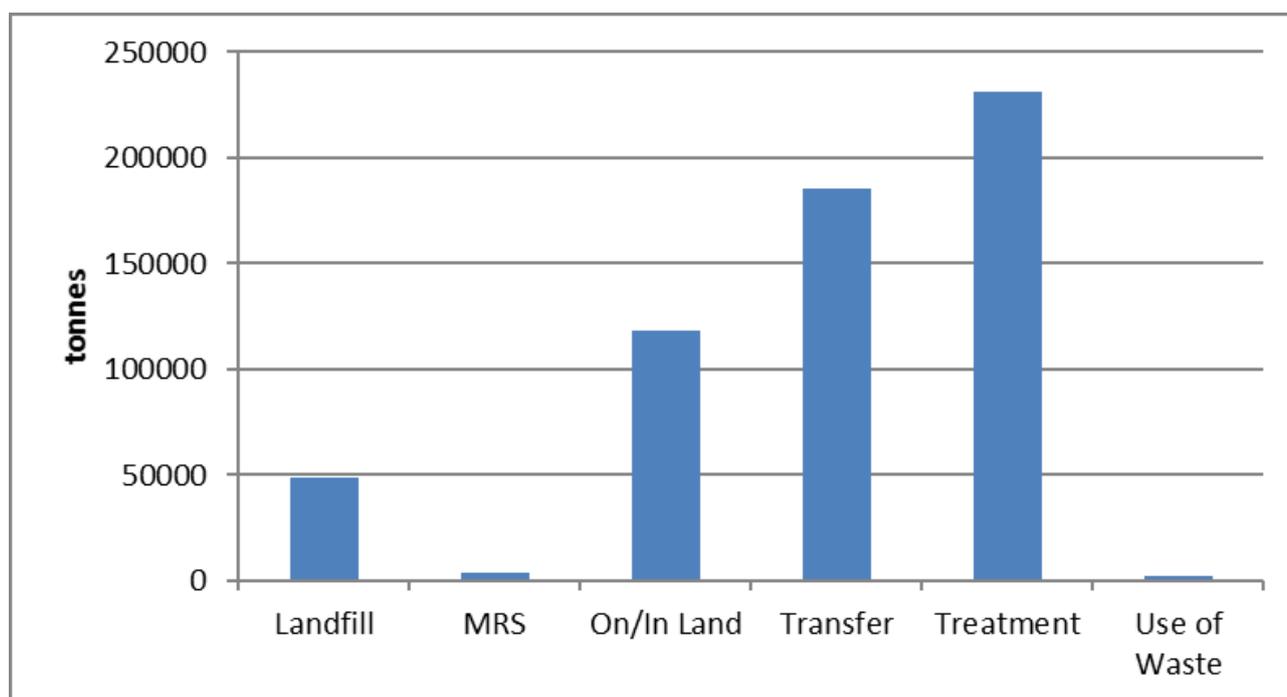
#### **How CDE waste is managed**

**4.13** CDE waste is managed at a range of sites within and outside of Dorset, according to market and availability of facilities. CDE waste tends to be deposited at the nearest facility to where it arises, whether this is a landfill site or a recycling facility.

**4.14** Figure 11 shows how inert/CDE waste arising in Dorset is managed. Around 58% of the inert waste originating in Bournemouth, Dorset and Poole in 2015 was managed at a treatment facility, whilst 7% was landfilled and 13% was on/in land. Around 22% was transferred, which indicates that

the waste was transferred to another waste management facility. For this reason it is assumed that these tonnages (approximately 188,500 tonnes) may be double counted in another consignment to final management (such as through landfill or treatment).

**Figure 11 Inert Waste Arisings - Management Methods (2015)**



Source: Environment Agency Waste Data Interrogator (2015)

**4.15** Table 27 shows a breakdown of inert waste by management method and whether it was managed within or outside of the county.

**Table 27 Management of Inert/CDE Waste Produced in Bournemouth, Dorset & Poole (2015)**

Waste Management Method	Quantity of waste produced in Dorset (tonnes)	Location of facility receiving waste	Quantity of waste received (tonnes)
Landfill	55,600	In Dorset	40,400
		Outside Dorset	15,200
Treatment	493,700	In Dorset	487,800
		Outside Dorset	5,900
On/In Land	107,700	In Dorset	96,200
		Outside Dorset	11,500
Use of waste	4,700	In Dorset	700

Waste Management Method	Quantity of waste produced in Dorset (tonnes)	Location of facility receiving waste	Quantity of waste received (tonnes)
		Outside Dorset	4,000
Metal Recycling Facility	4,500	In Dorset	2,700
		Outside Dorset	1,800
Transfer	188,400	In Dorset	131,200
		Outside Dorset	57,200

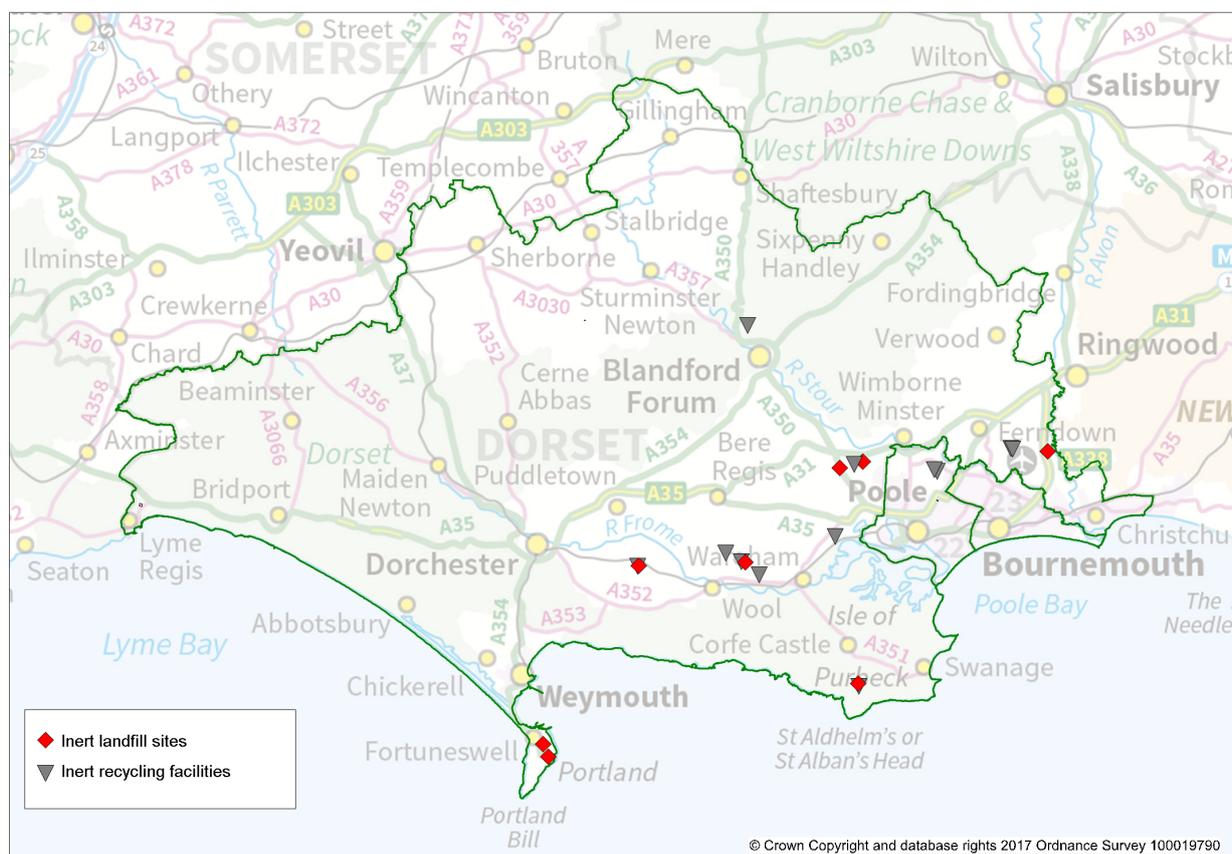
Source: Environment Agency Waste Data Interrogator (2015)

**4.16** Environment Agency data indicates that, in 2015, around 102,800 tonnes of inert, construction and demolition waste were received at landfill sites in Dorset and 522,00 tonnes were received at treatment facilities in Dorset. Also, 157,500 tonnes were received at transfer facilities, including aggregates/soil recycling plants. It should be noted that part of this quantity may have then gone on to either landfill or treatment facilities within the county.

**4.17** There are nine operational inert landfill sites in Dorset, plus a further one with planning permission<sup>(18)</sup>. CDE waste is also dealt with via a number of recycling facilities, including Canford Recycling Centre, at Canford Magna; two facilities at Eco Sustainable Solutions at Parley; Redbridge Road at Crossways; facilities on Puddletown Road and Swanworth Quarry in Purbeck, Spratley Wood near Wareham; a facility at Mannings Heath, Poole; Downend Farm near Blandford and a facility at Kings Stag both in North Dorset. Waste management facilities in Dorset are discussed in further detail in Background Paper 2 - Waste Plan Site Selection.

18 Avon Common has planning permission for mineral working, followed by inert filling. However the mineral working has not commenced and so this permission has not been included in capacity calculations for inert waste

**Figure 12 Facilities managing CDE waste**



**4.18** Some inert waste arising in the south east of Dorset is likely to be dealt with in facilities across the border in Hampshire, and vice versa. Further information on cross boundary movements of waste is available in Background Paper 3: Cross Boundary Movements of Waste.

### Forecasting future arisings

**4.19** It is necessary to estimate arisings of construction, demolition and excavation waste for the Plan period in order that the Waste Plan can make sufficient provision.

**4.20** Given that there are likely to be gaps in the data on arisings of inert/construction and demolition waste, making forward projections of arisings based upon this evidence is difficult to do with confidence. However, an assumption needs to be made in order to assess whether additional capacity is needed in the Plan area for dealing with this waste stream.

### Baseline figures

**4.21** In order to forecast arisings for CDE waste, an estimate of the amount of waste currently arising has been made. For the purposes of the Waste Plan, however, the total amount of inert waste that will arise over the Plan period (not just CDE waste) needs to be forecast. The Waste Plan should then plan only for the inert waste that needs to be dealt with through waste management facilities. As noted earlier in this chapter, a significant amount of total CDE waste arisings (comprising inert waste) is reused or recycled at construction sites and so does not need to be dealt with through waste management facilities.

**4.22** The amount of inert/CDE waste managed is therefore considered an appropriate base. Primarily from Environment Agency data, <sup>(19)</sup> it is possible to ascertain how much waste classed as inert/construction and demolition waste originated in Bournemouth, Dorset and Poole, irrespective of whether it was then managed within the sub-region.

**4.23** The baseline figure calculated for 2015 is 691,000 tonnes<sup>(20)</sup> This figure has been used as the baseline on which to forecast future arisings, as presented in the Waste Plan Pre-Submission Draft (2017).

**4.24** As preparation of the Waste Plan has been ongoing, it has been possible to update the baseline figures at different stages. Additionally, a revised approach using a more robust methodology has been used to calculate the updated 2015 baseline. Actual tonnages originating from Bournemouth, Dorset and Poole have increased significantly between 2013 and 2015 and this has had an impact on the final forecasts presented in the Waste Plan. Table 28 shows how the baseline has been updated.

**Table 28 Baseline - Arisings of Inert/CDE Waste**

Plan Stage	Baseline Year	CDE Waste Arisings (tonnes)
Draft Waste Plan (2015) & Draft Waste Plan Update (2016)	2013	403,700
Pre-Submission Draft (2017)	2015	691,000

### Developing possible waste growth scenarios

#### Draft Waste Plan (2015)

**4.25** The Waste Plan Issues Paper suggested a level of growth of 0% in CDE waste arisings over the plan period. Consultees however favoured an approach whereby CDE waste arisings would respond to trends in the economy. As CDE waste mainly arises from construction activities, it was considered appropriate to consider growth linked to this sector.

**4.26** As a starting point for forecasting arisings, two broad scenarios were considered based on two different assumptions. The first assumes that CDE waste will grow in accordance with population projections, whilst the second assumes that CDE waste will grow in line with economic growth (Gross Value Added) projected for the construction sector. The outcomes of these two assumptions are shown in Table 29.

**Table 29 Headline Scenarios for Inert/CDE Waste Arisings (tonnes)**

	Baseline (2013)	2016	2021	2026	2031
Population	403,700	410,410	422,700	435,500	447,400

19 Waste Data Interrogator 2015

20 'Bournemouth, Dorset & Poole Draft Waste Plan: Baseline for Commercial & Industrial Waste & Construction, Demolition and Excavation Waste Generated in Bournemouth, Dorset and Poole' (October 2017)

	Baseline (2013)	2016	2021	2026	2031
Economic Growth (construction sector)	403,700	475,700	584,200	676,600	764,600

**4.27** The majority of respondents to the Waste Plan Issues Paper consultation (2013) favoured an approach whereby inert/CDE waste is linked to economic growth and would therefore increase as activity in the construction sector increases. There had been a steady increase in CDE waste nationally and locally in recent years, which appeared to be linked to an upturn in the economy.

**4.28** A scenario taking account of economic growth was therefore considered most appropriate. However, as there are a number of pressures that are likely to prevent the amount increasing with the level of construction activity it was considered appropriate to develop a further sub-scenario which assumes that CDE waste will increase at 50% of the rate of projected GVA in the construction sector. Factors likely to suppress growth of CDE waste include improvements in the on site management of CDE waste; the impacts of the Landfill Tax; and increasing transportation costs all resulting in increased re-use on site. Additionally, work has been undertaken locally on GVA projections which suggests that GVA won't rise as significantly as currently forecast.

**4.29** Additionally, a zero growth scenario was considered, as put forward in the Waste Plan Issues Paper (2013).

**4.30** The scenarios and resulting forecasts based on assumptions linked to economic growth at intervals during the Plan period are summarised in Table 30.

**Table 30 Bournemouth, Dorset and Poole Projections for Inert Waste Arisings (tonnes) (Draft Waste Plan 2015 - superseded)\***

	Baseline (2013)	2016	2021	2026	2031	Average annual percentage growth
Low Growth Scenario	403,700	403,700	403,700	403,700	403,700	0%
Medium Growth Scenario	403,700	439,700	489,800	528,600	563,000	1.9%
High Growth Scenario	403,700	475,700	584,200	676,600	764,600	3.5%

\*The scenarios assume that arisings per £million of Gross Value Added (GVA) in the construction sector remain constant.

**4.31** The high growth scenario assumes that CDE waste arisings will increase in line with projected GVA for the construction sector (in line with the Local Economic Forecasting Model); the medium growth scenario assumes that CDE waste arisings will increase at 50% of the rate of projected GVA for the construction sector; and the low growth scenario assumes that arisings will remain constant.

**Preferred scenario**

**4.32** The medium growth scenario was taken forward in the Draft Waste Plan because it was considered likely that some of the pressures for reducing waste would act to suppress growth in arisings to below a rate that might otherwise occur in line with GVA. The average annual growth rate forecast was 1.9%.

#### **Draft Waste Plan Update (2016) & Pre-Submission Draft (2017)**

**4.33** After the preparation of the Draft Waste Plan (2015), further work was undertaken by the county council to improve the methodology on the Local Economic Forecasting Model, working in consultation with planners and economic development officers in the district and unitary authorities. The updated 2015 model resulted in a more positive outlook for the construction sector. The model incorporated a number of scenarios, including a 'Planned Growth' scenario. This is based on planned housing growth, incorporating current adopted local plan housing trajectories. The Planning Practice Guidance suggests that although the basis for assumptions relating to CDE waste should be that net arisings will remain constant over time, factors such as any significant planned regeneration or major infrastructure projects over the timescale of the Plan may be relevant.

**4.34** The Draft Waste Plan Update (2016) incorporated a preferred waste growth scenario whereby CDE waste arisings grow in line with growth in GVA in the construction sector, as forecast through the LEFM's 'Planned Growth' scenario. This is equivalent to the high growth scenario prepared for the Draft Waste Plan (2015).

**4.35** The Pre-Submission Draft continued with this approach, however the baseline was updated to reflect latest available figures on arisings. The baseline year for the forecasts is therefore 2015. The forecasts for inert/CDE waste arisings at intervals during the plan period are shown in Table 31.

**Table 31 Bournemouth, Dorset & Poole Projections for Inert Waste Arisings**

	Baseline (2015)	2018	2023	2028	2033	Average annual percentage growth
Forecast (tonnes)	691,000	801,800	1,005,200	1,173,400	1,357,700	3.7%

**4.36** Updating the baseline year from 2013 to 2015 has resulted in an increased projection by the end of the plan period, due to higher levels of arisings in 2014 and 2015. It is projected that arisings could be over 1.3 million tonnes per annum by the end of the plan period. It should be noted that projections should be treated with caution, particularly at small geographies and if looking at individual sectors (i.e. the construction sector). This can therefore be viewed as a 'worst case' scenario in terms of the amount of waste that needs to be planned for and regular monitoring will be necessary following the adoption of the Plan.

#### **Recycling rate**

**4.37** Of the arisings forecast, some will be able to be recycled, whilst any remainder that cannot be recycled will need to be managed through inert landfill. This can comprise the restoration of quarries and other engineering uses for the material (which may be classed as recovery) or simply disposal via landfill. In order to make provision for sufficient facilities of the right type, the Plan needs to make an assumption about the proportion of inert waste arisings that will be recycled.

**4.38** The revised Waste Framework Directive sets a target for the amount of CDE waste that should be recycled, stating that the rate of re-use and recycling for non-hazardous (inert) CDE waste should be increased to a minimum of 70% by 2020. However, it is recognised that this rate is already being achieved and exceeded in many areas. It is possible that up to 90% of inert waste arisings may be able to be recycled. For the purposes of this Plan, an 80% recycling rate has been assumed.

**Inert waste is projected to grow at an average annual rate of 3.7%.**

This is based on the assumption that inert waste arisings will grow in line with projected growth in Value Added for the construction sector. Growth in the construction sector is projected using the Local Economic Forecasting Model (2015), based on a 'planned growth scenario' (taking into account planned housing growth from adopted local plans).

It is assumed that 80% of inert waste arisings will be recycled.

**5.1** Hazardous waste is waste that contains one or more substances which might be dangerous to the environment or life. It may be present in any waste stream including local authority collected, commercial and industrial; and construction, demolition and excavation waste streams. It is waste which possesses one or more of the 15 hazardous properties set out in Annex III of the Revised Waste Framework Directive. Examples of hazardous waste include: clinical waste, asbestos, chemicals (e.g. brake fluid or print toner), batteries, solvents, pesticides, oils (non-edible) and equipment containing ozone depleting substances (e.g. fridges). Specific licences, granted by the Environment Agency, are required for the management of hazardous waste.

### **National data**

**5.2** Hazardous waste accounts for only a small percentage of total waste arisings (in 2015 around 2.5% of waste managed in England was hazardous waste), but the amounts of hazardous waste produced are still significant, with around 4.6 million tonnes arising in England in 2015. <sup>(21)</sup>

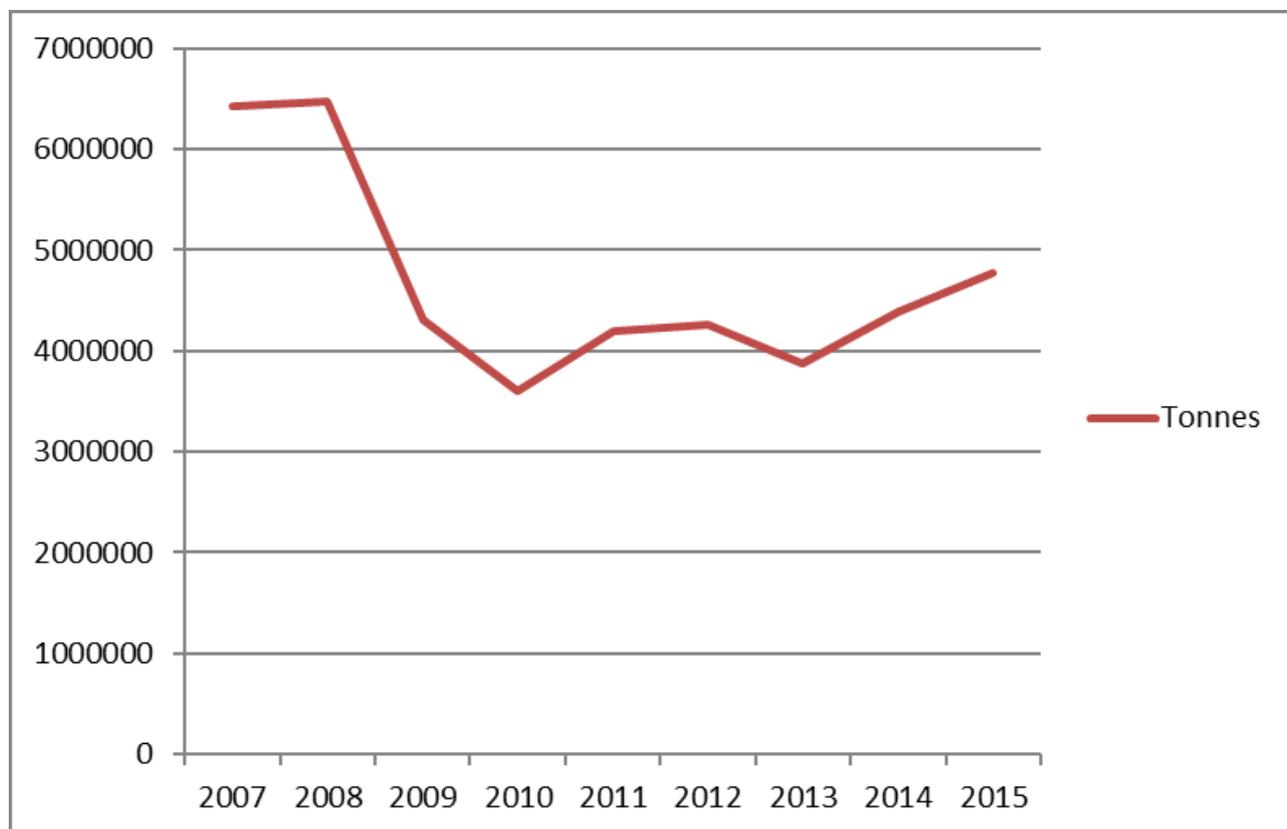
**5.3** Nationally, there is no clear trend in hazardous waste arisings with amounts fluctuating from year to year, partly due to variations in amounts of contaminated soil that has been removed from contaminated sites and landfilled as part of the remediation process. There was a 15% decrease in total waste managed between 2000 and 2011. A large increase in arisings was recorded in 1997 which was partly due to a change in the definition of hazardous waste to include oil. The revised European Waste Catalogue recently added another 250 waste types to the hazardous waste list.

**5.4** There has been an increasing trend in waste managed since 2010, with a drop in 2013. Arisings were back at 2012 levels by 2014 and the highest level of arisings was recorded in 2015.

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21 Waste management for England 2015 - data tables, at: <https://www.gov.uk/government/statistics/waste-management-for-england-2015>)

**Figure 13 Hazardous Waste Managed in England & Wales**



Source: Environment Agency Waste Data Tables 2007-2015

**5.5** In terms of the way hazardous waste is managed, nationally:

- 30% was recovered
- 22% was treated
- 22% was transferred
- 18% was landfilled
- 6% was incinerated.

#### Local data

**5.6** Local data on hazardous waste is generally accurate and is reported through the Environment Agency's Hazardous Waste Interrogator database, which holds information on arisings, movement and management. It should be noted that the reporting of hazardous waste managed can lead to the same wastes being reported more than once as they may be dealt with through a transfer station, followed by a treatment facility for example. This may therefore lead to an over estimate in arisings. Unlike the Waste Data Interrogator, the Hazardous Waste Interrogator does not provide site specific information.

#### Hazardous waste arisings

**5.7** Table 32 shows arisings for the last nine years, which have remained fairly constant, albeit with a slight dip in 2009. There has been an increasing trend in arisings of hazardous waste since 2013.

**Table 32 Hazardous waste arisings in the Dorset sub-region**

Year	Arisings (tonnes)
2006	47,748
2007	50,643
2008	45,229
2009	39,199
2010	49,044
2011	47,200
2012	51,335
2013	49,600
2014	58,531
2015	62,978

Source: Environment Agency Data Tables - South West Hazardous waste, at: <http://www.environment-agency.gov.uk/research/library/data/34169.aspx>

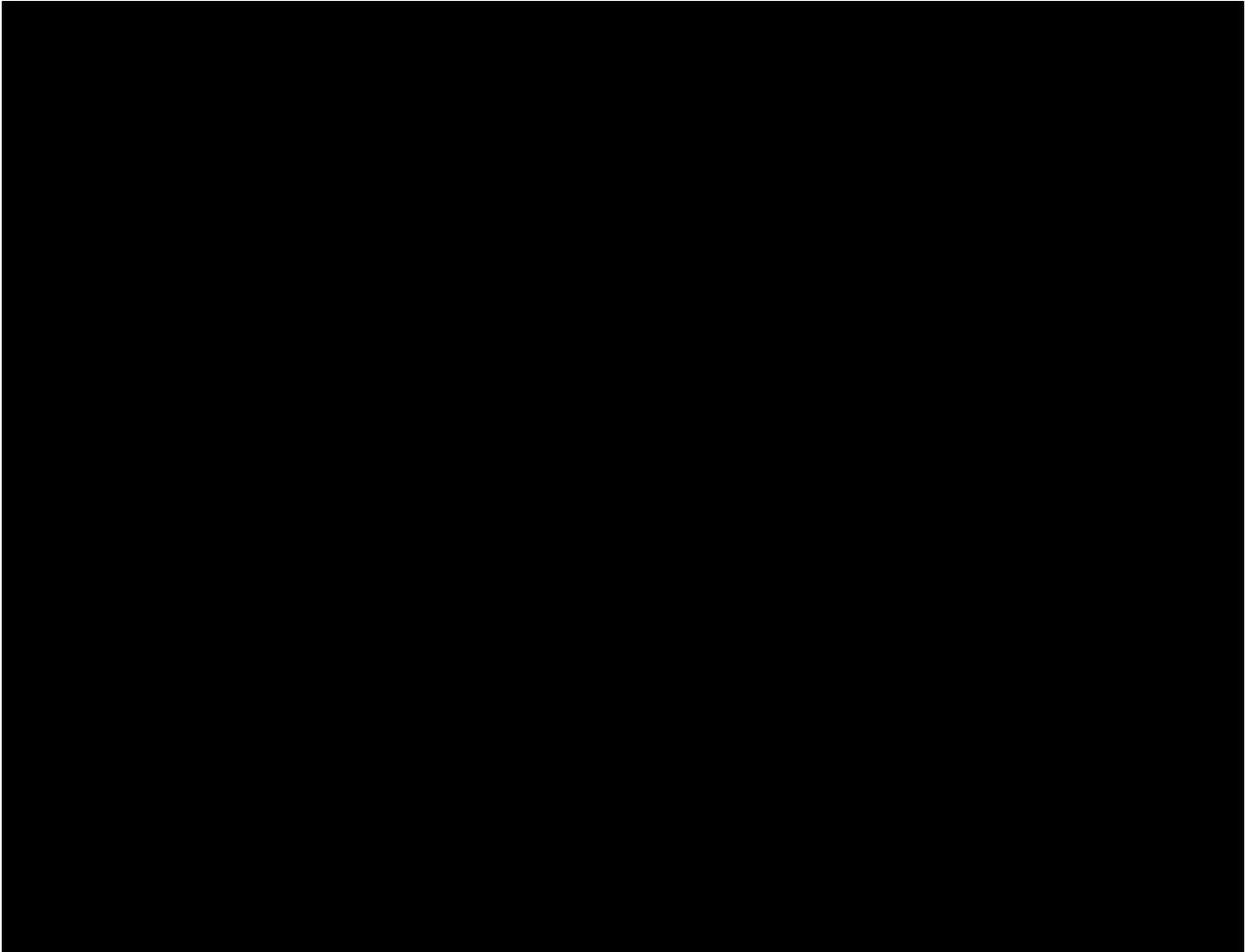
**5.8** In 2015, hazardous waste arisings in Dorset were around 63,000 tonnes <sup>(22)</sup> Of that amount, around 39,500 tonnes was also deposited, or managed, within Dorset and 23,500 tonnes was deposited outside of Dorset <sup>(23)</sup> Therefore around 40% Dorset's hazardous waste arisings were managed outside the county, or exported. Of the amount exported, 8,900 tonnes (38%) was managed in one of the adjoining Waste Planning Authority areas.

**5.9** Figure 14 shows a breakdown of the types of hazardous waste arising in Dorset in 2015. The largest proportion of hazardous waste was Oil and Oil/Water Mixtures at 56%. 10% of the hazardous waste arisings were classed as 'not otherwise specified.'

22 EA Hazardous Waste Interrogator 2015

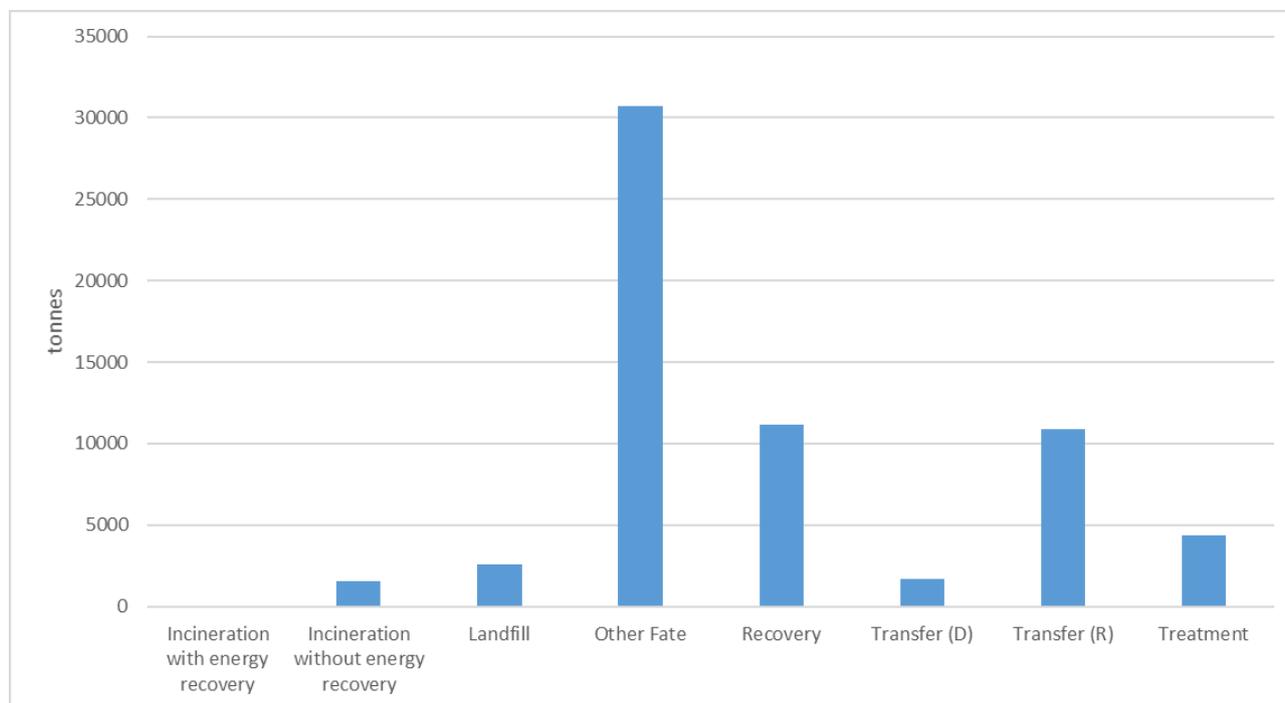
23 Note that this could include waste that has come from a hazardous waste transfer station in the county and so may not have truly 'arisen' in Dorset.

**Figure 14 Hazardous Waste Arisings by Type (2015)**



**5.10** Over 80% of arisings in 2015 fell into one of four categories: Oil and Oil/Water Mixtures, Municipal and Similar Commercial Wastes; Not Otherwise Specified; and C&D Waste and Asbestos.

**5.11** Figure 15 shows how hazardous waste arising in Dorset was managed. 18% went for recovery and 7% to treatment, whilst 4% was landfilled and 2.5% was incinerated without energy recovery. However 49% was recorded as 'Other Fate' so it is not known how this proportion was managed. 20% was transferred either for recovery or disposal. This indicates that the waste was transferred to another waste management facility. For this reason it is assumed that these tonnages (approximately 12,600 tonnes) may be double counted in another consignment to final recovery.

**Figure 15 Hazardous Waste Arisings - Management Method (2015)**

**5.12** Hazardous waste is dealt with at a range of specialist facilities, in some cases within the county but in many cases outside of the county. Table 33 shows a breakdown of hazardous waste by management method and whether it was managed within or outside of the county.

**Table 33 Management of hazardous waste produced in Bournemouth, Dorset & Poole (2015)**

Waste Management Method	Quantity of waste produced in Dorset (tonnes)	Location of facility receiving waste	Quantity of waste received (tonnes)
Incineration with energy recovery	11	In Dorset	7
		Outside Dorset	3.62
Incineration without energy recovery	1,533	In Dorset	1,421
		Outside Dorset	112
Landfill	2,557	In Dorset	0
		Outside Dorset	2,557
Other Fate	30,753	In Dorset	30,753
		Outside Dorset	0
Recovery	11,143	In Dorset	935

Waste Management Method	Quantity of waste produced in Dorset (tonnes)	Location of facility receiving waste	Quantity of waste received (tonnes)
		Outside Dorset	10,207
Transfer for disposal	1,713	In Dorset	419
		Outside Dorset	1,294
Transfer for recovery	10,894	In Dorset	3,970
		Outside Dorset	6,925
Treatment	4,344	In Dorset	1,990
		Outside Dorset	2,354
<b>Total hazardous waste produced in Dorset:</b>	<b>62,948</b>	<b>In Dorset</b>	<b>39,495</b>
		<b>Outside Dorset</b>	<b>23,453</b>

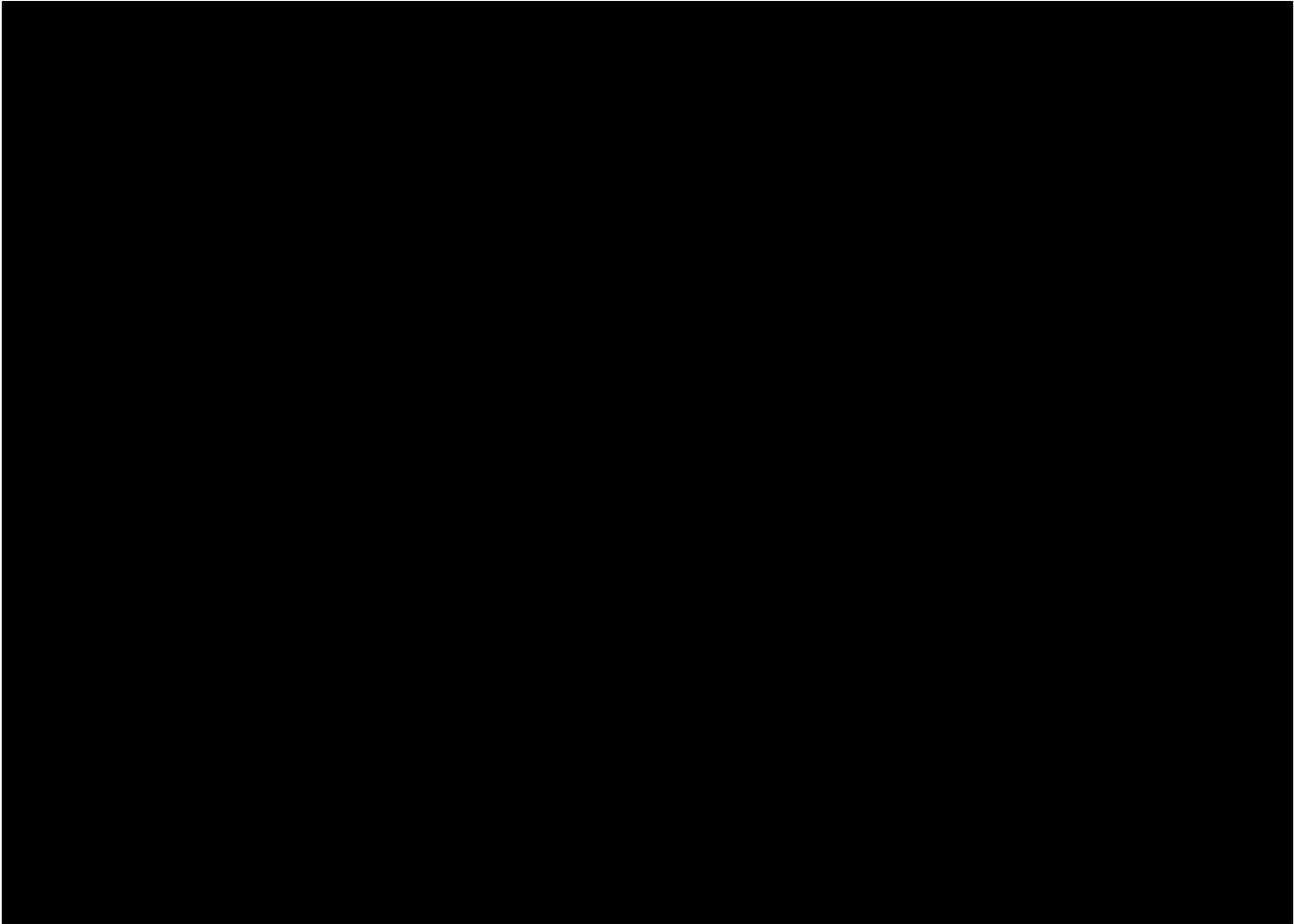
### Waste managed in Dorset

**5.13** According to Environment Agency data, a total of around 54,000 tonnes of hazardous waste was deposited in Dorset in 2015 - or in other words was received at hazardous waste facilities in the county. As stated above, around 39,500 tonnes of hazardous waste arising in Dorset was managed in Dorset; leaving 14,500 tonnes 'imported' from other areas. Of the amount imported, 9000 tonnes (62%) originated in the county's adjoining Waste Planning Authority areas.

**5.14** The proportion of waste arisings originating in Dorset equates to 73% of hazardous waste managed in the county; whilst the proportion of waste arisings originating outside of Dorset equates to 27%.

**5.15** Figure 16 shows the nature of hazardous waste managed at facilities in Dorset. Over half comprises oil and oil/water mixtures, with 10% being healthcare waste and 4% being municipal and similar commercial wastes.

**Figure 16 Hazardous Waste Types Managed in Dorset (2015)**

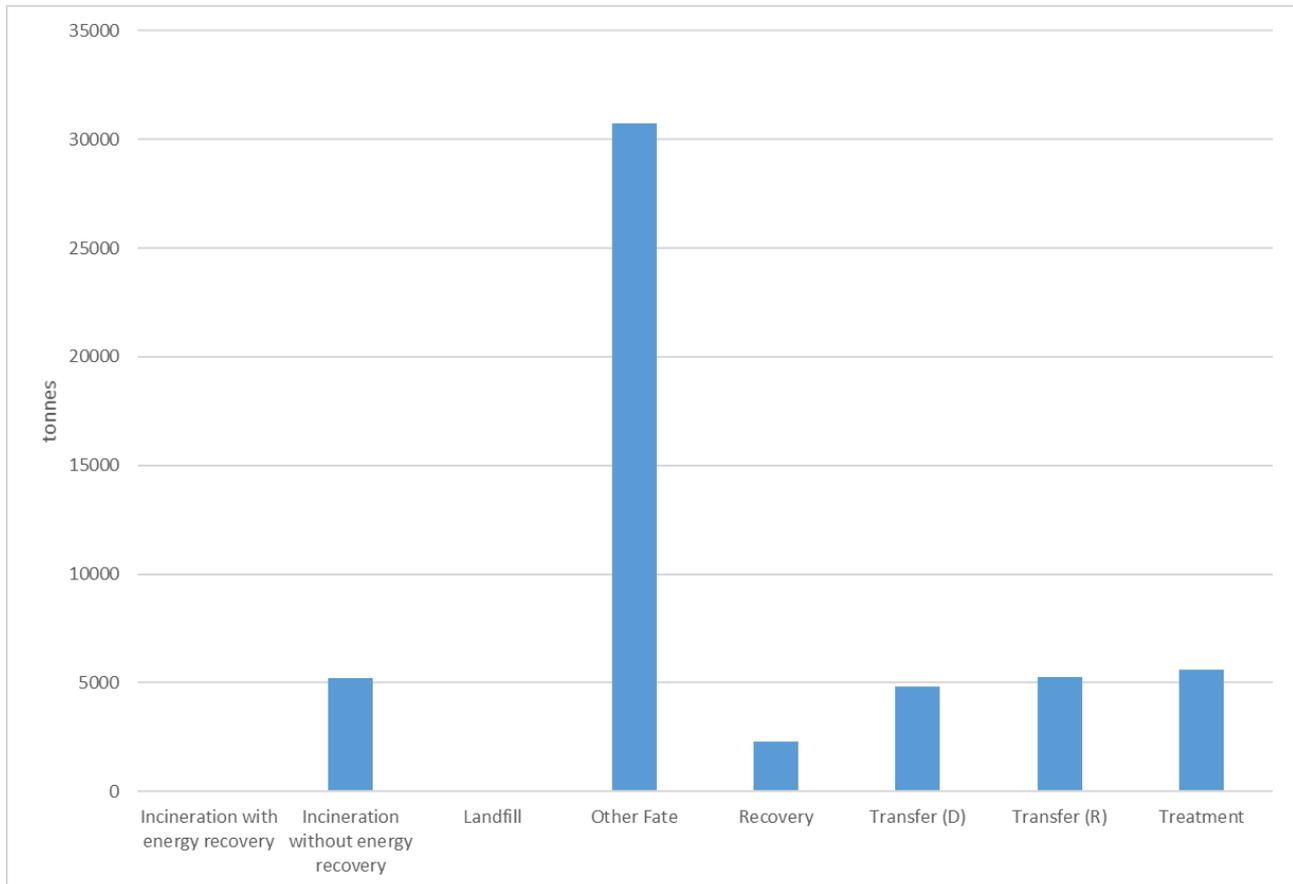


**5.16** The nature of the hazardous waste imported for management at facilities in Dorset is shown in Figure 17. Oil and oil/water mixtures and healthcare wastes form the highest proportions of types of hazardous waste imported. This is not surprising given the presence of Dorset's two hazardous waste treatment facilities, an oil and water treatment facility and a clinical waste incinerator.

**Figure 17 Hazardous Waste Imports (2015)**



**5.17** Figure 18 shows the management methods for hazardous waste managed in Dorset. The highest fate at 57% is recorded as not known. 10% of the hazardous waste managed in Dorset was by incineration without energy recovery and 10% was by treatment. 19% was transferred onwards.

**Figure 18 Hazardous Waste Managed in Dorset (2015)**

**5.18** Overall, Dorset exported 23,500 tonnes of hazardous waste in 2015 and imported 14,500 tonnes. This indicates that Dorset is a net exporter of hazardous waste.

**5.19** The specialised nature of hazardous waste facilities means that facilities tend to serve a wider than local market and so hazardous waste tends to travel further than other wastes.

**5.20** Healthcare waste arising in the sub-region is treated either at the Bournemouth Hospital Clinical Waste Incinerator or a clinical waste treatment facility located in Frome, Somerset. Both facilities are operated by SRCL Ltd. It is known that around 90% of the healthcare waste managed at the Bournemouth Hospital Clinical Waste Incinerator originates in Hampshire (including Portsmouth, Southampton and the Isle of Wight), whilst around 10% originates in Dorset, Bournemouth and Poole. Although this facility is working close to capacity, discussions with the operator suggest that any increased need could be met through new plant as opposed to additional land take.

**5.21** An oil and water treatment facility is located in Shaftesbury, dealing with hazardous waste from within and outside of Dorset. The operator states that around 20% of the waste managed is sourced from within Dorset, Bournemouth and Poole and that this facility is currently working under capacity.

**5.22** There are a number of hazardous waste transfer facilities, mainly comprising small scale facilities or sites which are licensed to transfer hazardous waste along with other wastes. The largest hazardous waste transfer facility manages photographic and print wastes and is located in Blandford.

**5.23** Aside from the above, other hazardous waste streams tend to be dealt with at specialist facilities outside of the county, although some materials arising from end of life vehicles are dealt with at scrapyards within the sub-region.

### Forecasting future arisings

**5.24** It is necessary to estimate arisings of hazardous waste for the Plan period in order that the Waste Plan can make sufficient provision. The Government published the National Planning Policy for Waste, along with the Waste Planning Practice Guidance, in October 2014. The Planning Practice Guidance states that: "Since existing data on hazardous waste arisings is likely to be robust, waste planning authorities should plan for future hazardous wastes arisings based on extrapolating time series data."

#### Initial projections (Draft Waste Plan 2015)

**5.25** A forecast based on the approach advocated in the Planning Practice Guidance was made, using 2012 as the baseline. The baseline figure is obtained from the Environment Agency, as outlined earlier in this chapter.

**5.26** A number of alternative forecasts based on assumptions linked to economic growth were also undertaken for comparison and in line with the approach taken for commercial and industrial waste. Forecasting based on economic growth was suggested as an appropriate approach by respondents to the Waste Plan Issues Paper (2013).

**5.27** The scenarios and resulting forecasts at intervals during the Plan period are summarised in Table 34. This is further explained below.

**Table 34 Initial Projections for Hazardous Waste Arisings (tonnes)**

	2012 (Baseline)	2016	2021	2026	2031
<b>Scenario 1 - Extrapolation of time series data</b>					
Growth in hazardous waste arisings based on extrapolation of time series data (linear)	51,335	49,389	50,751	52,113	53,474
<b>Scenario 2 - Economic growth (based on correlation between arisings &amp; Value Added)</b>					
2 (a): Growth in hazardous waste arisings based on the projected growth in Value Added, assuming that the historic relationship between arisings and VA will continue.	51,335	48,318	50,051	51,866	53,691
2 (b): Growth in hazardous waste arisings based on 75% of projected growth in Value Added, assuming that the historic relationship between arisings and VA will continue.	51,335	48,022	49,279	50,558	51,810
2 (c): Growth in hazardous waste arisings based on 50% of projected growth in Value Added, assuming that the historic relationship between arisings and VA will continue.	51,335	47,732	48,542	49,342	50,106
<b>Scenario 3 - Economic growth (based on arisings per £m VA)</b>					

	2012 (Baseline)	2016	2021	2026	2031
3 (a): Growth in hazardous waste arisings based on the projected growth in Value Added, with waste arisings assumed to continue at the average historic level per £m VA	51,335	51,001	57,449	64,202	70,993
3 (b): Growth in hazardous waste arisings based on 75% of the projected growth in Value Added, with waste arisings assumed to continue at the average historic level per £m VA	51,335	49,902	54,577	59,335	63,993
3 (c): Growth in hazardous waste arisings based on 50% of the projected growth in Value Added, with waste arisings assumed to continue at the average historic level per £m VA	51,335	48,821	51,834	54,813	57,653

**5.28** Scenario 1 projected growth in hazardous waste arisings by extrapolating the arisings data for 2006 - 2012. This method showed a small but steady increase in hazardous waste arisings over the Plan period, with 53,500 tonnes projected for 2031.

**5.29** Scenario 2 was developed by looking at the relationship between hazardous waste arisings and economic growth (specifically growth in Value Added). The data on arisings was considered in relation to the data on Value Added (VA) to consider whether variation in hazardous waste arisings can be explained by variation in VA. There was found to be a positive but not strong correlation between the two.

**5.30** In order to project future arisings, the relationship between the historic data on both arisings and VA was used to predict future levels of waste arisings, based on projections in VA. Essentially, it was assumed that the historic relationship between the two will continue and increases in arisings will be as a result of increases in VA.

**5.31** Similarly to Scenario 1, this method showed that there will be a small but steady increase in arisings, with arisings in 2031 projected to be 53,691 tonnes.

**5.32** As projections of VA are subject to uncertainty in themselves, lower rates of economic growth were also considered, based on the same assumption as outlined above. Scenario 2b looked at how arisings will change based on 75% of projected growth in VA, whilst Scenario 2c was based on 50% of projected growth in VA.

**5.33** Scenario 3 was based on the amount of hazardous waste arisings per million pounds (£m) of VA. It is assumed that waste arisings will continue at the average level (for 2006-2012) per million pounds of VA. This level was then projected based on projected growth in VA. This method showed a sharper projected increase in hazardous waste arisings, with arisings in 2031 projected to be 70,993.

**5.34** As with Scenario 2, lower rates of economic growth were considered based on this approach. Scenario 3b looked at how arisings will change based on 75% of projected growth in VA, whilst Scenario 3c is based on 50% of projected growth in VA.

**5.35** For Scenario 3, growth based on the percentage change in projected VA yields the same results.

**5.36** Scenario 2 is considered to be the most sound approach for projecting arisings based on economic growth, since it takes into account the historic relationship between the two variables.

**Which is the most appropriate scenario?**

**5.37** Scenario 1 was taken forward in the Draft Waste Plan (2015) as the basis for planning for sufficient capacity. This projected an average annual growth rate of 0.5%. This approach was preferred since national guidance is to project based on the extrapolation of time series data. However, Scenario 2 showed that growth in arisings linked to economic growth would result in the need to plan based on a very similar predicted level of arisings as for Scenario 1 in any case. This helped to corroborate both approaches.

**Updated baseline and projections (Pre-Submission Draft 2017)**

**5.38** The latest available figures for hazardous waste, from the Environment Agency, are for 2015. Projections for arisings of hazardous waste have therefore been updated, incorporating actual tonnages from 2013 - 2015. Actual tonnages are shown in Table 32, above.

**5.39** The preferred approach for projecting arisings of hazardous waste is the extrapolation of time series data, in line with national guidance.

**5.40** The updated forecasts at intervals during the Plan period are shown in Table 35.

**Table 35 - Projections for Hazardous Waste Arisings (tonnes)**

	2015	2018	2023	2028	2033
	(Baseline)				
1. Extrapolation of time series data - Linear	62,978	61,500	69,000	76,500	84,000
2. Extrapolation of time series data - Exponential smoothing	62,978	66,300	73,900	81,400	88,900

**5.41** Hazardous waste arisings are forecast to be around 84,000 tonnes per annum by the end of the Plan period.

**5.42** Extrapolating time series data based on the 2015 baseline and using a linear approach (1) shows a higher tonnage per annum than originally forecast (using a 2012 baseline) - 84,000 tonnes as opposed to 53,500 tonnes. This is mainly due to the relatively high tonnages of hazardous waste arisings recorded for 2014 and 2015.

**5.43** The compound percentage increase is 1.62% per annum over the Plan period, whilst the average annual percentage increase is 1.6%. This is higher than the 0.5% originally forecast and this is again explained by the increase in arisings in the last two years.

**5.44** An alternative method of extrapolating the time series data, using exponential smoothing, shows that hazardous waste arisings could rise to 89,000 tonnes per annum by the end of the Plan period, reflecting a 1.94% annual increase.

**5.45** Given that the preferred approach presented in the Draft Waste Plan (2015) was extrapolation using a linear method, and that consultees were content with this approach, this method is maintained for the Pre-Submission Draft Waste Plan.

**Hazardous waste is projected to grow at an average annual rate of 1.6%.**

This is based on the extrapolation of time series data, in line with national guidance.



## Other wastes

### Agricultural waste

**6.1** Agricultural wastes are defined as any substance or object from premises used for agriculture or horticulture, which the holder discards, intends to discard or is required to discard. It is waste specifically generated by agricultural activities. Up to date figures on the arisings of agricultural waste in the county are not known to be available, with the latest available dating from 1998.

**6.2** There are a number of on farm facilities that deal with either only waste arising on site or that in addition to small quantities of imported waste. These mainly comprise anaerobic digestion plants.

### Radioactive waste

**6.3** Radioactive waste is produced in the UK from both nuclear industry and non-nuclear industry sources, including through the use of radioactive materials in industry, from the extraction of naturally occurring radioactive materials, and in medicine and research.

**6.4** Radioactive waste is categorised according to the amount and type of radioactivity it contains. There are two main categories of radioactive waste: Higher Activity Waste and Low Level Waste. Higher Activity Waste (HAW) includes High Level Waste (HLW), Intermediate Level Waste (ILW) and some Low Level Waste (LLW) that is unsuitable for disposal at the Low Level Waste Repository in Cumbria (LLWR). LLW includes Very Low Level Waste (VLLW), although this category is more recently just referred to as LLW. Each of these waste categories represents different potential levels of hazard and so requires different forms of treatment and handling.

#### High Activity Waste

- **High Level Waste (HLW)** - waste that contains sufficiently high levels of radioactivity that heat is generated. It is generated as a by-product from the reprocessing of spent fuel from nuclear reactors. Approximately 0.1% of radioactive waste produced in the UK is HLW. HLW is currently sent to Sellafield in Cumbria for safe and secure interim storage until geological disposal is available. The Government believes the best way to deal with HLW in the long term is through the establishment of a deep geological disposal facility. The selection of a site for a geological disposal facility is the subject of a separate, Government-led process.
- **Intermediate Level Waste (ILW)** - contains higher concentrations of radioactivity than low level waste, but without the heat generation that occurs in high level waste. Like HLW, the Government believes the best way to deal with ILW in the longer term is through deep geological disposal. Intermediate storage of ILW will take place at specialist facilities until a geological disposal facility is available.

#### Low Activity Waste

- **Low Level Waste (LLW)** - is that which is within a specified concentration of radioactivity and does not normally require shielding during handling or transport. However it may require specifically designed containment. These wastes may arise from the non-nuclear and nuclear industries and typically consist of everyday items that have become contaminated during use by contact with radioactive materials. Disposal of low level waste requires permitting under environmental regulations. Low level waste is split into three sub-categories:
  - **Higher Activity Low Level Waste (HALLW)** - that is unsuitable for landfill is managed at the Low Level Waste Repository (LLWR), which is the UK's national low level radioactive waste disposal facility. The LLWR is a specialised 'near-surface' disposal facility located

near Drigg in West Cumbria. Established in 1959, the site has safely disposed of the nation's low level waste for over 50 years. Containerised waste is grouted prior to disposal in engineered concrete vaults.

- **Low Activity Low Level Waste (LALLW)** - does not need the highly engineered containment systems that are provided by the LLWR and can be sent to suitably permitted, conventional, non-inert landfills.
- **Very Low Level Waste (VLLW)** - is a sub-category of low-level waste that mainly arises from non-nuclear industries such as hospitals, universities and industrial premises. VLLW has such low concentrations of radioactivity that low-volume disposal can be handled through conventional disposal / landfill sites (and thus does not need to be explicitly and separately addressed in local plans), although higher volumes require permitting under environmental waste regulations.

**6.5** The boundary between different categories of radioactive waste, indeed the use of such broad categorisation, is coming under increased scrutiny as the UK approach to radioactive waste management continues to advance. There is an increasing focus instead on the characterisation of individual consignments of waste and decision-making thereafter based on the best means of management, whilst retaining the waste hierarchy and the proximity principle as key. The current national position on HAW is to achieve passive safety as soon as it reasonably practical for interim storage and eventual disposal to a future geological disposal facility.

### Radioactive waste arisings in Dorset

**6.6** Radioactive waste from the nuclear industry is generated in Dorset through the decommissioning of the former Winfrith nuclear research and development facility (Winfrith), which is a nuclear licensed site that is currently being managed, operated and decommissioned by Magnox, as the nuclear site license holder, under contract to the Nuclear Decommissioning Authority (NDA) as landowner. Winfrith is located near Wool, Purbeck, adjacent to Dorset Green Innovation Park, a 50 hectare strategic employment site with Enterprise Zone status, and close to European designated heathland.

**6.7** Magnox produces radioactive waste from decommissioning operations. The radioactive waste primarily consists of contaminated concrete, metals and plastic. Low Level Waste (LLW) and Intermediate Level Waste (ILW) need to be dealt with, the disposal of both of which is governed by the Nuclear Decommissioning Agency (NDA) nationally.

**6.8** Magnox applies Best Available Technique (BAT) and Best Environment Practice (BEP) to manage the waste from their nuclear liabilities. This includes pre-treatment, conditioning and decay storage processes prior to disposal that reduces the hazardous activity and volume of LLW and HAW in accordance with the principles of the waste hierarchy. Where radioactive waste generation cannot be avoided or minimised at source, it will be disposed of in accordance with the relevant national policy and strategies.

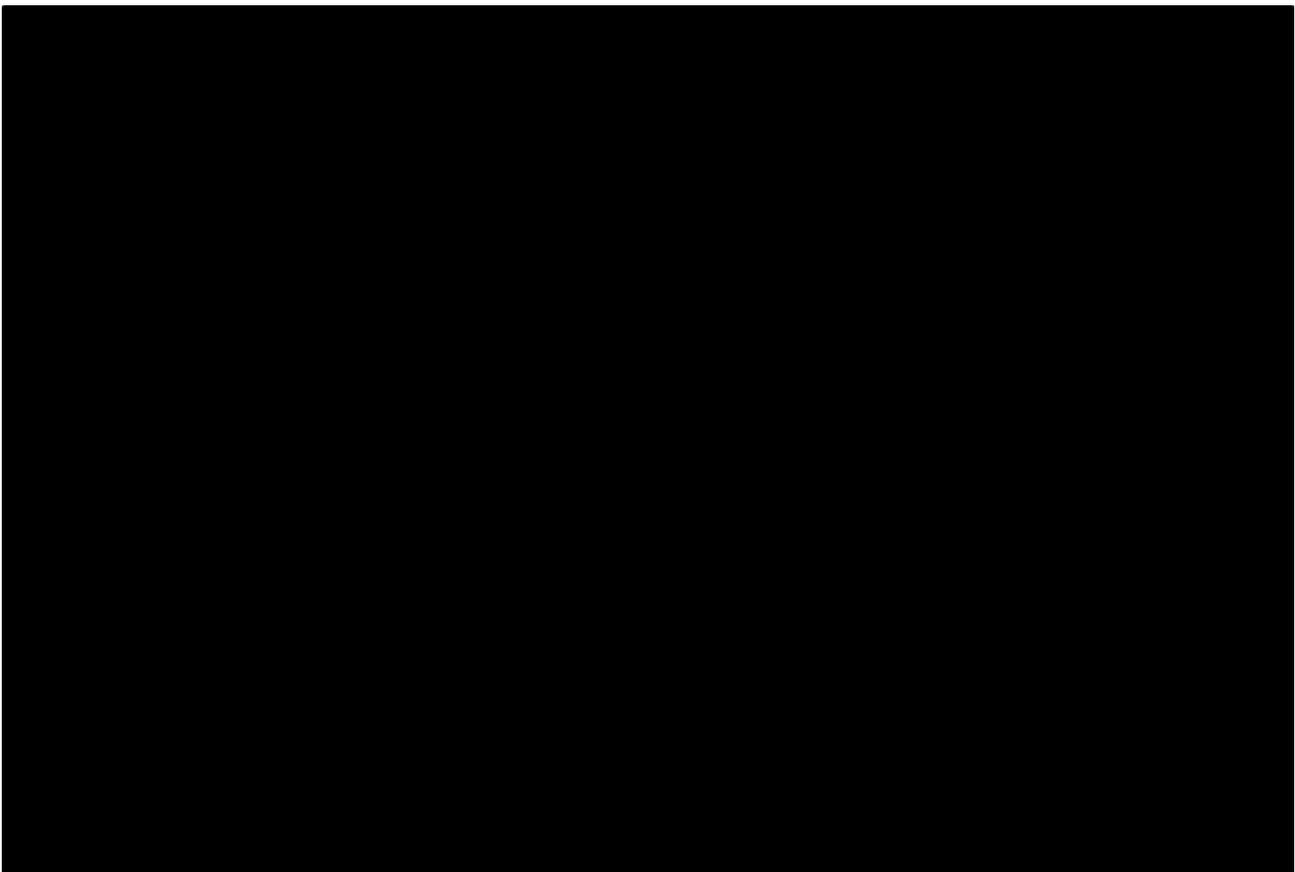
**6.9** The NDA has a service framework with the Low Level Waste Repository (LLWR), located in Cumbria, to implement the National Strategy and provide a coordinated national service to manage the disposal of LLW. Through the service framework Magnox can access a variety of treatment and diversion facilities that minimise the reliance on the national LLWR.

**6.10** There are three authorised disposal sites that can manage LALLW that does not need to be sent to the LLWR. They are: Clifton Marsh, in Lancashire, Lillyhall, in Cumbria, and the East Northants Resource Management Facility, in Northamptonshire. Capacity for the management of LLW nationally was considered through a report published in 2013, which concluded that there is adequate capacity in the existing authorised sites until December 2016 and if extensions to planning consents are

obtained for the sites, there is adequate capacity until 2030 <sup>(24)</sup>. Since the publication of this report, Lillyhall has been granted permission until 2029 and the Northants Resource Management Facility has been granted permission to 2026. Clifton Marsh has applied for an extension to 2035, although the site has restrictions on the amount of waste that can come from outside of the North West. It is therefore considered that there is sufficient capacity for the management of LALLW arising from Winfrith.

**6.11** The NDA require Magnox to keep an inventory of radioactive and non-radioactive waste either in situ, on site or due to arise as a result of the decommissioning and clean-up. The Magnox Integrated Decommissioning and Waste Management Strategy (2016) is used to forecast the total amount of all waste arisings over the lifecycle of each of the 12 Magnox sites and their individual decommissioning programmes. This involves systematic and progressive hazard reduction (taking advantage where possible of the process of natural radioactive decay) to reduce levels of radioactivity, and hence risk to people and the environment. Figure 19 shows the proportions of the types of waste to be managed, as forecast. The integrated waste management strategy is used to support the delivery of FES at each of the 12 Magnox sites.

**Figure 19 Total volume of raw waste to be managed at 12 Magnox sites 2016-2030 (Forecast 2016)**



**6.12** The Department of Business, Energy & Industrial Strategy (BEIS) and the NDA are responsible for appointing a suitable contractor for producing a UK Radioactive Waste and Materials Inventory (The Inventory). The Inventory contains information about:

24 Low Activity Low Level Waste Capacity Assessment (LLWR 2013)

- radioactive wastes that exist now;
- radioactive wastes that will arise in future; and
- radioactive materials – these are radioactive items that are not classed as waste now but may be in future if no further use can be found for them.

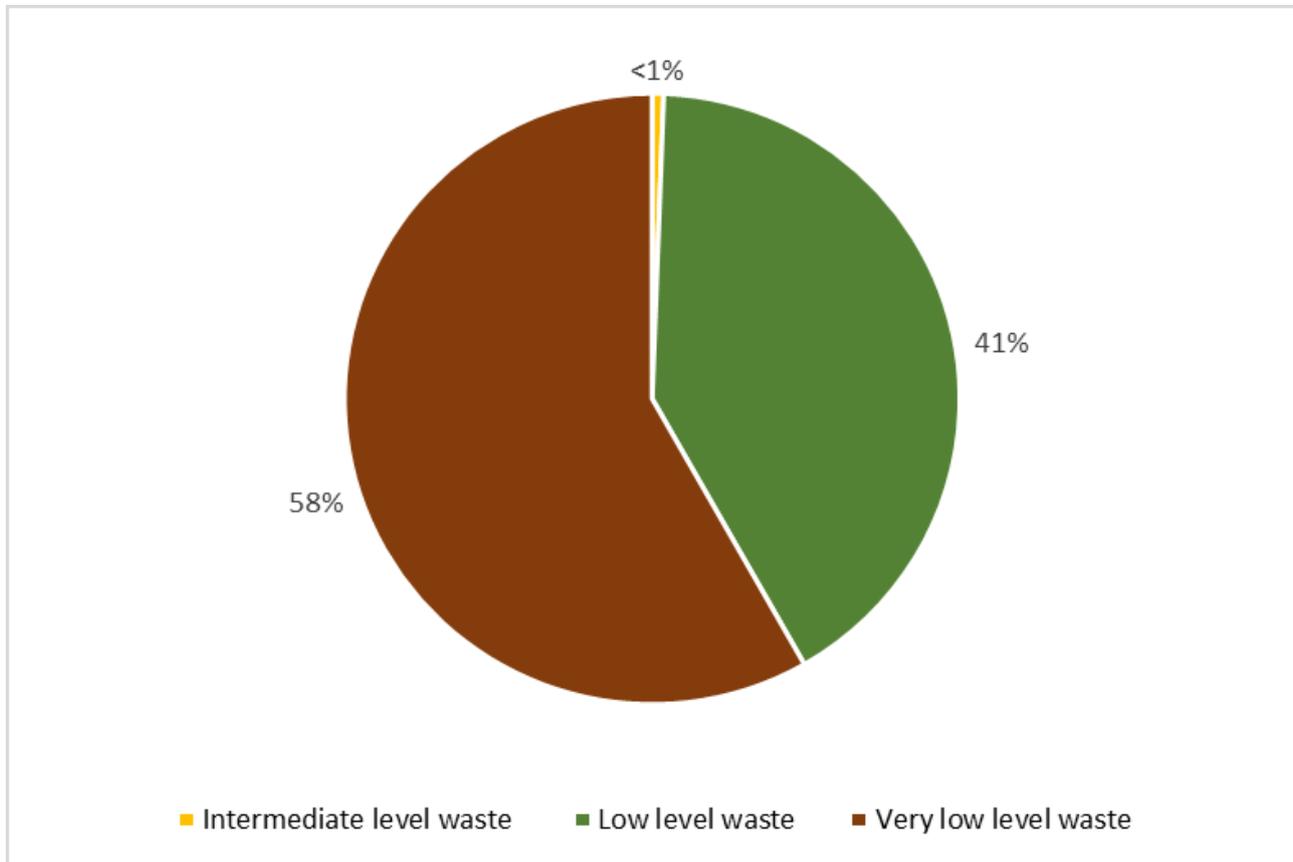
**6.13** The UK Radioactive Waste and Materials Inventory is updated every three years and is a snapshot of wastes and materials at a specific point in time, called the ‘stock date’. Information presented about wastes that existed at the stock date (1 April 2016) at Winfrith and are forecast to arise after this date as part of decommissioning to IES total approximately 11,000 cubic meters.<sup>(25)</sup> Table 36 shows the breakdown of radioactive waste expected and Figure 20 illustrates the proportions of the types of waste. The majority of this waste would be LLW, including VLLW. The Inventory does not include liquid and gaseous wastes containing very low concentrations of radioactivity that are routinely discharged to the environment in accordance with statutory regulations.

**Table 36 Winfrith: Wastes as at 1 April 2016 and future arisings**

Waste type	Reported volume (cubic metres)
ILW	67.2
LLW	4,490
VLLW	6,390
Total	11,000

Source: *Radioactive Wastes in the UK: UK Radioactive Waste Inventory Report (March 2017)*

**Figure 20 Total volume of radioactive waste to be managed over the lifetime of decommissioning at Winfrith (Forecast 2016)**



**6.14** Intermediate Level Waste (ILW) was produced during Winfrith's operational lifetime. The major components of ILW are metals with lesser quantities of cement, graphite, glass and ceramics. The ILW will be removed from the disused reactors and research facilities as part of the decommissioning process and placed in 6m<sup>3</sup> reinforced concrete boxes. The boxes will then be filled with cement and permanently sealed at the decommissioning site creating a solid concrete box. These boxes will be transported to the new ILW store at Harwell in Oxfordshire and will remain there until a permanent disposal facility becomes available. The ILW Store at Harwell will store around 2,800m<sup>3</sup> of raw waste (ILW)<sup>(26)</sup> and has been designed to accommodate ILW arising from the decommissioning of Winfrith. 70m<sup>3</sup> of raw waste (ILW) is expected to arise from Winfrith [Could not findcopy\\_3466150\\_ID\\_51816](#) and Harwell is permitted to accept 100 boxes of ILW from Winfrith.<sup>(27)</sup>

**6.15** Radioactive waste from the non-nuclear industry largely arises from the Wytch Farm oilfield. Naturally Occurring Radioactive Materials (NORM) deep underground affect drilling equipment at Wytch Farm. Such equipment is currently decontaminated at a facility located at Winfrith. Small amounts of radioactive waste arise from hospitals but are dealt with at the clinical waste incinerator in Bournemouth.

26 Magnox Limited: Integrated Decommissioning and Waste Management Strategy (May 2016)

27 The Department of Energy and Climate Change (DECC) has carried out national consultation on the siting process for the safe disposal of nuclear waste, which confirms that the preferred method is via a Geological Disposal Facility (GDF) deep underground. It is anticipated that a GDF would not be operational before 2040.

## Waste water and sewage

**6.16** Treatment of waste water in sewage treatment works results in the production of sewage sludge which is a biodegradable, odorous liquid that contains roughly 4% solid matter. The arisings of dry sewage in the Bournemouth, Dorset and Poole is around 21,000 tonnes per annum (2012) which equates to approximately 500,000 tonnes of wet sewage sludge per annum.

**6.17** The county has a network of sewage treatment facilities across the county (see Figure 21). There are two strategic waste water treatment sites that incorporate sludge treatment plants at Berry Hill, Bournemouth, and Cabot Lane, Poole. Holdenhurst, Bournemouth, is also a large site with a pipeline which takes waste water for processing at Berry Hill. These three sites are all subject to EA permitting. There is also a sludge treatment facility at Yeovil.

**6.18** Most sites are, however, relatively small. Responsibility for the provision of sewage treatment facilities and infrastructure and for the disposal of sludge lies with the water companies. In the plan area this responsibility lies mainly with Wessex Water, although South West Water covers some areas in the west of the county, managing four of the sewage treatment plants in Dorset.

**Figure 21 Existing sewage treatment facilities**



**6.19** Wessex Water has forecast that sewage arisings are likely to grow by approximately 4% over the period to 2020. This will require careful management, particularly within the Poole Harbour catchment. The harbour itself is designated as a Special Protection Area, Ramsar site and Special Area of Conservation and is sensitive to increased levels of nitrogen deposition.

# 7 Appendix 1 - Developing Growth Scenarios

**7.1** The table below highlights the key issues that were considered when developing the level of local authority growth for the three authorities.

**Issues considered in developing growth scenarios**

Issue	How we have built in the impact of this
<p>How the roll out of the DWP co-mingled kerbside collection service would effect tonnages as it becomes established in all areas.</p>	<p>Based on initial phases of the roll out of the new collection, DWP produced detailed projections on how the different elements of total waste arisings (Recycling, Food, Green Waste, Landfilled and Treatment) are likely to change up to 2018/19.</p> <p>Predictions have been updated based on actual arisings once the roll out was complete.</p>
<p>Bournemouth have a more established scheme for the collection of co-mingled recyclates and black bag waste.</p> <p>Introduction of fortnightly collections</p>	<p>There will be less variation in waste arisings; however it will be important to consider how both towns will expand over the plan period.</p> <p>During the preparation of the Waste Plan, Bournemouth Council made the decision to introduce fortnightly collections of waste and recyclates. This has been considered with an assumption made that the level of recyclates will increase and residual waste</p>
<p>Changes to the size of bins in Poole</p>	<p>tonnages will decrease</p> <p>Changes to sizes of bins have been introduced in Poole, however rates have and are expected to remain fairly stable. Although weights of collected recyclables are decreasing, it is suggested that this evens out with the increase in housing.</p>
<p>Housing projections</p>	<p>The impact of new homes has been built into the total municipal waste arising projections, this is based on projected housing development set out in the various district/borough local plans and core strategies.</p>
<p>Development of a new MRF to manage the county's co-mingled recyclables</p> <p>Giving residents the opportunity to recycle a greater range of materials</p>	<p>Bournemouth expect the level of recycling to remain constant with the development of a new MRF. There may be slight increases at times due to education and PR.</p> <p>Additionally the specification for a new MRF may include plastic film, plastic bags and foil which are not currently collected. However, overall the level of recyclables is expected to remain generally constant.</p> <p>NB: development of a new MRF still at early stage with no know commitment to build.</p>
<p>The introduction of new food waste collections in Bournemouth.</p>	<p>Food waste collection started in Bournemouth in March 2014. As waste arisings are known these can be built into projections.</p>
<p>The introduction of new food waste collections in Poole.</p>	<p>There are currently no plans to introduce food waste collections in Poole. The situation will be monitored during and post</p>

Issue	How we have built in the impact of this
	adoption of the Waste Plan to ensure any changes to waste collections can be planned for.



## 8 Appendix 2 - Proposed Housing Development to 2031

**NB: This report has been superseded by Appendix 3 'Proposed Housing Development to 2032 (Updated October 2015)**

**Bournemouth, Dorset and Poole – Proposed Housing Development 2014 - 2031.**

**8.1** To help assess how much municipal (household) waste will arise over the Plan period (up to 2031) this section looks at the levels of housing proposed in each of the local authorities in Bournemouth, Dorset and Poole and how much development has been built in recent years.

**Proposed Housing development**

**8.2** The Waste Plan area of Bournemouth, Dorset and Poole covers two Housing Market Areas (HMAs). The Bournemouth / Poole HMA covers the local authorities to the east of the county – including Bournemouth, Poole, Christchurch, East Dorset, North Dorset and Purbeck. The Weymouth / Dorchester HMA covers West Dorset and Weymouth and Portland local authority areas.

**8.3** The need for housing across the area was assessed by the authorities through a joint Strategic Housing Market Assessment (SHMA) covering the two HMAs in 2007/8<sup>0</sup>. This was updated in 2011<sup>0</sup> and forms the basis of the planned housing proposals in the adopted Local Plans for Bournemouth, Poole, Christchurch and East Dorset (working jointly) and Purbeck Councils. North Dorset District Council submitted their Plan in 2014 with housing proposals based on the updated assessment. This Plan has just been examined and the Inspector's findings are awaited. West Dorset and Weymouth Councils, working on a joint plan, also based the housing proposals in their submitted Local Plan on this evidence. However, due to concerns expressed by the Inspector appointed to examine their Plan, West Dorset and Weymouth and Portland Councils updated their SHMA in 2014 and on the basis of the findings, increased their proposed housing figures. The results of the examination into this Plan are expected in the summer of 2015.

**8.4** In view of the changes in government advice and in the economy since the last SHMA update, the authorities in the Bournemouth / Poole (or Eastern Dorset) HMA have now also commissioned a new SHMA. This work is nearing completion and will advise reviews of the current Plans.

**8.5** Table 23 below shows the levels of housing development proposed in the Councils' adopted Plans or latest versions in the case of North Dorset, West Dorset and Weymouth and Portland Councils.

**Table 37 Proposed Housing Development in Local Plans / Development Plan Documents in Bournemouth, Dorset and Poole**

Local Authority	Local Plan / DPD	Status	Plan period	Total Proposed dwellings	Annual average rate (dwellings per annum)	Comments
Bournemouth Borough Council	Bournemouth Core Strategy	Adopted 2012	2006 – 2026	14,600	730	
Borough of Poole	Poole Core Strategy	Adopted 2009	2006 – 2026	10,000	500	Core Strategy review underway.
Christchurch Borough Council + East Dorset District Council	Christchurch and East Dorset Core Strategy	Adopted 2014	2013 – 2028	8,490	566	
North Dorset District Council	North Dorset Local Plan Part 1	Submission 2014	2011 – 2026	4,350	290	This includes an alternative site in Blandford which increased housing supply by 150 dwellings (10dpa) above the Pre-submission Plan figures.
Purbeck District Council	Purbeck Local Plan Part 1	Adopted 2012	2006 - 2027	2,520	120	Local Plan Part 1 Review underway.
West Dorset District Council + Weymouth and Portland Borough Council	West Dorset, Weymouth and Portland Local Plan	Submitted 2013	2011 – 2031	15,500	775	Figures include increased housing target as examined in 2014.
<b>Bournemouth, Dorset and Poole</b>				<b>55,460</b>	<b>2,981</b>	

Source: Dorset County Council Spatial Planning - BDP Local Plan/Core Strategy Monitoring, March 2015

### **Past rates of development**

**8.6** To put these figures in context Table 24 below shows the historic levels of housing development in Dorset, Bournemouth and Poole over the 10 years 2004/05 - 2013/14. The average annual level of net dwelling completions across the three authorities is 2,604 dwellings. When the figures are considered in more detail a sharp divide can be seen in the level of development pre and post 2009 when the housing recession really began to bite in Dorset. Completions pre 2009 were over 3,000 every year whereas from 2009 onwards they have fallen below 2000 dwellings per annum. The planned annual average level of 2,981 dwellings per annum in Table 24 is above the 10 year average completions but below the higher levels of development achieved in the earlier years of the decade.

**Table 38 Historic Housing Development in Bournemouth, Dorset and Poole, Net Completions April 2004 – March 2014**

Local Authority	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2004/5-2013/14 year av	10 year av
Christchurch	92	132	128	190	101	102	103	62	71	149	1,130	113
East Dorset	225	172	128	163	116	70	157	107	61	156	1,355	136
North Dorset	489	554	270	194	207	192	272	375	144	227	2,924	292
Purbeck	83	161	187	208	194	164	77	107	79	72	1,332	133
West Dorset	530	564	517	345	383	204	330	377	366	259	3,875	388
Weymouth & Portland	290	359	188	275	410	150	130	169	204	113	2,288	229
<b>Dorset</b>	<b>1,709</b>	<b>1,942</b>	<b>1,418</b>	<b>1,375</b>	<b>1,411</b>	<b>882</b>	<b>1069</b>	<b>1197</b>	<b>925</b>	<b>976</b>	<b>12,904</b>	<b>1,290</b>
Bournemouth	1,096	960	1,089	1,534	1,218	622	492	555	639	394	8,599	860
Poole	413	828	666	619	685	421	257	187	208	257	4,541	454
<b>Totals</b>	<b>3,218</b>	<b>3,730</b>	<b>3,173</b>	<b>3,528</b>	<b>3,314</b>	<b>1,925</b>	<b>1,818</b>	<b>1,939</b>	<b>1772</b>	<b>1627</b>	<b>26,044</b>	<b>2,604</b>

Source: Dorset County Council, Spatial Planning - Residential Land Monitoring Records 2014

## Projected Development to 2031

**8.7** It is not yet known what level of development will be built beyond the current Plan periods. However, for this exercise it is assumed that the annual average development rate proposed for each Plan is extended beyond the end date of the Plan up to 2031. Table 25 shows these figures in column D. It shows that, on current planned rates of development some 65,238 dwellings could be built across Bournemouth, Dorset and Poole by 2031. Column E shows how much development has been built between the start of each Plan period up to the end of March 2014. The overall total of development built to March 2014 is 13,470 dwellings, an average rate of 2,417 dpa. This is lower than the average rate anticipated across the entire plan period (2,981 dpa) but this is not surprising as most of the Plans include the period of recession during the last few years when build rates slowed considerably. Some 51,768 dwellings remain to be built up to 2031 at a rate of over 3,000 dwellings per annum, similar to the rate between 2004 and 2009.

**8.8** Looking to the future, a key objective of national planning policy as set out in the National Planning Policy Framework is to “*boost significantly the supply of housing*”. To that end local authorities should make objective assessments of housing need, working jointly with neighbouring authorities who share the same housing market area. West Dorset and Weymouth and Portland Councils are the first in Dorset to make such an assessment<sup>0</sup>. These Councils have proposed a change to their Plan to increase the amount of housing built by upping the rate of development over the next 14 years by around 25%. (These figures have been accounted for in Table 3 as it is assumed that they will be included in the adopted Plan).

**8.9** The authorities in the Bournemouth/Poole Housing Market Area covering the east of the county are currently undertaking a similar assessment and will review the housing figures in their Plans over the next few years. Final housing figures based on the latest (2012 based) household projections are still awaited. Interim work indicates that considering both economic as well as demographic forecasts, the need for housing could increase by as much as 30% above current planned targets in the Eastern Dorset SHMA, so it is likely that additional development beyond current proposals will be needed in the medium to long term (2020 – 2031). However these are not yet final figures and further assessment using the latest government projections may result in changes. Also, it must be recognised that the east of the county is heavily constrained by European and nationally protected habitats as well as designated “Areas of Outstanding Natural Beauty” which will limit opportunities for future development, so it cannot be automatically assumed that it will be possible to increase housing rates by as much as 30%. The Local Authorities will have to assess what opportunities for development exist within their area and if necessary liaise with neighbouring authorities if they are unable to meet their objectively assessed needs themselves.

**8.10** Considering the broad distribution of future development, it is likely that the main focus will be in and around Poole and Bournemouth. The Dorset Local Enterprise Partnership’s Strategic Economic Plan proposes major development at Aviation Park at Bournemouth Airport and regeneration of the Port of Poole. A major urban extension of almost 1,000 dwellings is also proposed at north Christchurch. These proposals together with development around the two Universities in Bournemouth/Poole will help to stimulate the urban economy. Elsewhere a major urban extension (1800 dwellings) is proposed in Gillingham in the north of the County. In the west, Dorchester will be the main focus of development with around 1900 dwellings allocated, but extensions on the edge of Weymouth will also boost that town’s growth by around 1300 dwellings.

Table 39 Projected development up to 2031

Local Authority	A Plan period	B Total dwellings proposed (net).	C Average annual rate (dpa).	D Total projected development to 2031* (net).	E Development built from Plan start to 31.03.2014 (net)	F Outstanding development to 2031 (net).	G Average rate of development to be built to 2031 (dpa)
Bournemouth Borough Council - Core Strategy	2006 – 2026	14,600	730	18,250	6,543	11,707	689
Borough of Poole - Core Strategy	2006 – 2026	10,000	500	12,500	3,300	9200	541
Christchurch + East Dorset Councils – Core Strategy	2013 – 2028	8,490	566	10,188	305	9,883	581
North Dorset District Council -Local Plan Part1	2011 – 2026	4,350	290**	5,800	746	5,054	297
Purbeck District Council-Local Plan Part 1	2006 - 2027	2,520	120	3,000	1,088	1,912	113
West Dorset + Weymouth and Portland Councils – Local Plan	2011 – 2028	13,175	775***	15,500	1,488	14,012	824
<b>Bournemouth, Dorset and Poole</b>		<b>53,135</b>	<b>2,981</b>	<b>65,238</b>	<b>13,470</b>	<b>51,768</b>	<b>3045</b>

Source Dorset County Council

Notes: \* Total development to 2031 assumes annual average rate of previous Plan period continues.

\*\* North Dorset total includes additional 150 dwellings (10dpa) for new site in Blandford .

\*\*\* Annual average rate in West Dorset/Weymouth& Portland assumes higher rate identified in the Local Plan "Further Changes" 2014 for 2011 – 2031.

# 9 Appendix 3 - Proposed Housing Development to 2032 - Revised October 2015

### Bournemouth, Dorset and Poole – Proposed Housing Development 2015 – 2032 (January 2016)

To help assess how much municipal (household) waste will arise over the Plan period (up to 2032) this section looks at the levels of housing proposed in each of the local authorities in Bournemouth, Dorset and Poole and how much development has been built in recent years.

#### Proposed Housing development.

The Waste Plan area of Bournemouth, Dorset and Poole covers two Housing Market Areas (HMAs). The Bournemouth / Poole (or Eastern Dorset) HMA covers the local authorities to the east of the county – including Bournemouth, Poole, Christchurch, East Dorset, North Dorset and Purbeck. The Weymouth / Dorchester HMA covers West Dorset and Weymouth and Portland local authority areas.

The need for housing across the area was assessed by the authorities through a joint Strategic Housing Market Assessment (SHMA) covering the two HMAs in 2007/8<sup>0</sup>. This was updated in 2011<sup>0</sup> and forms the basis of the planned housing proposals in the adopted Local Plans for Bournemouth, Poole, Christchurch and East Dorset (working jointly), North Dorset and Purbeck Councils. West Dorset and Weymouth Councils, working on a joint plan, based their housing proposals on an updated SHMA using 2012 based population projections. This Plan has now been adopted.

In view of the changes in government advice and in the economy since the last SHMA update, the authorities in the Eastern Dorset HMA have now also completed a new SHMA. This work will advise reviews of the current Plans.

Table 1 below shows the levels of housing development proposed in the Councils' adopted Plans.

**Table 40**

Table 1 Proposed Housing Development in Local Plans / Development Plan Documents in Bournemouth, Dorset and Poole						
Local Authority	Local Plan / DPD	Status	Plan period	Total Proposed dwellings	Annual average rate (dwellings per annum)	Comments
Bournemouth Borough Council	Bournemouth Core Strategy	Adopted 2012	2006 – 2026	14,600	730	Review underway
Borough of Poole	Poole Core Strategy	Adopted 2009	2006 – 2026	10,000	500	Review underway.
Christchurch Borough Council + East Dorset District Council	Christchurch and East Dorset Core Strategy	Adopted 2014	2013 – 2028	8,490	566	
North Dorset District Council	North Dorset Local Plan Part 1	Adopted 2016	2011 – 2031	5700	285	

Purbeck District Council	Purbeck Local Plan Part 1	Adopted 2012	2006 - 2027	2,520	120	Review underway.
West Dorset District Council + Weymouth and Portland Borough Council	West Dorset, Weymouth and Portland Local Plan	Adopted 2015	2011 – 2031	15,500	775	
<b>Bournemouth, Dorset and Poole</b>				<b>56,810</b>	<b>2,976</b>	

Source: Dorset County Council Economy and Enterprise- BDP Local Plan/Core Strategy Monitoring, January 2016.

### Past rates of development

To put these figures in context Table 2 below shows the historic levels of housing development in Dorset, Bournemouth and Poole over the 10 years 2005/06 - 2014/15. The average annual level of net dwelling completions across the three authorities is 2,497 dwellings. Looking in more detail a sharp divide can be seen in the level of development pre and post 2009 when the housing recession really began to bite in Dorset. Completions between 2005/6 and 2008/9 were over 3,000 every year whereas from 2009/10 onwards they have generally been below 2000 dwellings per annum (dpa). The planned annual average level of 2,976 dpa in Table x above, is higher than the 10 year average completions but below the higher levels of development achieved in the earlier years of the decade.

**Table 41**

Local Authority	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15
Christchurch	132	128	190	101	102	103	62	71	149	149
East Dorset	172	128	163	116	70	157	107	61	156	156
North Dorset	554	270	194	207	192	272	375	144	227	227
Purbeck	161	187	208	194	164	77	107	79	72	72
West Dorset	564	517	345	383	204	330	377	366	259	259
Weymouth & Portland	359	188	275	410	150	130	169	204	113	113
<b>Dorset</b>	<b>1,942</b>	<b>1,418</b>	<b>1,375</b>	<b>1,411</b>	<b>882</b>	<b>1069</b>	<b>1197</b>	<b>925</b>	<b>976</b>	<b>976</b>

Bournemouth	960	1,089	1,534	1218	622	492	555	639	394
Poole	828	666	619	685	421	257	187	208	257
<b>Totals</b>	<b>3,730</b>	<b>3,173</b>	<b>3,528</b>	<b>3,314</b>	<b>1,925</b>	<b>1,818</b>	<b>1,939</b>	<b>1,772</b>	<b>1,627</b>

Source: Dorset County Council, Economy and Enterprise - Residential Land Monitoring Records. January 2016

### Projected Development to 2031

It is not yet known what level of development will be built beyond the current Plan periods. However, for this exercise it is assumed that the annual average development rate proposed for each Plan is extended beyond the end date of the Plan up to 2032. Table xxx below, shows these figures in column D. It shows that, on current planned rates of development some 68,114 dwellings could be built across Bournemouth, Dorset and Poole by 2032. Column E shows how much development has been built between the start of each Plan period up to the end of March 2015. The overall total of development built to March 2015 is 15,611 dwellings, an average rate of 2374 dpa. This is lower than the average rate anticipated across the entire plan period (2,976dpa) but this is not surprising as most of the Plans include the period of recession during the last few years when build rates slowed considerably. Some 52,503 dwellings remain to be built up to 2032 at a rate of over 3,000 dwellings per annum, similar to that between 2006 and 2009.

Looking to the future, a key objective of national planning policy as set out in the National Planning Policy Framework is to “*boost significantly the supply of housing*”. To that end local authorities should make objective assessments of housing need, working jointly with neighbouring authorities who share the same housing market area. West Dorset and Weymouth and Portland Councils completed their assessment in 2014<sup>0</sup>. Their Local Plan is based on these figures. However the Inspector examining their Plan noted that the authorities would need to undertake an early review of their housing situation – particularly looking at future needs in Dorchester and development opportunities in Sherborne. It is anticipated that this could lead to an increase in the overall supply in this HMA.

The authorities in the Eastern Dorset HMA undertook a similar assessment in 2015 and will review the housing figures in their Local Plans over the next few years. The overall figures for Objectively Assessed Need in the Eastern Dorset SHMA are shown in column H of the table below. They indicate a higher rate of development is needed across the Eastern half of the SHMA than has been achieved under current plans. Across the BDP area as a whole the average rate of development assessed to be needed in the latest SHMAs is around 23% higher than that which could be built under current Plans. However it must be recognised that the county is heavily constrained by European and nationally protected habitats as well as designated “Areas of Outstanding Natural Beauty” which will limit opportunities for future development, so it cannot automatically be assumed that it will be possible to increase housing rates by as much as 23%. The Local Authorities will have to assess what opportunities for development exist within their area and if necessary liaise with neighbouring authorities if they are unable to meet their objectively assessed needs themselves.

It should also be noted that the government is encouraging local communities to consider the need for housing over and above current Local Plan proposals in the preparation of “Neighbourhood Plans”. At 31<sup>st</sup> December 2015, 31 communities across the BDP area had an agreed Neighbourhood

Development Area, of which 7 have prepared a draft Neighbourhood Plan. So far only 1 Plan has been “made” (Cerne Abbas in West Dorset). The draft Neighbourhood Plans produced to date contain only limited proposals for new development (as shown in Column I of Table 3 below). As only one Plan has been formally adopted it seems premature at this stage to include an allowance for additional housing through this route. However the situation should be kept under review as more Plans become adopted.

Considering the broad distribution of future development, it is likely that the main focus will be in and around Poole and Bournemouth. The Dorset Local Enterprise Partnership’s Strategic Economic Plan proposes major development at Aviation Park at Bournemouth Airport and regeneration of the Port of Poole. A major urban extension of almost 1,000 dwellings is also proposed at north Christchurch. These proposals together with development around the two Universities in Bournemouth and Poole will help to stimulate the urban economy. Elsewhere a major urban extension (1800 dwellings) is proposed in Gillingham in the north of the County and over 1200 dwellings in and around Wimborne in the east. In the west, Dorchester will be the main focus of development with around 1900 dwellings currently allocated and extensions on the edge of Weymouth will also boost that town’s growth by around 1300 dwellings.

**Table 42**

	A	B	C	D	E	F	G
Local Authority	Plan period	Total dwellings proposed (net).	Average annual rate (dpa).	Total projected development to 2032** (net).	Development built from Plan start to 31.03.15	Outstanding development to 2032(net)	Average rate of development to be built 2032 (net)
Christchurch +	2013-28	8490	566	10,754	639	10115	595
East Dorset							
North Dorset	2011-31	5700	285	5,985	924	5061	298
Purbeck	2006-27	2520	120	3,120	1155	1965	116
West Dorset +	2011-31	15,500	775	16,275	1887	14388	846*
Weymouth and Portland							
<b>DORSET</b>		<b>32210</b>	<b>1746</b>	<b>36,134</b>	<b>4605</b>	<b>31529</b>	<b>1855</b>

Bournemouth	2006 - 26	14,600	730	18,980	7507	11473	675
Poole	2006-26	10,000	500	13,000	3499	9501	559
<b>Total BDP</b>		<b>56810</b>	<b>2976</b>	<b>68,114</b>	<b>15611</b>	<b>52503</b>	<b>3089</b>

Source: Dorset County Council, Economy and Enterprise . January 2016

\*Housing proposals in the West Dorset and Weymouth and Portland Local Plan are based on the OAN in the 2014 SHMA. As developments in the first 4 years of the Plan period have been below the average rate required, the average rate of development required to 2032 in Column G is above the overall average OAN in column H.

\*\* Total development to 2032 assumes annual average rate of previous Plan period continues

\*\*\* Includes average development rates proposed in those NPs where a draft Plan has been published, as at 12.01.2015. Only 1 Plan has been formally adopted or "made".