West Berkshire Minerals and Waste Local Plan

Local Waste Assessment (LWA)

November 2020

West Berkshire Local Plan

West Berkshire Council

This document, and its contents, has been prepared by West Berkshire Council with the support of BPP Consulting. It is intended solely for use by West Berkshire Council in relation to preparation of local aggregate and local waste assessments and development plan making.

This report may not be used by any person other than West Berkshire Council without express permission from West Berkshire Council. In any event West Berkshire Council assumes no responsibility, liability for any costs or losses to any other party in respect of or arising out of or in connection with this document and/or its contents.

For information and enquiries relating to the content of this document, contact the Minerals and Waste Team:

Tel: 01635 519111
Email: mwdpd@westberks.gov.uk
Post: Minerals and Waste Team, Planning and Transport Policy, Development and Planning, Market Street, Newbury, West Berks, RG14 5LD

Contents

1.0 Executive Summary

1.1 Purpose of the Local Waste Assessment

1.1.1 The Local Waste Assessment (LWA) reports on and provides evidence to understand the level of need for the provision of waste management capacity in West Berkshire over the Plan period (to 2037). To do this, it looks at current waste arisings, relevant management targets and waste management capacity, as well as predicted future arisings, future management targets and predicted waste management capacity at the end of the Plan period.

1.1.2 The LWA considers in depth the situation for the 'principal' waste streams, which include Local Authority Collected Waste (LACW), Construction, Demolition and Excavation (CDE) Waste, and Commercial and Industrial (C&I) Waste. It also reports on hazardous waste, radioactive waste, wastewater sludge and equine waste, as required by national Planning Practice Guidance[1].

1.2 Local Authority Collected Waste (LACW)

1.2.1 Local Authority Collected Waste (previously termed 'municipal' waste) is mainly comprised of waste from households, but also small amounts of other waste collected by or on behalf of West Berkshire Council (WBC). Total arisings in 2018 were 74,897. Based on forecasting, this could increase to 85,483 tonnes by 2036/37, although several forecasting scenarios predicted a decrease in arisings. The range of forecasting was between 64,531 – 85,483 tonnes.

1.2.2 Current targets relating to LACW are being achieved, and there is sufficient capacity within the Plan area to manage the current quantity of waste arisings. There is still sufficient capacity to manage an increase in LACW arisings over the Plan period even assuming a worst case growth scenario.

1.2.3 In terms of future targets, the EU Circular Economy Package (CEP)[2] adopted by the UK Government in 2020 introduced a 65% recycling target for municipal (household and similar) waste by 2035 with no more than 10% of municipal waste going to landfill by 2035. Current waste management capacity within the Plan area is sufficient to achieve this 65% recycling target, even assuming a worst case growth scenario.

1.3 Construction, Demolition and Excavation (CDE) Waste

1.3.1 Construction, Demolition and Excavation (CDE) wastes are produced from the demolition and construction of buildings/structures and infrastructure and is principally comprised of inert material (e.g. soil, stones, bricks, concrete) although a small proportion is non-inert (e.g. timber, plasterboard). CDE waste is generally the largest component of all the waste streams.

1.3.2 Total arisings of CDE waste in West Berkshire in 2018 were estimated to be 347,089 tonnes and the average over the last 5 years is 462,903 tonnes, which

[1] GOV.UK, (2015). *Guidance – Waste.* [online] Available at: https://www.gov.uk/guidance/waste [Accessed 05 Feb 2019]

[2] See Circular Economy Package policy statement published 30 July 2020 https://www.gov.uk/government/publications/circular-economy-package-policy-statement/circular-economy-package-policy-statement

has been chosen as the baseline arisings figure. Although CDE waste arisings are not predicted to increase significantly over the Plan period, historical variation means that future arisings could be within approximately +/- 24% of this figure (i.e. approximately 352,000 – 574,000 tonnes).

1.3.3 Current targets relating to CDE waste of 70% landfill diversion by 2020 (excluding soils) appear to be broadly being achieved. Total permanent operational capacity to manage CDE waste equates to 634,250 tonnes per annum, indicating that there will be more than sufficient capacity to achieve this target over the Plan period even assuming a worst case growth scenario.

1.4 Commercial and Industrial Waste

1.4.1 Commercial waste is any waste that comes from business activity and includes that arising from wholesalers and retailers. In addition, waste from public sector activities such as educational and healthcare establishments are included. Industrial waste arises from manufacturing and fabrication activities conducted at factories and industrial plants.

1.4.2 Total arisings in West Berkshire in 2018 were estimated to be 165,812 tonnes. Based on forecasting, this could increase to approximately 255,000 tonnes by 2037, although several forecasting scenarios predict a decrease in arisings. The range of forecasting was between approximately 142,300 – 255,000 tonnes.

1.4.3 There are no specific targets relating to C&I waste, although the targets in the Waste Framework Directive and new Circular Economy Package apply to municipal waste which includes *waste from other sources that is comparable to household waste in nature*, which would include a proportion of the commercial element of the C&I waste stream. The Circular Economy Package applies a 65% recycling target for municipal (household and similar) waste by 2035. Due to reporting methods, it is not possible to determine whether this target is being achieved for this element of the C&I waste stream, but it should be noted the target is not applicable to the whole C&I waste stream anyway.

1.4.4 It is however, important to ensure that there is at least sufficient capacity available to manage this waste stream as far up the hierarchy as possible so that this target might be achieved. Operational capacity to recycle C&I waste equates to approximately 450,950 tonnes per annum. This is sufficient capacity to ensure that 65% of the whole C&I waste stream may be recycled, and is even sufficient to manage total estimated C&I waste arisings over the Plan period assuming a worst case growth scenario.

1.5 Hazardous Waste

1.5.1 Hazardous waste refers to waste that has one or more of the specified 'hazardous properties' in the revised Waste Framework Directive 2008[3], e.g. explosive, flammable and infectious.

1.5.2 Total arisings in 2018 were 15,303 tonnes, and based on forecasting, this is expected to remain approximately constant over the Plan period. Capacity to

[3] *Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on Waste and repealing certain Directives.* [online] Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32008L0098 [Accessed 06 October 2020].

manage hazardous waste in the Plan area is approximately 17,100 tonnes per annum. It is acknowledged in national policy that for such waste streams requiring specialist management capacity, it is not always possible to manage all wastes within the Plan area of origin. This is due to the fact that the quantities of these wastes that may arise within a particular Plan area may not be sufficient to support an economically viable range of facilities to manage that waste. Therefore such wastes will tend to travel further afield.

1.6 Radioactive Waste

1.6.1 The majority of Radioactive Waste arising in West Berkshire arises from and is managed at, the Atomic Weapons Establishment (AWE) at Aldermaston and Burghfield. Other sources of radioactive waste include medical sources such as radiotherapy treatment and x-rays, plus research and industrial activities. The main types of radioactive waste arising at AWE include Low Level (LLW) and Intermediate Level (LLW) Wastes; no High Level waste (HLW) is generated. In 2016, the UK Radioactive Waste Inventory[4] recorded 4,480m^3 of ILW and 20,300m^3 of LLW at AWE (packaged volumes).

1.6.2 In terms of storage and disposal of the radioactive wastes produced at AWE, they are generally compacted to reduce their volume and stored on site until transferred to the Low Level Waste Repository at Drigg, Cumbria in terms of LLW, or Sellafield, Cumbria in terms of ILW. The Government has also committed to progressing a Geological Disposal Facility (GDF) which is its solution for long-term management of Higher Activity Waste including ILW and HLW.

1.7 Equine Waste

1.7.7 Due to the significance of the racehorse and recreational equine industry in West Berkshire, equine waste has been examined as a specific source as recommended by the national Planning Practice Guidance.

1.7.8 It is estimated that approximately 52,800 tonnes of equine waste is generated per annum, and it is not considered that this will change significantly over the Plan period. Most of this waste is managed on site via maturation piles as part of the overall use of stables, and therefore do not require express planning permission. There is no expectation that such arrangements cannot continue for the Plan period and therefore no specific provision is considered necessary.

1.8 Wastewater including Sewage Sludge

1.8.1 Sewage sludge is a natural by-product of the wastewater treatment process. In 2016, it is estimated that arisings of sludge in West Berkshire were between 3,916 – 3,997 tonnes, rising to 4,114 tonnes by 2035.

1.8.2 There are 30 sewage treatment works in West Berkshire, and one sludge dewatering centre (Newbury Sewage Treatment Works), with a capacity to process 7,300 tonnes per annum. Thames Water, the wastewater utility company have indicated that it intends to make use of facilities with spare capacity and expand capacity at current sites should the need arise in preference to developing new facilities in West Berkshire over the Plan period.

[4] https://ukinventory.nda.gov.uk/

1.9 Management of Residual Waste

1.9.1 Residual waste is waste left after non-hazardous waste (predominately from C&I and LACW streams) has been sorted and processed in order to extract maximum value, and requires management as a 'final fate'. This might be as disposal to landfill or other recovery such as incineration with efficient energy recovery either in the UK or abroad once converted to RDF.

1.9.2 West Berkshire does not have significant capacity to manage residual waste, and as such most of this residual waste is sent outside of the Plan area for management. In particular, there are no non-hazardous landfills due to the underlying geology being unsuitable to meet modern landfill standards, and limited energy recovery capacity.

1.9.3 National policy does not necessarily expect every waste planning area to provide the full range of facilities required to manage waste arising within the Plan Area, given economies of scale and the operation of the market transcending administrative boundaries. This means that each WPA may aim to achieve self-sufficiency overall ('net' self-sufficiency), which means that flows into and out of the Plan area are balanced and offset. For West Berkshire the lack of capacity to manage residual waste is more than offset by the capacity of facilities providing other forms of waste management in the district such as recycling. Therefore, overall waste management capacity in the district exceeds that of the waste generated and it can be said that the objective of net self-sufficiency can be met. Where a specific lack of capacity exists (for example residual waste management), this has been addressed through the Duty to Cooperate.

1.10 Movement of Waste

1.10.1 As stated above waste moves across administrative boundaries as its management is generally driven by market forces.

1.10.2 In 2018, over 95% of waste arising within West Berkshire was managed either within West Berkshire, or at facilities in mainly surrounding authorities (Oxfordshire, Hampshire, Slough). In addition, approximately 95% of waste that was managed within West Berkshire in 2018 came from either West Berkshire or surrounding authorities (Reading, Wokingham, Oxfordshire). This suggests that West Berkshire operates within a relatively locally based market catchment for its major waste streams.

1.11 Waste Arisings and Capacity in West Berkshire Summary

1.11.1 Table 1.1 shows the current arisings and predicted capacity balance in West Berkshire for at the end of the Plan period (2037).

Table 1.1: Arisings and Capacity (permanent, operational) Summary in West Berkshire

Waste Stream	Chosen Baseline Arisings (t)	Projected Arisings 2037 (t)	Permanent Operational Capacity (t)	Shortfall/ Surplus at 2037 (t)
LACW	74,897	85,500	118,000	+32,500

CDE	462,903	574,000	634,250 (+87,700m^{3}*)	+60,250
C&I	165,812	255,000	450,950**	+195,950
Hazardous	15,303	15,100	17,100	+2,000
Sewage Sludge	3,916	4,114	7,300	+3,186
*Radioactive****	*1,372m^{3}*****	*1,372m^{3}*	*20m^{3}*	-
*Equine****	*52,800*	*52,800*	*4,000*	-
*Other****	-	-	*400*	-
Total	**607,017**	**933,714**	**1,227,600 (+87,700m^{3})**	**+293,886**

* Inert waste landfill capacity is temporary, and has been excluded from net self-sufficiency calculations.

** Rounded up from 450,948 t

*** Not included in net self-sufficiency calculations

**** Radioactive waste arisings based on lifetime total over the Plan period (24,700/18).

1.11.2 Based on the findings of this Local Waste Assessment, and as summarised in Table 1.1, West Berkshire is net self-sufficient in the management of its waste, with an potential surplus of capacity of over 290,000 tonnes per annum at the end of the Plan period. This is based on the worst case forecasts of waste arising in all waste streams, and only includes permanently consented operational capacity and so is considered to be a robust assessment of capacity needs within the district.

2.0 Introduction

2.1 Purpose of the Local Waste Assessment

2.1.1 This Local Waste Assessment (LWA) has been produced as part of the evidence base to support the proposed submission version of the West Berkshire Minerals and Waste Local Plan (MWLP). It builds on the previous two Local Waste Assessments, the LWA 2013 produced in support of the Issues and Options consultation on the emerging MWLP, and the LWA 2016 produced to support the preferred options stage of the plan-making process. It also updates the LWA produced in 2019. Although these previous LWAs remain part of the evidence base for the emerging plan, this LWA updates and replaces these versions.

2.1.2 The Local Waste Assessment reports on, and provides evidence to understand the potential level of need for the provision of waste management capacity in West Berkshire over the Plan period (to 2037). In order to do this, the following matters are specifically considered:

(i) The current waste arisings in West Berkshire, as well as any historic patterns of arisings, covering each of the three 'principal' waste streams:

- Local Authority Collected Waste (LACW)
- Commercial and Industrial Waste (C&I); and
- Construction, Demolition and Excavation Waste (CDE)

Alongside these three waste streams, the LWA also considers the situation around hazardous waste, radioactive waste, wastewater sludge and locally significant equine waste as recommended by national Planning Practice Guidance[5].

(ii) Forecasts of the likely changes in waste arisings in each of the principal waste streams over the plan period (to 2037), including different forecast scenarios.

(iii) The current need for waste management capacity in West Berkshire, against the existing management capacity delivered by existing sites, covering the three principal waste streams (LACW, C&I, CDE). Again, the situation for hazardous, radioactive, sewage sludge and equine wastes has also been considered.

(iv) Identification of possible additional waste management capacity requirements and surplus waste management capacities over the plan period to 2037 for each of the principal waste streams, giving an indication of any critical current or projected capacity gaps the MWLP would need to provide for.

(v) The current pattern of movement of waste, by waste type, into and out of West Berkshire and the identification of any strategically important cross- boundary flows.

N.B. Any assumptions applied within this report are clearly stated.

[5] GOV.UK (2015) *Guidance – Waste. Paragraph: 013 Reference ID: 28-013-20141016 Revision date: 16 10 2014* [online] Available at: https://www.gov.uk/guidance/waste [Accessed 06 Oct 2020).

2.2 Policy Framework

2.2.1 In considering the need for future waste management requirements, it is necessary to be mindful of the context of the wider legislative and policy framework that sets targets for the management of waste both now and in future.

International

2.2.2 The principal source of drivers for change in waste management over the past decades has been European Union Directives transposed into UK law. In particular the revised Waste Framework Directive (Directive 2008/98/EC)[6] sets targets for the management of certain waste streams. In addition, the Landfill Directive (Directive 1999/31/EC)[7] specifically relates to the management of waste by landfill.

2.2.3 The Waste Framework Directive set a target of 50% recycling for household and similar waste by 2020, and a target to reuse, recycle or recover 70% of non-hazardous construction and demolition waste (excluding natural soil) by 2020. The Landfill Directive requires the diversion of biodegradable household and similar waste from landfill to 35% of the total (by weight) in 1995 by 2020.

2.2.4 The Waste Framework Directive also enshrined the application of the 'waste hierarchy' priority order into law, meaning waste is to be managed as high up the hierarchy as possible. The waste hierarchy is summarised in Figure 2.1 below:

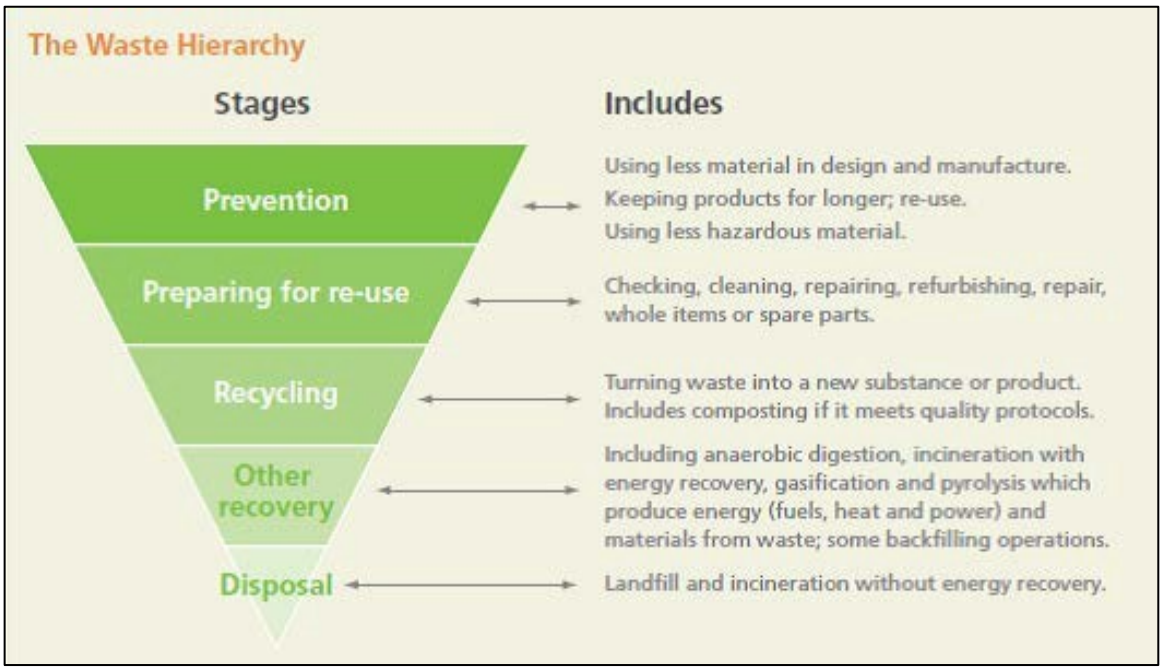

Figure 2.1: The Waste Hierarchy. Source: DEFRA (2011) Government Review of Waste Policy In England[8].

[6] *Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on Waste and repealing certain Directives.* [online] Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32008L0098 [Accessed 05 Feb 2019].
[7] *Council Directive 1999/31/EC of 26 April 1999 on the Landfill of Waste.* [online] Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A31999L0031 [Accessed 05 Feb 2019].
[8] DEFRA, (2011). *Government Review of Waste Policy in England 2011.* [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/69401/pb1354 0-waste-policy-review110614.pdf [Accessed 05 Feb 2019].

2.2.5 The EU Circular Economy Package (CEP)[9] adopted by the UK Government in 2020 increased the recycling targets for municipal (household and similar) waste in the Waste Framework Directive to 55% by 2025, 60% by 2030 and 65% by 2035 and amends the Landfill Directive to set a maximum of 10% of household and similar waste to landfill (90% landfill diversion) by 2035[10].

2.2.6 The revised Waste Framework Directive also establishes the principles of 'self-sufficiency' and 'proximity', which requires Member States to "*establish an integrated and adequate network of waste disposal installations and of installations for recovery of mixed municipal waste collected from private households*." The requirement also includes waste of similar composition to municipal waste from other producers. The network must enable waste to be disposed of, or be recovered at one of the nearest appropriate facilities, by means of the most appropriate methods and technologies, in order to ensure a high level of protection for the environment and public health. In this way, the network should enable the Community as a whole to become self-sufficient in waste disposal and recovery. It does not apply to waste not involved in municipal collection such as industrial or construction wastes, or treatment methods other than disposal or recovery.

2.2.7 Article 28 of the Waste Framework Directive requires each Member State to prepare a Waste Management Plan. In order to achieve this requirement in the UK, the Waste Management Plan for England[11] was published in December 2013 and a new Resources and Waste Strategy was published at the end of 2018[12]. The National Planning Policy for Waste (NPPW),[13] published in October 2014 also forms part of the Waste Management Plan for England setting out the national policy context for waste planning. When adopted, the West Berkshire MWLP will also comprise part of the overall Waste Management Plan for England, as all waste Development Plan Documents do.

2.2.8 The objective of the EU Landfill Directive is to prevent or reduce as far as possible, the negative effects on the environment from the landfilling of waste. In addition to the previously mentioned targets, the Directive defines different categories of waste, and sets a standard procedure for the acceptance of waste at landfills. The Directive also applies a permitting system to operating landfill sites, with strict controls on location, operation and closure of sites.

2.2.9 In addition to these two main directives, several others are also relevant to the management of waste, including:

---

[9] See Circular Economy Package policy statement published 30 July 2020 https://www.gov.uk/government/publications/circular-economy-package-policy-statement/circular-economy-package-policy-statement

[10] *Directive (EU) 2018/850 of the European Parliament and of the Council of 30 May 2018 amending Directive 1999/31/EC on the Landfill of Waste.* [online] Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2018.150.01.0100.01.ENG [Accessed 05 Feb 2019].

[11] DEFRA, (2013). *Waste Management Plan for England – December 2013.* [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/265810/pb14100-waste-management-plan-20131213.pdf [Accessed 05 Feb 2019].

[12] DEFRA, (2018). *Our Waste, Our Resources: A Strategy for England.* [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/765914/resources-waste-strategy-dec-2018.pdf [Accessed 21 Jan 2019].

[13] Department for Communities and Local Government, (2014). *National Planning Policy for Waste.* [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/364759/141015_National_Planning_Policy_for_Waste.pdf [Accessed 22 October 2020].

- Mining Waste Directive (2006/21/EC)[14]
- Urban Wastewater Directive (91/271/EEC)[15]
- Packaging Waste Directive (94/62/EC)[16]
- Waste Electrical and Electronic Equipment Directive (2012/19/EU)[17]

2.2.10 It is unclear what the impact of EU exit will have on the future implementation of evolving standards and targets enshrined in European directives within the UK. However, the Government's Waste and Resources Strategy[18] has confirmed that it remains committed to meeting the current targets until its long-term ambition to move away from weight-based recycling targets has been developed.

National

2.2.11 The *Waste (England and Wales) Regulations 2011*[19] transposed the EU Waste Framework Directive into UK legislation and set requirements for the collection, transport, recovery and disposal of waste.

2.2.12 The *Environmental Permitting (England and Wales) Regulations 2016*[20] transposed provisions of 15 EU Directives which impose obligations required to be delivered through permits or capable of being delivered through permits, including waste management facilities.

2.2.13 The National Planning Policy Framework (NPPF), first published in 2012 and revised in 2018 and 2019[21], effectively replaced the previous Regional and National planning policy system. The NPPF includes minimising waste as an environmental objective (paragraph 8), specifies that plans should set out strategic policies for matters including waste management (paragraph 20), and stipulates that it should be read in conjunction with the National Planning Policy for Waste (NPPW). The NPPW defines strategic principles for waste planning policy development and sets out considerations when determining planning applications for waste management facilities. The NPPW maintains the premise of driving waste up the waste hierarchy. Sitting alongside the NPPW is the national Planning Practice Guidance (PPG) for Waste[22], which details how the Government's policy on waste is to be interpreted/applied in practice.

---

[14] *Directive 2006/21/EC of the European Parliament and of the Council of 15 March 2006.* [online] Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32006L0021 [Accessed 05 Feb 2019].
[15] *Council Directive 91/271/EEC of 21 May 1991 Concerning Urban Waste-water Treatment.* [online] Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:31991L0271 [Accessed 05 Feb 2019].
[16] *European Parliament and Council Directive 94/62/EC of 20 December 1994 on Packaging and Packaging Waste.* [online] Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:01994L0062-20150526 [Accessed 05 Feb 2019].
[17] *Directive 2012/19/EU of the European Parliament and of the Council of 4 July 2012 on Waste Electrical and Electronic Equipment (WEEE).* [online] Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32012L0019 [Accessed 05 Feb 2019].
[18] DEFRA, (2018). *Our Waste, Our Resources: A Strategy for England.* [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/765914/resources-waste-strategy-dec-2018.pdf [Accessed 21 Jan 2019].
[19] *The Waste (England and Wales) Regulations 2011.* [online] Available at: http://www.legislation.gov.uk/uksi/2011/988/note/made [Accessed 05 Feb 2019].
[20] *The Environmental Permitting (England and Wales) Regulations 2016.* [online] Available at: http://www.legislation.gov.uk/uksi/2016/1154/note/made [Accessed 05 Feb 2019].
[21] *National Planning Policy Framework 2018* [online] Available at: https://www.gov.uk/government/publications/national-planning-policy-framework-2 [Accessed 26 March 2019].
[22] GOV.UK, (2015). *Waste Guidance.* [online] Available at: https://www.gov.uk/guidance/waste [Accessed 05 Feb 2019].

2.2.14 The Resources and Waste Strategy 2018[23] highlights the Government's priorities to achieve a circular economy as part of the transition to a sustainable economy. It builds on measures in the 25 year Environment Plan and Clean Growth Strategy and sets out how the stock of material resources is to be husbanded by minimising waste and promoting resource efficiency.

2.2.15 Alongside the NPPF, NPPW and National Waste Management Plan are the National Policy Statements (NPSs). The NPSs provide the primary basis for decisions on applications for certain defined nationally significant infrastructure projects (NSIPs) determined by the Infrastructure Planning Unit within the Planning Inspectorate on behalf of the Secretary of State. The NPSs may also be a material consideration in decision making on applications that fall to be determined by the waste planning authorities under the *Town and Country Planning Act 1990 (as amended).* Whether, and to what extent, the NPSs are material is to be assessed on a case by case basis. Those most relevant to waste management are listed below:

- EN-1: Overarching National Policy Statement for Energy (2011)[24]
- EN-3: National Policy Statement for Renewable Energy Infrastructure (2011)[25]
- National Policy Statement for Hazardous Waste (2013)[26]
- National Policy Statement for Waste Water (2012)[27]

Local

2.2.16 Current waste planning policy for West Berkshire is set out in the Waste Local Plan for Berkshire (plan period to 2006) adopted in 1998[28] (including saved policies[29]). The Waste Local Plan covers the whole of the former Berkshire County area.

2.2.17 Although the Waste Local Plan for Berkshire only covers the period until 2006, the Secretary of State directed a number of policies be saved until replaced by national, regional or local policies. For West Berkshire these saved policies will be replaced by the MWLP, once it is adopted.

2.2.18 The West Berkshire Municipal Waste Management Strategy 2002 – 2022[30] includes the long-term vision and strategic priorities for how municipal waste managed by or

[23] DEFRA, (2018). *Our Waste, Our Resources: A Strategy for England.* [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/765914/resources-waste-strategy-dec-2018.pdf [Accessed 21 Jan 2019].
[24] Department of Energy and Climate Change, (2011). *Overarching National Policy Statement for Energy (EN-1).* [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/47854/1938-overarching-nps-for-energy-en1.pdf [Accessed 05 Feb 2019].
[25] Department of Energy and Climate Change, (2011). *National Policy Statement for Renewable Energy Infrastructure (EN-3).* [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/37048/1940-nps-renewable-energy-en3.pdf [Accessed 05 Feb 2019].
[26] DEFRA, (2013). *National Policy Statement for Hazardous Waste.* [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/205568/pb13927-hazardous-waste-policy-20130606.pdf [Accessed 05 Feb 2019].
[27] DEFRA, (2012). *National Policy Statement for Waste Water.* [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/69505/pb13709-waste-water-nps.pdf [Accessed 05 Feb 2019].
[28] Berkshire Joint Strategic Planning Unit, (1998). *Waste Local Plan for Berkshire.* [online] Available at: https://info.westberks.gov.uk/CHttpHandler.ashx?id=34865&p=0 [Accessed 05 Feb 2019].
[29] Housing and Planning Directorate, (2007). *Letter Regarding Planning and Compulsory Purchase Act 2004 Waste Local Plan for Berkshire December 1998 Saved Policies Application.* [online] Available at: https://info.westberks.gov.uk/CHttpHandler.ashx?id=34867&p=0
[30] West Berkshire Council, (2002). *A Municipal Waste Management Strategy for West Berkshire Council.* [online] Available at: https://info.westberks.gov.uk/CHttpHandler.ashx?id=36818&p=0 [Accessed 05 Feb 2019].

on behalf of WBC is to be managed in the future. This strategy is underpinned by a number of strategic policies focusing on minimising waste production, and maximising recycling & composting.

Summary

2.2.19 What is clear from all these regulations, targets and strategies, is that the UK Government is committed to continuing to move towards a position where waste generation is minimised and the waste that is generated, is seen as an important resource to be re-used and recycled, and only disposed of as a last resort.

2.2.20 The myriad of targets, incentives and regulation, coupled with the complexities of many waste streams, makes it difficult to predict the future pattern of waste generation. What is clear, is that the UK Government remains committed to achieving a zero waste economy, and this will influence the need for, and the types of waste management facilities that may be required, moving forward.

2.2.21 The planning process can only do so much to achieve targets for reducing waste and moving towards a zero waste economy. It can play its part in making the right amount of the right sort of waste management capacity available in the most appropriate locations to facilitate achieving local and national aspirations. However, even where land for waste management development is identified through the plan-making process, the planning authority has little control over whether or when planning applications are made for capacity to manage waste in a way that achieves the relevant targets. It can however exert influence by approving or refusing applications depending on whether they align with the local strategy that underpins the Waste Local Plan.

3.0 Background

3.1 West Berkshire Minerals and Waste Local Plan

3.1.1 The current waste planning policy for West Berkshire is set out in the Waste Local Plan for Berkshire (WLPB) adopted in 1998[31] (including saved policies[32]). The WLPB covers the whole of the former Berkshire County area.

3.1.2 West Berkshire is preparing a new Minerals and Waste Local Plan (MWLP), which will replace the saved policies of the Waste Local Plan for Berkshire on adoption. An issues and options consultation (undertaken in accordance with Regulation 18 of The Town and Country Planning (Local Planning) (England) Regulations 2012 (as amended), including a call for mineral and waste sites was carried out in January/February 2014. Following this, a consultation focused on sites was undertaken in July/August 2016, with a further call for sites. The outcome of these consultations was used to inform and refine the emerging strategy, and a consultation on the 'preferred options' was undertaken in May/June 2017.

3.1.3 The Council is now preparing to submit the MWLP for examination, taking into account the results of these consultations. Submission is currently scheduled for Summer 2021. This Local Waste Assessment has been prepared as part of the evidence base to support the submission version of the MWLP.

3.2 West Berkshire Waste Planning Context

3.2.1 Waste flows across authority boundaries, and in this regard while West Berkshire has historically been a significant importer of some waste streams (notably inert construction and demolition waste) a potentially significant amount of other waste types (notably non-hazardous residual waste) has been exported for management outside the authority area. This is because there is a lack of non-hazardous landfill capacity within the Plan area primarily due to the underlying geology of West Berkshire and only a small amount of other recovery capacity. The limited amount of recovery capacity for residual waste is considered to be a consequence of West Berkshire being too small an area to plan effectively for all waste streams. This is primarily due to the amount of waste arisings not attracting sufficient market interest to justify development of significant capacity as economies of scale and waste management contracts often have an overriding influence. Quantities of the specialist waste arisings in the district are too small to make development of capacity for specific waste treatment viable. Therefore there will always be movements of waste across administrative boundaries.

3.2.2 It should be noted that West Berkshire's potential shortfalls in waste management capacity (non- hazardous landfill & other recovery) are at the lower end of the waste hierarchy. As such the permitted and operational waste management facilities in West Berkshire are generally managing waste at the higher end of the waste hierarchy via recycling, preparing for reuse and composting.

3.2.3 West Berkshire has entered into a Statement of Common Ground with other South East Waste Planning Authorities, which states that the authorities will set out to plan on the basis of net self-sufficiency where possible. The principle of net self-

[31] Berkshire Joint Strategic Planning Unit, (1998). *Waste Local Plan for Berkshire.* [online] Available at: https://info.westberks.gov.uk/CHttpHandler.ashx?id=34865&p=0 [Accessed 05 Feb 2019].
[32] Berkshire Joint Strategic Planning Unit, (1998). *Waste Local Plan for Berkshire.* [online] Available at: https://info.westberks.gov.uk/CHttpHandler.ashx?id=34865&p=0 [Accessed 05 Feb 2019].

sufficiency means that WBC will plan for the delivery of sufficient waste management facilities to ensure that the permitted amount of waste management capacity is at least equivalent to the amount of waste arising in the Plan area. It is considered that in planning for net self-sufficiency, the level of waste movements should be reduced in line with the proximity principle. To date in the preparation of the MWLP, the authority has been in a position of net self-sufficiency overall.

3.3 Factors Influencing Waste Arisings and Management

3.3.1 This Local Waste Assessment reviews, and seeks to predict the demands placed upon waste management capacity to establish whether WBC (as the relevant Waste Planning Authority) is making adequate provision for waste management capacity now and in the future. Before looking at the various waste streams individually, this section of the LWA reviews the likely factors that may influence waste arisings generally and hence the demand for waste management capacity, as well as potential constraints that may influence the delivery of new capacity or types of waste management facilities coming forward.

3.3.2 The drivers that influence patterns of waste generation are complex and poorly understood. However, in the past decade, there appears to have been a decoupling of the historic linkage between population growth and waste growth. As Figure 3.1 shows, Local Authority Collected Waste (which predominantly comprises waste from households plus small amounts of other waste) over this time appears to have been generally decreasing, while population has been increasing in West Berkshire. This indicates that waste growth has decoupled from population growth and therefore a simple extrapolation of arisings based on per head arisings and forecast population is unlikely to be representative.

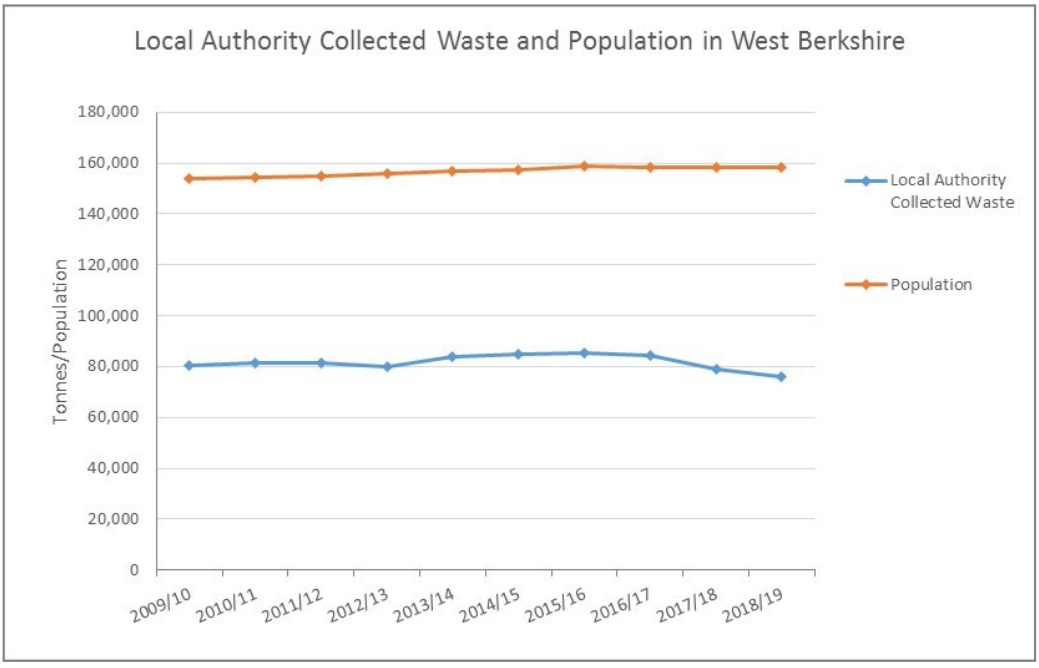

Figure 3.1: Population Growth and LACW Arisings in West Berkshire. Sources: ONS Population Estimates[33] and West Berkshire Council Waste Management Team.

[33] ONS, (2019). *Estimates of the Population for the UK, England and Wales, Scotland and Northern Ireland* [online] Available at: https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates [Accessed 06 Oct 2020]

3.3.3 Notwithstanding the above, it is considered logical that the future level of waste arisings, and hence demand for management capacity for LACW will be a function of population growth to some degree.

Population and Household Growth

3.3.4 It is expected that there will be a decrease in population in the Plan area over the projected plan period (to 2037) from approximately 159,000 people to approximately 157,000 people, as shown in Figure 3.2. This equates to a decrease of 1.3%.

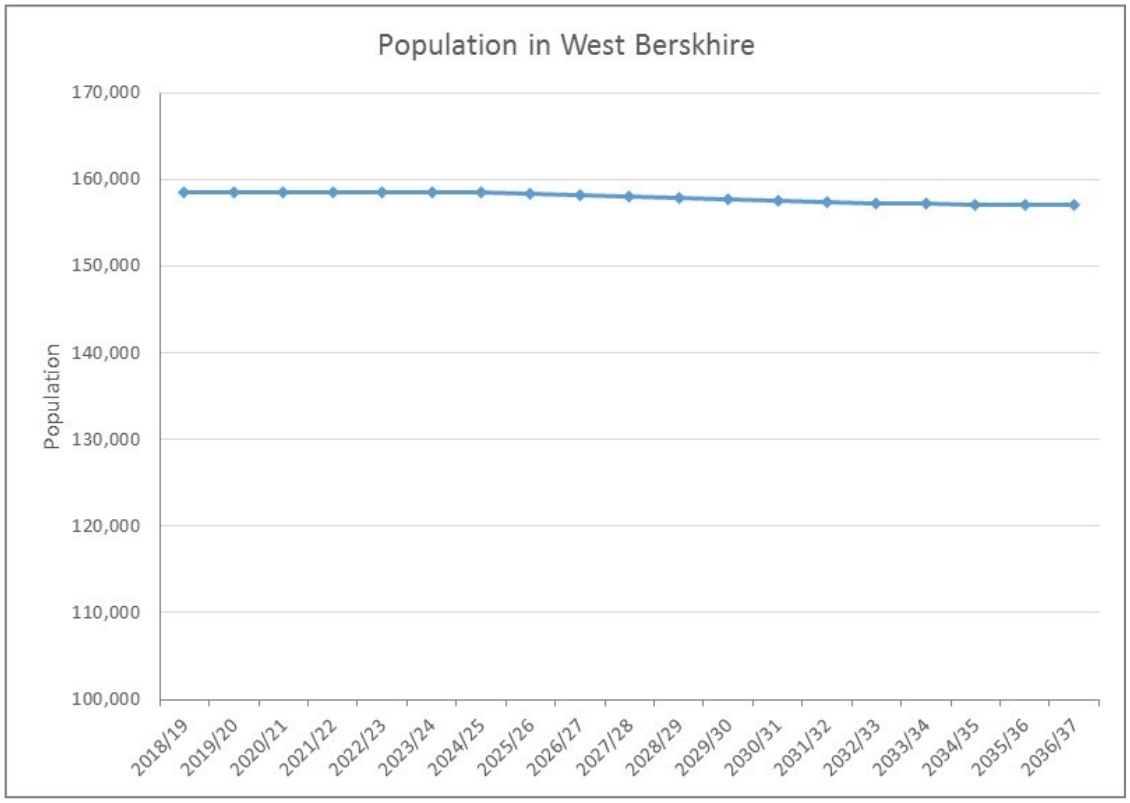

Figure 3.2: Estimated Population in West Berkshire over the Plan Period. Source ONS Population Projections.[34]

3.3.5 The ONS has also published household projection data to 2041 for England by local authority area[35]. The number of households in the district are predicted to rise from 65,392 in 2018/2019 to 69,112 in 2036/37, an increase of 5.4%.

3.3.6 The indicated increase in household numbers has the potential to result in more waste being generated within the Local Authority Collected Waste stream. Population and household change may also impact upon the level of arisings in other waste streams such as sewage waste generation, and Construction and Demolition waste as more housing is required to provide for increased households. Although population is predicted to decrease over the Plan period, as indicated previously, there appears to have recently been a decoupling of

[34] ONS. (2018). *Population Projections for Local Authorities: Table 2.* [online] Available at: https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections/datasets/localauthoritiesinenglandtable2 [Accessed 06 Oct 2020].
[35] ONS, (2018). *Household Projection for England.* [online] Available at: https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections/datasets/householdprojectionsforengland [Accessed Oct 2020].

the correlation between population growth and waste arisings.

Housing Completions

3.3.7 The projected level of housing completions required to accommodate household growth is also a factor which may influence future construction and demolition waste arisings. The number of housing completions are reported by West Berkshire Council in the Council's Annual Monitoring Report (AMR)[36].

3.3.8 The adopted West Berkshire Core Strategy contains provision for the delivery of 525 net additional dwellings per annum. West Berkshire Council is in the process of developing a new Local Plan, which will assess and seek to meet the housing and employment needs of the authority to 2036. This plan is expected to result in a need to enhance the planned provision for housing. The Strategic Housing Market Assessment (SHMA[37]) identifies West Berkshire as having a need for an average of 665 new dwellings a year. The SHMA itself however does not set a new housing target, as this will be set through the new Local Plan following additional work on constraints and opportunities for development, carried out in cooperation with the other authorities within the Housing Market Area.

3.3.9 Ultimately these increases in house completions could result in a potential consequential increase in Construction and Demolition waste. However, these changes are not considered likely to lead to significant increases over and above the levels experienced in previous years.

Economic and Construction Forecasts

3.3.10 Economic growth is considered to affect the quantities of waste arising in West Berkshire. In particular, Commercial and Industrial waste arisings from economic and support service activity, and Construction and Demolition waste in relation to construction activity.

3.3.11 The Thames Valley Berkshire Strategic Economic Plan published in 2013[38] identifies an average increase in GVA from 2000 – 2010 of 2.6%. The average increase from 2010 – 2020 is predicted to be 1.8%, and from 2020 – 2025 is 2.6%. It should be noted that these predictions were made before the Covid-19 outbreak that has resulted in a severe contraction of the UK economy in 2020.

3.3.12 The Office for Budgetary Responsibility (OBR) forecasts for GDP until 2024 are shown below[39]:

	2019	2020	2021	2022	2023	2024
GDP % change	1.4	1.1	1.8	1.5	1.3	1.4

[36] West Berkshire Council. *Annual Monitoring Report (AMR) and Planning Commitments.* [online] available at: https://info.westberks.gov.uk/amr [Accessed 05 Feb 2019].
[37] West Berkshire Council. *Strategic Housing Market Assessment.* [online] available at: https://info.westberks.gov.uk/shma [Accessed 14 Oct 2020].
[38] Thames Valley Berkshire Local Enterprise Partnership, (2013). *Strategic Economic Plan, 2015/16 – 2020/21.* [online] Available at: http://www.thamesvalleyberkshire.co.uk/getfile/Public%20Documents/Strategic%20Economic%20Plan/TVB%20SEP%20Consultation%20Draft%20low%20res.pdf?inline-view=true [Accessed 06 Oct 2020].
[39] Office for Budget Responsibility, (2020). *Economic and Fiscal Outlook.* [online] Available at: https://obr.uk/efo/economic-and-fiscal-outlook-march-2020/ [Accessed 04/11/2020].
[39] https://obr.uk/coronavirus-analysis/

3.3.13 It is important to note that these forecasts were published on 11 March 2020 before the full impact of the Coronavirus pandemic had been assessed. In July 2020 the OBR published an assessment of potential growth[40] in 2020 that specifically considers impacts of the pandemic on the economy. This analysis considers three scenarios for GDP in 2020 as follows: -10.6%; -12.4%; and, -14.3%.

3.3.14 HM Treasury comparison of independent GDP forecasts[41] published in July 2020 indicate growth of:

	2020	2021	2022	2023
GDP % change	- 9.1	6.6	N/A[42]	N/A

3.3.15 The ONS recorded a fall in GDP during the three months March to May 2020 of 19.1[43]%.

3.3.16 Forecasts of growth have been significantly affected by the coronavirus pandemic. In its report on the economic outlook for the UK in June 2020, the OECD states:

"The COVID-19 crisis has led to a severe economic contraction. GDP is projected to fall by 14% in 2020 if there is a second virus outbreak later in the year (the double-hit scenario). An equally likely single-hit scenario would still see GDP fall sharply by 11.5%."

3.2.17 KPMG noted that Brexit will also have an impact in its June 2020 report on the economic outlook for the UK[44].

"As lockdown restrictions are gradually lifted during the summer, we expect to see a partial recovery from the second half of 2020. That said, Q1 next year could see another contraction due to the end of the transition period with the EU. GDP could fall by 7.2% in 2020 before rising by 2.8% in 2021."

3.3.18 Construction output is an important economic indicator and is also used in the compilation of the output measure of GDP. The Office for National Statistics produce a monthly bulletin (Construction Output in Great Britain)[45] detailing estimates of output in the construction industry. Construction output is an important economic indicator and is also used in the compilation of the output measure of gross domestic product (GDP). Construction output fell by 40.1% in April 2020 (Figure 3.3); this was driven by a 41.2% decrease in new work and a 38.1% decrease in repair and maintenance; all of these decreases were the largest monthly falls on record since the monthly records began in January 2010.

[40] https://obr.uk/coronavirus-analysis/
[41] Forecasts for the UK Economy: A comparison of independent forecasts, July 2020 (HM Treasury): https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/900759/Forecomp_July_2020.pdf
[42] N/A = not available
[43] ONS 2020. *Gross Domestic Product* [online] https://www.ons.gov.uk/economy/grossdomesticproductgdp. Accessed 04/11/2020
[44] https://assets.kpmg/content/dam/kpmg/uk/pdf/2020/06/uk-economic-outlook-june-2020.pdf
[45] Construction output in Great Britain: https://www.ons.gov.uk/businessindustryandtrade/constructionindustry/datasets/outputintheconstructionindustry

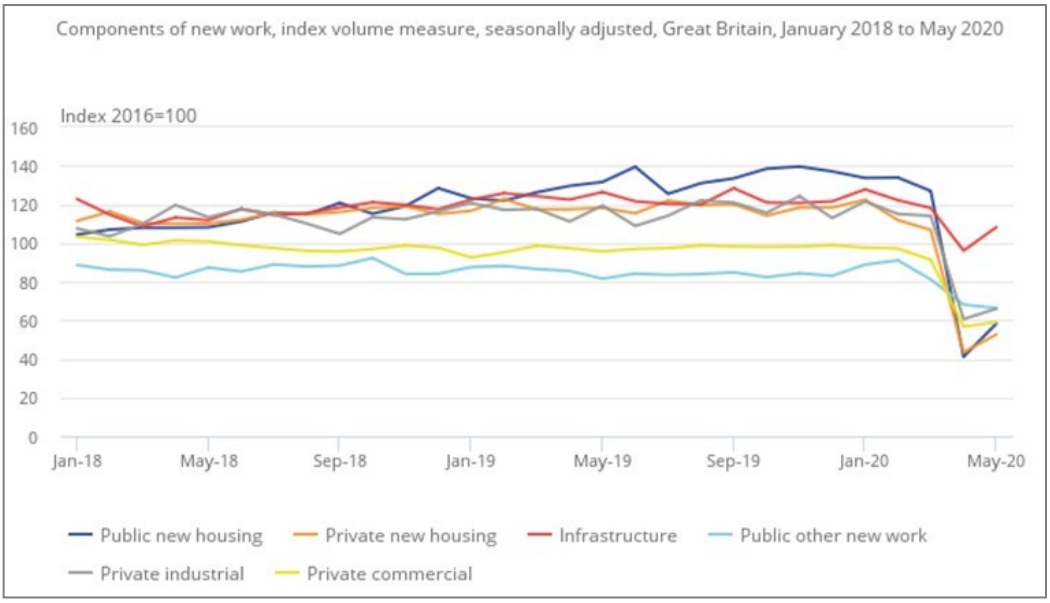

Figure 3.3: Components of new construction work. Source: ONS[46].

3.3.19 The forecasts indicate uncertainty over the impact of the coronavirus pandemic and EU exit on the economy and growth.

3.3.20 The EU Circular Economy Package will also interplay with economic activity in future, as waste is increasingly viewed as a resource to be fed back into the supply chain, and product manufacture is increasingly being designed with the whole life cycle in mind. Economic growth in future therefore may not result in a corresponding increase in waste arisings as in the past. Therefore the effect of variations in economic and construction activity on waste generation within the respective streams remain somewhat uncertain.

Constraints on Waste Arisings and Management

3.3.21 West Berkshire is a relatively small authority area, constrained by a number of environmental designations, including the North Wessex Downs Area of Outstanding Natural Beauty (AONB) which covers 74% of the district. These constraints have the potential to restrict all types of development within West Berkshire. Such restrictions suggest that it is unlikely that West Berkshire will see significant new development within the projected Plan period likely to result in a significant increase in the generation of waste above the current baseline. Such constraints may result in an increase in re-development of existing sites and refurbishment of existing buildings. This does have the potential to generate waste as part of the redevelopment process such as construction and demolition waste, albeit at a lower level than new building.

3.3.22 The predominantly rural nature of West Berkshire means that waste arisings are relatively dispersed, and this coupled with the relatively small quantities of waste produced within the authority area, may mean that certain facilities may not be developed. This is due to the fact that, as with any industry, potential investors seek a minimum rate of return on investment. In terms of waste management facilities there are throughput thresholds which may heavily influence when a new facility would become financially viable. If a facility cannot source sufficient feedstock to

46 https://www.ons.gov.uk/businessindustryandtrade/constructionindustry/bulletins/constructionoutputingreatbritain/may2020

make the operation of the facility economically viable then it is unlikely to be developed.

3.3.23 A further constraint in West Berkshire in relation to landfill taking non-inert waste, is the underlying geology. Historically, mineral extraction sites were used for landfilling waste and in previous decades this was also the dominant method of waste management in West Berkshire. However, the last landfill site in the district permitted to accept non-inert waste ceased to accept such waste in 2005. Changes to the standards and siting criteria relating to non-inert landfills introduced through pan European requirements mean that voids created from extraction of the deposits of minerals currently worked in West Berkshire (relatively shallow sand and gravel deposits) are no longer suitable for infill with anything other than inert waste materials without considerable investment. Therefore working mineral sites in West Berkshire are now restored using solely inert waste materials sourced principally from the construction and demolition waste stream or are restored to a lower level without the need for the importation of fill material at all.

3.4 Waste Management Facilities in West Berkshire

3.4.1 Tables 3.2 – 3.7 show the capacity of facilities available to manage waste in West Berkshire, broken down by waste stream. This information is summarised in Table 3.1. From this, it can be seen that West Berkshire has capacity to manage approximately 1.2 million tonnes of waste arisings per annum (plus 87,700m^3 of remaining operational inert waste voidspace and 20m^3 radioactive waste treatment)

Table 3.1: Summary of Waste Management Capacity in West Berkshire

Waste Stream	Capacity (tonnes per annum)
Local Authority Collected Waste (LACW)	118,000
Commercial and Industrial (C&I)	450,950*
Construction, Demolition & Excavation (CDE)	634,250
Hazardous	17,100
Specialist Waste (incl. sewage sludge, radioactive, equine and 'other')	11,700 (+ 20m^3)
Landfill (Inert)	87,700m^3
TOTAL	**1,232,000 + 87,720m^3**

* Rounded up from 450,948 t

Table 3.2: Waste Management Facilities in West Berkshire – Local Authority Collected (LACW) Waste.

Site Name	Site Location	Facility Type	End Date/ Permission	Capacity (tpa)	Comments
Operational LACW Capacity					
Padworth Integrated Waste Management Facility	Padworth Lane, Lower Padworth.	Materials Recovery Facility, In Vessel Composting and Waste Transfer Station	Permanent (17/01683/MINMAJ, 17/01685/MINMAJ)	88,000	Whole site conditioned to 95,000 tpa indicated within application submission, split between: HWRC (7,000 tpa) IVC (29,000 tpa) MRF 19,000 tpa) WTS (40,000 tpa)
Padworth Integrated Waste Management Facility - HWRC	Padworth Lane, Lower Padworth.	Mini HWRC	Permanent (17/01683/MINMAJ, 17/01685/MINMAJ)	7,000	
Newtown Road HWRC		HWRC	Permanent permission (06/00960/FULMAJ)	23,000	Maximum annual throughput conditioned to 23,000 tpa.
Total LACW Capacity				**118,000**	

Table 3.3: Waste Management Facilities in West Berkshire – Commercial and Industrial (C&I) Waste

Site Name	Site Location	Facility Type	End Date/ Permission	Capacity (tpa)	Comments
Operational C&I Capacity					
A4 Breakers	Sevenacre Copse, Grange Lane, Beenham.	Metal Recycling	Permanent Lawful Use (13/00343/FUL)	21,000	Established use. Standard rules permit limits throughput to 75,000 tpa. WDI data over the last 5 years suggests throughput is up to approximately 21,000 tpa.
Beenham MRF	Grange Lane, Beenham.	Materials Recycling Facility (MRF)	Permanent (06/01888/COMIND)	65,000	Throughput of 120,000 tpa allowed at appeal. EA permit limits throughput to 73,000 tpa. Most recent waste operator return indicates capacity of 35,000 transfer and 30,000 recycling/RDF production.
Theale Waste Recycling & Transfer Facility	Deans Copse Road, Theale.	Materials Recycling Facility (MRF)	Permanent (16/01200/MINMAJ)	50,000	Whole site conditioned to 150,000 tpa. Latest operator survey splits capacity into: Non-haz: C&I 50,000 tpa Inert CDE: 90,000 tpa Biomass boiler: 10,000 tpa
Theale Waste Recycling & Transfer Facility	Deans Copse Road, Theale.	Biomass boiler (waste wood) and material drying system.	Permanent (16/01200/MINMAJ)	10,000	
Padworth Breakers	Wrays Farm, Rag Hill, Aldermaston.	Metal Recycling	Permanent (94/44837/FUL)	4,999	Environmental permit allows up to 4,999 tonnes. Latest operator return indicates that the site capacity is 230,000 tonnes. This figure has not been used due to significantly lower throughput data.
Old Stocks Farm	Old Stocks Farm, Paices Hill, Aldermaston.	Skip Waste Recycling & Transfer Station	Permanent (12/03092/MINMAJ)	8,750	Whole site conditioned to 25,000 tpa until building to contain operations has been completed, whereupon site conditioned to 75,000 tpa (appeal decision). Latest operator survey indicates waste streams split between: 35% non-haz and 65% inert.

Colthrop Aggregate Processing Plant	Kennetholme Quarry, Colthrop Lane, Thatcham.	Inert Waste Recycling Facility	Permanent (13/01206/FUL)	5,000	Tonnage conditioned in planning consent to 15,000. Application indicates that 5,000 tpa will be glass (assumed to come from C&I stream), with the rest recyclable CDE waste. WDI data over the last 5 years suggests throughput is up to approximately this amount.
Woodside Recycling	Woodside Farm, Goodboys Lane, Reading	Paper Waste Transfer Station	Permanent Lawful Use (01/00819/CERT).	26,000	Established use. Site operates under a T4 waste exemption which allows 500 tonnes of waste per week to be treated as a minimum. Actual throughput data unknown.
Weirside	Land at Weirside, Burghfield Bridge, Burghfield.	Skip Waste Recycling & Transfer Facility	Permanent (05/02928/MINMAJ)	20,000	Planning permission granted on appeal requires a building to be constructed which as yet has not been. The application submission made reference to the management of 20,000 tonnes.
Computer Salvage Specialists – Abex Road	Abex Road, Newbury.	Specialist WEEE Treatment & Recycling Facility.	Permanent (00/01031/FUL)	14,499	EA permit limit is 14,499 tpa non-hazardous waste and 10,500 hazardous waste.
Computer Salvage Specialists – Aylesford Way	Aylesford Way, Thatcham.	WEEE Storage & Sorting Facility.	Permanent (09/02183/FULC)	12,000	WEEE storage and pre-processing prior to treatment at Abex Road Facility. Standard rules permit limits throughput to 75,000 tpa, however WDI data over the last 5 years suggests throughput is up to approximately 12,000 tpa.

Rookery Farm	Rookery Farm, Curridge Green, Thatcham.	Reprocessing site for scrap plastic chipping.	Permanent (07/00347/FULC)	38,000	Site operates under U10, D7, U1 and U13 waste exemptions. Most recent operator return suggests approximately 38,000 tpa capacity.
Martin Collins Enterprises	Cuckoo Copse, Lambourn Woodlands, Membury Airfield, Hungerford.	Reprocessing Tyre and Plastic.	Permanent (04/02545/FULC)	26,000	Site operates under T4, U9 and T12 waste exemptions. The T4 waste exemption allows 500 tonnes of waste per week to be treated as a minimum. Actual throughput data is unknown.
SSE Distribution Centre	Enterprise Way, Thatcham.	Waste Transfer Facility for SSE C&I waste.	Permanent (10/02632/COMIND)	1,200	Site permit limits total amount of waste accepted to 1,200 tpa.
Thatcham Block Works	Newbury Works, Enterprise Way, Thatcham.	PFA Recycling Facility	Permanent	98,500	Application indicates throughput of 225,000. Permit also limits throughput to 225,000 tpa. However, 2018 WDI throughput was approx. 98,500 tonnes. As this is a new site, capacity will be monitored to see if this needs to be increased.
Reading Quarry	Berrys Lane, Burghfield.	Skip Waste Recycling & Transfer Station	Permanent (16/03253/COMIND)	47,500	Whole site conditioned to 50,000 tpa, inclusive of biomass boiler (2,500).

Reading Quarry	Berrys Lane, Burghfield.	Biomass boiler (waste wood) and material drying system.	Permanent (16/03253/COMIND)	2,500	Whole site conditioned to 50,000 tpa, inclusive of biomass boiler (2,500).
Total C&I Operational Capacity				**450,948**	
Non-operational C&I Capacity					
Theale Waste Transfer Station	Deans Copse Road, Theale.	RDF processing, Wood & Plastic processing.	Permanent (17/02241/MINMAJ)	82,000	Site granted permission in 2017, but not yet operational. Application references 50,000 tpa capacity to process RDF, 25,000tpa wood processing and 7,000tpa plastic processing.
Beenham	Grange Lane, Beenham.	Composting Facility	Permanent (06/00862/COMIND)	25,000.	Allowed on appeal. Maximum annual throughput 25,000 tpa. Site has not operated in the last 5 years according to WDI and latest operator survey confirms the site is non-operational.
Total Non-Operational C&I Capacity				**107,000**	
TOTAL C&I WASTE MANAGEMENT CAPACITY				**557,948**	

Table 3.4: Waste Management Facilities in West Berkshire – Construction, Demolition and Excavation (CDE) Waste.

Site Name	Site Location	Facility Type	End Date/ Permission	Capacity (tpa)	Comments
Operational CDE Capacity					
Reading Quarry	Berrys Lane, Burghfield, Reading.	Construction & Demolition Recycling Facility	Permanent (13/01466/FUL)	275,000	Maximum annual throughput conditioned to 275,000tpa in consent. EA permit limits throughput to 300,000 tpa. WDI data over the last 5 years suggests capacity is up to approximately this amount.
Theale Waste Recycling and Transfer Facility	Deans Copse Road, Theale, Reading.	Inert Aggregates Recycling Facility	Permanent (16/01200/MINMAJ)	90,000	Whole site conditioned to 150,000 tpa. Latest operator survey splits capacity into: Non-haz: C&I 50,000 tpa Inert CDE: 90,000 tpa Biomass boiler: 10,000 tpa
Old Stocks Farm	Old Stocks Farm, Paices Hill, Aldermaston, Reading.	Skip Waste Recycling & Transfer Station	Permanent (12/03092/MINMAJ)	16,250	Whole site conditioned to 25,000 tpa until building to contain operations has been completed, whereupon site conditioned to 75,000 tpa (appeal decision). Latest operator survey indicates waste streams split between: 35% non-haz and 65% inert.
Colthrop Aggregate Processing Plant	Kennetholme Quarry, Colthrop Lane, Thatcham.	Inert Waste Recycling Facility	Permanent (13/01206/FUL)	10,000	Tonnage conditioned in planning consent to 15,000. Application indicates that 5,000 tpa will be glass (assumed to come from C&I stream), with the rest recyclable CDE waste.
Whitehouse Farm	Whitehouse Farm, Silchester Road, Tadley.	Skip waste Recycling & Transfer Station including inert recycling and soil screening	Permanent (136979, 10/02590/MIN MAJ)	150,000	EA permit limit is 250,000 tpa, including hazardous wastes. Most recent operator survey indicates capacity of 50,000 tpa for non-hazardous CDE waste, 50,000 tpa for inert CDE waste, 20,000 tpa for metal waste (assumed to come from CDE waste

					stream) and 2,600 tpa for hazardous wastes. WDI data over the last 5 years suggests throughput is up to approximately 150,000 tpa inert/CDE.
Colthrop Waste Transfer & Recycling Centre (Avon Site)	Land at Colthrop Business Park, Colthrop Lane, Thatcham.	Inert Waste Recycling Facility	Permanent (02/01805/COMIND)	93,000	EA permit limits throughput to 93,000 tpa and this is confirmed by operator in the most recent survey. The site was proposed on the basis it would manage 150,000 tpa (75% skip waste, 25% inert).
Total Permanent Operational CDE Capacity				**634,250**	
Moores Farm	Moores Farm, Pingewood, Reading.	Inert Waste Recycling Facility	Temporary – 31st Dec 2024 (19/00953/MINMAJ)	35,000	Also inert landfill operation. Permission requires processing of waste to cease on or before 31st December 2024. Environmental permit limits throughput to 74,000 tpa. Approximately 35,000 tonnes recycling capacity indicated in latest operator survey.
Total Operational CDE Capacity incl. temporary				**669,250**	
Non-operational CDE Capacity					
Copyhold Farm	The Quarry, Copyhold Farm, Curridge, Thatcham	Inert Waste MRF	Temporary – 15th Oct 2024 (18/02238/MINMAJ)	75,000	Will cease on conclusion of infilling operations permitted by 18/02236/MINMAJ, or of 15 October 2024, whichever is the earlier. Standard rules permit limits site to 75,000 tpa which is the capacity provided in the most recent operator returns. The latest waste operator survey response indicates that the site is non-operational and WDI shows site has not operated since 2016.
Total Non-Operational CDE Capacity (temporary)				**75,000**	
TOTAL CDE WASTE MANAGEMENT CAPACITY				**744,250**	

Table 3.5: Waste Management Facilities in West Berkshire – Hazardous Waste

Site Name	Site Location	Facility Type	End Date/ Permission	Capacity (tpa)	Comments
Operational Hazardous Capacity					
Whitehouse Farm	Whitehouse Farm, Silchester Road, Tadley.	Hazardous Waste Transfer Station	Permanent (136979, 10/02590/MINMAJ)	2,600	EA permit limit is 250,000 tpa, including hazardous wastes. Most recent operator survey indicates capacity of 50,000 tpa for non-hazardous CDE waste, 50,000 tpa for inert CDE waste, 20,000 tpa for metal waste (assumed to come from CDE waste stream) and 2,600 tpa for hazardous wastes.
Computer Salvage Specialists	Abex Road, Newbury.	Specialist WEEE Treatment & Recycling Facility	Permanent (00/01031/FUL)	10,500	EA permit limit is 14,499 tpa non-hazardous waste and 10,500 hazardous waste.
Membury Airfield	Membury Airfield, Ramsbury Road, Lambourn	Specialist waste solvent disposal and disposal and recovery of oils and minerals.	Permanent (13/00349/FUL)	4,000	Capacity based on most recent operator return.
TOTAL HAZARDOUS WASTE MANAGEMENT CAPACITY				**17,100**	

Table 3.6: Waste Management Facilities in West Berkshire – Specialist Waste

Site Name	Site Location	Facility Type	End Date/ Permission	Capacity (tpa)	Comments
Operational Specialist Waste Capacity					
Park Farm Composting	Upper Lambourn, Hungerford.	Composting of equine waste.	Permanent (10/00147/FUL)	4,000	
Hillfoot Farm	Hillfoot Farm, Hillfoot, Chapel Row.	Combined Heat and Power (CHP) plant via anaerobic digestion using mixed crops and slurry from within the agricultural unit as feedstock	Permanent (01/01031/FUL)	400	Throughput is approximately 4,000 tpa (approximately 3,600 tonnes crop tissue and 400 tonnes cattle slurry). While the most recent operator returns indicate that capacity is 6,000 tpa, mixed crop tissue is not considered as waste. Therefore only 400t agricultural waste considered to contribute to capacity.
Newbury Sewage Treatment Works	Lower Way, Newbury.	Traditional activated sludge process.	Permanent	7,300	
AWE Aldermaston	Aldermaston, Reading.	Specialist treatment (ILW).	Permanent (03/00533/FUL)	$20m^3$	Based on the UK Radioactive Waste Inventory
		VLLW, LLW and ILW transfer			
		VLLW, LLW and ILW storage			
TOTAL SPECIALIST WASTE MANAGEMENT CAPACITY				**11,700 + $20m^3$**	

Table 3.7: Waste Management Facilities in West Berkshire – Inert Disposal to Land.

Site Name	Site Location	Facility Type	End Date/ Permission	Capacity (m^3)	Comments
Operational Inert Landfill/Recovery Capacity					
Copyhold Farm Quarry	Copyhold Farm, Curridge, Thatcham.	Inert Landfill	Temporary – 14 Jun 2022 (18/02236/MINMAJ)	7,700	End date for importation of waste is 14 June 2022. The site is nearing completion of extraction and infilling. Data from Environment Agency remaining landfill capacity tables.
Kennetholme Farm	Kennetholme Farm, Bath Road, Midgham.	Inert Landfill/ Recovery to Land	Temporary – 2020 (17/00952/MINMAJ)	40,000	End date for importation of waste: 11 years from commencement of extraction operations which is ~2020. Total imported materials = 330,000 tonnes, therefore annual capacity is approximately 30,000 tonnes. Assume 2 years remaining (from end of 2018) = 60,000 tonnes, or 40,000m^3 using conversion of 1.5t:1m^3).
Moores Farm	Moores Farm, Pingewood.	Inert Landfill/ Recovery to Land	Temporary – 31st Dec 2024 (19/00953/MINMAJ)	40,000	End date for importation of waste is 31st December 2024. Annual fill capacity is approximately 30,000 tpa from latest operator survey return. Remaining capacity based on previous LWA data (100,000m^3) minus 3 years of operational capacity (90,000 tonnes = 60,000m^3 with a conversion factor of 1.5t:1m^3).
Total Operational Inert Landfill Capacity (m^3)				**87,700**	
Non-operational Inert Landfill Capacity					
Wasing Lower Farm	Lower Farm, Wasing Lane, Aldermaston.	Inert Landfill	Yet to commence. (12/01220/MINMAJ)	1,250,000	Voidspace dependent on extraction yet to commence. Non-operational.
TOTAL INERT DISPOSAL TO LAND CAPACITY (m^3)				**1,337,700**	

4.0 Local Authority Collected Waste

4.1 Introduction

4.1.1 Previously the term 'Municipal Waste' was used to refer to waste collected by local authorities. Local Authority Collected Waste (LACW) is the term now used and includes the total waste collected by a local authority. This is mainly comprised of household waste, but also small amounts of other municipal waste and non-municipal waste such as construction, demolition waste and trade waste.

4.2 Arisings

4.2.1 Figure 4.1 sets out LACW arisings in West Berkshire over the 10 year period 2009/10 - 2018/19.

Figure 4.1: Local Authority Collected Waste Arisings. Source: West Berkshire Council Waste Management Service.

4.3 West Berkshire Municipal Waste Management Strategy

4.3.1 West Berkshire Council's Municipal Waste Management Strategy (MWMS)[47] was adopted by the Council in 2002 as a 20 year strategic plan on how Local Authority Collected Waste (LACW) is to be managed in the future. This strategy is underpinned by a number of strategic policies which focus on minimising waste production, and maximising recycling & composting.

4.4 West Berkshire Integrated Waste Management Contract

4.4.1 In 2003, in order to implement the Municipal Waste Management Strategy and achieve certain recycling and landfill diversion targets, the authority secured

[47] West Berkshire Council, (2002). *A Municipal Waste Management Strategy for West Berkshire Council.* [online] Available at: https://info.westberks.gov.uk/CHttpHandler.ashx?id=36818&p=0 [Accessed 05 Feb 2019].

financial support for the development of new waste management facilities in order to maximise recycling and composting of LACW arising in the district. In 2008, an Integrated Waste Management Contract was entered into with waste management company Veolia Environmental Services, to ensure that the district's LACW is collected and managed in accordance with the Strategy. More information on this can be found in the Final Business Case of West Berkshire Council's Long-Term Integrated Waste Management Contract.[48]

4.5 Management of Local Authority Collected Waste

4.5.1 Figure 4.2 shows the pattern of how LACW has been managed within the district over the last 10 years. A detailed breakdown of the information is given in Appendix A. It can be seen from this figure that the proportion of LACW being disposed to landfill has decreased significantly over this period from 66% to approximately 15% as a consequence of recycling, composting and energy recovery. The proportion of waste recovered has exceeded that landfilled since 2011/2012.

4.5.2 A recycling/ composting rate of around 50% has been achieved since 2014/2015. This exceeds the average national rate of around 45% by a significant margin[49].

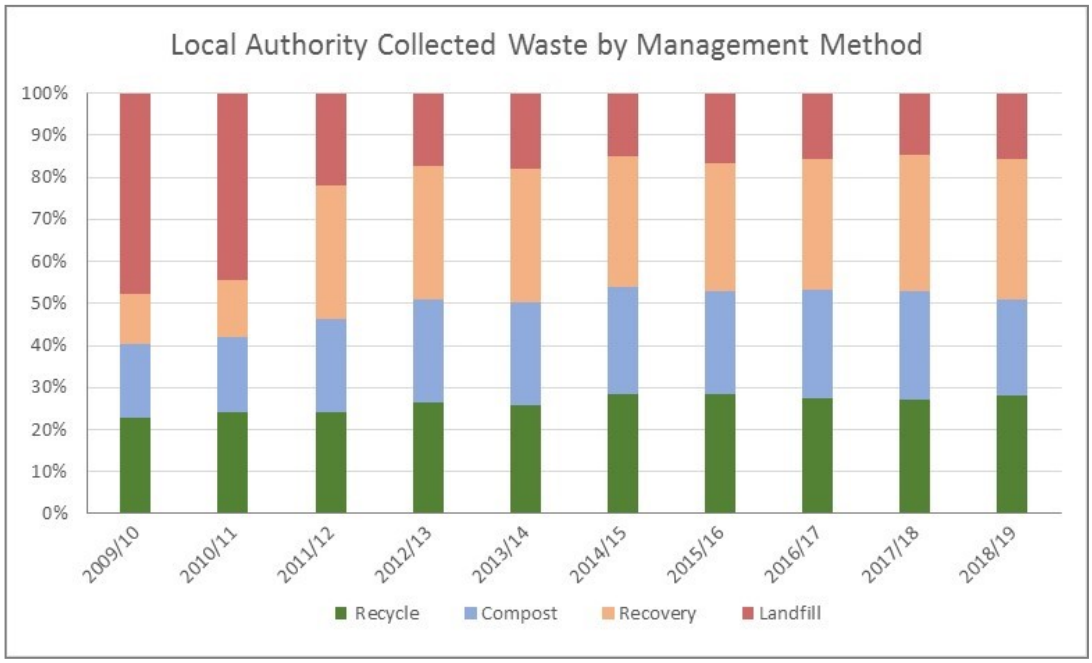

Figure 4.2: Management of Local Authority Collected Waste in West Berkshire. Source: West Berkshire Council Waste Management Service.

4.6 Local Authority Collected Waste Management Targets

4.6.1 The management of LACW can be measured against various targets at an international, national and local level; these are set out below:

[48] West Berkshire Council, (2007). *Business Case of West Berkshire Council's Long-Term Integrated Waste Management Contract.* [online] Available at: https://info.westberks.gov.uk/CHttpHandler.ashx?id=45648&p=0 [Accessed 05 Feb 2019].
[49] DEFRA, (2018). *UK Statistics on Waste* [online]. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/746642/UK_Statistics_on_Waste_statistical_notice_October_2018_FINAL.pdf [Accessed 31 Jan 2019].

International

4.6.2 The EU Waste Framework Directive sets a target for preparing for re-use and recycling of 50% of waste from households and similar waste streams by 2020[50].

4.6.3 As can be seen from Figure 4.2, this target is already being achieved in West Berkshire (in terms of the waste hierarchy, composting is equivalent to recycling).

4.6.4 The EU Circular Economy Package includes targets for recycling 65% of waste from households and similar waste streams, and a maximum of 10% of this waste to landfill (90% landfill diversion) by 2035[51].

National

4.6.5 It is unclear what the impact of the UK leaving the EU will be on the implementation of the Circular Economy Package targets in the UK. However, the Government's Resources and Waste Strategy[52] has confirmed that these targets will remain until its long-term ambition to move away from weight-based recycling targets is developed. The national strategy also aims to achieve zero biodegradable waste to landfill by 2030 with the roll out of food waste collections to all households and businesses by 2023. It also confirmed that Local Authorities will be resourced to meet the new burdens of delivering the policies in the Strategy.

Local

4.6.6 The West Berkshire Council MWMS 2002 - 2022 includes targets to have recycled or composted at least 30% of household waste by 2005/06[53]. The Integrated Waste Management Contract entered into in 2008, built on these targets, to achieve the following minimum recycling rates, and also included aspirational rates as shown in Table 4.1. The targets set, assure compliance with the WFD targets for 2020.

Table 4.1: Integrated Waste Management Contract Comparison of Aspirational, Guaranteed and Forecasted Composting and Recycling Targets (selected years).

Year	Recycling & Composting (Guaranteed)	Recycling & Composting (Predicted)	Recycling & Composting (Aspirational)
2017/18	49.39	50.4%	56%
2024/25	49.35	50.36%	56%
2031/32	49.33	50.34%	56%

Source: Business Case of West Berkshire Council's Long-Term Integrated Waste Management Contract[54].

4.6.7 In addition, West Berkshire Council has set itself a target of reducing the amount of household waste being sent to landfill, to no more than 20% of waste collected. The proportion of West Berkshire household waste sent to landfill

[50] European Commission, (2016). *Waste Framework Directive – Targets and Reporting.* [online] Available at: http://ec.europa.eu/environment/waste/framework/targets.htm [Accessed 05 Feb 2019].
[51] European Commission, (2017). *Waste – Review of Waste Policy and Legislation.* [online] Available at: http://ec.europa.eu/environment/circular-economy/ [Accessed 05 Feb 2019].
[52] DEFRA, (2018). *Our Waste, Our Resources: A Strategy for England.* [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/765914/resources-waste-strategy-dec-2018.pdf [Accessed 21 Jan 2019].
[53] West Berkshire Council, (2002). *A Municipal Waste Management Strategy for West Berkshire Council.* [online] Available at: https://info.westberks.gov.uk/CHttpHandler.ashx?id=36818&p=0 [Accessed 05 Feb 2019].
[54] West Berkshire Council, (2007). *Business Case of West Berkshire Council's Long-Term Integrated Waste Management Contract.* [online] Available at: https://info.westberks.gov.uk/CHttpHandler.ashx?id=45648&p=0 [Accessed 05 Feb 2019].

has been below 20% since 2012/13 (Figure 4.2).

4.7 Future Local Authority Collected Waste Arisings

4.7.1 To plan for sufficient waste management capacity for LACW waste in the future, it is necessary to estimate future arisings of this waste stream.

4.7.2 The national Planning Practice Guidance for Waste paragraph 29 (Reference ID: 28- 029-20141016)[55] states that:

A 'growth profile', setting out the assumed rate of change in waste arisings may be a useful starting point for forecasting municipal waste arisings. The growth profile should be based on 2 factors:

- *Household or population growth; and*
- *Waste arisings per household or per capita*

4.7.3 Following this guidance, a range of growth profiles have been considered to assess the possible range of future arisings of LACW in the District to 2037 (the end of the Plan period). In addition, the growth rate used in the Municipal Waste Management Strategy and Integrated Waste Management Contract have also been applied. These are considered to be in line with national guidance, as they account for household and population growth as well as average household size in West Berkshire. A trend-based growth profile has also been used for comparison. The profiles are:

Scenario 1: Growth rate in the Municipal Waste Management Strategy 2002-2022. This assumed that a fundamental element of the future Integrated Waste Management Contract would be a commitment to waste minimisation, with the aim of slowing the rate of household waste growth to 1% by 2010 and 0.5% per annum thereafter. Given this exercise starts after 2010 this scenario applies a growth rate of 0.5% to waste arising data through to 2037.

Scenario 2: Growth profile used in the Integrated Waste Management Strategy 2008. The final business case for the IWMC used a slowing growth rate, with a rate of 0% growth in household waste applied from 2019/2020 until 2037.

Scenario 3: This scenario applies the trend in waste arisings per capita since 2001 (- 0.78%), to the ONS predicted population data for West Berkshire until 2037.

Scenario 4: This scenario applies the past 10 year average of waste arisings per capita (0.503 tonnes per person) to the ONS predicted population data for West Berkshire to 2037.

Scenario 5: This scenario applies the trend in waste arisings per household since 2001 (-1.03% per annum) to the ONS predicted household data for West Berkshire to 2037.

Scenario 6: This scenario applies the past 10 year average of waste arisings per household (1.237 tonnes per household) to the ONS predicted household data to 2037.

[55] GOV.UK, (2015). *Guidance – Waste*. [online] Available at: https://www.gov.uk/guidance/waste#evidence-needed-to-identify-waste-requirements-in-local-plans [Accessed 05 Feb 2019].

Scenario 7: This applies the trend for actual LACW waste arisings from 2000/01 – 2018/19 and continues this trend line to 2037.

4.7.4 The results of modeling these scenarios until the end of the plan period (2037) are shown in Figure 4.3 and a summary for selected years is given in Table 4.2. The full data set is shown in Appendix B. From this, it can be seen that the range of LACW that is predicted to arise in 2037 is between approximately 65,000 – 85,000 tonnes. The average of these estimates is 75,042 tonnes, which is similar to the arisings seen in recent years. The overall trend line (shown in green) depicts a decreasing amount of LACW over the period to 2037.

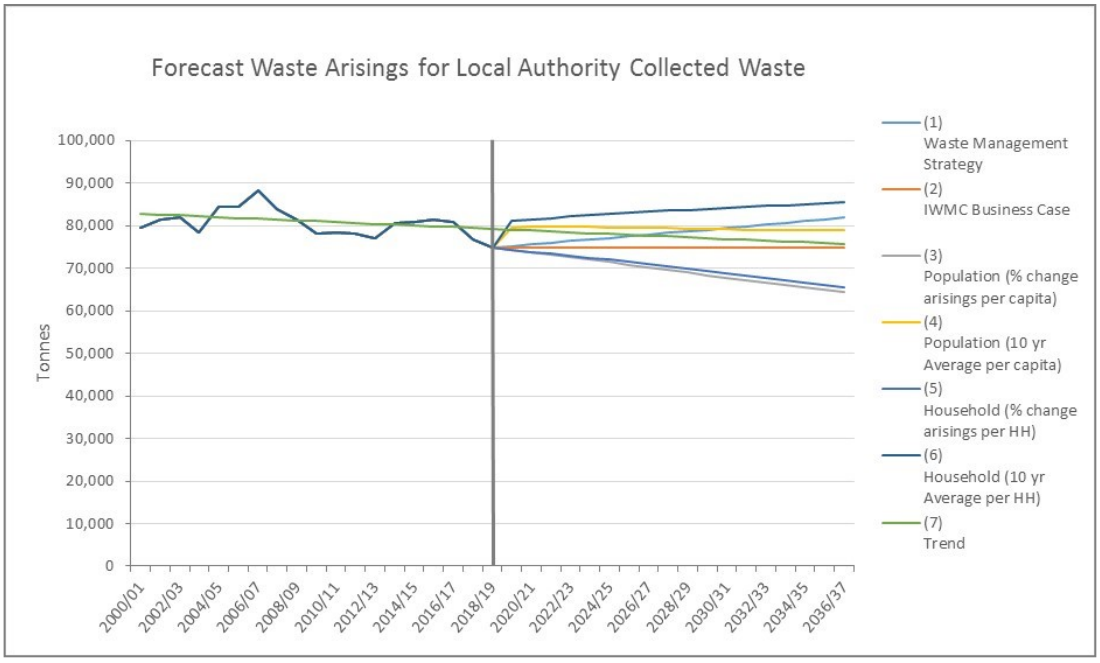

Figure 4.3: Forecast of LACW Arising Scenarios to 2037. See Appendix B for sources

Table 4.2: Estimated LACW Waste Arisings to 2037 (tonnes)

	2018/19	2023/24	2029/30	2036/37
Scenario 1	74,897	76,788	81,492	81,932
Scenario 2	74,897	74,897	77,042	74,897
Scenario 3	74,897	72,065	73,521	64,531
Scenario 4	74,897	79,699	84,424	78,972
Scenario 5	74,897	72,530	74,063	65,667
Scenario 6	74,897	82,498	87,558	85,483
Scenario 7	74,897	77,227	75,649	73,809

4.8 Local Authority Collected Waste Capacity

4.8.1 The capacity available to manage LACW in the district is shown in Table 4.3 and comprises the facilities secured through the Integrated Waste Management Contract. These facilities benefit from permanent planning permission and will be available throughout the plan period.

Table 4.3: Facilities Available to Manage LACW in West Berkshire.

Facility	Capacity (tpa)
Padworth Integrated Waste Management Facility, comprising:	
• Materials Recovery Facility (MRF);	40,000
• In Vessel Composting Facility (IVC) for garden waste and food waste;	29,000
• Waste Transfer Station (WTS); and	19,000
• Split-level Household Waste Recycling Centre (HWRC).	7,000
Newtown Road Household Waste Recycling Centre	23,000
Total	**118,000**

4.9 Capacity Analysis

4.9.1 Table 4.3 demonstrates that even assuming the highest growth rate for LACW until 2037, which would result in approximately 85,500tpa, there is still sufficient capacity at current facilities to manage LACW arisings until the end of the plan period. Additionally, there is predicted to be approximately 32,500tpa headroom capacity at these facilities even assuming the worst case scenario for waste arisings.

4.9.2 Table 4.4 below sets out the required capacity to achieve the Circular Economy Package targets by 2035, for each scenario.

Table 4.4: Estimated LACW Management Capacity Required to Meet Circular Economy Package Targets by 2035 (before the end of the Plan Period) (tonnes).

2035	Recycle (65%)	Implied Recovery (25%)	Landfill (10%)	Total
Scenario 1	53,256	20,483	8,193	81,932
Scenario 2	48,683	18,724	7,490	74,897
Scenario 3	41,945	16,113	6,453	64,531
Scenario 4	51,332	19,743	7,897	78,972
Scenario 5	42,683	16,417	6,567	65,667
Scenario 6	55,564	21,371	8,548	85,483
Scenario 7	47,976	18,452	7,381	73,809

4.9.3 The range of LACW arisings requiring recycling (including composting)to meet the Circular Economy Package targets by 2037 (at the end of the plan period) is between approximately 42,000 – 56,000 tonnes. The total current capacity to achieve this, (comprising 40,000 MRF, and 29,000 IVC) would be sufficient to achieve these targets including the worst case scenario of around 56,000 tonnes.

4.10 Residual LACW

4.10.1 There are no facilities within West Berkshire for management of residual LACW by energy recovery or non-hazardous landfill, and therefore the district is reliant on capacity outside of the Plan area for management of this waste type. This is explored in further detail in the chapter entitled 'Management of Residual Waste' where the management of residual LACW is considered together with components of a similar character arising in other waste streams.

5.0 Construction, Demolition and Excavation Waste

5.1 Introduction

5.1.1 In general, Construction, Demolition and Excavation (CDE) wastes are produced from civil engineering activities, from the demolition of existing buildings/structures, or from construction of new buildings and structures. CDE waste is principally comprised of inert material (soil, stones, bricks, concrete), but a small proportion is non-inert, for example timber, pipes and plasterboard. CDE waste is understood to be the largest contributing stream to the total quantity of waste generated in England[56].

5.2 Arisings

Data

5.2.1 The sources of data for CDE waste are limited and this makes generating estimates of CDE waste arisings within an individual Waste Planning Authority (WPA) challenging.

5.2.2 The Environment Agency (EA) records tonnages of waste managed where a site is governed by an Environmental Permit in its Waste Data Interrogator (WDI) which it publishes annually in 18 month arrears. Although the WDI has a number of caveats and limitations, it is considered one of the best available sources of waste data. In addition, the EA also publishes data in its Waste Incineration Returns (WIR) for wastes managed through Energy from Waste (EfW) facilities that are not reported through the WDI.

5.2.3 Other sources of CDE waste data include annual waste surveys carried out by the authority, and annual aggregate monitoring surveys undertaken on behalf of the South East Aggregates Working Party (SEEAWP), which include data on recycled aggregate sales.

5.2.4 Due to the nature of CDE waste, many of the arisings can be re-used on construction sites as an aggregate, as fill material, or for landscaping. In addition, CDE waste can be managed under an exemption from environmental permitting, and tonnages managed in this way are not formally reported. Therefore, potentially significant amounts of CDE waste are not being captured through established reporting mechanisms. However, waste being re-used is not likely to require specific provision for management capacity in future, and therefore it is considered that the amount of CDE waste required to be planned for is adequately captured through available data sources.

Methodologies

5.2.5 Given the uncertainties and potential inaccuracies involved in estimating CDE arisings within a WPA, several methodologies have been applied to generate a range of estimates within which actual CDE arisings may be expected to fall:

[56] DEFRA, (2018). *Digest of Waste and Resource Statistics – 2018 Edition* [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/710124/Digest_of_Waste_and_Resource_Statistics_2018.pdf [Accessed 05 Feb 2019].

Method 1: Estimate CDE arisings using the EA Waste Data Interrogator (WDI) and specific European Waste Catalogue (EWC) Code.

5.2.6 This methodology attempts to apply specific European Waste Catalogue (EWC) waste codes to determine the tonnage of CDE waste, as reported in the WDI. CDE wastes are generally categorised under Chapter 17 in the European Waste Catalogue, which covers 'Construction and Demolition Wastes (including Excavated Soil from Contaminated Sites)'. Chapter 17 codes with a hazardous denotation were excluded, as these will be reported under hazardous waste arisings. A list of the specific codes used in this methodology is given in Appendix C, and the results for the years 2014 – 2018 are given in Table 5.1.

5.2.7 To avoid double counting, tonnages to transfer facilities have been excluded except for sites outside of West Berkshire. This is because it is generally assumed that waste moving through transfer facilities in West Berkshire will be counted at other sites when it enters its final fate. For example, residual waste will end up in landfill, or at incineration facilities and recyclable material will end up at treatment facilities. However, tonnages to transfer facilities outside West Berkshire need to be included because the onward movement of waste from these facilities will no longer record West Berkshire as the origin and therefore it cannot be assumed that this waste will be captured elsewhere.

5.2.8 The WDI records waste arising from 'Berkshire' even though this does not constitute an administrative entity anymore, and waste arising that is not attributed below the level of the South East Region (WPA not codeable – South East). This results in a significant amount of waste that may potentially not be captured in waste arising calculations for individual Waste Planning Authorities. To account for this many Waste Planning Authorities are now including a 'share' of this waste to ensure it is captured and planned for accordingly. An attempt to account for the 'West Berkshire share' of this waste by determining the percentage of waste collected across all Berkshire and South East authorities in a given year and then applying this to waste originating as 'Berkshire' or 'WPA not codeable – South East' respectively. The results of this exercise are given in Appendix D. It should be noted that it is not possible to determine the particular characteristics or management method of waste estimated in this way.

Table 5.1: WDI and European Waste Catalogue Code Methodology for Estimating CDE Waste Arising in West Berkshire 2014 – 2018.

	2014	2015	2016	2017	2018
CDE Inert	135,933	186,038	214,800	190,392	144,224
% Inert	86%	90%	92%	95%	95%
CDE Non-haz	21,349	21,335	18,295	9,189	7,148
% Non-haz	14%	10%	8%	5%	5%
Total (tonnes)	**157,282**	**207,373**	**233,095**	**200,211**	**151,372**
Berkshire and South East unattributed share	133,138	134,774	143,827	74,176	67,376
GRAND TOTAL	**290,420**	**342,147**	**376,922**	**274,387**	**218,748**

Method 2: Use modified DEFRA methodology for estimating annual waste generation from the Construction, Demolition and Excavation Sectors in England (2012)[57].

5.2.9 In March 2012, DEFRA published a methodology used for estimating national CDE waste generation, which was developed in partnership with other agencies and industry bodies using existing data sources, rather than relying on previous, dated surveys. In summary, the methodology included adding the following elements:

1. Waste dealt with by transfer and treatment facilities
2. Waste sent to landfill
3. Waste disposed of under exemptions
4. Waste recycled as aggregate

5.2.10 An attempt has been made to apply this methodology to West Berkshire using available data sources. Several modifications are necessary to apply it to the local level, and the modified methodology and arisings from 2014 – 2018 are summarised in Table 5.2.

5.2.11 Again, the West Berkshire share of 'Berkshire' waste and waste not coded below the region of the South East has been applied.

[57] DEFRA, (2012). *Methodology for Estimating Annual Waste Generation from the Construction, Demolition and Excavation (CD&E) Sectors in England.* [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/400594/CDE-generation-methodology.pdf [Accessed 05 Feb 2019

Table 5.2: Modified Defra Methodology for Estimating CDE Waste Arising in West Berkshire 2014 – 2018

	2014	2015	2016	2017	2018	Notes
Waste dealt with by transfer & treatment facilities:	**24,804**	**28,673**	**50,083**	**27,029**	**15,915**	
Transfer	17,816	16,264	31,065	11,200	5,919	Only included input to transfer sites outside of West Berks, because the onward movement of waste from these facilities will no longer record West Berkshire as the origin. Waste to transfer facilities within West Berks will be covered by final disposal/treatment in other steps. Source: WDI
Treatment	2,100	3,926	10,143	5,217	9,996	Only included sites outside of West Berks, as waste recycled as product (aggregates, soil) within West Berks included in Step 4. Source: WDI
MRS	2,817	1,702	1,283	1,040	525	Source: WDI
CDE waste recoded as Ch. 19 12 12 at transfer facilities and disposed.	2,071	6,781	7,592	9,572	8,993	Included transfer facilities within plan area to account for waste that is received as Ch. 17 and recoded as 19 12 12. This was done by applying the proportion of CDE waste from West Berkshire at transfer sites within West Berks managing Ch. 17 waste and producing Ch. 19 waste to the total 19 12 12 output. Source: WDI
Waste deposited to land:	**103,672**	**162,916**	**174,396**	**168,966**	**115,156**	
Landfill	101,341	51,897	78,373	87,019	78,700	Source: WDI
On/In land	2,331	111,019	96,023	81,947	36,456	Includes waste managed at formerly exempt sites. Source: WDI

Waste dealt with under Exemptions	21,200	21,200	21,200	21,200	21,200	The most common exemption dealing with CDE waste is a 'U1' exemption which allows use of waste to be used in construction without requiring a permit. A report produced for WRAP58 estimated the mean value for U1 exemptions is 600t. The nature of these exemptions is that they are generally only used once, i.e. as a one-off exercise. The number of U1 exemptions in West Berkshire was obtained from the Environment Agency's Register of Waste Exemptions[59]. Each registration lasts for 3 years, and so the total number of exemptions registered in the last 3 years was calculated (106) and multiplied by 600. This was then divided by three to give an approximate annual estimate, giving the figure shown.
Waste recycled as aggregate	156,454	152,533	179,935	167,248	117,924	Estimated from aggregates monitoring survey (including that recycled for non-aggregate use, e.g. construction fill) by multiplying total recycled product with estimated percentage originating in West Berkshire). Source: SEEAWP Aggregate Monitoring Surveys/Authority Annual Waste Surveys.
Berkshire and South East Unattributed Share	133,138	134,774	143,827	74,176	67,376	To account for a share of waste that has not been attributed below 'Berkshire or 'South East'. See Appendix D.
TOTAL (tonnes)	**439,268**	**500,096**	**569,441**	**458,619**	**347,089**	

Assume CDE Arisings = ∑ waste dealt with by transfer & treatment facilities + waste deposited to land + waste dealt with under exemptions + waste recycled as aggregate. Use EWC codes from Ch. 17, excluding hazardous (assume 20 02 02 (soil and stones) and 19 12 09 (minerals, for example sand, stones) covered by C&I estimate).

[58] WRAP, (2013). *Review of the factors causing waste soil to be sent to landfill, 2007 to 2011*. [online] Available at: http://www.wrap.org.uk/sites/files/wrap/CIS101-301%20Final%20Report%20final%2017%20april%2013.pdf [Accessed 05 Feb 2019].

[59] Environment Agency, (n.d.a.). *Register of Waste Exemptions.* [online] Available at: [59]https://environment.data.gov.uk/public-register/view/search-waste-exemptions [Accessed 05 Feb 2019].

5.2.11 A comparison of these estimates of CDE waste arisings within West Berkshire using the two methodologies is given in Table 5.3, and show in Figure 5.1.

Table 5.3: Comparison of Estimated CDE Waste Arisings.

	2014	2015	2016	2017	2018	Average
Method 1: WDI and EWC	290,420	342,147	376,922	274,387	218,748	300,525
Method 2: Modified DEFRA Methodology	439,268	500,096	569,441	448,619	347,089	462,903

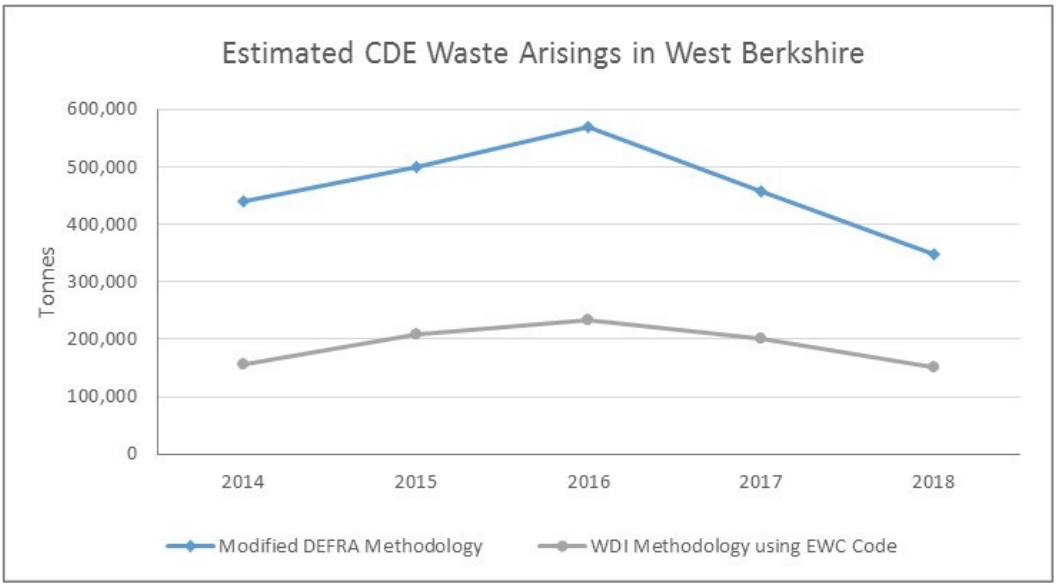

Figure 5.1: Comparison of Estimated CDE Waste Arisings in West Berkshire.

5.3 Chosen Baseline for CDE Waste Arisings

5.3.1 From Table 5.3 and Figure 5.1, it can be seen that the modified DEFRA methodology for estimating CDE waste is consistently higher than the WDI methodology using specific EWC codes. The modified DEFRA methodology also follows the same pattern of arisings as that using specific EWC codes, which is logical because both methodologies are based on the Waste Data Interrogator. In terms of robustness in planning for capacity to manage CDE waste, it is considered that using the higher figures generated using the modified DEFRA methodology will represent a worst case scenario and is likely to demonstrate the maximum amount of capacity that is required. Due to large year on year variation (up to 64%), it is also considered that using the average figure for the past 5 years will provide a more robust figure in planning for future waste management needs. Therefore, this figure has been chosen as the baseline for CDE waste arisings; this was **462,903 tonnes** in the 5 year period to 2018, as shown in Table 5.3.

5.4 CDE Waste Management Targets

5.4.1 The European Waste Framework Directive (Directive 2008/98/EC) sets a target for a minimum of 70% (by weight) of non-hazardous construction and demolition waste excluding naturally occurring excavation material (EWC 17 05 04) to be prepared for re-use, recycled or undergo other material recovery (including backfilling operations using waste to substitute other materials) by 2020.

5.4.2 When the 70% target is applied to whole of the waste stream using the 2018 CDE estimate, this would require 242,962 tonnes to be managed by reuse, recycling or other material recovery including backfilling. However, as previously mentioned, it is not possible to determine the management method of the 'Berkshire and South East share' of the estimated CDE total. It is also not possible to determine the 'final fate' of the amount of CDE waste estimated as being recoded as Chapter 19 during transfer. Without including these estimates, 189,503 tonnes of CDE waste (70% of 270,719) would be required to be managed by reuse, recycling or other material recovery to meet the target. In order to calculate the actual amount of CDE waste managed in this way (i.e. prepared for reuse, recycled or recovered), it is assumed that the tonnages represented by treatment facilities, MRS sites, recycled as product, deposited on/in land (for example as part of recovery to land operations) and waste used under exemptions contribute to this total. This amounted to 186,101 in 2018, or approximately 69% of total CDE waste attributed to West Berkshire and not recoded at transfer in the year.

5.4.3 A proportion of the tonnages dealt with by transfer facilities may well also contribute to the 70% target, however it is not possible to determine this from the information available. If all of the transfer tonnages are assumed to be relevant, then this would equate to 71% of total CDE waste managed. Moreover, given back filling is counted as other recovery further analysis of waste disposed to landfill reveals that of the total 78,700 tonnes reported, 69,979 tonnes went to inert landfill which may be regarded as beneficial recovery, giving an overall recovery rate of 89%.

5.4.4 There is currently sufficient CDE recycling capacity to manage 70% of current and predicted CDE arisings (see section 5.7). When determining future capacity required to manage CDE waste in the district, it will need to be ensured that sufficient capacity remains available to continue to manage CDE waste through preparation for reuse, recycling or material recovery in order to achieve and maintain the Waste Framework Directive target going forward.

5.5 Future CDE Waste Arisings

5.5.1 The National Planning Practice Guidance (NPPG) states in paragraph 033 (Reference ID:28-033-20141016) states:

'*Waste planning authorities should start from the basis that net arisings of construction and demolition waste will remain constant over time as there is likely to be a reduced evidence base on which forward projections can be based for construction and demolition wastes. However, when forecasting construction and demolition waste arisings, the following may be relevant:*

- *annual existing returns from waste management facilities*
- *data from site waste management plans (where available)*
- *the fact that a sizeable proportion of construction and demolition waste arisings are managed or reused on site, or exempt sites, so it is critical that some provision is made for unseen capacity in this way*
- *significant planned regeneration or major infrastructure projects over the timescale of the Plan.*

5.5.2 There are several major infrastructure projects which could contribute to CDE waste managed in West Berkshire over the Plan period including the development of the M4 Smart motorway system from Reading to London and Crossrail (the western most station being Reading). There is also a commitment by Government to continue the development of High Speed 2 (HS2) rail, and in October 2016 the

government announced that a North West runway at Heathrow is its preferred scheme for the expansion capacity in the South East although recent developments have now brought this prospect into doubt. The management of waste generated from the projects is likely to be planned for at a project level involving a combination of onsite management and use of a number of facilities across a range of authority areas. Therefore it is considered that there is no need to make specific additional provision for waste generated through the plan-making process.

5.5.3 The adopted West Berkshire Core Strategy contains provision for the delivery of at least 10,500 homes over the period 2006 – 2026, which equates to a rate of 525 net additional dwellings per annum. Subsequent to the adoption of the Core Strategy, a Strategic Housing Market Assessment (SHMA) was commissioned by the Thames Valley Berkshire Local Enterprise Partnership (LEP). This concluded that the Objectively Assessed Need (OAN) for housing in West Berkshire was 665 dwellings per annum from 2013 – 2036. The SHMA itself however, does not set a new housing target, as this will be set through the new Local Plan. The building of houses to meet the identified need would generate CDE waste requiring management within the district. However the generation of CDE waste from house building in West Berkshire would have been captured in the historical WDI data and therefore already factored into the baseline arisings estimation. While the rate may increase, the effect of this on arisings can be expected to be offset to as significant degree with increased focus on the need to reduce waste disposal costs, and improve the environmental performance of developments as assessed through the BREEAM scheme.

5.5.4 Therefore, in line with the guidance in the NPPG, a 0% growth rate has been adopted for CDE Waste arisings over the plan period (to 2037). Over the most recent 5 year period for which data is available (2014-2018), arisings have fluctuated approximately 48% from the average estimate (462,903 tonnes). Therefore, a degree of variation of +/- 24% seems prudent to apply to the baseline figure to account for year on year variation that inevitably occurs. This results in a range of between 351,806 tonnes and 574,000 tonnes, as shown in Figure 5.2.

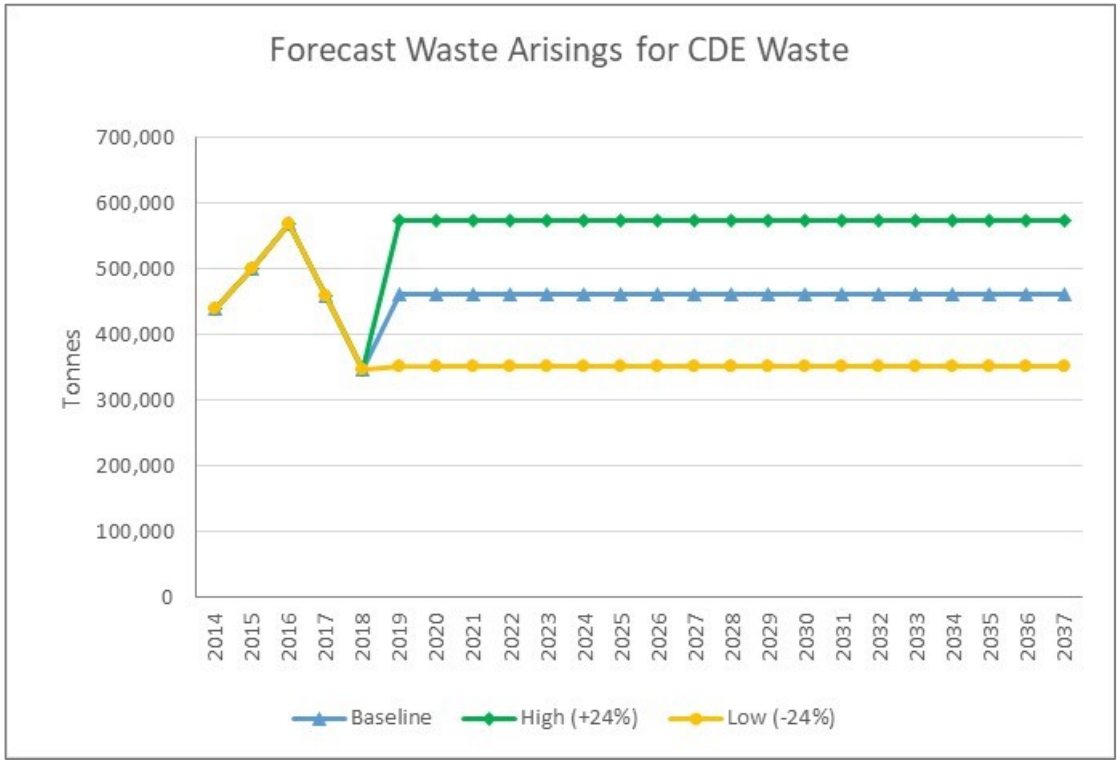

Figure 5.2: Forecast of CDE Waste Arisings to 2037

5.6 CDE Waste Management Capacity

5.6.1 There are a number of existing sites that manage CDE waste in West Berkshire. These facilities are shown in Table 5.4. Data on waste management capacity has been determined using limits on throughput in planning permissions and environmental permit limits, as well as WDI throughput data and annual waste operator and aggregates monitoring surveys. Generally planning permit limits have been applied. In the absence of these, environmental permit limits have been used in conjunction with 'sense check' information from the WDI and annual operator surveys. Any assumptions have been stated. Transfer capacity has been included, as this is considered to contribute to the management of waste in the district by preparing waste for its final fate.

Table 5.4: Facilities Available to Manage CDE Waste in West Berkshire.

Site Name	Site Location	Facility Type	End Date/ Permission	Capacity (tpa)	Comments
Operational CDE Capacity					
Reading Quarry	Berrys Lane, Burghfield, Reading.	Construction & Demolition Recycling Facility	Permanent (13/01466/FUL)	275,000	Maximum annual throughput conditioned to 275,000tpa in consent. EA permit limits throughput to 300,000 tpa. WDI data over the last 5 years suggests capacity is up to approximately this amount.
Theale Waste Recycling and Transfer Facility	Deans Copse Road, Theale, Reading.	Inert Aggregates Recycling Facility	Permanent (16/01200/MINMAJ)	90,000	Whole site conditioned to 150,000 tpa. Latest operator survey splits capacity into: Non-haz: C&I 50,000 tpa Inert CDE: 90,000 tpa Biomass boiler: 10,000 tpa
Old Stocks Farm	Old Stocks Farm, Paices Hill, Aldermaston, Reading.	Skip Waste Recycling & Transfer Station	Permanent (12/03092/MINMAJ)	16,250	Whole site conditioned to 25,000 tpa until building to contain operations has been completed, whereupon site conditioned to 75,000 tpa (appeal decision). Latest operator survey indicates waste streams split between: 35% non-haz and 65% inert.
Colthrop Aggregate Processing Plant	Kennetholme Quarry, Colthrop Lane, Thatcham.	Inert Waste Recycling Facility	Permanent (13/01206/FUL)	10,000	Tonnage conditioned in planning consent to 15,000. Application indicates that 5,000 tpa will be glass (assumed to come from C&I stream), with the rest recyclable CDE waste.
Whitehouse Farm	Whitehouse Farm, Silchester Road, Tadley.	Skip waste Recycling & Transfer Station including inert recycling and soil screening	Permanent (136979, 10/02590/MIN MAJ)	150,000	EA permit limit is 250,000 tpa, including hazardous wastes. Most recent operator survey indicates capacity of 50,000 tpa for non-hazardous CDE waste, 50,000 tpa for inert CDE waste, 20,000 tpa for metal waste (assumed to come from CDE waste stream) and 2,600 tpa for hazardous

					wastes. WDI data over the last 5 years suggests throughput is up to approximately 150,000 tpa inert/CDE.
Colthrop Waste Transfer & Recycling Centre (Avon Site)	Land at Colthrop Business Park, Colthrop Lane, Thatcham.	Inert Waste Recycling Facility	Permanent (02/01805/COMIND)	93,000	EA permit limits throughput to 93,000 tpa and this is confirmed by operator in the most recent survey. The site was proposed on the basis it would manage 150,000 tpa (75% skip waste, 25% inert).
Total Permanent Operational CDE Capacity				**634,250**	
Moores Farm	Moores Farm, Pingewood, Reading.	Inert Waste Recycling Facility	Temporary – 31st Dec 2024 (19/00953/MINMAJ)	35,000	Also inert landfill operation. Permission requires processing of waste to cease on or before 31st December 2024. Environmental permit limits throughput to 74,000 tpa. Approximately 35,000 tonnes recycling capacity indicated in latest operator survey.
Total Operational CDE Capacity incl. temporary				**669,250**	
Non-operational CDE Capacity					
Copyhold Farm	The Quarry, Copyhold Farm, Curridge, Thatcham	Inert Waste MRF	Temporary – 15th Oct 2024 (18/02238/MINMAJ)	75,000	Will cease on conclusion of infilling operations permitted by 18/02236/MINMAJ, or of 15 October 2024, whichever is the earlier. Standard rules permit limits site to 75,000 tpa which is the capacity provided in the most recent operator returns. The latest waste operator survey response indicates that the site is non-operational and WDI shows site has not operated since 2016.
Total Non-Operational CDE Capacity (temporary)				**75,000**	
TOTAL CDE WASTE MANAGEMENT CAPACITY				**744,250**	

5.7 Capacity Analysis

5.7.1 From Table 5.5 it can be seen that permanent operational capacity to manage the recyclable element of CDE waste equates to 634,250 tonnes per annum. This is in excess of the approximately 401,800 tonnes of CDE waste (70% of worst case growth scenario) required to be prepared for reuse, recycled or recovered at the end of the Plan period in line with the Waste Framework Directive. It is even sufficient to manage the total estimated CDE waste arisings (351,806 - 574,000 tpa) over the plan period, although there is still likely to be a need for capacity for the management of non-inert residual CDE waste.

5.7.2 There is existing capacity for inert landfill/recovery of 87,700m^3. In addition, as part of the MWLP, sites are being allocated for minerals development and this will potentially involve the infilling of mineral voids with inert fill material (often comprised of CDE waste). Capacity to manage non-inert residual waste (including that arising from CDE waste) is outlined in the chapter on 'Management of Residual Waste'.

6.0 Commercial and Industrial Waste

6.1 Introduction

6.1.1 Broadly speaking, commercial waste is defined as waste arising from wholesalers, catering establishments, retailers (shops and offices) and public sector activities such as educational establishments and healthcare, while industrial waste is waste arising from factories and industrial plants. Together, they comprise the Commercial and Industrial (C&I) waste stream. Commercial waste is broadly similar in composition to Local Authority Collected Waste, and both are considered to comprise the non-hazardous fraction of waste when described by its composition (as opposed to inert and hazardous waste - although commerce and industry will be responsible for a significant proportion of arising of this waste stream too).

6.2 Arisings

Data

6.2.1 Similar to CDE waste, due to the lack of source data reporting the quantity and composition of this waste stream, obtaining estimates of C&I arisings at individual Waste Planning Authority (WPA) is challenging.

6.2.2 Again the Environment Agency Waste Data Interrogator (WDI) is considered one of the best available sources of waste data. In addition, the EA publishes data on waste managed through Energy from Waste (EfW) facilities not captured directly through the WDI, separately through the Waste Incinerator Returns (WIR).

6.2.3 Other sources of C&I waste data include the 2009 Commercial and Industrial Waste Survey undertaken by DEFRA and reported in 2011[60], which included estimates of the amount of waste generated by different commercial and industrial sectors. Due to the age of this survey, the data should be treated with due caution. The authority also undertakes annual waste input surveys of consented waste management facilities in West Berkshire, including those accepting C&I waste.

6.2.4 In some instances, C&I waste may be managed at a site that operates under an exemption from environmental permitting. This means that tonnages managed in this way are not reported through the WDI. While the initial 'Reconcile' methodology attempted to estimate quantities of waste managed through these routes, the updated DEFRA Reconcile methodology for C&I waste (Oct 2018[61]) now excludes an estimate of waste managed through exemptions, as estimates of waste are inherently unreliable. The new methodology reflects the 'best estimate' that can be produced on an annual basis from the available data. This method is used to report on progress against European Union waste management legal requirements to the European Commission. It should also be noted that some waste management activities may be conducted ancillary to a principle land use

[60] DEFRA, (2011). *Commercial and Industrial Waste Survey 2009 Final Report.* [online] Available at: https://webarchive.nationalarchives.gov.uk/20130125163914/http://www.defra.gov.uk/statistics/files/ci-project-report.pdf [Accessed 05 Feb 2019].
[61] DEFRA, (2018). *Commercial and Industrial Waste Arisings Methodology Revisions for England.* [online]. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/746643/Commercial_and_Industrial_Waste_Arisings_Methodology_Revisions_Feb_2018_Oct_2018_update.pdf [Accessed 05 Feb 2019].

and may not therefore have express planning consent. Hence a proportion of waste may be managed outside of the permitting system.

Methodologies

6.2.5 Given the uncertainties and potential inaccuracies involved in estimating C&I waste arising within a Plan area, several methodologies have been applied to arrive at an estimate for C&I arising in West Berkshire:

Method 1: Estimate C&I arisings using the EA Waste Data Interrogator (WDI) and specific European Waste Catalogue (EWC) Code.

6.2.6 This methodology attempts to apply specific European Waste Catalogue (EWC) waste codes to determine the tonnage of C&I waste, as reported in the WDI. This is essentially the corollary to the method used to generate an estimate for CDE waste, using all remaining EWC codes except Chapter 1 (Mining Waste), Chapter 02 01 (Agricultural Waste) and 19 08 05 (Wastewater – considered separately). All codes with a hazardous denotation were also excluded, as this is planned for separately as hazardous waste arisings.

6.2.7 EWC codes that denote Household and Commercial and Industrial wastes are combined in the WDI as 'HIC' (Household, Industrial and Commercial). Therefore, the amount of Local Authority Collected Waste (as reported in Section 3) must be excluded, to avoid double counting.

6.2.8 Incinerator inputs as reported by the Environment Agency Waste Incinerator Returns are included except for chapter 19 waste (as this chapter includes waste from other waste processes and will result in double counting). However, this data is only available from 2016. A list of the specific EWC codes used in this methodology is given in Appendix E.

6.2.9 To avoid double counting, tonnages to transfer facilities have been excluded except for sites outside of West Berkshire. This is because it is generally assumed that waste moving through transfer facilities will be counted at final fate sites. For example, residual waste will end up in landfill, or at incineration facilities and recyclable material will end up at treatment facilities. However, tonnages going to transfer facilities outside West Berkshire need to be included because the onward movement of waste from these facilities will no longer record West Berkshire as the origin and therefore this waste will not be captured as West Berkshire waste elsewhere.

6.2.10 The WDI records waste arising from 'Berkshire' even though this does not constitute an administrative entity anymore. In addition, the WDI also records waste arising that is not attributed below the level of the South East Region (WPA not codeable – South East). This results in a significant amount of waste that may potentially not be captured in waste arising calculations for individual Waste Planning Authorities. To account for this many Waste Planning Authorities are now including a 'share' of this waste to ensure it is captured and planned for accordingly. An attempt to account for the 'West Berkshire share' of this waste by determining the percentage of waste collected across all Berkshire and South East authorities in a given year and then applying this to waste originating as 'Berkshire' or 'WPA not codeable – South East' respectively. The results of this exercise are given in Appendix D. It should be noted that it is not possible to determine the particular characteristics or management method of waste estimated in this way.

6.2.11 The results of using this methodology to estimate C&I waste arisings in West Berkshire for the years 2014 – 2018 are given in Table 6.1.

Table 6.1: WDI and European Waste Catalogue Code Methodology for Estimating C&I Waste Arising in West Berkshire 2014 – 2018

	2014	2015	2016	2017	2018
HIC Inert	3,402	4,343	5,042	4,301	7,077
% Inert	3%	5%	7%	5%	7%
HIC Non-haz	186,938	160,388	128,551	157,434	156,832[62]
Incinerator Inputs			16,566	10,244	11,513
% Non-haz	97%	95%	93%	95%	93%
LACW	*80,856*	*81,547*	*81,051*	*76,858*	*74,897*
Total (tonnes)	**109,484**	**83,184**	**69,108**	**95,121**	**100,525**
Berkshire and SE Unattributed Share	21,138	28,109	70,429	41,069	38,342
GRAND TOTAL	**130,622**	**111,293**	**149,721**	**136,190**	**138,8676**

Method 2: Estimate C&I Waste Arisings using amount of waste generated per business sector.

6.2.12 In 2011, DEFRA published the Commercial and Industrial Waste Survey Final Report[63], which estimated the total tonnage of C&I waste produced in England by broad business sector type. The amount of waste generated per business sector is able to be determined from this, and applied to West Berkshire business data (published by ONS) in order to generate an estimate of C&I waste arisings within the district. The methodology and arisings from 2014 – 2018 are summarised in Table 6.2.

6.2.13 This methodology assumes an average tonnage of waste generated for each business in each sector. In reality, businesses of different sizes within the same sector would generate proportionally differing amounts of waste and the specific activities of each business would impact on the volume of waste arisings. As the average tonnages are based on national level data, this approach assumes that amount of waste arising per business unit in each sector in West Berkshire is the same as that at the national level. In addition, as no surveys have been undertaken since 2009, it has been assumed that the tonnage of waste produced per business unit in each sector has remained static since this time.

[62] WDI 2018 reports a movement of 201,228 tonnes of 20 03 01 from West Berkshire to Sutton Courtenay Landfill in Oxfordshire. However, upon querying this with the EA, they have now confirmed that the movement was actually 1,446 tonnes. Therefore this difference has been removed from the WDI figure.
[63] DEFRA, (2011). *Commercial and Industrial Waste Survey 2009 Final Report.* [online] Available at: https://webarchive.nationalarchives.gov.uk/20130125163914/http://www.defra.gov.uk/statistics/files/ci-project-report.pdf [Accessed 05 Feb 2019].

Table 6.2: Waste per Business Sector Methodology for Estimating C&I Waste Arising in West Berkshire 2014 – 2018.

2009 DEFRA Commercial & Industrial Waste Survey[64]		ONS UK Business Activity, Size & Location 2009[65]		Waste Arisings per business (tonnes)	C&I Arisings West Berkshire (tonnes) (no. businesses West Berkshire)				
Business Sector	Waste Arisings England 2009	Business Sector	Number of Business England 2009		2014	2015	2016	2017	2018
Food, drink & Tobacco	4,666,985	Production	136,675	176	77,534 (440)	82,820 (470)	91,631 (520)	90,750 (515)	91,631 (520)
Textiles/Wood/ Paper/Publishing	3,450,362								
Power & Utilities	5,719,551								
Chemicals/non-metallic minerals manufacture	3,847,479								
Metal manufacturing	4,235,420								
Machinery & Equipment	2,164,130								
Retail & Wholesale	9,211,893	Motor Trades	66,225	22	5,009 (230)	5,118 (235)	5,118 (235)	4,900 (225)	5,227 (240)
		Wholesale	111,340		8,602 (395)	8,602 (395)	8,493 (390)	8,493 (390)	8,276 (380)
		Retail	245,430		9,364 (430)	8,929 (410)	8,711 (400)	8,711 (400)	9,147 (420)

[64] DEFRA, (2011). *Commercial and Industrial Waste Survey 2009 – Final Report.* [online] Available at: https://webarchive.nationalarchives.gov.uk/20130125163914/http://www.defra.gov.uk/statistics/files/ci-project-report.pdf [Accessed 05 Feb 2019].
[65] ONS, (2009). *UK Business: Activity, Size and Location*. [online] Available at: https://www.ons.gov.uk/businessindustryandtrade/business/activitysizeandlocation/datasets/ukbusinessactivitysizeandlocation [Accessed 05 Feb 2019].

Hotels & Catering	2,670,844	Accommodation & Food Services	146,480	18	5,197 (285)	5,379 (295)	5,379 (295)	5,379 (295)	5,197 (285)
Public Administration & Social Work	2,890,353	Public Administration & Defence	19,760	22	647 (30)	755 (35)	863 (40)	971 (45)	971 (45)
		Health	114,180		4,640 (215)	4,747 (220)	4,855 (225)	4,963 (230)	4,532 (210)
Education	1,480,795	Education	54,435	27	3,672 (135)	3,808 (140)	3,944 (145)	3,944 (145)	3,944 (145)
Transport & Storage	2,188,970	Transport	73,195	30	6,131 (205)	6,878 (230)	7,327 (245)	7,626 (255)	7,477 (250)
Other Services, Information & Communication	5,401,558	Information & Communication	145,060	6	6,093 (1,040)	6,415 (1.095)	6,621 (1,130)	6,826 (1,165)	6,972 (1,190)
		Finance & Insurance	58,350		644 (110)	791 (135)	820 (140)	937 (160)	1,025 (175)
		Arts, Entertainment, Recreation & Other Service	161,465		3,750 (640)	3,955 (675)	3,896 (665)	3,779 (645)	3,750 (640)
		Business Administration & Support Services	173,030		3,896 (665)	4,160 (710)	4,306 (735)	4,423 (755)	4,394 (750)
		Property	80,560		1,670 (285)	1,699 (290)	1,728 (295)	1,758 (300)	1,758 (300)
		Professional, Scientific & Technical	303,475		10,312 (1,760)	11,132 (1,900)	11,747 (2,005)	12,011 (2,050)	11,513 (1,965)
TOTAL					**147,161**	**155,190**	**165,441**	**165,472**	**165,812**

Method 3: Modified DEFRA Reconcile Methodology.

6.2.10 In 2014, DEFRA published a 'New Methodology to Estimate Waste Generation by the Commercial and Industrial Sector in England'[66] following the discontinuation of the C&I sector surveys in 2009. This is commonly referred to as the 'Reconcile' methodology. In summary the method uses the following calculation:

C&I generation = ∑ (Inputs to specified permitted facilities + incineration inputs + exemptions + direct exports) – (household waste + CDE waste + imports).

6.2.11 The methodology has since been updated to omit exemptions, and the October 2018 statistical notice from DEFRA[67] states that the new C&I estimates are the 'best estimate we can produce from the available data'.

6.2.12 There are several challenges with repeating this methodology at an individual WPA level, such as obtaining estimates of waste packaging recycled through direct haul as this data is only reported nationally. Nevertheless an attempt has been made to apply this methodology to West Berkshire.

6.2.13 The WDI records waste arising from 'Berkshire' even though this does not constitute an administrative entity anymore. In addition, the WDI also records waste arising that is not attributed below the level of the South East Region (WPA not codeable – South East). This results in a significant amount of waste that may potentially not be captured in waste arising calculations for individual Waste Planning Authorities. To account for this many Waste Planning Authorities are now including a 'share' of this waste to ensure it is captured and planned for accordingly. An attempt to account for the 'West Berkshire share' of this waste by determining the percentage of waste collected across all Berkshire and South East authorities in a given year and then applying this to waste originating as 'Berkshire' or 'WPA not codeable – South East' respectively. The results of this exercise are given in Appendix D. It should be noted that it is not possible to determine the particular characteristics or management method of waste estimated in this way.

6.2.14 The results of using this methodology to estimate C&I waste arisings in West Berkshire for the years 2014 – 2018 are given in Table 6.3.

[66] DEFRA, (2012). *Estimates of Commercial and Industrial Waste Generation in England 2012.* [online] Available at: http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&ProjectID=19118&FromSearch=Y&Publisher=1&SearchText=ev0804&SortString=ProjectCode&SortOrder=Asc&Paging=10#Description [Accessed 05 Feb 2019].

[67] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/746643/Commercial_and_Industrial_Waste_Arisings_Methodology_Revisions_Feb_2018_Oct_2018_update.pdf [Accessed 05 Feb 2019].

Table 6.3: Modified DEFRA Reconcile Methodology for Estimating C&I Waste Arising in West Berkshire 2014 – 2018

Stage of Methodology	2014	2015	2016	2017	2018	Notes
Headline waste arising from West Berkshire	406,499	460,142	507,972	504,708	430,635 *	Waste with recorded origin 'West Berkshire'
Add waste sent to/received at incineration facilities**	-	-	16,566	10,244	11,513	Incineration waste recorded in Environment Agency Waste Incinerator Returns. Excluding Ch. 19 waste
Exclude Mining Waste	57	7	0.4	56	0	EWC Ch. 1 (not hazardous)
Exclude Agricultural Waste	477	178	15	120	118	EWC Ch. 02 01 (not hazardous)
Exclude CDE Waste	183,248	243,479	249,569	219,683	168,303	EWC Ch. 17 (not hazardous)
Exclude waste from the treatment of waste	85,651	73,812	92,528	89,594	96,739	EWC Ch. 19 (not hazardous)
Exclude Hazardous Waste	17,951	13,289	16,031	21,525	8,232	All * codes
Exclude transfer stations and non-endpoint treatment	17,290	41,423	82,018	87,431	84,129	Transfer and non-endpoint treatment from within WPA boundary (CA Site, Car Breakers, Clinical Transfer, Construction, Haz Transfer, Inert Transfer, MRF, Non- haz Transfer, Timber Manufacturing, Vehicle Depolution, WEEE). Waste codes not already excluded. Assumes waste sent to intermediate facilities within authority area are accounted for elsewhere.
Add transfer station adjustment	28,170	9,078	23,513	21,850	18,848	Assumed proportion of 20 03 01 recoded as Ch.19 at transfer stations.
Add Berkshire and South East Unattributed Share	21,138	28,109	70,429	41,069	38,342	To account for a share of waste that has not been attributed below 'Berkshire or 'South East'. See Appendix D.
Sub-Total	151,133	125,141	178,319	159,462	141,817	
Exclude LACW	*80,856*	*81,547*	*81,051*	*76,858*	*74,897*	From Waste Management team.
TOTAL	**70,277**	**43,594**	**97,268**	**82,604**	**66,919**	

Source: Waste Data Interrogator 2014 - 2018, EA Incinerator returns 2016 - 2018, West Berkshire Waste Management Team

* WDI 2018 reports a movement of 201,228 tonnes of 20 03 01 from West Berkshire to Sutton Courtenay Landfill in Oxfordshire. However, upon querying this with the EA, they have now confirmed that the movement was actually 1,446 tonnes. Therefore this difference has been removed from the WDI figure.

**Waste Incinerator inputs only available from 2016

6.2.15 A comparison of the estimates of C&I waste arisings within West Berkshire using the three methodologies is given in Table 6.4, and shown in Figure 6.1.

Table 6.4: Comparison of Estimated C&I Waste Arisings

	2014	2015	2016	2017	2018
Method 1: WDI and EWC Code	109,484	83,184	69,108	95,121	100,525
Method 2: Business Survey Methodology	147,161	155,190	165,441	165,472	165,812
Method 3: Modified DEFRA Methodology	70,277	43,594	97,268	82,604	66,919

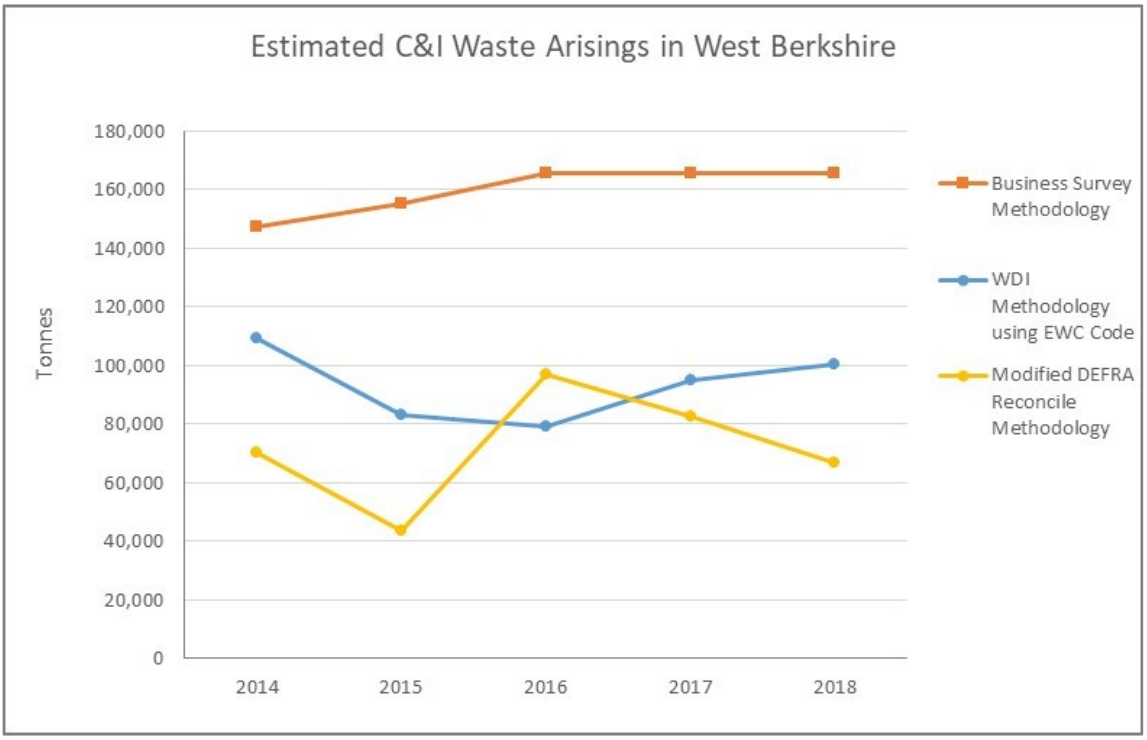

Figure 6.1: Comparison of Estimated C&I Waste Arisings

6.3 Chosen Baseline for C&I Waste Arisings

6.3.1 From Table 6.4 and Figure 6.1, it can be seen that the Business Survey Methodology for estimating C&I waste has generated estimates consistently higher than the WDI methodology applying specific EWC codes and the Modified DEFRA Reconcile Methodology.

6.3.2 In terms of robustness in planning for capacity to manage C&I waste, it is considered that using the higher estimate will represent a worst case scenario and demonstrate the maximum amount of capacity that may be required. Consequently, the Business Survey methodology figure has been chosen as the baseline for C&I waste arisings; in 2018 this was **165,812 tonnes**.

6.4 C&I Waste Management Targets

6.4.1 There are no specific C&I waste targets in the Waste Framework Directive. However, the target relating to waste from households outlined in the section on Local Authority

Collected Waste also applies to waste streams similar to waste from households, which would include some C&I waste, in particular that arising from the commercial component:

'by 2020, the preparing for re-use and the recycling of waste materials such as at least paper, metal, plastic and glass from households and possibly from other origins as far as these waste streams are similar to waste from households, shall be increased to a minimum of overall 50% by weight.'

6.4.2 The targets in the new Circular Economy Package adopted by the European Commission also apply to household waste and waste from other sources that is comparable to household waste in nature, which would include some C&I waste. The targets are for recycling 65% of this waste, and no more than 10% to landfill (90% landfill diversion) by 2035[68].

6.4.3 Based on these targets, in terms of the chosen 2018 baseline figure, 50% would equate to 82,906 tonnes of relevant C&I waste being recycled by 2020 (assuming a worst case scenario that the whole C&I waste stream is similar to household waste). However, it is not possible to determine performance against this target from the chosen baseline C&I arisings methodology (Business Survey), as the data does not denote any type of management method.

6.4.4 Calculating whether this target is being achieved using the WDI using EWC codes and Modified DEFRA Reconcile Methodology (Methods 1 and 3) is also problematic, because LACW and C&I waste are combined in the WDI, with LACW being subtracted separately at a later stage in the methodology. Therefore, the closest estimate is to breakdown the total combined HIC waste (excluding mining, agricultural waste, construction waste and waste from the treatment of wastes) reported in the WDI by management method, as shown in Table 6.5 below. Incinerator inputs have also been included as they form part of the management profile for household and similar commercial waste.

6.4.5 It is assumed that the tonnages managed by treatment facilities and MRS (metal recycling sites) are relevant in achieving the Waste Framework Directive (WfD) Target. Most of the amount managed at transfer facilities are excluded in the methodology to reduce double counting as previously explained. A proportion of the tonnages dealt with by transfer facilities may well also contribute to the target, however it is not possible to determine this from the information available.

Table 6.5: Household, Industrial and Commercial Waste by Management Method, 2018

Management Method	Tonnes	Percentage
Treatment	62,774	70%
MRS	10,494	12%
Total Recycling	**73,268**	**82%**
Transfer (to other authorities)	1,420	2%
Energy Recovery	11,513	13%
Landfill	3,382*	4%
Total HIC (using specified EWC codes)	**89,583**	**100%**

Source: Waste Data Interrogator, 2018, Waste Incinerator Returns, 2018.

* WDI 2018 reports a movement of 201,228 tonnes of 20 03 01 from West Berkshire to Sutton Courtenay Landfill in Oxfordshire. However, upon querying this with the EA, they have now

[68] European Commission, (2017). *Review of Waste Policy and Legislation.* [online] Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1530001632550&uri=CELEX:32018L0851 [Accessed 05 Feb 2019].

confirmed that the movement was actually 1,446 tonnes. Therefore this difference has been removed from the WDI figure.

6.4.6 Using this estimation, it shows that approximately 82% of HIC waste was recycled in 2018 which meets the Waste Framework Directive target of 50% by 2020, and the Circular Economy Package target of 65% by 2035. In addition, only 4% of HIC waste was sent to landfill in 2018, which meets the Circular Economy Package target of no more than 10% of household and similar waste sent to landfill by 2035.

6.4.5 When determining future capacity required to manage C&I waste in the district, it will need to be ensured that sufficient capacity is maintained to recycle C&I waste in order to achieve the Waste Framework Directive and Circular Economy Targets.

6.5 Future C&I Waste Arisings

6.5.1 In order to plan for sufficient waste management capacity for C&I waste in the future, it is necessary to estimate future arisings of this waste stream.

6.5.2 The National Planning Policy Guidance for Waste paragraph 32 (Reference ID: 28-032-20141016)[69] states that:

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

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

6.5.3 Based on this guidance, a range of growth profiles have been considered in assessing the range of future arisings of C&I waste expected in the District to 2037 (the length of the plan period). These are based on the chosen 2018 baseline figure, and comprise:

Scenario 1: Estimated GDP growth has been calculated by averaging GDP estimates for 2018, 2019, 2020, 2021 and 2022 from the Office for Budgetary Responsibility[70], and HM Treasury comparison of independent GDP forecasts[71]. The figure for 2022 (1.7%) is then applied through to the end of the Plan period.

Scenario 2: This scenario applies the yearly estimated percentage change in population (population figures reported by ONS) through to the end of the Plan period.

[69] GOV.UK, (2015). *Guidance – Waste.* [online] Available at: https://www.gov.uk/guidance/waste [Accessed 05 Feb 2019].
[70] Office for Budget Responsibility, (2018). *Economic and Fiscal Outlook*. [online] http://cdn.obr.uk/EFO-MaRch_2018.pdf [Accessed 05 Feb 2019].
[71] HM Treasury, (2018). *Forecasts for the UK Economy: A comparison of Independent Forecasts.* [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/733826/PU797_Forecast_for_the_UK_Economy_August_2018_covers.pdf [Accessed 05 Feb 2019].

Scenario 3: This scenario takes the average business growth (number of business reported by ONS) in West Berkshire from 2014 – 2018 (+1.9%) and this growth rate is applied through to the end of the Plan period.

Scenario 4: This applies a trend to the estimated C&I waste arisings from 2014 – 2018 and continues this trend line until 2037.

Scenario 5: This scenario uses the annual percentage change (~-0.8%) calculated from the central scenario for commercial waste component of C&I waste in the DEFRA forecasting model "Forecasting 2020 Waste Arisings and Treatment Capacity" (2013)[72] and applies this through to the end of the Plan period.

Scenario 6: This scenario uses the methodology in Appendix 1 of the Chartered Institute of Waste Management (CIWM) 2013 report "Commercial and Industrial Waste in the UK and Republic of Ireland"[73], which applies an annual % change in employment per annum for different business sectors.

Scenario 7: The South East England Partnership Board (wound up in July 2010) updated its regional model for required waste management capacity projections in 2010. The growth rates (1.5%: 2018-2020, 1.0%: 2021-2037) are applied through to the end of the Plan period.

6.5.4 The results of modelling these scenarios until the end of the plan period (2037) are shown in Figure 6.2 and a summary for selected years is given in Table 6.6. The full data set is shown in Appendix F. From this, it can be seen that the range of C&I waste that is predicted to arise in 2037 is between approximately 142,300 – 255,000 tonnes. The average of these estimates is 196,949 tonnes, which is higher than the baseline figure of 165,812. The historical trend line (shown in orange) depicts the highest rate of C&I waste growth over the period to 2037.

[72] DEFRA, (2013). *Forecasting 2010 Waste Arisings and Treatment Capacity.* [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/251567/pb13883-forecasting-2020-waste-arisings-131017.pdf [Accessed 05 Feb 2019].
[73] CIWM, (2013). *Commercial and Industrial Waste in the UK and Republic of Ireland.* [online] Available at: https://www.ciwm.co.uk/Custom/BSIDocumentSelector/Pages/DocumentViewer.aspx?id=QoR7FzWBtisamYEcWSfL6SxAJRLAPT9vf9UOxY7TX%252bRvV%252ffsIKIsqU2EtUq%252bj7oCo87WOf%252fbs9PqCytSgZ5tfRfy2%252bBshoiDu7f882AjZtqLLztRjeHBL8ywUdWyhRgk [Accessed 05 Feb 2019].

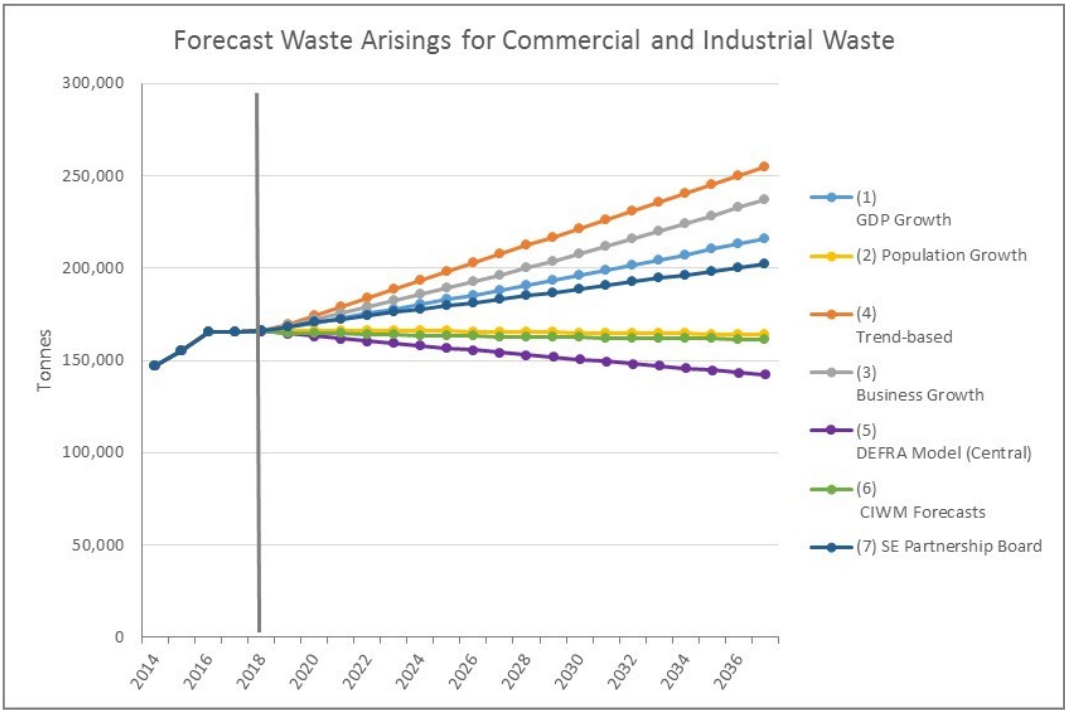

Figure 6.2: Forecast of C&I waste Arising Scenarios to 2037. See Appendix F for sources

Table 6.6: Estimated C&I Waste Arisings to 2037 (tonnes)

	2019	2025	2031	2037
Scenario 1	168,133	182,938	198,853	216,512
Scenario 2	165,736	165,737	164,744	164,290
Scenario 3	168,962	189,156	211,764	237,075
Scenario 4	169,332	197,882	226,433	254,983
Scenario 5	164,486	156,746	149,371	142,344
Scenario 6	164,888	163,382	162,247	161,491
Scenario 7	168,299	179,537	190,583	202,307

6.6 C&I Waste Management Capacity

6.6.1 There are a number of sites that manage C&I waste in West Berkshire. These facilities are shown in Table 6.7. Data on waste management capacity has been determined using limits on throughput in planning permissions and environmental permit limits, as well as WDI throughput data and annual waste operator and aggregates monitoring surveys. Generally planning permit limits have been applied. In the absence of these, environmental permit limits have been used in conjunction with 'sense check' information from the WDI and annual operator surveys. Any assumptions have been stated. Transfer capacity has been included, as this is considered to contribute to the management of waste in the district by preparing waste for its final fate.

6.6.2 From Table 6.7 it can be seen that permanent operational capacity to manage the recyclable element of C&I waste equates to approximately 450,950 tonnes per annum. This is in excess of the 50% Waste Framework Directive target by 2020 (approximately 127,500 tonnes, assuming a worst case growth scenario) and 65% Circular Economy Target (applied across the whole C&I waste stream) by 2035 (165,740 tonnes, assuming a worst case growth scenario). It is even sufficient to manage total predicted all C&I waste arisings (142,300 – 255,000 tpa) over the plan period, although there is still likely to be a need for some disposal or recovery of residual C&I waste. Capacity to manage residual waste (including C&I) is outlined in the chapter on 'Management of Residual Waste'.

Table 6.6: Facilities Available to Manage C&I Waste in West Berkshire.

Site Name	Site Location	Facility Type	End Date/ Permission	Capacity (tpa)	Comments
Operational C&I Capacity					
A4 Breakers	Sevenacre Copse, Grange Lane, Beenham.	Metal Recycling	Permanent Lawful Use (13/00343/FUL)	21,000	Established use. Standard rules permit limits throughput to 75,000 tpa. WDI data over the last 5 years suggests throughput is up to approximately 21,000 tpa.
Beenham MRF	Grange Lane, Beenham.	Materials Recycling Facility (MRF)	Permanent (06/01888/COMIND)	65,000	Throughput of 120,000 tpa allowed at appeal. EA permit limits throughput to 73,000 tpa. Most recent waste operator return indicates capacity of 35,000 transfer and 30,000 recycling/RDF production.
Theale Waste Recycling & Transfer Facility	Deans Copse Road, Theale.	Materials Recycling Facility (MRF)	Permanent (16/01200/MINMAJ)	50,000	Whole site conditioned to 150,000 tpa. Latest operator survey splits capacity into: Non-haz: C&I 50,000 tpa Inert CDE: 90,000 tpa Biomass boiler: 10,000 tpa
Theale Waste Recycling & Transfer Facility	Deans Copse Road, Theale.	Biomass boiler (waste wood) and material drying system.	Permanent (16/01200/MINMAJ)	10,000	
Padworth Breakers	Wrays Farm, Rag Hill, Aldermaston.	Metal Recycling	Permanent (94/44837/FUL)	4,999	Environmental permit allows up to 4,999 tonnes. Latest operator return indicates that the site capacity is 230,000 tonnes. This figure has not been used due to significantly lower throughput data.
Old Stocks Farm	Old Stocks Farm, Paices Hill, Aldermaston.	Skip Waste Recycling & Transfer Station	Permanent (12/03092/MINMAJ)	8,750	Whole site conditioned to 25,000 tpa until building to contain operations has been completed, whereupon site conditioned to 75,000 tpa (appeal decision). Latest operator survey indicates waste streams split between: 35% non-haz and 65% inert.

Colthrop Aggregate Processing Plant	Kennetholme Quarry, Colthrop Lane, Thatcham.	Inert Waste Recycling Facility	Permanent (13/01206/FUL)	5,000	Tonnage conditioned in planning consent to 15,000. Application indicates that 5,000 tpa will be glass (assumed to come from C&I stream), with the rest recyclable CDE waste. WDI data over the last 5 years suggests throughput is up to approximately this amount.
Woodside Recycling	Woodside Farm, Goodboys Lane, Reading	Paper Waste Transfer Station	Permanent Lawful Use (01/00819/CERT).	26,000	Established use. Site operates under a T4 waste exemption which allows 500 tonnes of waste per week to be treated as a minimum. Actual throughput data unknown.
Weirside	Land at Weirside, Burghfield Bridge, Burghfield.	Skip Waste Recycling & Transfer Facility	Permanent (05/02928/MINMAJ)	20,000	Planning permission granted on appeal requires a building to be constructed which as yet has not been. The application submission made reference to the management of 20,000 tonnes.
Computer Salvage Specialists – Abex Road	Abex Road, Newbury.	Specialist WEEE Treatment & Recycling Facility.	Permanent (00/01031/FUL)	14,499	EA permit limit is 14,499 tpa non-hazardous waste and 10,500 hazardous waste.
Computer Salvage Specialists – Aylesford Way	Aylesford Way, Thatcham.	WEEE Storage & Sorting Facility.	Permanent (09/02183/FULC)	12,000	WEEE storage and pre-processing prior to treatment at Abex Road Facility. Standard rules permit limits throughput to 75,000 tpa, however WDI data over the last 5 years suggests throughput is up to approximately 12,000 tpa.

Rookery Farm	Rookery Farm, Curridge Green, Thatcham.	Reprocessing site for scrap plastic chipping.	Permanent (07/00347/FULC)	38,000	Site operates under U10, D7, U1 and U13 waste exemptions. Most recent operator return suggests approximately 38,000 tpa capacity.
Martin Collins Enterprises	Cuckoo Copse, Lambourn Woodlands, Membury Airfield, Hungerford.	Reprocessing Tyre and Plastic.	Permanent (04/02545/FULC)	26,000	Site operates under T4, U9 and T12 waste exemptions. The T4 waste exemption allows 500 tonnes of waste per week to be treated as a minimum. Actual throughput data is unknown.
SSE Distribution Centre	Enterprise Way, Thatcham.	Waste Transfer Facility for SSE C&I waste.	Permanent (10/02632/COMIND)	1,200	Site permit limits total amount of waste accepted to 1,200 tpa.
Thatcham Block Works	Newbury Works, Enterprise Way, Thatcham.	PFA Recycling Facility	Permanent	98,500	Application indicates throughput of 225,000. Permit also limits throughput to 225,000 tpa. However, 2018 WDI throughput was approx. 98,500 tonnes. As this is a new site, capacity will be monitored to see if this needs to be increased.
Reading Quarry	Berrys Lane, Burghfield.	Skip Waste Recycling & Transfer Station	Permanent (16/03253/COMIND)	47,500	Whole site conditioned to 50,000 tpa, inclusive of biomass boiler (2,500).

Reading Quarry	Berrys Lane, Burghfield.	Biomass boiler (waste wood) and material drying system.	Permanent (16/03253/COMIND)	2,500	Whole site conditioned to 50,000 tpa, inclusive of biomass boiler (2,500).
Total C&I Operational Capacity				**450,948**	
Non-operational C&I Capacity					
Theale Waste Transfer Station	Deans Copse Road, Theale.	RDF processing, Wood & Plastic processing.	Permanent (17/02241/MINMAJ)	82,000	Site granted permission in 2017, but not yet operational. Application references 50,000 tpa capacity to process RDF, 25,000tpa wood processing and 7,000tpa plastic processing.
Beenham	Grange Lane, Beenham.	Composting Facility	Permanent (06/00862/COMIND)	25,000.	Allowed on appeal. Maximum annual throughput 25,000 tpa. Site has not operated in the last 5 years according to WDI and latest operator survey confirms the site is non-operational.
Total Non-Operational C&I Capacity				**107,000**	
TOTAL C&I WASTE MANAGEMENT CAPACITY				**557,948**	

6.7 Capacity Analysis

6.7.1 In terms of capacity to achieve the Circular Economy targets by 2035 and until the end of the Plan period (2037), Table 6.7 below sets out the required capacity to achieve these for each of the growth scenarios.

Table 6.7 Estimated C&I Management Capacity Required to Meet Circular Economy Targets by 2035 (tonnes).

2035 - 2037	Recycle (65%)	Implied Recovery (25%)	Landfill (10%)	Total
Scenario 1	140,499	54,038	21,615	216,152
Scenario 2	106,789	41,073	16,429	164,290
Scenario 3	154,099	59,269	23,707	237,075
Scenario 4	165,739	63,746	25,498	254,983
Scenario 5	92,523	35,586	14,234	142,344
Scenario 6	104,969	40,373	16,149	161,491
Scenario 7	131,500	50,577	20,231	202,307

6.7.2 The range of C&I arisings requiring recycling (including composting) by 2035 to achieve the Circular Economy Package targets is between approximately 92,500 – 165,700 tonnes. The total current capacity to achieve this, (450,950 tonnes permanent operational capacity) is sufficient to achieve this target under all scenarios, including the worst case scenario.

6.8 Residual C&I Waste

6.8.1 Regarding management of residual C&I waste by energy recovery and non-hazardous landfill, there are no such facilities within West Berkshire and therefore the district is reliant on capacity outside of the Plan area for these management methods. This is outlined in further detail in the chapter on ‘Management of Residual Waste’.

7.0 Hazardous Waste

7.1 Introduction

7.1.1 Hazardous waste is generally classed as a waste that has one or more of the fifteen specified hazardous properties listed in Annex II to the Waste Framework Directive[74]. These are summarised as:

- Explosive
- Flammable or highly flammable
- Toxic or release toxic or very toxic gases on contact with water, air or an acid
- Infectious
- Mutagenic
- 'Ecotoxic substances
- Oxidising
- Irritant or harmful
- Substances which after disposal are capable of yielding another substance (i.e. leachate)
- Teratogenic
- Carcinogenic

7.1.2 Although hazardous waste is being considered separately in this Local Waste Assessment, it appears in all three principal waste streams (LACW, C&I, CDE). The chosen methodologies for calculating or estimating arisings in the principal waste streams deliberately exclude hazardous waste to avoid double counting.

7.1.3 Hazardous waste is regulated through the Waste Framework Directive and The Hazardous Waste (England) Regulations 2005[75].

7.1.4 DEFRA published a Hazardous Waste Strategy for England in 2010[76] which outlines the national strategy for the management of hazardous wastes and sets out additional national capacity requirements for hazardous wastes. The Strategy identified that the following generic categories of nationally significant infrastructure projects are likely to be needed:

- Waste electrical and electronic equipment plants
- Oil regeneration plant
- Treatment plant for air pollution control residues
- Facilities to treat oily wastes and oily sludges
- Bioremediation / soil washing to treat contaminated soil diverted from landfill
- Ship recycling facilities
- Hazardous waste landfill

7.1.5 The National Policy Statement (NPS) for Hazardous Waste[77], published in June 2013, sets out the strategic need and justification for the provision of nationally significant infrastructure identified. This policy statement is used to guide decisions made by the Planning Inspectorate for proposals which fall within the definition of a Nationally Significant Infrastructure Project. This NPS does recognise that

[74] *Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on Waste and Repealing certain Directives.* [online]. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32008L0098 [Accessed 05 Feb 2019].
[75] *The Hazardous Waste (England and Wales) Regulations 2005.* [online] Available at: http://www.legislation.gov.uk/uksi/2005/894/contents/made [Accessed 05 Feb 2019].
[76] DEFRA, (2010). *A Strategy for Hazardous Waste Management in England.* [online] Available at: https://webarchive.nationalarchives.gov.uk/20130505065433/http://archive.defra.gov.uk/environment/waste/topics/hazwaste/documents/policy.pdf [Accessed 05 Feb 2019].
[77] DEFRA, (2013). *National Policy Statement for Hazardous Waste.* [online] Available at: https://www.gov.uk/government/publications/hazardous-waste-national-policy-statement [Accessed 05 Feb 2019].

provision of these types of facilities on a smaller scale, may also be possible and in such cases where facilities do not meet the thresholds set out in the Planning Act, planning permission must be obtained under the Town and Country Planning system, unless the Secretary of State has issued a Direction under section 35 of the Planning Act to the effect that the application can be considered under the Planning Act. The 2010 Strategy also identifies other types of facility, which are needed, but on a more local basis and which would fall to be determined by the Waste Planning Authority where the proposed capacity does not exceed the thresholds set out in the Planning Act or the Secretary of State has not made a direction to that effect.

7.2 Arisings

Data

7.2.1 Tonnages of hazardous waste managed through facilities permitted under Environmental Permitting Regulations (EPR) are reported through the Waste Data Interrogator (WDI) published annually. In addition, movements of hazardous waste are reported separately in the Hazardous Waste Interrogator (HWI).

7.2.2 It would be logical if the WDI was consistent with the HWI, as both databases are produced by the Environment Agency from specific returns. However, both datasets use different methods to report data – the WDI records quantities and types of waste managed at EPR permitted sites, and the HWI records quantities of waste using information from consignment notes when waste changes hands. Consequently, tonnages of hazardous waste transferred between facilities in the same ownership may not be reported in the HWI and therefore tonnages may be underreported. Moreover, some of the waste reported through the HWI may move to facilities reporting through the Agency WIR instead of the WDI.

7.2.3 The HWI is generally regarded as being more accurate than using the WDI to estimate hazardous waste arisings. However, both datasets have been used for comparison.

Methodologies

Method 1: Use Waste Data Interrogator

7.2.4 As with using the WDI for other waste streams, tonnages to transfer facilities except for sites outside of West Berkshire have been excluded from the headline hazardous waste figure, to avoid double counting. This is because it is generally assumed that waste moving through transfer facilities will be counted at other sites when it enters its final fate. This is particularly true of hazardous waste which tends not to be suitable for intermediate treatment so will only generally be bulked up at such sites for onward management, meeting its final fate elsewhere. However, tonnages moving to transfer facilities outside West Berkshire are included because the onward movement of waste from these facilities will no longer be recorded as having West Berkshire as the origin and therefore it cannot be assumed that this waste will be captured elsewhere.

7.2.5 The WDI records waste arising from ‘Berkshire’ even though this does not constitute an administrative entity anymore. In addition, the WDI also records waste arising that is not attributed below the level of the South East Region (WPA not codeable – South East). This results in a significant amount of waste that may potentially not be captured in waste arising calculations for individual Waste Planning Authorities. To account for this many Waste Planning

Authorities are now including a 'share' of this waste to ensure it is captured and planned for accordingly. An attempt to account for the 'West Berkshire share' of this waste by determining the percentage of waste collected across all Berkshire and South East authorities in a given year and then applying this to waste originating as 'Berkshire' or 'WPA not codeable – South East' respectively. The results of this exercise are given in Appendix D. It should be noted that it is not possible to determine the particular characteristics or management method of waste estimated in this way.

7.2.1 The results of using the WDI to obtain an estimate of hazardous waste arisings in West Berkshire from 2014 – 2018 are shown in Table 7.2 and Figure 7.1.

Table 7.1: Hazardous Waste Arisings in West Berkshire (tonnes) using Waste Data Interrogator.

	2014	2015	2016	2017	2018
Hazardous Waste Arisings	17,705	12,713	15,773	21,514	8,232
Berkshire and South East Unattributed Share	1,571	1,756	6,852	6,291	2,068
TOTAL	**19,276**	**14,469**	**22,625**	**27,805**	**10,300**

Source: Waste Data Interrogator 2014, 2015, 2016, 2017, 2018.

Method 2: Use Hazardous Waste Interrogator

7.2.2 The results of using the HWI to obtain an estimate of hazardous waste arisings in West Berkshire from 2014 – 2018 are shown in Table 7.2 and Figure 7.1.

Table 7.2: Hazardous Waste Arisings in West Berkshire (tonnes) using Hazardous Waste Interrogator.

	2014	2015	2016	2017	2018
Hazardous Waste Arisings	15,247	15,392	15,740	15,160	15,303

Source: Hazardous Waste Interrogator 2014, 2015, 2016, 2017, 2018.

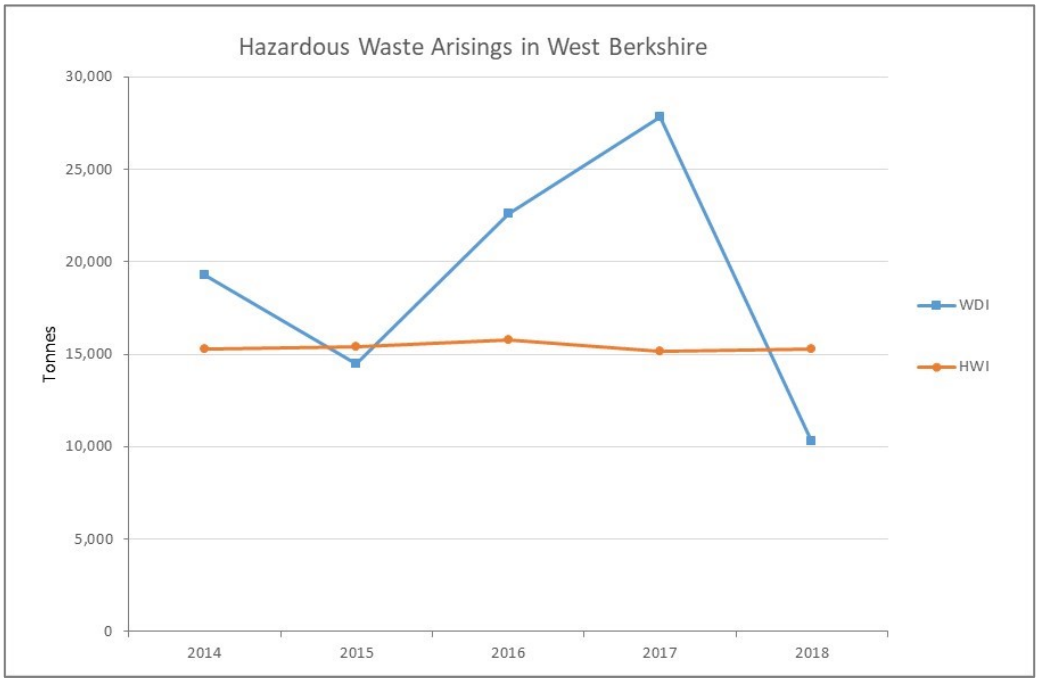

Figure 7.1: Hazardous Waste Arisings within West Berkshire 2014 - 2018

7.3 Chosen Baseline for Hazardous Waste Arisings

7.3.1 From Tables 7.1 and 7.2 Figure 7.1, it can be seen that the Waste Data Interrogator estimates for hazardous waste arisings from the District are far more variable than that reported through the Hazardous Waste Interrogator. This is probably due to the different reporting methods in the datasets, as outlined in paragraph 7.2.2. In terms of robustness in planning for necessary capacity to manage hazardous waste, it has generally been considered that using the higher estimate will represent a worst case scenario and demonstrate the maximum amount of capacity that may be required. In the previous LWA, this was the WDI estimate, however using 2018 data it is now the HWI estimate. In addition, the PPG recommends using the HWI to obtain hazardous waste data[78]. Therefore it is proposed to use the HWI figure as the baseline for hazardous waste arisings in West Berkshire; this was **15,303 tonnes in 2018**.

7.3.2 The breakdown of hazardous waste by management method using the chosen baseline figure for 2018 is shown in Figure 7.2, and the breakdown by European Waste Catalogue (EWC) chapter is shown in Table 7.4. Figure 7.2 shows that the predominant management method for hazardous waste that arose in West Berkshire in 2018 was treatment (54%). Small amounts were dealt with by landfill and MRS sites (12% and 14% respectively), and approximately a quarter (21%) was managed at transfer facilities. Table 7.4 shows that nearly a third of hazardous waste arising in West Berkshire in 2018 was from oil wastes and wastes from liquid fuel (30.6%), followed by wastes from the construction and demolition sector (20.2%) and wastes not otherwise specified (19.6%).

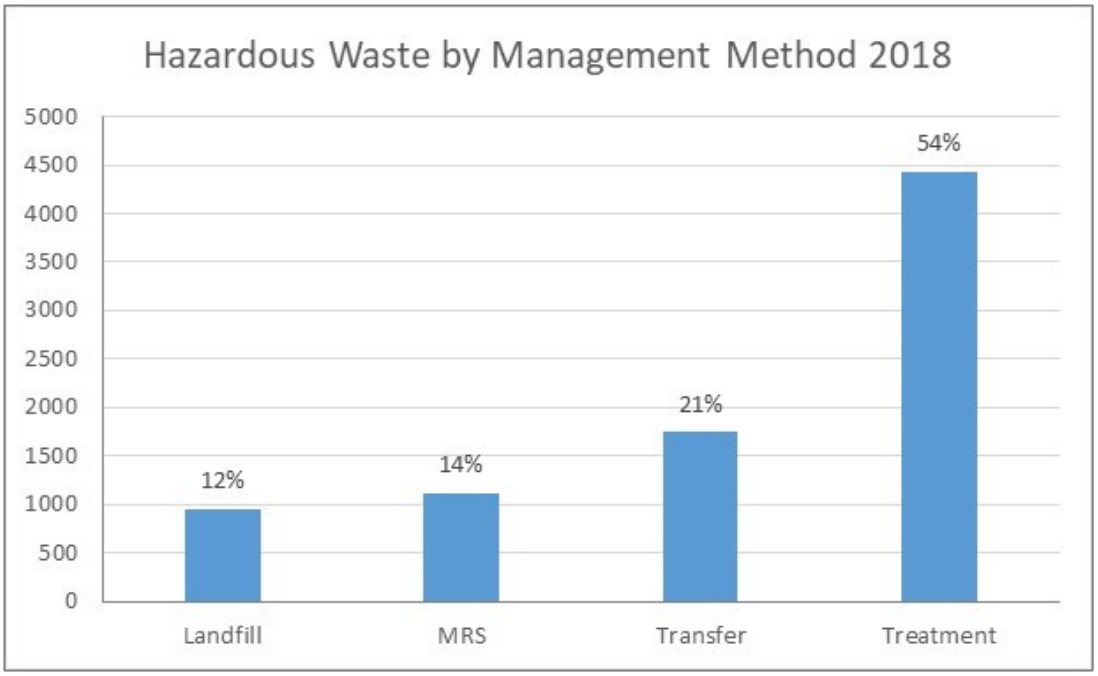

Figure 7.2: Hazardous Waste by Management Method, 2018. Source: WDI 2018.

7.3.3 In terms of hazardous waste sent to landfill, Table 7.3 shows the location of these recorded in the Waste Data Interrogator (2018). The Hazardous Waste Interrogator does not include information on management type. The most significant movement

[78] GOV.UK (2014). *Guidance – Waste*. Paragraph: 035 Reference ID: 28-035-20141016. Revision date: 16 10 2014 [online]. Available at https://www.gov.uk/guidance/waste [Accessed 08 Oct 2020].

of hazardous waste to landfill was to Parkgate Farm Hazardous Waste Landfill in Wiltshire. This facility is currently permitted until 2038 and Wiltshire Council have not identified any reason why the movement of waste from West Berkshire cannot continue over the Plan period[79].

Table 7.3: Hazardous Waste Arising in West Berkshire and Berkshire Deposited to Landfill in 2018 (rounded to nearest tonne).

Authority/Landfill Site Name	Tonnes Received – Hazardous
WEST BERKSHIRE ORIGIN	
Wiltshire	
Parkgate Farm Hazardous Waste Landfill	944
Gloucestershire	
Wingmoor Farm	3
Wingmoor Quarry Landfill	0.005
West Berkshire	
Reading Quarry	1
WEST BERKSHIRE TOTAL	**948**
BERKSHIRE ORIGIN	
Peterborough	
Eye North Eastern Landfill	21
BERKSHIRE TOTAL	**21**

Source; WDI 2018

Table 7.4: Hazardous Wastes Arising in West Berkshire by EWC, 2018 in rank order.

EWC Chapter	Description	Tonnes	%
13	Oil wastes and wastes of liquid fuels	4,679.6	30.6%
17	Construction and demolition wastes	3087.7	20.2%
16	Wastes not otherwise specified in the list	3000.0	19.6%
19	Wastes from waste management facilities, off-site waste water treatment plants and preparation of water for human consumption and water for industrial use	1087.5	7.1%
20	Municipal wastes and similar commercial wastes	1008.9	6.6%
7	Waste from organic chemical processes	766.3	5.0%
12	Wastes from shaping and physical and mechanical surface treatment of metals and plastics	716.2	4.7%
8	Wastes from the formulation, supply and use of coatings, adhesives, sealants and printing inks	247.0	1.6%
18	Wastes from human or animal health care and/or related research	230.0	1.5%
15	Waste packaging; absorbents, wiping cloths, filter materials and protective clothing	196.8	1.3%
11	Wastes from chemical surface treatment and coating of metals and other materials	189.3	1.2%
14	Waste organic solvents, refrigerants and propellants	75.4	0.5%
6	Waste from inorganic chemical processes	9.7	0.1%
9	Wastes from the photographic industry	7.4	0.0%
2	Wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing	0.7	0.0%
1	Mining Wastes	0.1	0.0%
3	Wastes from wood processing	0	0%
4	Wastes from leather, fur and textile industries	0	0%

[79] Minutes of a meeting with Wiltshire Council, 14 Nov 2018.

5	Wastes from petroleum refining, natural gas purification and pyrolytic treatment of coal	0	0%
10	Wastes from thermal processes	0	0.0%
Total		15,302.7	100%

Source: HWI 2018

7.4 Future Hazardous Waste Arisings

7.4.1 In order to plan for sufficient waste management capacity for hazardous waste in the future, it is necessary to estimate future arisings of this waste stream.

7.4.2 The National Planning Policy Guidance for Waste paragraph 34 (Reference ID: 28-034-20141016)[80] 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.

7.4.3 Therefore, the growth forecast for hazardous waste is based on extrapolating the trend over the past 5 years to the end of the plan period. This is shown in Figure 7.3 and indicates that hazardous waste arisings are likely to remain similar over the course of the Plan period. The forecast of the trend using the HWI is 15,128 tonnes, which is slightly less than current arisings. If the figures and trend using the WDI are extrapolated to the end of the plan period, arisings are predicted to be 9,664 tonnes. Therefore it is proposed to use the HWI prediction of future hazardous waste arisings in order to plan for future hazardous waste management capacity in the District.

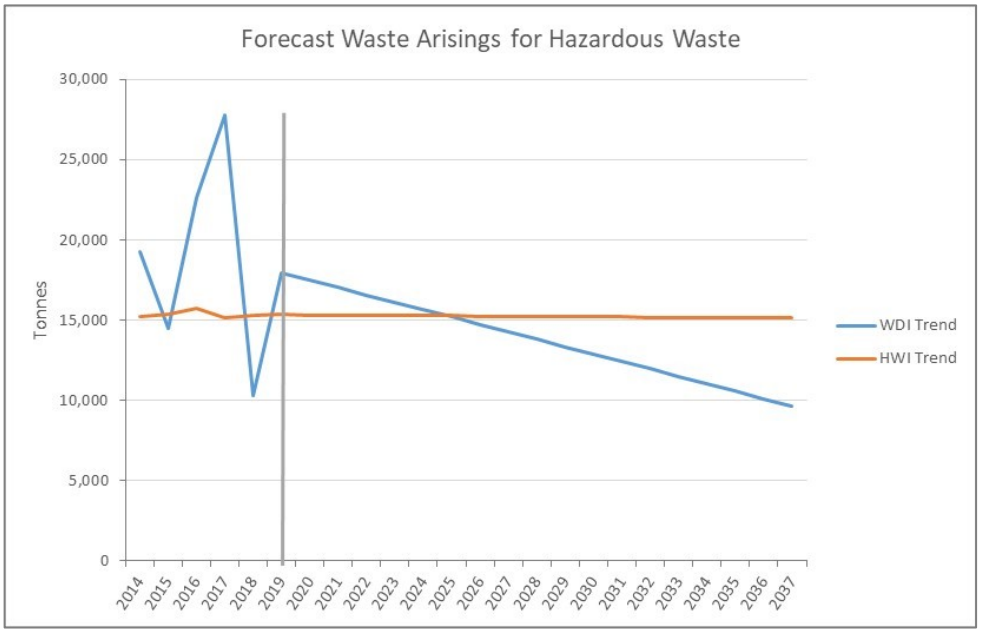

Figure 7.3: Forecast of Hazardous Waste Arising in W Berks to 2037 projecting historical trends forward. Source: WDI 2018 equation y = -461.56x + 20,280; HWI 2018 & equation -12x + 15404.

[80] GOV.UK, (2015). *Guidance – Waste.* [online] Available at: https://www.gov.uk/guidance/waste [Accessed 05 Feb 2019].

7.5 Hazardous Waste Management Capacity

Table 7.4: Facilities Available to Manage Hazardous Waste in West Berkshire.

Site Name	Site Location	Facility Type	End Date/ Permission	Capacity (tpa)	Comments
Operational Hazardous Capacity					
Whitehouse Farm	Whitehouse Farm, Silchester Road, Tadley.	Hazardous Waste Transfer Station	Permanent (136979, 10/02590/MINMAJ)	2,600	EA permit limit is 250,000 tpa, including hazardous wastes. Most recent operator survey indicates capacity of 50,000 tpa for non-hazardous CDE waste, 50,000 tpa for inert CDE waste, 20,000 tpa for metal waste (assumed to come from CDE waste stream) and 2,600 tpa for hazardous wastes.
Computer Salvage Specialists	Abex Road, Newbury.	Specialist WEEE Treatment & Recycling Facility	Permanent (00/01031/FUL)	10,500	EA permit limit is 14,499 tpa non-hazardous waste and 10,500 hazardous waste.
Membury Airfield	Membury Airfield, Ramsbury Road, Lambourn	Specialist waste solvent disposal and disposal and recovery of oils and minerals.	Permanent (13/00349/FUL)	4,000	Capacity based on most recent operator return.
TOTAL HAZARDOUS WASTE MANAGEMENT CAPACITY				**17,100**	

7.6 Capacity Analysis

7.6.1 Hazardous waste arisings are estimated to be approximately 15,100 tonnes in 2037. Table 7.4 shows that there is capacity to manage approximately 15,000 tonnes per annum of hazardous waste in the district and that West Berkshire also has no consented capacity for final disposal such as hazardous landfill or high temperature incineration. Therefore, like most other authorities, West Berkshire is unlikely to be able to be in a position whereby it can manage all the hazardous wastes that originate within the authority. This is largely due to the specialist nature of the wastes, and the treatment methods needed to manage hazardous wastes. As only small quantities of certain types of hazardous waste arise in West Berkshire, it would not be economically viable to have all the necessary facilities in the authority area. As such there will always be cross boundary movements of hazardous waste.

7.6.2 No additional sites are proposed for hazardous waste at this stage, as capacity analysis suggests there is sufficient capacity within the District to manage an equivalent amount of hazardous waste arisings over the Plan period. Additionally, hazardous waste will need to be treated at specialist facilities, therefore the government recognises that such waste might have to travel further. The proximity principle does not apply to this waste stream and national Planning Policy Guidance for Waste paragraph 007 (Reference ID: 28-007-20141016)[81] states that:

There are clearly some wastes which are produced in small quantities for which it would be uneconomic to have a facility in each local authority.

[81] GOV.UK, (2015). *Guidance – Waste.* [online] Available at: https://www.gov.uk/guidance/waste [Accessed 22 Oct 2020].

8.0 Radioactive Waste

8.1 Introduction

8.1.1 Radioactive waste is classified in terms of the type and level of radioactivity it contains. The categories of radioactive waste in the UK are defined as follows[82]:

- High Level Waste (HLW): Wastes in which the temperature may rise significantly as a result of their radioactivity, so this factor has to be taken into account in their management.
- Intermediate Level Waste (ILW): Wastes exceeding the upper boundaries for LLW, but does not generate a significant amount of heat.
- Low Level Waste (LLW): Waste containing relatively low levels of radioactivity, not exceeding 4 gigabecquerel (GBq) per tonne of alpha activity, or 12 GBq per tonne of beta/gamma activity.
- Very Low Level Waste (VLLW): A sub-category of LLW, with specific activity limits. VLLW can be disposed of at regular household or industrial waste permitted landfill facilities.

8.1.2 High Level Radioactive Waste is normally only generated by nuclear facilities, such as nuclear power stations. The major component of Intermediate Level Wastes are nuclear reactor components and sludges from the treatment of radioactive liquid effluents. Lower level radioactive wastes can include soils, rubble and steel items from nuclear sites, and are also generated by medical sources such as radiotherapy treatment and x-rays and other industrial activities.

8.1.3 The disposal of radioactive wastes from nuclear and non-nuclear sites is regulated under the Environmental Permitting (England and Wales) Regulations 2010 (as amended). In England the regulatory body is the Environment Agency, which also has regulatory responsibility for accumulation and disposal of radioactive wastes arisings on non-nuclear sites.

8.1.4 The new Integrated Waste Management Radioactive Waste Strategy (2018) (RWS)[83] delivers an integrated approach to all radioactive waste management within the Nuclear Decommissioning Authority (NDA) estate, not just specific waste streams (e.g. LLW). The strategy has been developed from the UK Strategy for the Management of Solid Low Level Waste from the Nuclear Industry (2016)[84] and the NDA Higher Activity Waste Strategy (2016)[85], although the UK LLW Strategy will always be the overarching strategic document for the management of LLW.

[82] Nuclear Decommissioning Authority, (2016). *UK Radioactive Waste Inventory.* [online] Available at: http://ukinventory.nda.gov.uk/about-radioactive-waste/what-is-radioactivity/what-are-the-main-waste-categories/ [Accessed 05 Feb 2019].
[83] Nuclear Decommissioning Authority, (2018). *Integrated Waste Management Radioactive Waste Strategy*. [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/729845/Radioactive_Waste_Strategy_July_2018.pdf [Accessed 05 Feb 2019].
[84] Department of Energy & Climate Change, (2016). *UK Strategy for the Management of Solid Low Level Waste from the Nuclear Industry*. [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/497114/NI_LLW_Strategy_Final.pdf [Accessed 05 Feb 2019].
[85] Nuclear Decommissioning Authority, (2016). *Integrated Waste Management NDA Higher Activity Waste Strategy*. [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/522435/NDA_Higher_Activity_Waste_Strategy_2016.pdf [Accessed 05 Feb 2019].

8.1.5 Local Authorities are required to plan for the sustainable management of Low Level Radioactive waste[86]. In West Berkshire, the Atomic Weapons Establishment (AWE) sites at Aldermaston and Burghfield manage the whole life cycle of the United Kingdom's nuclear warhead, including decommissioning and disposal. As these sites have the potential to generate arisings of low level and intermediate level radioactive waste, it is relevant to consider them in this report.

8.2 Management of Radioactive Waste

Low Level Wastes

8.2.1 The vast majority of Low Level Waste has historically been packaged and placed in concrete-lined vaults at the Low Level Waste Repository (LLWR) in Cumbria, operated on behalf of the NDA by Low Level Waste Repository Ltd. The LLWR is the UKs principal facility for the disposal of low level wastes and accepts waste from nuclear licensed sites, hospitals and research establishments[87]. However, application of the waste hierarchy has increasingly encouraged sites to divert waste away from the LLWR by using different waste treatment and disposal methods such as incineration, metal recycling and alternative disposal. This will extend the operational life of the LLWR.

Intermediate Level Wastes

8.2.2 For most ILW, packaging consists of immobilisation in cement-based materials within steel drums or boxes. ILW packaging plants operate at Dounreay (Scotland), Harwell (Oxfordshire), Sellafield (Cumbria), Trawsfynydd (Wales) and Winfrith (Dorset).

High Level Wastes

8.2.3 The UK's HLW is managed at Sellafield in West Cumbria and largely comprises reprocessing spent fuel from nuclear power stations in a process called vitrification. This converts the reprocessed fuel into a borosilicate glass and yields a stable and durable waste form suitable for long-term storage and subsequent disposal.[88]

8.2.4 The government is also pursuing the implementation of a Geological Disposal Facility (GDF) for higher-activity radioactive wastes (including HLW and ILW), which will isolate radioactive waste deep inside a suitable rock strata, so that no harmful quantities of radioactivity reach the earth[89].

8.3 Arisings and Future Arisings

8.3.1 The Nuclear Decommissioning Authority (NDA), in conjunction with the Department for Business, Energy & Industrial Strategy produces and maintains an inventory of radioactive waste in the United Kingdom[90]. The Radioactive Waste Inventory is

[86] GOV.UK, (2015). *Guidance – Waste.* Paragraph 13, Reference ID 29-013-20141016. [online] Available at: https://www.gov.uk/guidance/waste [Accessed 05 Feb 2019].

[87] Nuclear Decommissioning Authority, (2016). *UK Radioactive Waste Inventory.* p. 175. [online] Available at: http://ukinventory.nda.gov.uk/wp-content/uploads/sites/18/2014/01/2016UKRWMI-UK-Radioactive-waste-inventory-report.pdf [Accessed 05 Feb 2019].

[88] Harrision, M.T. 2014. Vitrification of High Level Waste in the UK. *Procedia Materials Science.* **7**, pp.10-15. [online] Available at: https://www.sciencedirect.com/science/article/pii/S2211812814010463 [Accessed 05 FEb 2019].

[89] GOV.UK, (2018). *Geological Disposal Facility (GDF) for Higher-activity Radioactive Waste.* [online] Available at: https://www.gov.uk/government/collections/geological-disposal-facility-gdf-for-high-activity-radioactive-waste [Accessed 05 Feb 2019].

[90] Nuclear Decommissioning Authority, (2016). *UK Radioactive Waste Inventory.* p. 175. [online] Available at: http://ukinventory.nda.gov.uk/wp-content/uploads/sites/18/2014/01/2016UKRWMI-UK-Radioactive-waste-inventory-report.pdf [Accessed 05 Feb 2019].

completed every three years, and is the most comprehensive and up to date source of information on radioactive waste in the UK in the public domain. The most recent inventory is from 2016 and the data also estimates future volumes of arisings. For AWE, decommissioning is the major contributor to future arisings.

8.3.1 Table 8.1 outlines the volumes of radioactive waste at AWE Aldermaston and Burghfield as reported in the Radioactive Waste Inventory.

Table 8.1: Radioactive Waste Arisings at AWE Aldermaston & Burghfield (2016)

Waste Category	Reported at 1 April 2016 (m^3)	Estimated Future Arisings (m^3)	Lifetime Total (m^3)
Reported Volumes (m^3)			
HLW	0	0	0
ILW	4,410	4,290	8,710
LLW	1,560	23,300	24,900
VLLW	0	0	0
TOTAL	**5,980**	**27,600**	**33,600**
Conditioned Volumes (m^3)			
HLW	0	0	0
ILW	2,140	1,750	3,890
LLW	1,730	17,100	18,800
VLLW	0	0	0
TOTAL	**3,870**	**18,800**	**22,700**
Packaged Volumes (m^3)			
HLW	0	0	0
ILW	2,480	2,000	4,480
LLW	2,090	18,200	20,300
VLLW	0	0	0
TOTAL	**4,570**	**20,200**	**24,700**

Source: Waste Inventory Data for Aldermaston & Burghfield[91]

8.3.2 The variations between the quantities in Table 8.1 can be explained by the different methods for reporting volume. The reported volume is the volume taken up by all wastes at the inventory stock date and is the volume taken up by wastes inside the containers they are within. The conditioned volume includes 'immobilising mediums' to condition the waste and create a solid, stable waste form. The packaged volume is then the total volume taken up by the waste, the immobilising medium and the waste container. This is the final volume that is used in determining the size needed for disposal facilities. Typically the packaged waste volume is between 20-50% greater than the conditioned waste volume[92].

8.3.3 The Inventory indicates that the AWE sites mostly generate plutonium contaminated materials. The figures in Table 8.1 also include approximately 4,000m^3 of radioactive contaminated land that will require extraction and appropriate disposal on closure of AWE Aldermaston. The majority of the volume is directly associated with current process buildings and it is envisaged that further investigation of these areas will only occur following decommissioning.

8.3.4 With the exception of the AWE Aldermaston and Burghfield sites, there are no other known sources of notable quantities of radioactive waste arising within West Berkshire.

[91] Nuclear Decommissioning Authority, (2016). *Waste Inventory Data for Aldermaston & Burghfield.* [online] Available at: http://ukinventory.nda.gov.uk/site/aldermaston-burghfield/ [Accessed 05 Feb 2019].
[92] Nuclear Decommissioning Authority, (2016). *How are Waste Volumes Reported?* [online] Available at: https://ukinventory.nda.gov.uk/about-the-inventory/how-are-waste-volumes-reported/ [Accessed 06 Feb 2019].

8.4 Radioactive Waste Management Capacity

8.4.1 The Radioactive Waste Strategy (2018) at pg. 18 identifies that due to the National LLW programme diverting 85 – 90% of waste to the LLWR, there is now confidence that the LLWR will have capacity for the duration of the decommissioning process in the UK, including that at AWE.

8.4.2 A report by the Office for Nuclear Regulation (ONR) on the Management of Higher Activity Waste at AWE – Regulatory Strategy and Enforcement Action for the Management of Higher Activity Waste (2016)[93] identifies that based on predicted arisings, it is expected that the existing ILW stores will reach their maximum capacity within ten years. However, since this date it is understood that a long-term solution for the treatment and storage of Higher Activity Waste from Aldermaston has been secured at Sellafield[94] with options to extend the programme.

8.4.3 AWE Aldermaston has confirmed that the majority of the radioactive waste disposed under its Radioactive Substances Environmental Permit takes place through a contract the Ministry of Defence holds with Low Level Waste Repository Ltd. This contract allows access to a framework of service providers in the United Kingdom and Internationally. AWE has also confirmed that it expects to be able to access new waste processing opportunities as they are introduced, through the framework contract operated by the Low Level Waste Repository Ltd.

8.4.4 No sites have been put forward by developers for inclusion in the emerging MWLP specifically for the management of radioactive waste. It is acknowledged that HLW and ILW require specialist management, and therefore at this point in time and throughout the plan period, it is unlikely that West Berkshire would host waste management sites that would undertake the final management of these streams. Subject to all planning and environmental considerations, there could potentially be VLLW managed through incineration or landfill throughout the plan-period. It is also possible that facilities may be required to aid in the transfer or stabilisation of waste prior to final management at another location.

8.4.5 A policy has been included in the MWLP to enable development for radioactive waste treatment and storage at the AWE facility should this prove necessary over the plan period. A criteria based policy has also been included in the MWLP to cover specialist waste management facilities where these are proven to be necessary. This would include facilities to manage other sources of radioactive waste (e.g. from clinical/hospital waste).

[93] Office for Nuclear Regulation, (2016). *Management of Higher Activity Waste at AWE – Regulatory Strategy and Enforcement Action for the Management of Higher Activity Waste.* [online] Available at: http://www.onr.org.uk/pars/2016/awe-14-027.pdf [Accessed 05 Feb 2019].
[94] AWE, (2017). *AWE Working with Sellafield Ltd.* [online] Available at: https://www.awe.co.uk/2017/12/awe-working-with-sellafield-ltd/ [Accessed 05 Feb 2019].

9.0 Equine Waste

9.1 Introduction

9.1.1 The generation and management of equine waste is not normally considered to be a strategic planning matter. However, it is recognised that in West Berkshire there is a significant horse population due to the presence of both the racehorse industry and the recreational equine industry. West Berkshire has been a famous training area for over 150 years, and is the second largest racehorse training area in Britain. It is therefore considered prudent for this Local Waste Assessment to consider this waste stream in more detail to ascertain whether it requires management in a strategic manner.

9.1.2 Defra estimates that 90 million tonnes of farm manures are applied to agricultural land in the UK every year[95]. Manure and slurries have been used as fertiliser on farmland for many years and are not classed as waste when used in this way, however, they can cause pollution if they are not stored and spread carefully. Defra considers that horse manure, while subject to certain controls, is not considered waste if all of the following apply[96]:

- It is used as a soil fertiliser
- Its use is part of a lawful practice of spreading on clearly identified parcels of land; and
- Its storage is limited to the needs of those spreading operations to be carried out on agricultural holdings, whether yours or someone else's.

9.1.3 Horse manure and bedding may be composted, but before setting up a composting operation, the site must be registered with the Environment Agency, although it may not need an environmental permit. Suitably licensed facilities must be used to dispose of solid waste from the equine industry, such as contaminated bedding, food containers, empty pesticide and other chemical containers and plastics such as silage wrap. Some of this waste particularly that which would not readily decompose would be captured within the commercial and industrial waste stream. Clinical waste, such as from horse veterinary activities would be hazardous and managed separately, likely through incineration.

9.2 Equestrian Industry in West Berkshire

9.2.1 The West Berkshire Core Strategy, July 2012, and related topic paper on the Equestrian/Racehorse Industry, recognised that equestrian activities and related development and the racehorse breeding and training industries are characteristic features for the area, and in particular within the North Wessex Downs Area of Outstanding Natural Beauty (AONB). A major concentration of the livery activity within the North Wessex Downs AONB is within West Berkshire, particularly in the Lambourn Valley, which is also known as the 'Valley of the Racehorse'.

[95] DEFRA, (2007). *Understanding the Behaviour of Livestock Manure Multiple Pollutants through Contrasting Cracking Clay Soils.* [online] Available at: http://sciencesearch.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=14964 [Accessed 05 Feb 2019].
[96] DEFRA, (2015).*Keeping horses on farms*. [online] Available at: https://www.gov.uk/guidance/keeping-horses-on-farms [Accessed 05 Feb 2019].

9.2.2 A study on the effects of the horseracing industry on the North Wessex Downs AONB[97] was supported by a survey which included 55 trainers, along with 23 studs nine livery yards, seven farriers, four veterinary practices, five horse feed suppliers and 49 other horse racing industry related businesses. They are grouped in four main clusters around Lambourn, East Ilsey, Hungerford (all within West Berkshire), and Marlborough, Wiltshire. The Lambourn cluster is the largest with 25 training yards, two stud farms, one livery yard, three veterinary surgeries, three horse feed merchants and 18 associated businesses as shown in Figure 9.1.

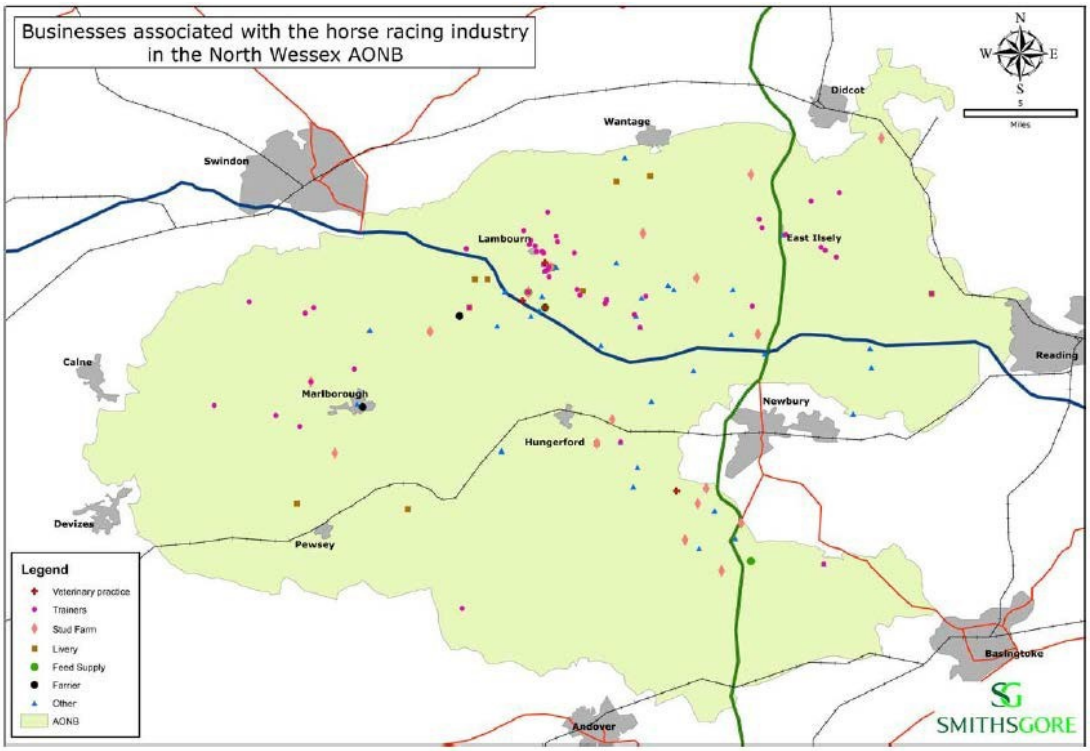

Figure 9.1: Businesses Associated with the Horse Racing Industry in the North Wessex Downs AONB. Source[89]

9.3 Arisings

9.3.1 The study on the effects of horse racing in the North Wessex Downs AONB[89] estimated that there are approximately 3,737 racehorses at training yards, stud farms and liveries within the North Wessex Downs AONB. Based on the concentration of horse racing establishments shown in Figure 9.1, a large majority of these can be expected to be from West Berkshire. The Jockey Club, at a meeting with Council Officers in April 2014, has indicated that there were roughly 1,362 racehorses in training in the Lambourn Valley, which does not include concentrations around West Ilsey and Hungerford also in West Berkshire.

9.3.2 The British Equestrian Trade Association national survey (2015)[92] estimates that the number of horses in Britain was 944,000 in 2015, down from 988,000 in 2011. Based on an estimated population in West Berkshire in 2015 of 157,460[98] which

[97] Kirkham Landscape Planning Consultants, (2007). *A Study of the Key Effects of the Horseracing Industry on the North Wessex Downs Area of Outstanding Natural Beauty.* [online] Available at: http://www.northwessexdowns.org.uk/uploads/File_Management/Publications/Planning/RacingIndustryStudy.pdf [Accessed 28 Jan 2019].

[98] ONS, (2017). *Estimates of the population for the UK, England and Wales, Scotland and Northern Ireland.*

was 0.25% of the population of Britain in that year, this would equate to 2,360 horses in West Berkshire.

9.3.3 A research article on the size and spatial distribution of the horse population in Great Britain[99] includes an estimate for the horse population within Great Britain of 840,000 horses (2011). This is considered to be an underestimate because of the exclusion of horses due to age of location criteria. Based on a percentage of West Berkshire's population of Great Britain of 0.25%, this would equate to 2,100 horses in West Berkshire. The study also provides maps of the National Equine Database owner and stakeholder horse data by postcode area. These maps indicate a horse density in West Berkshire of between 76 – 100 horses per 10km^2. Using this density data, and an area of West Berkshire of 704.2km^2, equates to between 5,352 and 7,042 horses in West Berkshire.

9.3.4 The Surrey Horse Pasture Management Project in its section on manure storage and disposal advice[100] indicates that an average horse will produce approximately 7.5 tonnes of manure annually (not including the addition of soiled stable bedding material). If this figure is applied to the range of estimates of the number of horses within West Berkshire, this would equate to between 15,750 and 52,800 tonnes of horse manure being generated annually within West Berkshire. This is a wide ranging estimate, and it is understood that the majority of this waste is managed on site through composting or spreading as a fertiliser and therefore outside of the formal planning system.

9.3.5 The Environment Agency Waste Data Interrogator database for 2018 records the quantity of agricultural waste arising from West Berkshire as 35.8 tonnes[101]. This further supports the assumption that the majority of material from this industry is managed as a non-waste, and outside of the formal planning system.

9.4 Chosen Baseline for Equine Waste Arisings

9.4.1 The Jockey Club have confirmed that the estimated quantity of waste produced per horse of 7.5 tonnes per annum is a realistic figure. Therefore, the variation of estimates for the arisings of this waste stream are only dependent on estimates of the number of horses in West Berkshire.

9.4.2 As with estimates of other waste streams in this Local Waste Assessment, it is considered that including the higher figure generated will represent a worst case scenario and is likely to demonstrate the maximum amount of capacity that is required. This would equate to **52,800** tonnes of equine waste. However, as previously outlined, the majority of this waste stream is not likely to enter the formal planning system.

[online] Available at: https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/datasets/populationestimatesforukenglandandwalesscotlandandnorthernireland [Accessed 28 Jan 2019].

[99] Boden et al., (2012). Summary of Current Knowledge of the Size and Spatial Distribution of the Horse Population within Great Britain. *BMC Veterinary Research,* **8**(43). [online] Available at: https://bmcvetres.biomedcentral.com/articles/10.1186/1746-6148-8-43 [Accessed 28 Jan 2019].

[100] Simpson, R. and West, N., (2009). *Manure Storage & Disposal Advice Note (007).* [online] Available at: https://www.surreycc.gov.uk/__data/assets/pdf_file/0020/35336/ManureAdviceNote007.pdf [Accessed 28 Jan 2019].

[101] Under European Waste Code 02 01 06 'animal faeces, urine and manure (including spoiled straw), effluent, collected separately and treated off-site'.

9.5 Future Equine Waste Arisings

9.5.1 The Jockey Club have confirmed that nationally, the number of racehorses in training have been falling for a number of years, although in 2013 the foal crop grew, as did the numbers of racehorses in training. It is the case that due to the current capacity in local racing yards being (in the main) fully occupied within Lambourn, no significant increases could happen without further planning permissions. It was estimated however, on current market trends, that yard capacities in Lambourn may look to increase in the future by approximately 400 horses. It is not known however when this would be.

9.5.2 The British Equestrian Trade Association Survey[102] also indicated that the number of horses in Great Britain declined from 2011 to 2015.

9.5.3 There does not appear to be any significant justification for assuming that the amount of equine waste in West Berkshire is going to rise or fall over the Plan period, and therefore it has been presumed that it remains constant over the period to 2037.

9.6 Equine Waste Management Capacity

9.6.1 In the Lambourn area it is known that there is one main operator that takes receipt of horse manure and composts it. The last waste return received by the operator is from 2013 and indicate that approximately 2,000 tonnes of horse manure was managed in that year. The maximum capacity was estimated to be double this amount and therefore approximately 4,000 tonnes per annum. This also confirms that the majority of equine waste arisings are dealt with outside of the formal planning system. Due to the likely cost of transporting manure, it is unlikely that the material would travel far, and therefore it is assumed that the majority of waste is spread on land within West Berkshire and close to the border in Wiltshire and Oxfordshire.

9.6.2 The Jockey Club have indicated that equine waste disposal was not an issue raised by their trainers, and therefore it was not perceived that there was an under-provision in equine waste management routes or facilities. It is generally the case that many yards do not have the capacity to store equine waste on site. As such, the waste is currently regularly collected by local farmers or taken directly by the trainers to the composting facility.

9.6.3 The Jockey Club have also confirmed that any new facility to manage equine waste was more likely to be driven by technological advances, rather than by any increases in horse population locally within West Berkshire. They confirmed that it would be appropriate for the MWLP to include policies to support any forthcoming proposals for a local facility which would manage equine waste from Lambourn, although this would be driven by whether there would be an adequate feed source and it appropriate technologies became available. A specific policy for equine waste may not be necessary, if other policies were sufficiently flexible to accommodate changes in equine waste management technology or circumstances.

[102] British Equestrian Trade Association, (n.d.a). National Equestrian Survey 2015 Shows Increased Consumer Spending. [online] Available at: http://www.beta-uk.org/pages/news-amp-events/news/national-equestrian-survey-2015-shows-increased-consumer-spending.php [Accessed 28 Jan 2019]

10.0 Wastewater Sewage Sludge

10.1 Introduction

10.1.1 Sewage sludge is a natural by-product of the wastewater treatment process; it includes the residual organic matter and dead bacteria used in the treatment process or biosolids removed from the wastewater being treated. With a general growth in population and housing anticipated in West Berkshire, it is considered relevant to include sewage sludge in this Local Waste Assessment.

10.1.2 Sewage sludge management can involve the management of either raw or treated material through a range of routes. The use of treated sewage sludge as a soil enhancer and fertiliser on agricultural land remains the favoured option, and the Environment Agency states that approximately 3 to 4 million tonnes of sewage sludge is applied to land each year[103]. Sewage sludge has been used as a fertiliser on farmland for many years and is not classified as waste when tested, supplied and used in accordance with the Sludge (Use in Agriculture) Regulations 1989[104]. Increasingly, sewage sludge generated from wastewater treatment processes has undergone anaerobic digestion reducing the residual sewage solids that need to be disposed of, while generating biogas, a renewable energy source.

10.1.3 The Urban Waste Water Treatment Directive[105] came into effect in 1991 and stipulated high standards of waste water treatment. It is presumed that this has resulted in the generation of more sewage sludge. This Directive also prohibited the discharge of sewage sludge to surface waters through pipes or disposal from ships at sea by 31 December 1998, and since then alternative re-use or disposal routes have been used. The Sewage Sludge Directive[106] also came into effect in 1986 and seeks to encourage the use of sewage sludge in agriculture and to regulate its use so as to prevent harmful effects. Due to the age of this Directive, the European Commission is currently assessing whether it should be reviewed[107]. The Water Framework Directive[108] is also relevant to how this waste is managed and the related impacts. It was introduced originally in 2000 and consolidated in 2008. It aims for 'good status' for all ground and surface waters in the EU.

10.2 Current and Future Arisings

10.2.1 Thames Water is the private utility company responsible for wastewater treatment within the Thames Valley, including West Berkshire. Information acquired from Thames Water through the Duty to Cooperate has supplemented the information available to WBC, and informed this section of the Local Waste Assessment.

---

[103] Environment Agency, (2014). *Spreading Sewage Sludge on Land.* [online] Available at: https://webarchive.nationalarchives.gov.uk/20140328110415/http://www.environment-agency.gov.uk/business/sectors/130187.aspx [Accessed 28 Jan 2019].
[104] *The Sludge (Use in Agriculture) Regulations 1989*. [online] Available at: http://www.legislation.gov.uk/uksi/1989/1263/contents/made [Accessed 28 Jan 2019].
[105] *Council Directive Concerning Urban Waste Water Treatment (91/271/EEC)*. [online] Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:31991L0271 [Accessed 28 Jan 2019].
[106] *Council Directive on the Protection of the Environment, and in Particular of the Soil, when Sewage Sludge is used in Agriculture (86/278/EEC)*. [online] Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:31986L0278 [Accessed 28 Jan 2019).
[107] European Commission, (2016). *Sewage Sludge* [online] Available at: http://ec.europa.eu/environment/waste/sludge/index.htm [Accessed 28 Jan 2019].
[108] *Council Directive of the European Parliament and of the Council of 23 October 2000 establishing a Framework for Community Action in the Field of Water Policy (2000/60/EC)*. [online] Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32000L0060 [Accessed 28 Jan 2019].

10.2.2 Table 10.1 shows the estimated sewage sludge arisings in West Berkshire, provided by Thames Water. These are based on a predicted 27.2kg of sludge arising per Population Equivalent (including transient population allowance) over time.

Table 10.1: Estimated Sewage Sludge Arisings in West Berkshire

	2016	2021	2026	2031	2035
Sludge Arisings (tonnes)	3,916	3,997	4,052	4,081	4,114

Source: Thames Water (2019).

10.2.3 The data in this table suggests that currently, sewage sludge production is estimated to be between 3,916 and 3,997 tonnes per annum and by the end of the Plan period it is estimated to be 4,114 tonnes per annum.

10.3 Capacity and Capacity Analysis

10.3.1 There are 30 sewage treatment works in West Berkshire, and one sludge dewatering centre in Thatcham (known as Newbury Sewage Treatment Works). Capacity at this centre is 7,300tpa, as shown in Table 3.6. The dewatered sludge (cake) is then exported to another facility for energy recovery, with the residues from this treatment process being transported back to be spread on farm land in West Berkshire and North Hampshire.

10.3.2 In terms of how West Berkshire's sewage sludge is managed, there appears to be a move away from the recycling of sewage sludge into a soil improver, to the recovery of renewable energy. This is due to a number of reasons, including regulatory factors and the impending shortfall of land to deposit processed sewage sludge on. There is also a focus on removing water from the sewage sludge to reduce the volumes deposited on land and to reduce transport movements.

10.3.3 Although energy recovery sits below recycling in the Waste Hierarchy, recycling of sewage sludge into soil improver requires mixing of lime into the material resulting in odour issues and increasing its volume, hence requiring an increased number of vehicle movements to transport the material. There are also potentially negative impacts from nitrates and phosphates leaching into groundwater as a result of deposition of sewage sludge on agricultural land. The use of the material to generate renewable energy, although it can have its own negative impacts, is considered to be a positive move in terms of sustainability.

10.3.4 Thames Water has indicated through the Duty to Cooperate that it is likely the Newbury site will remain operational, acting as the 'central hub' for all the sludge collected from the local sewage treatment works. It has been indicated that it is unlikely that the site would be expanded or the throughput increased significantly in the near future. Thames Water have also confirmed that they will expand current sites and make use of facilities with spare capacity. Therefore, they do not anticipate that any additional facilities will be needed in West Berkshire.

10.3.5 The MWLP will include a criteria-based policy for specialist waste streams, which will include sewage sludge. Therefore, if a need arises over the Plan period, new facilities could be permitted provided they comply with this and all relevant policies in the MWLP.

11.0 Management of Residual Waste

11.1 Introduction

11.1.1 Residual waste is the residue that requires 'final fate' management after waste has been sorted and processed in order to gain maximum value particularly from the C&I and LACW non-hazardous waste stream.

11.1.2 West Berkshire does not have significant capacity to manage residual waste, and as such most of this residual waste is meets its final fate outside of the district. Whether these movements can continue over the Plan period, or whether other provision needs to be made, is the focus of this section.

Targets

11.1.3 In addition to the Circular Economy Package target of reducing landfill to no more than 10% of combined municipal arisings by 2035, the Government Resources and Waste Strategy, introduced the target of eliminating all avoidable waste[109] by 2050 and all avoidable plastic waste by the end of 2042[110].

11.1.4 The Government has recently released a Monitoring Report for progress against the Resources and Waste Strategy targets. This reported on a monitoring indicator of 'avoidable residual waste from household sources' which found that "*Residual waste is problematic, as its treatment is often the most polluting waste-management option. It also prevents the value of materials and products being retained in the economy. It is important to note that such an approach represents a subset of avoidable waste, as it does not include other forms of waste e.g. that sent for recycling which could have been prevented or avoided further up the waste hierarchy."* and concluded that *" The message from this assessment is that a substantial quantity of material appears to be going into the residual waste stream, where it could have at least been recycled or dealt with higher up the waste hierarchy. This is something we will continue to monitor into the future in line with our commitment to reduce avoidable waste."* Hence consideration of the future management of residual waste needs to be done with due cognisance of the wider expectation that this stream ought to be reducing.

11.2 Non-hazardous Landfill

11.2.1 Historically, mineral extraction sites were used for landfilling waste and in previous decades this was also the predominant waste disposal method in West Berkshire. However, due to changes in the siting criteria for non-inert landfills introduced through the Landfill Directive in 1999, the deposits currently worked in West Berkshire (relatively shallow sand and gravel deposits) would not be suitable for non-inert landfill without considerable investment. The last non-hazardous waste landfill site in West Berkshire ceased accepting such waste in 2005. Therefore, for a number of years all of the non-hazardous waste arising in West Berkshire requiring disposal has been exported to landfill sites, predominantly in neighbouring authority areas.

[109] The Clean Growth Strategy defined the aim of zero avoidable waste as eliminating all waste where it is *"technologically, environmentally and economically practicable (TEEP) to do so, [while] working to support innovation in new materials, products and processes that extend the range of materials covered by this categorisation".*

[110] Plastic waste is considered to be 'avoidable' when it *"could have been reused or recycled; when a reusable or recyclable alternative could have been used instead; or when it could have been composted or biodegraded in the open environment"* (page 7*).*

11.2.2 Table 11.1 shows where residual non-hazardous waste attributed as arising in West Berkshire and that which is attributed as arising in Berkshire was deposited to landfill in 2018, as reported in the Waste Data Interrogator. Given Berkshire no longer exists as an administrative entity, some of the waste attributed to Berkshire may have arisen from West Berkshire or the other former Berkshire authority areas.

Table 11.1: Residual Non-hazardous Waste Arising in West Berkshire and Berkshire Deposited to Landfill in 2018 (rounded to nearest tonne).

Authority/Landfill Site Name	Tonnes Received – Non-hazardous
WEST BERKSHIRE ORIGIN	
Oxfordshire	
Sutton Courtenay Landfill	44,795*
Buckinghamshire	
Springfield Farm Landfill	9,497
Warwickshire	
Ling Hall Landfill	1,855
Wiltshire	
Lower Compton Landfill	453
Park Grounds Landfill	19
Gloucestershire	
Wingmoor Quarry Landfill	64
West Berkshire	
Reading Quarry	51
WEST BERKSHIRE TOTAL	**56,734**
BERKSHIRE ORIGIN	
Oxfordshire	
Finmere Quarry Landfill	8,912
Swindon	
Studley Grange Landfill	5,341
Hertfordshire	
Westmill II Waste Management Facility	127
Wiltshire	
Park Grounds Landfill	44
BERKSHIRE TOTAL	**14,425**

Source: WDI 2018
* A movement of 201,228 tonnes of 20 03 01 (Mixed Municipal Waste) from West Berkshire to Sutton Courtenay Landfill is recorded in the 2018 WDI. However, upon querying this with the Environment Agency, the movement has confirmed to be only 1,446 tonnes. Therefore the difference has been subtracted from this number.

11.2.3 Table 11.1 shows that approximately 57,000 tonnes of non-hazardous residual waste arising in West Berkshire was deposited in other (mainly neighbouring) authorities in 2018. This is likely due to the cost of transportation, and cost of disposal of this waste. In addition, 14,425 tonnes of non-hazardous residual waste recorded as arising in 'Berkshire' was deposited in landfill in other authority areas. The majority of waste was deposited in Oxfordshire (Sutton Courtenay Landfill and Finmere Quarry), with decreasing amounts deposited in Springfield Farm Landfill in Buckinghamshire, Studley Grange Landfill in Swindon and Ling Hall Landfill in Warwickshire.

11.2.4 West Berkshire Council is a member of the South East Waste Planning Advisory Group (SEWPAG) which has formally agreed thresholds for consultation between member authorities of SEWPAG on waste movements (strategic movements) under the Duty to Co-operate as follows:

- 5,000 tpa for non-hazardous waste
- 10,000 tpa for inert waste
- 100 tpa for hazardous waste

11.2.5 These thresholds have been applied, as below these levels, it is unlikely that the importation of waste will have a significant impact on the waste management strategy of host authorities. However, it is acknowledged by SEWPAG that these thresholds need to be applied sensibly and represent a starting point for liaison with other Waste Planning Authorities.

11.2.6 The movements that exceed the threshold for 5,000tpa non-hazardous waste for movements from West Berkshire to landfill in 2018 were to Sutton Courtenay Landfill in Oxfordshire, and Springfield Farm Landfill in Buckinghamshire. In addition, Finmere Quarry in Oxfordshire and Studley Grange Landfill in Swindon received more than 5,000 tonnes of non-hazardous waste from 'Berkshire', some of which may have arisen in West Berkshire.

11.2.7 As part of the Duty to Cooperate, West Berkshire District Council has contacted authorities with identified strategic movements of waste arising in West Berkshire to understand the nature of these movements, and the likelihood of their being able to continue over the Plan period.

11.2.8 By far the most significant movement of non-hazardous waste to landfill from West Berkshire in 2018 was to Sutton Courtenay (44,795 tonnes), which represented 79% of non-hazardous waste landfilled known to have arisen in West Berkshire. This facility is due to close in 2030, and therefore prior to the end of the Plan period. Similarly, Springfield Farm Landfill in Buckinghamshire is due to close in 2029 before the end of the Plan period, although an application to extend the end date to 2044 is currently being determined. Therefore, the movements of non-hazardous waste from West Berkshire to these landfill sites cannot be guaranteed over the Plan period.

11.2.10 SEWPAG have acknowledged the provision of non-hazardous landfill to be a strategic issue for the South East. The drivers are considered to include the decline in non-hazardous waste being sent to landfill, and the higher standards imposed on the operation of non-hazardous landfills through the Landfill Directive, plus Groundwater Directive (for siting) which raises the cost of developing new landfills for non-hazardous waste significantly. As a result, the number of non-hazardous landfill facilities is declining across the South East, and consequently the remaining voidspace is declining as well. In some cases, facilities are being closed earlier than anticipated, and the remaining facilities may now be accepting waste from a wider area than previously. Consequently SEWPAG has prepared a Joint Position Statement (JPS) on Non-Hazardous Landfill in the South East.[111]

11.2.11 The JPS acknowledges the challenges for delivering new non-hazardous landfill capacity, and supports the fact that while it is the aim to manage waste as high up the hierarchy as possible, there will still be a need for some non-hazardous landfill capacity particularly in the short to medium term.

11.2.12 The JPS also outlines a criteria based policy approach that has been adopted by a number of Waste Planning Authorities in the South East of England. These policies

[111] SEWPAG, (2019). *Joint Position Statement: Non-hazardous Landfill in the South East of England.*

acknowledge that sites for non-hazardous landfill facilities may come forward in future and so policies need to be flexible to deal with such proposals.

11.2.13 According to previous calculations, approximately 34,000 tonnes per annum capacity to dispose of non-hazardous (LACW + C&I) residual waste will be required in West Berkshire by 2037. This is based on the assumption that the circular economy target for reducing municipal and similar waste landfilled to no more than 10% is achieved, and using the worst case forecast arising scenarios for LACW (85,483 tonnes) and C&I (254,983 tonnes) wastes.

11.2.14 As outlined previously, West Berkshire's geology is unsuitable for non-inert landfill without considerable investment. Additionally, no sites for non-hazardous landfill were promoted as part of the call for sites to be included in the MWLP. Consequently, it is unlikely that additional non-hazardous landfill capacity will be developed within the district over the Plan period. However, it is important to consider the changing policy environment over the Plan period, along with new technologies and so a site criteria policy has been included against which proposals for non-hazardous waste landfill may be assessed, should they come forward within the district.

11.2.15 Notwithstanding the shortfall to dispose of non-hazardous residual waste, it is still possible for West Berkshire to be *net self- sufficient* in waste management over the Plan period (as shown in Table 13.1). This is because even though there is a lack of non-hazardous landfill and recovery capacity, the surplus capacity at other types of waste management facility in the district more than offsets this shortfall. Therefore, the total waste management capacity in the district still exceeds the quantity of waste generated. It is also worth noting that the forms of waste management in West Berkshire are at the higher end of the waste hierarchy and thus more desirable. The principle of planning for 'net' self-sufficiency has been agreed with other Waste Planning Authorities in the South East of England, through the SEWPAG Statement of Common Ground (para 2.1)[112]

11.2.16 In addition, a Statement of Common Ground is being prepared for the MWLP to address the specific lack of non-hazardous landfill and recovery capacity over the Plan period.

11.3 Energy Recovery

11.3.1 Energy recovery describes the management of non-hazardous waste to recover the energy value from residual waste. This constitutes techniques such as incineration with capture of heat to generate electricity and/or supply heat and advanced thermal technologies such as gasification and pyrolysis which can produce a syngas which may be used as a fuel.

11.3.2 West Berkshire has limited energy recovery facilities, although there is permission for two biomass boilers for waste wood. As a result, the majority of waste from West Berkshire undergoing this form of management is exported outside of the district.

[112] SEWPAG, (2020). *Statement of Common Ground between Waste Planning Authority Members of the South East Waste Planning Advisory Group Concerning Strategic Policies for Waste Management.*

11.3.3 Table 11.2 shows where non-inert (non-hazardous and hazardous) waste arising in West Berkshire and 'Berkshire' was managed at energy from waste facilities in 2018, as reported in the Environment Agency Incinerator Waste Returns. These figures include elements of both LACW and C&I wastes.

Table 11.2: Residual Non-hazardous Waste Arising in West Berkshire and Berkshire sent to Energy Recovery in 2018 (rounded to nearest tonne)

Authority/Site Name	Tonnes Received
WEST BERKSHIRE ORIGIN	
Hampshire	
Integra North Energy Recovery Facility	11,448
Integra South West Energy Recovery Facility	4,757
Slough	
Lakeside Energy from Waste Facility	11,090
Portsmouth City	
Integra South East Energy Recovery Facility	256
Hillingdon	
Hillingdon Clinical Waste Incinerator	11
WEST BERKSHIRE TOTAL	**27,658**
BERKSHIRE ORIGIN	
Oxfordshire	
Ardley EfW Plant	19,606
Sutton	
Beddington Energy Recovery Facility	272
Slough	
Lakeside Clinical Waste Incinerator	125
Bedford	
Goosey Lodge	37
Doncaster	
Kirk Sandall Thermal Treatment Plant	34
Stockton on Tees	
Teeside EfW Plant	13
Buckinghamshire	
Greatmoor Waste Facility	9
Avonmouth Treatment Site	2
Birmingham City	
Tyseley Plant	1
BERKSHIRE TOTAL	**20,099**

Source: Environment Agency, Incinerator Waste Returns, 2018[113]

11.3.4 As can be seen from Table 11.3, the majority of waste from West Berkshire sent for energy recovery outside of the district went to sites in Hampshire, with the next largest amount travelling to the Lakeside Energy from Waste Facility in Slough. In addition 19,600 tonnes travelled to the Ardley EfW plant in Oxfordshire which is not attributed below the level of 'Berkshire'.

11.3.5 As part of the Duty to Cooperate, West Berkshire has contacted authorities with identified 'strategic' movements of waste from West Berkshire (>5,000 tpa for non-hazardous waste) to understand the nature of these movements, and the likelihood of their being able to continue over the Plan period.

[113] Environment Agency, (2020). *Waste Data Interrogator 2018* [online] Available at: https://data.gov.uk/dataset/312ace0a-ff0a-4f6f-a7ea-f757164cc488/waste-data-interrogator-2018 [Accessed 21 Oct 2020].

11.3.6 The facilities in Hampshire, where the majority of waste sent for energy recovery from West Berkshire is sent are known to have permanent planning permission, with no known planning reasons why similar waste movements cannot continue over the course of the Plan period.

11.3.7 It is known that the Lakeside Energy from Waste Facility falls within the area proposed for an additional runway at Heathrow Airport. As such, it is likely that this facility will not be available to continue to accept waste if the development at Heathrow goes forward. While it is understood that alternative sites to relocate the Lakeside plant are under consideration, for the purposes of certainty over the Plan period it is not assumed this capacity will continue to be available. However, it is understood that due to current contracts, this facility is not a preferred facility for sending waste from West Berkshire, and is only used when other facilities are not available.

11.3.8 According to previous calculations, approximately 85,117 tonners per annum capacity to recover non-hazardous (LACW + C&I) waste will be required in West Berkshire by 2037. This is based on the assumption that circular economy targets for reducing municipal and similar waste landfilled to no more than 10%, and increasing recycling rates to 65% by 2035 are achieved (25% being the implied percentage managed by energy recovery), and using the worst case forecast arising scenarios for LACW (85,483 tonnes) and C&I (254,983 tonnes) wastes.

11.3.9 As already outlined, West Berkshire does not have sufficient capacity to manage residual waste either through energy recovery or landfill. However, notwithstanding this shortfall in capacity, it is still possible for West Berkshire to be *net self-sufficient* in waste management over the Plan period (as shown in Table 13.1). This is because even though there is a lack of non-hazardous landfill and recovery capacity, the surplus capacity at other types of waste management facility in the district more than offsets this shortfall. Therefore, the total waste management capacity in the district still exceeds the quantity of waste generated. It is also worth noting that the forms of waste management in West Berkshire are at the higher end of the waste hierarchy and thus more desirable. The principle of planning for 'net' self-sufficiency has been agreed with other Waste Planning Authorities in the South East of England, through the SEWPAG Statement of Common Ground (para 2.1).[114]

11.3.10 In addition, a Statement of Common Ground for the MWLP is being prepared to address the lack of non-hazardous landfill and recovery capacity over the Plan period.

11.3.11 The MWLP does not propose to distinguish energy from waste facilities and so the general locational criteria policy for waste management facilities would apply. This would enable energy from waste facilities to come forward within the district in future, provided that all relevant criteria are satisfied.

11.4 Inert Landfill/Recovery

11.4.1 Activities which involve the permanent deposit of inert waste to land can be considered as disposal (landfill) or recovery operations. Whether a particular activity constitutes disposal or recovery depends on the specific purpose of the

[114] SEWPAG, (2020). *Statement of Common Ground between Waste Planning Authority Members of the South East Waste Planning Advisory Group Concerning Strategic Policies for Waste Management.*

development, and may also differ when considered from a planning or an environmental permitting perspective. Generally, from a planning perspective the deposit of waste from which no further value can be obtained is considered disposal (disposal to land is referred to as landfill), but where an environmental benefit or other beneficial use is achieved, the deposit of waste can be considered to be recovery. This includes the backfilling of mineral voids.

11.4.2 The main source of inert landfill and recovery capacity is from voids left after the working of minerals, which has historically been the case in West Berkshire.

11.4.3 Table 11.3 shows where inert waste arising in West Berkshire was deposited to landfill or on/in land in 2018, as reported in the Waste Data Interrogator. Waste categorised as deposited on/in land is considered to be recovery. Table 11.3 shows that 115,519 tonnes of inert waste arising in West Berkshire was deposited to landfill or as part of a recovery operation in West Berkshire or other (mainly neighbouring) authorities. The majority of the waste (91%) was deposited in West Berkshire itself. As with non-hazardous waste, the proximity of these facilities is likely to be due to the cost of transportation, and cost of disposal of this waste.

11.4.4 In addition, 149,685 tonnes of inert waste with the origin of 'Berkshire' was deposited to landfill or as part of a recovery operation in West Berkshire or other authorities. Some of this waste may have arisen in West Berkshire.

Table 11.3: West Berkshire Residual Inert Waste Deposited to Landfill or On/In Land (Recovery) 2018 (rounded to nearest tonne)

Authority/Site Name	Tonnes Received – Landfill	Tonnes Received – On/In Land
WEST BERKSHIRE ORIGIN		
West Berkshire		
Reading Quarry	69,606	
Kennetholme Quarry		29,882
Moores Farm		6,115
Oxfordshire		
Sutton Courtenay Landfill	2,322	
Sutton Courtenay Landfill – Phase 3	5,290	
Ewelme No. 2 Landfill – Inert Area	17	
Upwood Quarry	356	
Land North of Sewage Works		36
Wiltshire		
Lower Compton Landfill	51	
Hampshire		
Chandlers Farm		363
Eversley Quarry		198
Wokingham		
Star Works Landfill	1,235	
Peterborough		
Thornhaugh Landfill Site	48	
WEST BERKSHIRE TOTAL	**78,926**	**36,593**
BERKSHIRE ORIGIN		
West Berkshire		
Copyhold Farm Landfill	16,832	
Oxfordshire		
Woodeaton Quarry	15,648	
Bowling Green Farm Quarry		1,279
Bracknell Forest		

Royal County of Berkshire Polo Club		29,580
Blue Mountain Golf Entertainment Centre		3,240
Hampshire		
Chandlers Farm		41,500
Roke Manor Quarry	25	
Central Bedfordshire		
Cainhoe Quarry	7	
Hillingdon		
Sipson North East Inert Landfill	120	
Wiltshire		
Brickworth Quarry	31	
Cleveland Farm		18,439
Gloucestershire		
Shorncote Quarry Complex		193
Reading		
Green Park Village		22,740
Thurrock		
Little Belhus Restoration		51
BERKSHIRE TOTAL	**32,663**	**117,022**

Source: Waste Data Interrogator 2018.

11.4.5 The European Waste Framework Directive target is for 70% of non-hazardous construction and demolition waste to be recovered (i.e. diverted from disposal to landfill) excluding the disposal of clean excavation soil (EWC 17 05 04) by 2020. The 70% recovery target implies that no more than 30% of non-hazardous construction and demolition waste may be disposed to landfill by 2020. Based on the estimated CDE arisings figure (430,400 tonnes), this would equate to 129,120 tpa from 2020 to the end of the Plan period.

11.4.6 There is existing capacity for 87,700m^3 of operational inert waste to land capacity in the district (Table 3.7). In addition, 1.25 million m^3 has yet to be created through consented mineral extraction, and as part of the MWLP sites are being allocated for minerals development which will potentially involve the infilling of mineral voids with inert fill material (often comprised of CDE waste). It is estimated that these sites could result in an additional 933,333 million m^3 of capacity to deposit inert waste to land (as part of a landfill or recovery operation). This equates to approximately 2.27 million m^3, or 126,169m^3 per annum to the end of the Plan period (2019 – 2037). Applying a conversion factor of 1.5t:1m^3 this equates to 189,253 tonnes per annum - greater than the anticipated need for 129,120 tonnes per annum.

12.0 Movement of Waste

12.1 Introduction

12.1.1 Waste moves across administrative boundaries. Like any business the waste management sector is market driven, and private contracts will exist between parties which will influence where waste is transported and managed. Particularly relevant to Waste Planning Authorities, (as already mentioned in the section on the management of residual waste) is that due to various reasons (including market forces) not all types of waste management facilities will necessarily be developed in every waste planning authority area. This means that waste is likely to travel into and out of those Plan areas.

12.1.2 The Environment Agency's (EA's) Waste Data Interrogator captures waste movements, but relies on the annual returns provided by operators of permitted sites to be reliable and accurate. Although there are known reliability issues with the WDI (as previously discussed), it is considered to be the most reliable available data source for cross-boundary movements of waste. As the data in this section is solely derived from the WDI, it may not match figures provided elsewhere in this report.

12.2 Movements to/from West Berkshire

12.2.1 The top 10 waste movements for 2018 are given in Table 12.1. This shows that over 95% of waste recorded as arising in West Berkshire was managed either within West Berkshire or mainly surrounding authorities. Similarly, approximately 95% of waste managed in West Berkshire is recorded as arising within West Berkshire or mainly surrounding authorities. This implies that the majority of waste arising within West Berkshire does not travel far for management, and the majority of the waste that is imported for management within West Berkshire has not travelled far.

Table 12.1: Top 10 West Berkshire Waste Movements 2018 (rounded to the nearest tonne)

Waste Exports 2018			Waste Imports 2018		
Waste Planning Authority	**Tonnes**	**Percent**	**Waste Planning Authority**	**Tonnes**	**Percent**
West Berkshire	234,060	54.4%	West Berkshire	234,060	30.6%
Oxfordshire	69,804	16.2%	Reading	124,541	16.3%
Slough	33,304	7.7%	North Yorkshire	98,464	12.9%
Hampshire	28,201	6.5%	Wokingham	58,117	7.6%
Bristol City	16,287	3.8%	Oxfordshire	57,367	7.5%
Buckinghamshire	11,178	2.6%	Hampshire	42,947	5.6%
Swindon	9,554	2.2%	Bracknell Forest	41,141	5.4%
Wakefield	4,033	0.9%	Berkshire*	35,963	4.7%
Surrey	3,810	0.9%	Slough	18,160	2.4%
Reading	2,450	0.6%	Windsor & Maidenhead	17,892	2.3%
Total	**430,635****	**96%**	**Total**	**765,459*****	**95%**

Source: WDI 2018

* As the WDI relies on operator returns, occasionally information does not recognise up to date Waste Planning Authority boundaries and therefore just 'Berkshire' is sometimes included rather than a breakdown of individual authorities within the former County of Berkshire.

** Total waste arising within West Berkshire (as recorded in WDI 2018)

*** Total waste managed within West Berkshire (as recorded in WDI 2018)

12.2.2 Table 12.1 shows that in 2018 there was significantly more waste managed in West Berkshire than that which arose in West Berkshire. This situation is similar to previous years reported in earlier Local Waste Assessments where West Berkshire also managed more than that arising within the district.

12.2.3 The top five receiving authorities for West Berkshire's waste were: West Berkshire, Oxfordshire, Slough, Hampshire, and Bristol City. The predominant movements to Oxfordshire were of non-hazardous and inert waste to the Sutton Courtenay Landfill Facility, and inert waste to the Oxford Sewage Treatment Works Sludge Import Facility. The predominant movement to Slough from West Berkshire was to the Slough Sewage Treatment Works. The main movements to Hampshire from West Berkshire in 2018 were for non-hazardous waste to various facilities, and inert waste to the Warren Heath Recycling Facility. The predominant movements to Bristol City, were to the Royal Edward Dock (scrap metal facility) and Units A, B, & C Estuary Park (waste wood facility).

12.2.4 The top five authorities with waste being managed within West Berkshire were: West Berkshire, Reading, North Yorkshire, Wokingham and Oxfordshire. The predominant movements from Reading, Wokingham and Oxfordshire (neighbouring authorities) are inert waste being managed at Reading Quarry aggregates recycling facility. This is likely to be due to the large construction markets in these areas (source of CDE waste), and the proximity of Reading Quarry to their administrative boundaries. It is perhaps somewhat surprising that the next biggest waste import to West Berkshire is from North Yorkshire, however it is understood that the Thatcham Block Works imports Pulverised Fuel Ash (PFA) from the Drax power station in North Yorkshire for use in their Autoclaved Aerated Concrete blocks.

12.2.5 In addition, and reported outside of the Waste Data Interrogator are the movements from West Berkshire to energy from waste facilities in Hampshire, Slough, Portsmouth and Hillingdon as outlined in Table 11.2. These movements totalled 27,658 tonnes in 2018.

12.3 Waste from London

12.3.1 In line with the National Planning Policy for Waste[115], the need for additional waste management capacity of more than local significance should be considered. Therefore, consideration has been given to how exports of London waste may impact upon waste management in West Berkshire.

12.3.2 The draft New London Plan is currently undergoing examination, and includes a commitment to achieve net self-sufficiency (excluding excavation waste) by 2026. Amendments to the Plan acknowledge that the particular characteristics of this waste stream mean that it will be very challenging for London to provide sites or provision for excavation waste. The Plan identifies that in 2015, London exported approximately 4.2mt (42%) to authorities in the South East of England, predominantly CD&E waste.

12.3.3 There are many projects in London that will require the management of significant amounts of inert waste, including Crossrail 2 and the Thames

[115] *National Planning Policy for Waste.* (2014). [online] Available at: https://www.gov.uk/government/publications/national-planning-policy-for-waste [Accessed 05 Feb 2019].

Tideway Tunnel.

12.3.4 The WDI (2018) shows the following waste movements between London and West Berkshire in Table 12.2.

Table 12.2: Waste Movements between West Berkshire and London 2018 (rounded to nearest tonne)

Movement (tonnes)	Non-hazardous	Inert	Hazardous	Total
West Berkshire to London	18	0	24	42
London to West Berkshire	5,442	7,329	26	12,796

Source: WDI 2018

12.3.5 Table 12.2 shows that waste movements from London to West Berkshire are relatively small, and mainly comprises inert waste with slightly less non-hazardous waste. The movement of inert and hazardous wastes from London do not reach the thresholds for being identified as strategic movements (10,000 tpa for inert waste & 100 tpa for hazardous wastes, agreed by the South East Waste Planning Authorities). The movement of non-hazardous waste just exceeds the threshold for it being a strategic movement (5,000 tpa for non-hazardous waste, agreed by the South East Waste Planning Authorities), however the new draft London Plan has committed to becoming net self-sufficient in this waste stream and the facilities in West Berkshire that are receiving waste from London benefit from permanent planning permission in any case. Any reduction in waste received at these facilities from London as a result of it becoming net self-sufficient in all waste streams except excavation waste will mean more capacity is available to manage waste from West Berkshire or elsewhere.

13.0 Summary of Waste Arisings and Capacity in West Berkshire

13.0.1 In order to determine if the district is 'net self-sufficient' in waste management capacity (i.e. having capacity equivalent to the amount of waste arising), Table 13.1 shows the current situation in West Berkshire. Only the principal waste streams (LACW, CDE and C&I), plus hazardous waste and sewage sludge arisings have been used in calculating net self-sufficiency. This is because equine waste is predominantly treated directly on farms without entering the formal waste management system, and radioactive waste is highly specialised with the only facility being located at AWE. Specialist waste facilities have also been excluded (except for sewage sludge), as they relate mainly to equine/farm waste and radioactive waste, which has been excluded on the above basis.

13.0.2 Based on the findings of this Local Waste Assessment, and as summarised in Table 13.1, West Berkshire is able to be net self-sufficient in the management of its waste, with an additional 293,886 tonnes per annum of capacity at the end of the Plan period. This is based on planning for the worst case scenario of waste arising forecasts in all waste streams, and only includes permanently consented operational capacity and so is likely to be a robust assessment of capacity needs within the district.

Table 13.1: Arisings and Capacity (permanent, operational) Summary in West Berkshire

Waste Stream	Chosen Baseline Arisings (t)	Projected Arisings 2037 (t)	Permanent Operational Capacity (t)	Shortfall/ Surplus at 2037 (t)
LACW	74,897	85,500	118,000	+32,500
CDE	462,903	574,000	634,250 (+87,700m^3*)	+60,250
C&I	165,812	255,000	450,950**	+195,950
Hazardous	15,303	15,100	17,100	+2,000
Sewage Sludge	3,916	4,114	7,300	+3,186
*Radioactive****	*1,372m^3*** **	*1,372m^3*	*20m^3*	-
*Equine****	*52,800*	*52,800*	*4,000*	-
*Other****	-	-	*400*	-
Total	**607,017**	**933,714**	**1,227,600 (+87,700m^3)**	**+293,886**

* Inert waste landfill capacity is temporary, and has been excluded from net self-sufficiency calculations.
** Rounded up from 450,948 t
*** Not included in net self-sufficiency calculations
**** Radioactive waste arisings based on lifetime total over the Plan period (24,700/18).

Appendix A: Local Authority Collected Waste Data

Year	Local Authority Collected Waste	Recycle	Recycle %	Compost	Compost %	Recovery	Recovery %	Landfill	Landfill %	Landfill Diversion %
2009/10	78,269	17,955	22.9%	13,509	17.3%	9,353	11.9%	37,452	47.9%	52.1%
2010/11	78,435	18,879	24.1%	14,048	17.9%	10,565	13.5%	34,943	44.6%	55.4%
2011/12	78,156	18,953	24.3%	17,155	21.9%	24,947	31.9%	17,101	21.9%	78.1%
2012/13	77,011	20,023	26.5%	18,483	24.5%	23,873	31.6%	13,092	17.3%	82.7%
2013/14	80,776	20,194	25.6%	19,386	24.6%	25,041	31.8%	14,136	17.9%	82.1%
2014/15	80,856	22,952	28.4%	20,545	25.4%	25,041	31.0%	12,196	15.1%	84.9%
2015/16	81,547	23,104	28.3%	19,942	24.5%	24,910	30.5%	13,590	16.7%	83.3%
2016/17	81,051	22,374	27.6%	20,783	25.6%	25,193	31.1%	12,701	15.7%	84.3%
2017/18	76,758	20,916	27.2%	19,580	25.5%	24,949	32.5%	11,314	14.7%	85.3%
2018/19	74,897	20,986	28.0%	17,112	22.8%	25,099	33.5%	11,701	15.6%	84.4%

Source: West Berkshire Council Waste Management Service.

Appendix B: Forecast Local Authority Collected Waste Data

Year	(1) Waste Manage-ment Strategy	(2) IWMC Business Case	(3) Pop'n (% change/ capita)	(4) Pop'n (10 yr avg/ capita)	(5) H'hold (% change per HH)	(6) H'hold (10 yr avg per HH)	(7) Trend	West Berks Pop'n	Waste arisings /capita	Waste arisings/ capita %change	H'holds	Waste Arisings /HH	Arisings /HH% change
2000/01	79,432	79,432	79,432	79,432	79,432	79,432	82,832	144,494	0.550		56,913	1.396	
2001/02	81,413	81,413	81,413	81,413	81,413	81,413	82,635	143,913	0.566	2.91%	56,921	1.430	2.48%
2002/03	82,117	82,117	82,117	82,117	82,117	82,117	82,439	144,297	0.569	0.60%	57,176	1.436	0.41%
2003/04	78,529	78,529	78,529	78,529	78,529	78,529	82,242	145,147	0.541	-4.93%	57,610	1.363	-5.09%
2004/05	84,599	84,599	84,599	84,599	84,599	84,599	82,046	146,492	0.577	6.74%	58,240	1.453	6.56%
2005/06	84,442	84,442	84,442	84,442	84,442	84,442	81,849	148,107	0.570	-1.27%	58,997	1.431	-1.47%
2006/07	88,453	88,453	88,453	88,453	88,453	88,453	81,652	150,056	0.589	3.39%	59,794	1.479	3.35%
2007/08	83,986	83,986	83,986	83,986	83,986	83,986	81,456	152,024	0.552	-6.28%	60,670	1.384	-6.42%
2008/09	81,525	81,525	81,525	81,525	81,525	81,525	81,259	153,039	0.533	-3.57%	61,227	1.332	-3.81%
2009/10	78,269	78,269	78,269	78,269	78,269	78,269	81,063	153,943	0.508	-4.56%	61,781	1.267	-4.85%
2010/11	78,435	78,435	78,435	78,435	78,435	78,435	80,866	154,148	0.509	0.08%	62,102	1.263	-0.31%
2011/12	78,156	78,156	78,156	78,156	78,156	78,156	80,669	154,704	0.505	-0.71%	62,539	1.250	-1.05%
2012/13	77,011	77,011	77,011	77,011	77,011	77,011	80,473	156,031	0.494	-2.30%	63,130	1.220	-2.39%
2013/14	80,776	80,776	80,776	80,776	80,776	80,776	80,276	156,633	0.516	4.49%	63,626	1.270	4.07%
2014/15	80,856	80,856	80,856	80,856	80,856	80,856	80,079	157,460	0.514	-0.43%	64,035	1.263	-0.54%
2015/16	81,547	81,547	81,547	81,547	81,547	81,547	79,883	158,576	0.514	0.14%	64,586	1.263	-0.01%
2016/17	81,051	81,051	81,051	81,051	81,051	81,051	79,686	158,473	0.511	-0.54%	64,863	1.250	-1.03%
2017/18	76,758	76,758	76,758	76,758	76,758	76,758	79,490	158,527	0.484	-5.33%	65,076	1.180	-5.61%
2018/19	74,897	74,897	74,897	74,897	74,897	74,897	74,897	158,454	0.473	-2.38%	65,392	1.145	-2.90%
2019/20	75,271	74,897	74,325	79,677	74,402	81,186	78,279	158,474	0.469	-0.78%	65,638	1.134	-1.03%
2020/21	75,648	74,897	73,776	79,706	73,903	81,483	78,016	158,532	0.465	-0.78%	65,878	1.122	-1.03%
2021/22	76,026	74,897	73,205	79,709	73,472	81,853	77,753	158,537	0.462	-0.78%	66,177	1.110	-1.03%
2022/23	76,406	74,897	72,632	79,703	73,023	82,202	77,490	158,525	0.458	-0.78%	66,459	1.099	-1.03%

2023/24	76,788	74,897	72,065	79,699	72,530	82,498	77,277	158,518	0.455	-0.78%	66,699	1.087	-1.03%
2024/25	77,172	74,897	71,478	79,668	72,005	82,756	76,964	158,455	0.451	-0.78%	66,907	1.076	-1.03%
2025/26	77,558	74,897	70,873	79,612	71,482	83,012	76,701	158,344	0.448	-0.78%	67,114	1.065	-1.03%
2026/27	77,946	74,897	70,252	79,531	70,986	83,296	76,438	158,183	0.444	-0.78%	67,344	1.054	-1.03%
2027/28	78,336	74,897	69,647	79,463	70,476	83,561	76,175	158,047	0.441	-0.78%	67,558	1.043	-1.03%
2028/29	78,727	74,897	69,029	79,374	69,941	83,792	75,912	158,871	0.437	-0.78%	67,745	1.032	-1.03%
2029/30	79,121	74,897	68,410	79,277	69,405	84,017	75,649	157,677	0.434	-0.78%	67,927	1.022	-1.03%
2030/31	79,516	74,897	67,805	79,191	68,872	84,242	75,386	157,506	0.430	-0.78%	68,109	1.011	-1.03%
2031/32	79,914	74,897	67,218	79,118	68,342	84,466	75,123	157,362	0.427	-0.78%	68,290	1.001	-1.03%
2032/33	80,314	74,897	66,652	79,066	67,818	84,693	74,861	157,259	0.424	-0.78%	68,473	0.990	-1.03%
2033/34	80,715	74,897	66,101	79,025	67,270	84,886	74,598	157,177	0.421	-0.78%	68,629	0.980	-1.03%
2034/35	81,119	74,897	65,559	78,891	66,735	85,088	74,335	157,108	0.417	-0.78%	68,793	0.970	-1.03%
2035/36	81,524	74,897	65,035	78,971	66,200	85,288	74,072	157,070	0.414	-0.78%	68,954	0.960	-1.03%
2036/37	81,932	74,897	64,531	78,972	65,667	85,483	73,809	157,072	0.411	-0.78%	69,112	0.950	-1.03%

Sources:
Waste Data: West Berkshire Council Waste Management Service ONS Population Estimates:
https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/datasets/populationestimatesforukenglandandwalesscotlandandnorthernireland
ONS Population Predictions:
https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections/datasets/localauthoritiesinenglandtable2
ONS Household Estimates and Predictions:https://www.gov.uk/government/statistical-data-sets/live-tables-on-household-projections#based-live-tables
https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections/datasets/householdprojectionsforengland
Trend Equation: y= -262.92x + 83,274
10 year average waste arisings per capita (2009/10 – 2018/19): 0.503
10 year average waste arisings per household (2009/10 – 2018/19): 1.237
Average % change waste arisings per capita 2000/01 – 2018/19: -0.78%
Average % change waste arisings per capita 2000/01 – 2017/18: -1.03%

Appendix C: European Waste Catalogue (EWC) Codes used in Methodology to Estimate CDE Waste Arisings

CDE Inert
170101 concrete
170102 bricks
170103 tiles and ceramics
170107 mixtures of concrete, brick, tiles and ceramics other than those mentioned in 170106
170202 glass
170302 bituminous mixtures other than those mentioned in 170301
170504 soil and stones other than those mentioned in 170503
170506 Dredging spoil other than those mentioned in 170505
170508 Track ballast other than those mentioned in 170507
CDE Non-haz
080112 waste paint and varnish other than those mentioned in 080111
080410 waste adhesives and sealants other than those mentioned in 080409
170201 wood
170203 plastic
170401 copper, bronze, brass
170402 aluminium
170403 lead
170404 zinc
170405 iron and steel
170406 tin
170407 mixed metals
170411 cables other than those mentioned in 170410
170604 insulation materials other than those mentioned in 170601 and 170603
170802 gypsum-based construction materials other than those mentioned in 170801
170904 mixed construction and demolition wastes other than those mentioned in 170901, 170902 and 170903

Appendix D: Methodology for determining a 'West Berkshire Share' of Waste coded 'Berkshire' and 'WPA not codeable – South East' in the Waste Data Interrogator.

2018

BERKSHIRE UNATTRIBUTED						
Area	**Hazardous**	**HIC**	**CDE**	**% Hazardous**	**% HIC**	**% CDE**
Bracknell Forest	2,918	142,816	134,479	5%	13%	12%
Reading	10,466	248,756	276,112	17%	22%	25%
Slough	24,239	188,495	281,929	39%	17%	25%
West Berkshire	8,413	247,030	175,191	13%	22%	16%
Windsor & Maidenhead	3,099	192,925	115,501	5%	17%	10%
Wokingham	13,314	87,047	142,499	21%	8%	13%
TOTAL	62,449	1,107,069	1,125,711	100%	100%	100%
Berkshire*	9,147	35,846	291,358			
West Berks Attributed	427	7,999	45,343			

SOUTH EAST UNATTRIBUTED						
Area	**Hazardous**	**HIC**	**CDE**	**% Hazardous**	**% HIC**	**% CDE**
Bracknell Forest	2,918	142,816	134,479	0.3%	1.2%	1.0%
Brighton & Hove	3,088	153,050	122,241	0.3%	1.3%	0.9%
Buckinghamshire	47,250	921,711	1,668,367	4.4%	7.6%	11.9%
East Sussex	38,791	733,397	487,047	3.6%	6.0%	3.5%
Hampshire	111,081	2,146,155	2,260,765	10.4%	17.7%	16.2%
Isle of Wight	29,865	168,768	171,046	2.8%	1.4%	1.2%
Kent	168,737	2,550,918	2,944,503	15.8%	21.0%	21.1%
Medway	7,387	409,883	93,902	0.7%	3.4%	0.7%
Milton Keynes	11,243	235,930	280,657	1.1%	1.9%	2.0%
Oxfordshire	470,046	860,408	1,741,895	44.1%	7.1%	12.5%
Reading	10,466	248,756	276,112	1.0%	2.1%	2.0%
Slough	24,239	188,495	281,929	2.3%	1.6%	2.0%
Southampton	46,028	146,499	226,432	4.3%	1.2%	1.6%
Surrey	35,425	1,242,261	1,659,993	3.3%	10.2%	11.9%
West Berkshire	8,413	247,030*	175,191	0.8%	2.0%	1.3%
West Sussex	35,667	1,447,208	1,185,110	3.3%	11.9%	8.5%
Windsor & Maidenhead	3,099	192,925	115,501	0.3%	1.6%	0.8%
Wokingham	13,314	87,047	142,499	1.2%	0.7%	1.0%
TOTAL	1,067,057	12,12,257	13,967,669	100%	100%	100%
WPA not codeable - South East**	208,040	1,489,118	1,756,667			
West Berks Attributed	1,640	30,343	22,033			
TOTAL BERKSHIRE & SE SHARE	**2,068**	**38,342**	**67,376**			

* A movement of 201,228 tonnes of 20 03 01 (Mixed Municipal Waste) from West Berkshire to Sutton Courtenay Landfill is recorded in the 2018 WDI. However, upon querying this with the Environment Agency, the movement has confirmed to be only 1,446 tonnes. Therefore the difference has been subtracted from this number.

** Excludes EWC Ch. 01, 02 01 & Ch. 19

2017

BERKSHIRE UNATTRIBUTED						
Area	**Hazardous**	**HIC**	**CDE**	**% Hazardous**	**% HIC**	**% CDE**
Bracknell Forest	1,799	164,374	117,576	2.6%	15%	9%
Reading	9,446	223,694	411,113	13.6%	20%	31%
Slough	21,785	161,237	364,526	31.3%	14%	27%
West Berkshire	21,525	259,320	223,864	21.0%	23%	17%
Windsor & Maidenhead	1,262	222,725	101,604	1.8%	20%	8%
Wokingham	13,704	82,390	114,452	19.7%	7%	9%
TOTAL	69,521	1,113,740		100%	100%	100%
Berkshire*	11,514	35,659	303,958			
West Berks Attributed	**3,565**	**8,303**	**51,042**			

SOUTH EAST UNATTRIBUTED						
Area	**Hazardous**	**HIC**	**CDE**	**% Hazardous**	**% HIC**	**% CDE**
Bracknell Forest	1,799	164,374	117,576	0.2%	1.4%	0.8%
Brighton & Hove	4,558	156,702	137,917	0.4%	1.3%	1.0%
Buckinghamshire	48,232	690,223	1,127,018	4.6%	5.9%	8.0%
East Sussex	40,664	783,908	532,157	3.9%	6.7%	3.8%
Hampshire	100,444	2,010,728	2,299,160	9.6%	17.1%	16.3%
Isle of Wight	46,350	166,594	184,956	4.4%	1.4%	1.3%
Kent	186,343	2,357,552	2,134,300	17.9%	20.0%	22.2%
Medway	5,469	493,720	41,052	0.5%	4.2%	0.3%
Milton Keynes	9,262	225,901	374,548	0.9%	1.9%	2.7%
Oxfordshire	412,920	893,295	1,497,450	39.6%	7.6%	10.6%
Reading	9,446	223,694	411,113	0.9%	1.9%	2.9%
Slough	21,785	161,237	364,526	2.1%	1.4%	2.6%
Southampton	41,196	126,474	386,967	3.9%	1.1%	2.7%
Surrey	35,836	1,342,747	1,838,469	3.4%	11.4%	13.0%
West Berkshire	21,525	259,320	223,864	2.1%	2.2%	1.6%
West Sussex	42,716	1,407,602	1,202,628	4.1%	12.0%	8.5%
Windsor & Maidenhead	1,262	222,725	101,604	0.1%	1.9%	0.7%
Wokingham	13,704	2,390	114,452	1.3%	0.7%	0.8%
TOTAL	1,043,511	11,769,186	14,089,757	100%	100%	100%
WPA not codeable - South East*	132,152	1,487,102	1,456,042			
West Berks Attributed	2,726	32,767	23,134			
TOTAL BERKSHIRE & SE SHARE	**6,291**	**41,069**	**74,176**			

* Excludes EWC Ch. 01, 02 01 & Ch. 19

2016

BERKSHIRE UNATTRIBUTED						
Area	**Hazardous**	**HIC**	**CDE**	**% Hazardous**	**% HIC**	**% CDE**
Bracknell Forest	1,485	181,399	115,965	2.6%	16%	11%
Reading	9,097	248,434	302,562	15.7%	22%	28%
Slough	21,577	203,964	221,671	37.2%	18%	20%
West Berkshire	16,031	237,529	254,412	27.6%	21%	23%
Windsor & Maidenhead	837	218,890	88,103	1.4%	19%	8%
Wokingham	9,002	62,834	103,804	15.5%	5%	10%
TOTAL	58,029	1,153,050	1,086,517	100.0%	100%	100%
Berkshire*	15,997	172,967	461,199			
West Berks Attributed	**4,419**	**35,631**	**107,991**			

SOUTH EAST UNATTRIBUTED						
Area	**Hazardous**	**HIC**	**CDE**	**% Hazardous**	**% HIC**	**% CDE**
Bracknell Forest	1,485	181,399	115,965	0.1%	1.6%	0.9%
Brighton & Hove	3,792	163,411	153,411	0.3%	1.4%	1.2%
Buckinghamshire	39,754	724,271	969,147	3.6%	6.4%	7.7%
East Sussex	34,623	760,757	548,578	3.1%	6.7%	4.4%
Hampshire	118,837	1,898,985	2,161,109	10.8%	16.7%	17.1%
Isle of Wight	52,531	176,158	186,396	4.8%	1.5%	1.5%
Kent	199,270	2,158,182	2,738,365	18.1%	19.0%	21.7%
Medway	6,612	356,644	87,094	0.6%	3.1%	0.7%
Milton Keynes	7,048	252,397	199,378	0.6%	2.2%	1.6%
Oxfordshire	483,605	836,862	1,320,172	43.9%	7.4%	10.5%
Reading	9,097	248,434	302,562	0.8%	2.2%	2.4%
Slough	21,577	203,964	221,671	2.0%	1.8%	1.8%
Southampton	25,062	152,105	409,674	2.3%	1.3%	3.2%
Surrey	33,182	1,377,575	1,683,578	3.0%	12.1%	13.4%
West Berkshire	16,031	237,529	254,412	1.5%	2.1%	2.0%
West Sussex	39,610	1,363,136	1,063,318	3.6%	12.0%	8.4%
Windsor & Maidenhead	837	218,890	88,103	0.1%	1.9%	0.7%
Wokingham	9,002	62,834	103,804	0.8%	0.6%	0.8%
TOTAL	1,101,955	11,373,533	12,606,737	100%	100%	100%
WPA not codeable - South East*	167,254	1,666,214	1,775,751	0.1%	1.6%	0.9%
West Berks Attributed	2,433	34,798	35,836	0.3%	1.4%	1.2%
TOTAL BERKSHIRE & SE SHARE	**6,852**	**70,429**	**143,827**			

* Excludes EWC Ch. 01, 02 01 & Ch. 19

2015

BERKSHIRE UNATTRIBUTED						
Area	**Hazardous**	**HIC**	**CDE**	**% Hazardous**	**% HIC**	**% CDE**
Bracknell Forest	1,550	168,415	117,037	2.8%	15%	10%
Reading	8,056	253,119	330,935	14.6%	23%	28%
Slough	19,985	225,810	271,508	36.2%	21%	23%
West Berkshire	13,289	198,811	248,042	24.1%	18%	21%
Windsor & Maidenhead	1,561	185,443	128,971	2.8%	17%	11%
Wokingham	10,707	64,733	97,193	19.4%	6%	8%
TOTAL	55,148	1,096,331	1,193,686	100%	100%	100%
Berkshire*	4,550	24,591	488,671			
West Berks Attributed	**128**	**4,459**	**101,543**			

SOUTH EAST UNATTRIBUTED						
Area	**Hazardous**	**HIC**	**CDE**	**% Hazardous**	**% HIC**	**% CDE**
Bracknell Forest	1,550	168,415	117,037	0.2%	1.5%	1.0%
Brighton & Hove	1,853	148,845	105,830	0.2%	1.3%	0.9%
Buckinghamshire	26,401	733,947	770,221	2.6%	6.6%	6.5%
East Sussex	28,243	668,045	603,085	2.8%	6.0%	5.1%
Hampshire	96,490	2,019,431	2,056,194	9.7%	18.3%	17.2%
Isle of Wight	6,262	188,659	175,370	0.6%	1.7%	1.5%
Kent	189,005	2,013,233	2,263,140	18.9%	18.2%	19.0%
Medway	10,211	336,169	65,413	1.0%	3.0%	0.5%
Milton Keynes	5,030	281,071	143,988	0.5%	2.5%	1.2%
Oxfordshire	457,464	860,181	1,450,860	45.8%	7.8%	12.2%
Reading	8,056	253,119	330,935	0.8%	2.3%	2.8%
Slough	19,985	225,810	271,508	2.0%	2.0%	2.3%
Southampton	45,897	185,501	424,716	4.6%	1.7%	3.6%
Surrey	35,325	1,432,952	1,768,343	3.5%	13.0%	14.8%
West Berkshire	13,289	198,811	248,042	1.3%	1.8%	2.1%
West Sussex	42,039	1,081,488	900,488	4.2%	9.8%	7.6%
Windsor & Maidenhead	1,561	185,443	128,971	0.2%	1.7%	1.1%
Wokingham	10,707	64,733	97,193	1.1%	0.6%	0.8%
TOTAL	999,368	11,045,853	11,921,334	100%	100%	100%
WPA not codeable - South East*	122,474	1,313,939	1,597,114			
West Berks Attributed	1,629	23,649	33,230			
TOTAL BERKSHIRE & SE SHARE	**1,756**	**28,109**	**134,774**			

* Excludes EWC Ch. 01, 02 01 & Ch. 19

2014

BERKSHIRE UNATTRIBUTED						
Area	**Hazardous**	**HIC**	**CDE**	**% Hazardous**	**% HIC**	**% CDE**
Bracknell Forest	1,860	166,629	93,514	2.7%	14%	9%
Reading	7,094	317,728	279,726	10.4%	26%	27%
Slough	21,686	294,576	277,114	31.9%	24%	26%
West Berkshire	17,951	201,433	187,115	26.4%	17%	18%
Windsor & Maidenhead	2,898	181,687	159,692	4.3%	15%	15%
Wokingham	16,400	58,641	58,393	24.2%	5%	6%
TOTAL	67,889	1,220,694	1,055,554	100.0%	100%	100%
Berkshire*	3,475	21,974	422,373			
West Berks Attributed	95	3,626	74,873			
SOUTH EAST UNATTRIBUTED						
Area	**Hazardous**	**HIC**	**CDE**	**% Hazardous**	**% HIC**	**% CDE**
Bracknell Forest	1,860	166,629	93,514	0.2%	1.5%	1.0%
Brighton & Hove	864	164,054	107,232	0.1%	1.5%	1.2%
Buckinghamshire	23,569	774,407	677,136	2.0%	7.2%	7.5%
East Sussex	26,216	694,313	472,339	2.2%	6.4%	5.3%
Hampshire	96,603	1,778,778	1,968,922	8.3%	16.4%	21.9%
Isle of Wight	7,364	207,983	148,166	0.6%	1.9%	1.7%
Kent	225,087	1,944,194	375,563	19.3%	18.0%	4.2%
Medway	12,103	340,721	59,276	1.0%	3.2%	0.7%
Milton Keynes	9,632	234,933	97,245	0.8%	2.2%	1.1%
Oxfordshire	581,776	758,118	1,037,951	49.8%	7.0%	11.6%
Reading	7,094	317,728	279,726	0.6%	2.9%	3.1%
Slough	21,686	294,576	277,114	1.9%	2.7%	3.1%
Southampton	16,233	222,711	376,094	1.4%	2.1%	4.2%
Surrey	56,633	1,375,874	1,496,746	4.9%	12.7%	16.7%
West Berkshire	17,951	201,433	187,115	1.5%	1.9%	2.1%
West Sussex	43,409	1,096,872	1,103,976	3.7%	10.1%	12.3%
Windsor & Maidenhead	2,898	181,687	159,692	0.2%	1.7%	1.8%
Wokingham	16,400	58,641	58,393	1.4%	0.5%	0.7%
TOTAL	1,167,378	10,813,652	8,976,200	100%	100%	100%
WPA not codeable - South East*	95,976	940,129	2,795,089			
West Berks Attributed	1,476	17,512	58,266			
TOTAL BERKSHIRE & SE SHARE	**1,571**	**21,138**	**133,138**			

* Excludes EWC Ch. 01, 02 01 & Ch. 19

Appendix E: European Waste Catalogue (EWC) Codes used in Methodology to Estimate C&I Waste Arisings

HIC Inert
050117 bitumen
150107 glass packaging
191205 glass
191209 minerals (for example sand, stones)
200102 glass
200202 soil and stones
HIC Non-haz
Ch. 02 02 wastes from the preparation and processing of meat, fish and other foods of animal origin.
Ch. 02 03 wastes from fruit, vegetables, cereals, edible oils, cocoa, coffee, teas and tobacco preparation and processing, conserve production, yeast and yeast extraction production, molasses preparation and fermentation.
Ch. 02 04 wastes from sugar processing.
Ch. 02 05 waste from the dairy products industry.
Ch. 02 06 waste from the baking and confectionary industry.
Ch. 02 07 wastes from the production of alcoholic and non-alcoholic beverages (except coffee, tea and cocoa).
Ch. 03 01 (excl. 03 01 04*) wastes from wood processing and the production of panels and furniture.
030299 wood preservatives not otherwise specified.
Ch. 03 03 wastes from pulp, paper and cardboard production and processing.
Ch. 04 01 (excl. 04 01 03*) wastes from the leather and fur industry.
Ch. 04 02 wastes from the textile industry. All codes except hazardous (*)
Ch. 05 01 wastes from petroleum refining. Excluding all hazardous codes (*) and 05 01 17 bitumen
Ch. 05 06 (excl. 05 06 01* & 05 06 03*) wastes from the pyrolytic treatment of coal.
Ch. 05 07 (excl. 05 07 01*) wastes from natural gas purification and transportation.
06 01 99 waste from the manufacture, formulation, supply and use (MFSU) of acids – wastes not otherwise specified.
06 02 99 wastes from the MFSU of bases – wastes not otherwise specified
Ch. 06 03 wastes from the MFSU of salts and their solutions and metallic oxides. All codes except hazardous (*)
06 04 99 metal-containing wastes other than those mentioned in 06 03 – wastes not otherwise specified.
Ch. 06 05 (excl. 06 05 02*) sludges from on-site effluent treatment
Ch. 06 06 (excl. 06 06 02*) wastes from the MFSU of sulphur chemicals, sulphur chemical processes and desulphurisation processes.
06 07 99 wastes from the MFSU of halogens and halogen chemical processes – wastes not otherwise specified.
Ch. 06 08 (excl. 06 08 02*) wastes from the MFSU of silicon and silicon derivatives.
Ch. 06 09 (excl. 06 09 03*) wastes from the MFSU of phosphorous chemicals and phosphorous chemical processes
Ch. 06 10 (excl. 06 10 02*) wastes from the MFSU of nitrogen chemicals, nitrogen chemical processes and fertiliser manufacture.
Ch. 06 11 waste from the manufacture of inorganic pigments and opacifiers.
Ch. 06 13 wastes from inorganic chemical processes not otherwise specified. All codes except hazardous (*)

Ch. 07 01 wastes from the MFSU of basic organic chemicals. All codes except hazardous (*)
Ch. 07 02 wastes from the MFSU of plastics, synthetic rubber and manmade fibres. All codes except hazardous (*)
Ch. 07 03 wastes from the MFSU of organic dyes and pigments (except 06 11). All codes except hazardous (*)
Ch. 07 04 wastes from the MFSU of organic plant protection products (except 02 01 08 and 02 01 09) wood preserving agents (except 03 02) and other biocides. All codes except hazardous (*)
Ch. 07 05 wastes from the MFSU of pharmaceuticals. All codes except hazardous (*)
Ch. 07 06 wastes from the MFSU of fats, grease, soaps, detergents, disinfectants and cosmetics. All codes except hazardous (*)
Ch. 07 07 wastes from the MFSU of fine chemicals and chemical products not otherwise specified. All codes except hazardous (*)
Ch. 08 01 wastes from the MFSU and removal of paint and varnish. Excluding all hazardous codes (*) and 08 01 12 waste paint and varnish other than those mentioned in 08 01 11
Ch. 08 02 wastes from MFSU of other coatings (including ceramic materials)
Ch. 08 03 wastes from MFSU of printing inks. All codes except hazardous (*)
Ch. 08 04 wastes from MFSU of adhesives and sealants (including waterproofing products). Excluding all hazardous codes (*) and 08 04 10 waste adhesives and sealants other than those mentioned in 08 04 09
Ch. 09 01 wastes from the photographic industry. All codes except hazardous (*)
Ch. 10 01 wastes from power stations and other combustion plans (except 19). All codes except hazardous (*)
Ch. 10 02 wastes from the iron and steel industry. All codes except hazardous (*)
Ch. 10 03 wastes from aluminium thermal metallurgy. All codes except hazardous (*)
Ch. 10 04 wastes from lead thermal metallurgy. All codes except hazardous (*)
Ch. 10 05 wastes from zinc thermal metallurgy. All codes except hazardous (*)
Ch. 10 06 wastes from copper thermal metallurgy. All codes except hazardous (*)
Ch. 10 07 (excl. 10 07 07*) wastes from silver, gold and platinum thermal metallurgy.
Ch. 10 08 wastes from other non-ferrous thermal metallurgy. All codes except hazardous (*)
Ch. 10 09 wastes from casting of ferrous pieces. All codes except hazardous (*)
Ch. 10 10 waste from casting of non-ferrous pieces. All codes except hazardous (*)
Ch. 10 11 wastes from manufacture of glass and glass products. All codes except hazardous (*)
Ch. 10 12 (excl. 10 12 09* & 10 12 11*) wastes from manufacture of ceramic goods, bricks, tiles and construction products.
Ch. 10 13 (excl. 10 13 09* & 10 13 12*) wastes from manufacture of cement, lime and plaster and articles and products made from them.

Ch. 11 01 wastes from chemical surface treatment and coating of metals and other materials (e.g. galvanic processes, zinc coating processes, pickling processes, etching, phosphating, alkaline degreasing, anodising). All codes except hazardous (*)
Ch. 11 02 wastes from non-ferrous hydrometallurgical processes. All codes except hazardous (*)
Ch. 11 05 wastes from hot galvanising processes. All codes except hazardous (*)
Ch. 12 01 wastes from shaping and physical and mechanical surface treatment of metals and plastics. All codes except hazardous (*)
Ch. 15 packaging (including separately collected municipal packaging waste). Excluding all hazardous codes (*) and 15 01 07 glass packaging
15 02 03 absorbents, filter materials, wiping cloths and protective clothing other than those mentioned in 15 02 02.
Ch. 16 01 end of life vehicles from different means of transport (including off road machinery) and wastes from dismantling of end of life vehicles and vehicle maintenance (except 13, 14 6 06 and 16 08). All codes except hazardous (*)
Ch. 16 02 wastes from electrical and electronic equipment. All codes except hazardous (*)
Ch. 16 03 off-specification batches and unused products. All codes except hazardous (*)
Ch. 16 05 gases in pressure containers and discarded chemicals. All codes except hazardous (*)
Ch. 16 06 batteries and accumulators. All codes except hazardous (*)
Ch. 16 07 wastes from transport tank, storage tank and barrel cleaning (except 05 and 13). All codes except hazardous (*)
Ch. 16 08 spent catalysts. All codes except hazardous (*)
Ch. 16 10 aqueous liquid wastes destined for off-site treatment. All codes except hazardous (*)
Ch. 16 11 waste linings and refractories. All codes except hazardous (*)
Ch. 18 01 wastes from natal care, diagnosis, treatment or prevention of disease in humans. All codes except hazardous (*)
Ch. 18 02 wastes from research, diagnosis, treatment or prevention of disease involving animals. All codes except hazardous (*)
Ch. 19 01 wastes from incineration or pyrolysis of waste. All codes except hazardous (*)
Ch. 19 02 wastes from physico/chemical treatment of waste (including dechromatation, decyanidation, neutralisation). All codes except hazardous (*)
Ch. 19 03 stabilised/solidified wastes. All codes except hazardous (*)
Ch. 19 04 vitrified waste and wastes from vitrification. All codes except hazardous (*)
Ch. 19 05 wastes from aerobic treatment of solid wastes.
Ch. 19 06 wastes from anaerobic treatment of waste.
Ch. 19 07 (excl. 19 07 02*) landfill leachate.
Ch. 19 08 wastes from waste water treatment plants not otherwise specified.

Excluding all hazardous codes (*) and 19 08 05 sludges from treatment of urban wastewater.
Ch. 19 09 wastes from the preparation of water intended for human consumption or water for industrial use.
Ch. 19 10 wastes from shredding of metal-containing wastes. All codes except hazardous (*)
Ch. 19 11 wastes from oil regeneration. All codes except hazardous (*)
Ch. 19 12 wastes from the mechanical treatment of waste (e.g. sorting, crushing, compacting, pelletising) not otherwise specified. Excluding all hazardous codes (*) and 19 12 05 glass & 19 12 09 minerals (for example and, stones)
Ch. 19 13 wastes from soil and groundwater remediation. All codes except hazardous (*)
Ch. 20 01 separately collected fraction (except 15 01). Excluding all hazardous codes (*) and 20 01 02 glass
Ch. 20 02 garden and park wastes. Excluding all hazardous codes (*) and 20 02 02 soil and stones
Ch. 20 03 other municipal wastes.

Appendix F: Forecast Commercial and Industrial Waste Data

Forecasts	(1) GDP Growth	(2) Population Growth	(3) Business Growth	(4) Trend-based	(5) DEFRA Model (Central)	(6) CIWM Forecasts	(7) SE Partnership Board	Population	Population % Change	GDP (%)
2014	147,161	147,161	147,161	147,161	147,161	147,161	147,161	156,633		
2015	155,190	155,190	155,190	155,190	155,190	155,190	155,190	157,460	0.53%	
2016	165,441	165,441	165,441	165,441	165,441	165,441	165,441	158,576	0.71%	
2017	165,472	165,472	165,472	165,472	165,472	165,472	165,472	158,473	-0.06%	
2018	165,812	165,812	165,812	165,812	165,812	165,812	165,812	158,527	0.03%	
2019	168,133	165,736	168,962	169,332	164,486	164,888	168,299	158,454	-0.05%	1.4%
2020	169,983	165,757	172,171	174,090	163,170	164,612	170,824	158,474	0.01%	1.1%
2021	173,043	165,817	175,441	178,849	161,864	164,345	172,532	158,532	0.04%	1.8%
2022	175,638	165,822	178,774	183,607	160,569	164,089	174,257	158,537	0.00%	1.5%
2023	177,921	165,810	182,170	188,366	159,285	163,843	176,000	158,525	-0.01%	1.3%
2024	180,412	165,803	185,630	193,124	158,011	163,607	177,760	158,518	0.00%	1.4%
2025	182,938	165,737	189,156	197,882	156,746	163,382	179,537	158,455	-0.04%	1.4%
2026	185,499	165,621	192,749	202,641	155,492	163,167	181,333	158,344	-0.07%	1.4%
2027	188,096	165,452	196,411	207,399	154,249	162,962	183,146	158,183	-0.10%	1.4%
2028	190,730	165,310	200,141	212,158	153,015	162,767	184,978	158,047	-0.09%	1.4%
2029	193,400	165,126	203,943	216,916	151,790	162,583	186,827	157,871	-0.11%	1.4%
2030	196,107	164,923	207,817	221,674	150,576	162,410	188,696	157,677	-0.12%	1.4%
2031	198,853	164,744	211,764	226,433	149,371	162,247	190,583	157,506	-0.11%	1.4%
2032	201,637	164,593	215,787	231,191	148,177	162,094	192,488	157,362	-0.09%	1.4%
2033	204,460	164,486	219,886	235,950	146,991	161,952	194,413	157,259	-0.07%	1.4%
2034	207,322	164,400	224,063	240,708	145,815	161,821	196,357	157,177	-0.05%	1.4%
2035	210,225	164,328	228,319	245,466	144,649	161,700	198,321	157,108	-0.04%	1.4%
2036	213,168	164,288	232,656	250,225	143,491	161,590	200,304	157,070	-0.02%	1.4%
2037	216,152	164,290	237,075	254,983	142,344	161,491	202,307	157,072	0.00%	1.4%

Sources:

Waste Data: West Berkshire Council Waste Management Service
ONS Population
Estimates: https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/datasets/populationestimatesforukenglandandwalesscotlandandnorthernireland
ONS Population
Predictions: https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections/datasets/localauthoritiesinenglandt able2
ONS UK Business, Activity Size and Location: https://www.ons.gov.uk/businessindustryandtrade/business/activitysizeandlocation/datasets/ukbusinessactivitysizeandlocation

Scenario Assumptions:

(3) Businesses in West Berkshire 2014 = 6,875; Businesses in West Berkshire 2018 = 7,363. Increase of ~7.6% total (increase ~1.9% per annum)

(4) Trend Equation: y= 4,758.4x + 145,540

(5) DEFRA model 2012[116] estimate: 47.9mt, 2020 estimate: 43.8mt = decrease of ~8.4% (decrease ~0.8% per annum)

(5) CIWM Model[117]:

Table 3: Waste generated per employee by sector grouping

Sector	Waste per employee (tonnes per annum)	Annual % change in employment per annum 2000-2010	Annual % change in employment per annum 2011 onwards
Manufacturing	8.707	-4.50%	-0.70%
Retail and wholesale	2.593	-0.20%	0.50%
Transport, information and communications	1.049	-0.20%	-0.50%
Public Admin, education, social work & Defence	1.276	2.00%	-0.10%
Hotels and food service	1.659	0.20%	-0.50%
Other**	2.121	1.30%	1.30%

Source: Ricardo-AEA

[116] Forecasting 2020 Waste Arisings and Treatment Capacity. Revised February 2013 Report. DEFRA (2013). Figure 3, p.8 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/251567/pb13883-forecasting-2020-waste-arisings-131017.pdf

[117] CIWM Report 2013 Commercial and Industrial Waste in the UK and Republic of Ireland (Appendix 1). https://www.ciwm.co.uk/Custom/BSIDocumentSelector/Pages/DocumentViewer.aspx?id=QoR7FzWBtisamYEcWSfL6SxAJRLAPT9vf9UOxY7TX%252bRvV%252ffsIKIsqU2EtUq%252bj7oCo87WOf%252fbs9PqCytSgZ5tfRfy2%252bBshoiDu7f882AjZtqLLztRjeHBL8ywUdWyhRgk

(6) SE Partnership Board[118]:

Table 3.4 SE Regional Growth Rates for MSW, C&I, C&D and Hazardous Waste

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
MSW	2.5%	2.5%	2.5%	2.5%	2.5%	2.0%	2.0%	2.0%	2.0%	2.0%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
C&I	2.5%	2.5%	2.5%	2.5%	2.5%	2.0%	2.0%	2.0%	2.0%	2.0%	1.5%	1.5%	1.5%	1.5%	1.5%	1.0%	1.0%	1.0%	1.0%	1.0%
C&D	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Hazardous	2.5%	2.5%	2.5%	2.5%	2.5%	2.0%	2.0%	2.0%	2.0%	2.0%	1.5%	1.5%	1.5%	1.5%	1.5%	1.0%	1.0%	1.0%	1.0%	1.0%

Source: ERM, 2005. Update of the Model for Future Waste Management Capacity Needs in the South East

[118] Regional Waste management Capacity: Survey, Methodology and Monitoring. Final Report, March 2007 (p.14). https://www.medway.gov.uk/downloads/file/327/regional_waste_management_capacity_march_2007

Glossary

AD – Anaerobic Digestion
C&I – Commercial and Industrial (Waste)
CDE – Construction, Demolition and Excavation (Waste)
Circular Economy – An alternative to the traditional linear economy ('make', 'use' 'dispose'), in which resources are kept in use for as long as possible, with the maximum value extracted from them with materials and products recovered and regenerated at the end of service life. EA – Environment Agency
EfW – Energy from Waste
EWC – European Waste Catalogue
HAW – Higher Activity Waste
(Radioactive) HLW – High Level
Waste (Radioactive) HWRC –
Household Waste Recycling Centre
Hazardous Waste – Waste which exhibits one or more of the hazardous properties in Annex II to the EU Waste Framework Directive (e.g. flammable, explosive, corrosive).
ILW – Intermediate Level Waste (Radioactive)
Inert Waste – Waste that does not undergo any significant physical, chemical or biological transformations.
IVC – In Vessel Composting
LACW – Local Authority
Collected Waste LLW – Low
Level Waste (Radioactive) MRF
– Materials Recovery Facility
MSW – Municipal Solid Waste
Non-hazardous Waste – Waste which does not exhibit one or more of the hazardous properties in Annex II to the EU Waste Framework Directive.
VLLW – Very Low Level Waste
(Radioactive) WDI – Waste Data
Interrogator
WEEE – Waste Electrical and Electronic
Equipment WFD – Waste Framework
Directive

If you require this information in an alternative format or translation, please call 01635 42400 and ask for the Minerals and Waste Planning Policy Team.

West Berkshire Council
Development and Planning
Council Offices
Market Street
Newbury
RG14 5LD
T: 01635 519111
F: 01635 519408
E: mwdpd@westberks.gov.uk
www.westberks.gov.uk/mwlpps

WBC/P&C/CP/1213