Agenda Item 5- Appendix 1

Hertfordshire County Council

Local Authority Collected Waste Spatial Strategy

October 2016

Content

Drawings

1 Executive summary

The supporting information outlined in this Waste Spatial Strategy indicates that there have been major changes in service provision in recent years that have led to improvement in performance and increased diversion from landfill.

Consideration of the existing arrangements for waste management highlights a need for improved infrastructure to sustain service delivery, meet the disposal needs of planned household growth in Hertfordshire, mitigate the increasing costs of waste transfer and treatment, provide resilience in service provision and further improve performance. Future arrangements will need to include facilities that are appropriately sized and capable of managing fluctuations in waste composition and volume.

A network of infrastructure is necessary to manage waste efficiently and effectively for the future. The optimal waste management facility requirements are considered to be:

1.1 A facility to treat residual Local Authority Collected Waste (LACW)

A long term ambition for the Waste Disposal Authority (WDA) is to be able to treat/dispose of residual LACW within Hertfordshire. Currently Hertfordshire County Council (HCC) is in contract with Veolia Environmental Services to deliver an Energy Recovery Facility (ERF). A single, in-County ERF affords the WDA surety of proximate, long term treatment for waste that is not separated for reuse, recycling and/or composting.

1.2 A supporting network of Waste Transfer Stations (WTSs)

Dependent on the location of a facility or facilities to treat residual LACW, a network of WTSs are required to effectively serve Hertfordshire's requirements. A WTS is a facility where waste is bulked ready for onward transport to a recycling facility or disposal facility.

A network of WTSs would enable the further segregation of waste types. Once waste types are segregated they can be sent to specialist treatment facilities for processing/treatment and/or disposal using the most economical option. Strategically positioned WTSs close to the major road network will enable more

efficient WCA collection rounds by providing a location for unloading close to the point of waste production prior to onward bulk transportation to treatment/disposal facilities. This Waste Spatial Strategy indicates a clear preference for co-location of WTSs with, for example, WCA depots and/or HWRCs.

In addition to residual LACW, the WTSs should be designed to be flexible, that is, capable of accommodating a range of separately collected materials e.g. street sweepings, organic wastes and dry recycling.

1.3 A strategic network of improved Household Waste Recycling Centres (HWRCs)

The current network of 17 HWRCs is largely not expected to be fit for purpose and/or be capable of sustaining service delivery for the plan period. An analysis of centre capacity, linked to the planned introduction of Automatic Number Plate Recognition (ANPR) cameras across the network in late 2016, will inform the development of an Annex to this waste spatial strategy (anticipated to be available in summer 2017).

The existing operation suggests that an improved network of more fit-for-purpose and strategically located Household Waste Recycling Centres (HWRCs), designed to serve larger catchment areas, could provide a more effective and efficient service. The HWRCs should be easy to travel to, be larger and more flexible than the existing centres, enable increased segregation of waste types and provide an improved customer experience including meeting improved reuse ambitions.

2 Introduction and purpose

2.1 This Hertfordshire County Council (HCC) Local Authority Collected Waste (LACW) Spatial Strategy has been prepared by the Waste Disposal Authority (WDA). It is a 'live' document and will be periodically reviewed and updated to reflect influencing factors that affect the composition and total volume of LACW in Hertfordshire. Influencing factors include population and housing growth within Hertfordshire, the strength of the economy, waste legislation and local and national waste management policies (at Appendix 1).

2.2 Under Section 30(2)(a) of the Environmental Protection Act 1990, HCC is required to perform the statutory functions of the WDA for Hertfordshire. As WDA, the county council is responsible for the treatment and/or disposal of LACW arising in the county.

2.3 This document sets out an assessment of desirable new and improved waste management facilities required in the county over the period to 2031 and beyond to better enable the sustainable management and disposal of LACW.

2.4 When identifying waste management requirements, a holistic view of the LACW management process has been considered, taking into consideration the separate roles of the WDA and Waste Collection Authorities (WCAs).

2.5 The spatial strategy is set out by material stream i.e. residual, dry recycling and organic with each stream considered to require differing solutions to provide appropriate infrastructure and arrangements.

2.6 It should be recognised that the WDA operates within changeable parameters. Projected population growth, applicable waste legislation; local and national policies and known changes to WCA services have all been considered.

2.7 This strategy does not represent a formal policy position but seeks to provide context and direction for relevant decision makers when considering the activities and functions of the WDA. It is not a prescriptive document or a rigid blueprint for future service planning but instead sets out an informed and up to date vision of the infrastructure considered by the WDA to be required in Hertfordshire to provide a deliverable, effective and efficient 'waste network'.

Local Authority Collected Waste

2.8 Local Authority Collected Waste is defined as all waste collected by the local authority including commercial and industrial waste.

2.9 Hertfordshire's LACW is typically made up of the following types of waste:

- Household waste collected by the ten Borough and District Councils as the WCA's for Hertfordshire.
- Commercial and industrial waste collected in association with the above.
- Waste collected at the county's Household Waste Recycling Centres (HWRCs).
- Specialised forms of LACW waste e.g. clinical waste, asbestos and chemicals

2.10 It should be noted that, whilst there are currently no performance targets for local authorities, National targets are set out in applicable legislation. As set out within Appendix 1, these National targets can relate to LACW or household waste, for example, the targets for levels of recycling relate to household waste only whereas, diversion from landfill targets concern the wider definition of LACW or 'municipal' waste.

2.11 Unless otherwise indicated, all figures in this report relate to LACW and its component parts.

Vision Statement

2.12 The Waste Disposal Authority aims to provide effective and value for money services for the compliant treatment of waste arising in Hertfordshire. These services will be robust but flexible to accommodate changes in arrangements, waste volumes and waste composition and will be developed with consideration of the reasonable expectations of partner authorities and residents in the County.

3 Residual waste

Summary

The amount of residual waste has steadily decreased since 2004/05 due to legislative and financial drivers and the associated WCA and WDA service improvements. However, population growth is expected to result in waste growth during the period to 2031.

In 2015/16 the primary means of disposing of residual waste was by using regional ERFs. Within the county disposal facilities are limited to the Westmill landfill site which has permission to operate to the end of 2017 (at the time of writing).

The WDAs residual waste strategy is to promote/enable the provision of a major new ERF in the county, supported by strategically located Waste Transfer Stations.

3.1 Residual waste comprises of the waste left over after materials have been separated for reuse, recycling and organic waste treatment. Table 1 and figure 1 demonstrate that the amount of residual waste has steadily decreased since 2004/05. The introduction of landfill tax increased the cost of disposing of residual waste using landfill facilities. In response to this and the HWP aspiration to increase recycling rates both the WCAs and WDA made investments to increase recycling and composting at the kerbside and at HWRCs. These service improvements coupled with a weaker economic climate have resulted in reduced residual waste.

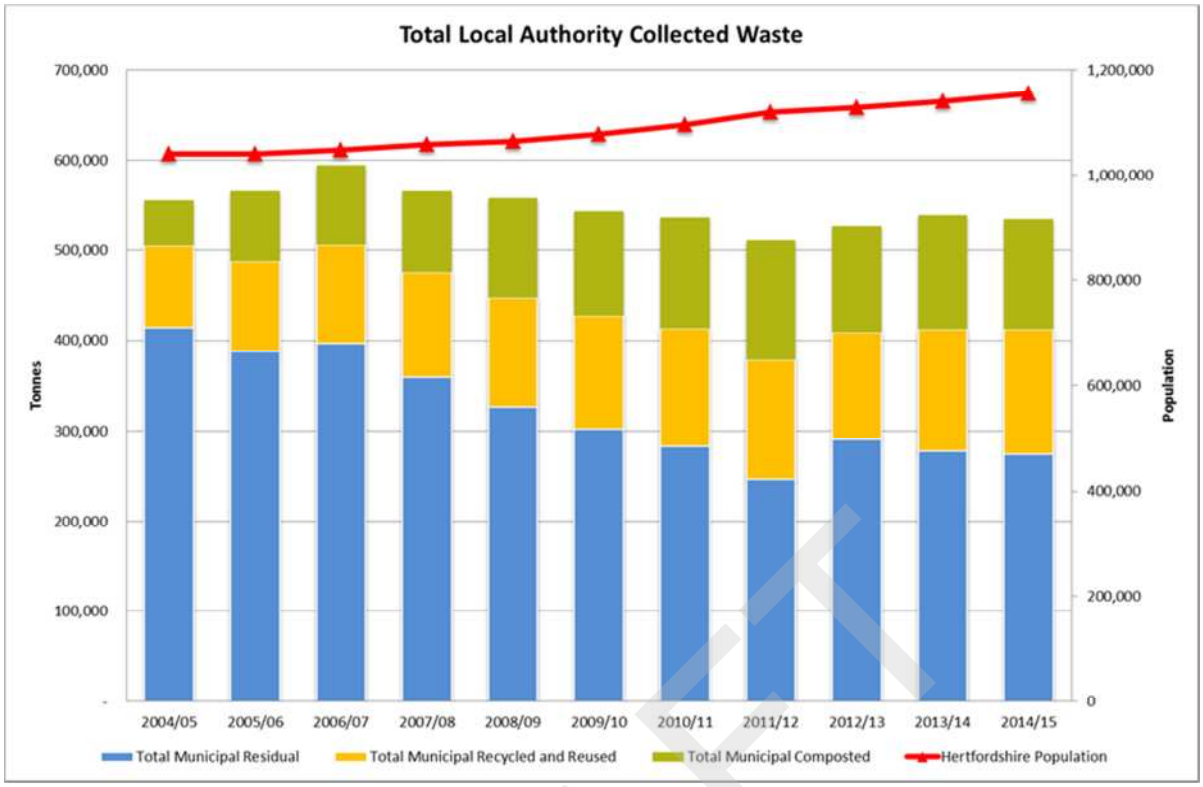
3.2 However, this downward trend is not considered likely to continue with population growth likely to result in waste growth. Service changes introduced by WCAs in recent years are known to have masked underlying waste growth. For example, although overall residual waste reduced in 2015/16 compared with the previous year, six of the ten of the WCAs (those that did not implement service changes) experienced residual LACW growth.

Table 1: Residual waste disposal tonnages

Year	Landfill (Tonnes)	% of total LACW	Energy Recovery (Tonnes)	% of total LACW	Total Residual LACW	Residual LACW as % of all LACW
2004/05	381,863	68.7%	32,852	5.9%	414,715	**74.6%**
2005/06	353,784	62.5%	34,627	6.1%	388,411	**68.6%**
2006/07[1]	359,942	60.5%	36,862	6.2%	396,804	**66.7%**
2007/08	318,697	56.3%	40,767	7.2%	359,464	**63.5%**
2008/09	290,172	52.0%	36,743	6.6%	326,915	**58.6%**
2009/10	275,159	50.6%	26,839	4.9%	301,998	**55.5%**
2010/11	242,384	45.1%	41,304	7.7%	283,688	**52.8%**
2011/12[1]	200,725	37.3%	73,365	13.6%	274,090	**50.9%**
2012/13	190,558	36.2%	100,283	19.0%	290,841	**55.2%**
2013/14	191,926	35.6%	86,464	16%	278,390	**51.6%**
2014/15	140,115	26.2%	134,482	25.1%	274,597	**51.3%**
2015/16	98,076	18.6%	167,589	31.7%	265,665	**50.3%**

[1] To ensure accurate provision of data and payment of contracts an annual accounting schedule consisting of either 52 or 53 weeks is developed each year. 2006/07 and 2011/12 were '53 week years'

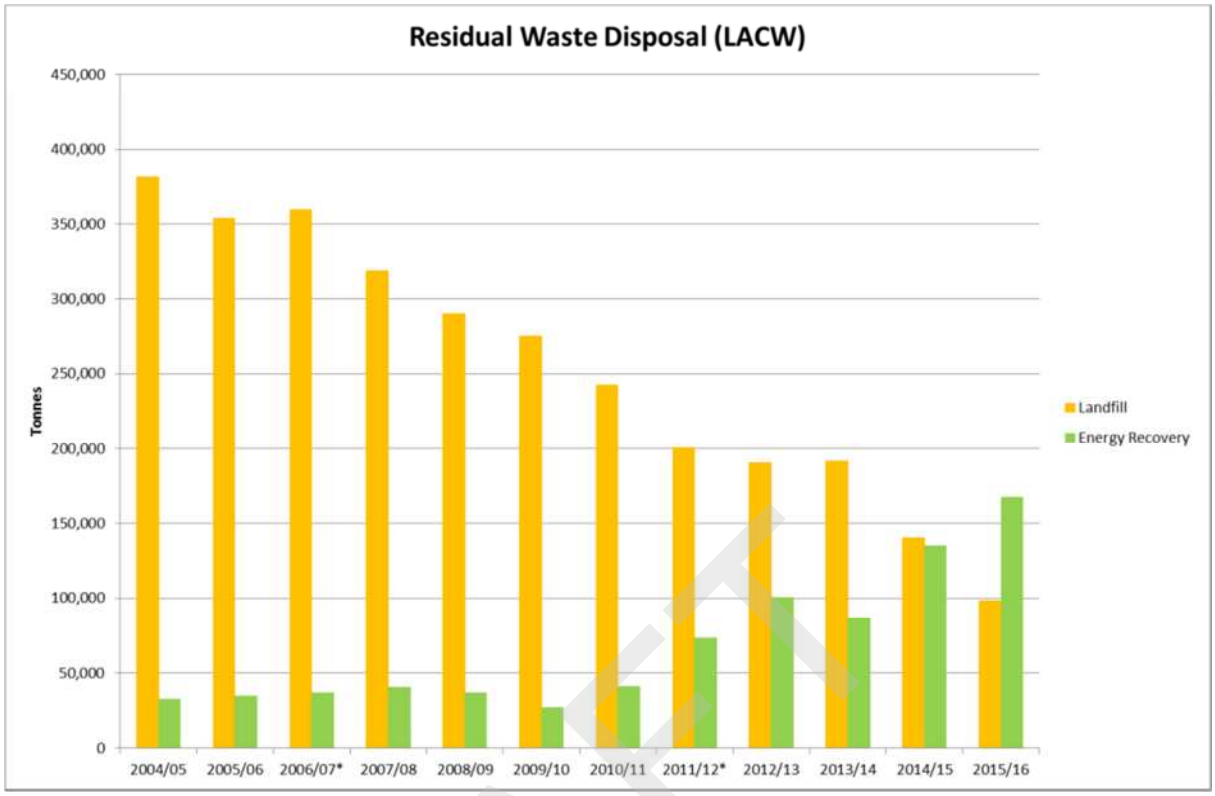
Figure 1: Total Local Authority Collected Waste



3.3 Residual waste in Hertfordshire is primarily disposed of using two methods; Energy Recovery and Landfill. The use of ERFs as a method of disposing of Hertfordshire's residual waste has increased in recent years as regional facilities have been developed and available landfill capacity has reduced. Hertfordshire has been able to utilise these facilities in the short term but treatment capacity cannot be guaranteed and the locations of the facilities leads to increasing transport costs. Furthermore, there currently remains a need to utilise some landfill capacity for items unsuitable for current ERFs. Therefore, more suitable and sustainable long term arrangements are required for the treatment of residual LACW.

3.4 The proportion of residual LACW sent to landfill and to ERFs over an 11 year period, from April 2004 to March 2016 has changed as shown in table 1 and figure 2. This is due to a reduction in landfill capacity close to Hertfordshire and the procurement of regional disposal contracts with ERFs. The volume of LACW sent to landfill has decreased steadily to a level around a quarter of that in 2004/5.

Figure 2: LACW sent to landfill and Energy Recovery Facilities



Landfill sites

3.5 In 2015/16, 98,076 tonnes (18.6%) of all LACW was principally disposed of at three landfill sites, see table 2 below. In addition to facilities procured by the WDA (listed below) other facilities were used by contracted suppliers for the disposal of non-recyclable residues.

Table 2: LACW sent to landfill sites

Site	Tonnes
Bletchley, Buckinghamshire	48,416
Milton, Cambridgeshire	2,979
Westmill, Ware, Hertfordshire	41,029
Other sites	5,652
Total	**98,076**

Energy Recovery Facilities

3.6 In 2015/16, 167,589 tonnes (31.7%) of all LACW was disposed of at ERFs, see table 3 below. In addition to facilities procured by the WDA (listed below) other facilities outside of Hertfordshire were also used to dispose of clinical, street cleansing and chemical wastes.

Table 3: LACW sent to Energy Recovery Facilities

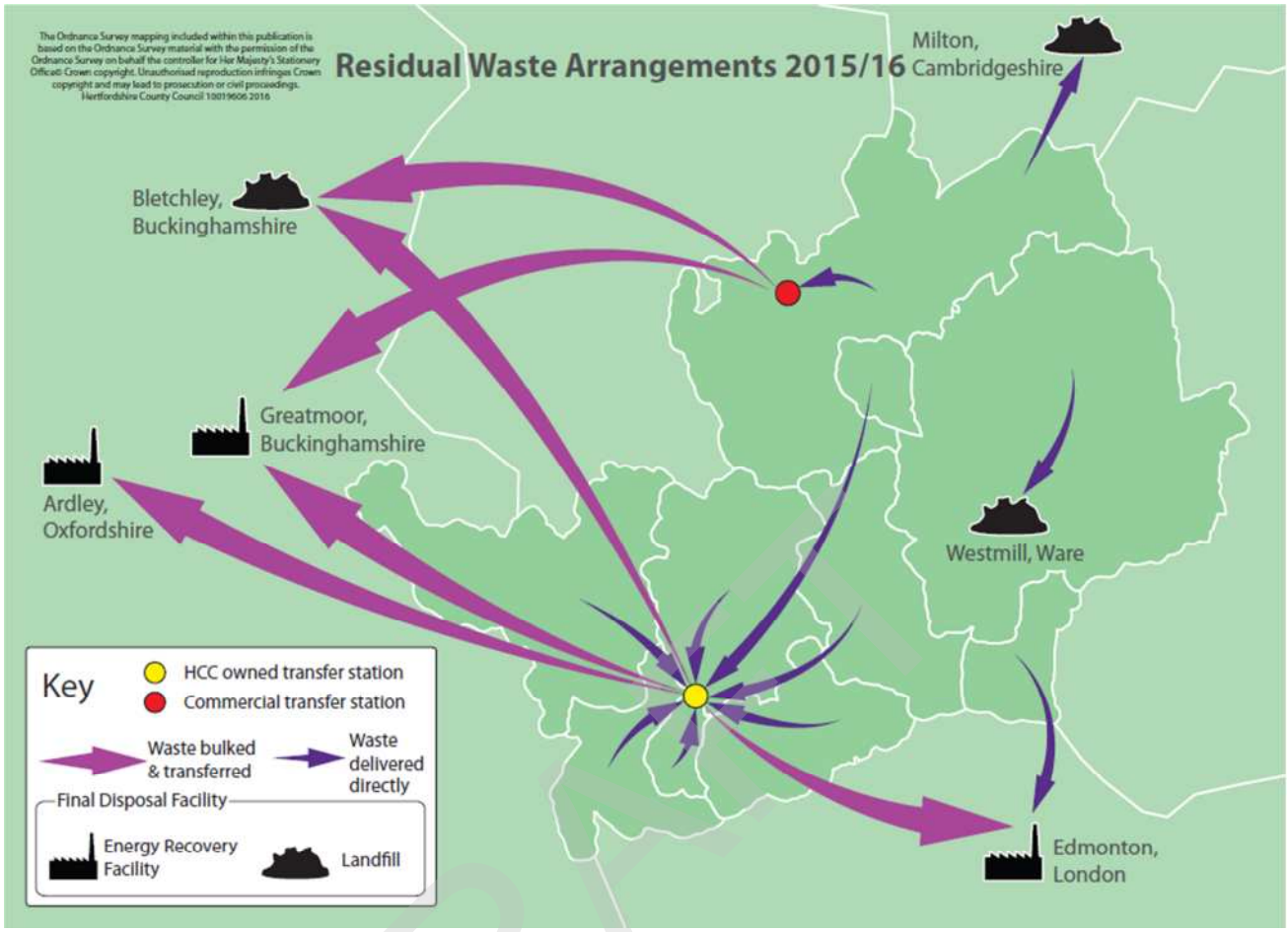
Site	Tonnes
Edmonton, Enfield, London	64,858
Ardley, Oxfordshire	84,537
Greatmoor, Buckinghamshire	12,813
Lakeside, Buckinghamshire	577
Other	4,803
Total	**167,589**

3.7 The information from tables 2 and 3 shows that almost 85% of the residual LACW in Hertfordshire is exported out of the County attracting significant transfer and haulage costs.

Appraisal of current provision

3.8 Current arrangements for disposal include direct delivery into landfill sites and Energy Recovery Facilities, supplemented with transfer facilities allowing for WCAs to deliver their waste within a reasonable distance for onward bulk transportation to landfill sites and the regional ERFs. A summary is shown as map 1 below.

Map 1: Waste disposal routes



Waste treatment facility

3.9 A feasibility study to consider the procurement of a major waste treatment facility was undertaken in 2007 and an outline business case for the provision of a new waste treatment facility was approved by the county council Cabinet on 20 October 2008.

3.10 Following a detailed procurement process, the WDA entered into a contract with Veolia ES Hertfordshire Limited (VES) in July 2011 for the provision of a solution for the treatment of Hertfordshire's residual LACW. VES's chosen site for an ERF was New Barnfield, Welham Green, a site close to the A1/A414 junction in the centre of the county.

3.11 The site is allocated as Green Belt within the Welwyn Hatfield Local Development Plan and in July 2015 the Secretary of State refused planning permission for the development of an ERF at New Barnfield.

3.12 The Revised Project Plan (RPP) mechanism in the contract allows VES to propose an alternative site and/or design and other consequential changes to the contract. The council invited VES to submit a RPP and following evaluation the council accepted VES's RPP in March 2015.

3.13 The RPP submitted by VES details their proposal to develop a high efficiency ERF based on modern technology, and designed to meet R1 "recovery" status under the Waste Framework Directive. The facility would be Combined Heat & Power ("CHP") "ready" and with recovery/reprocessing of Incinerator Bottom Ash ("IBA") derived from the processing of residual waste streams.

3.14 The location of the proposed facility is Ratty's Lane, Rye House, Hoddesdon.

3.15 The proposed facility would have a nominal capacity to accept 320k tonnes per annum of waste (based on normal calorific values and plant availability) and is expected to generate 33.5 Megawatt electric (MWe) gross of power (30.2MWe nett). This can be considered as the equivalent electricity input into the National Grid for 69,000 typical households.

3.16 Should planning permission be obtained in line with VES's expectations, the planned services commencement date for the facility is estimated to be the 31 December 2020.

3.17 The proposed operational period of the contract is 30 years following planning and construction of the facility.

Interim arrangements

3.18 Interim arrangements have been put in place while a long term solution for the treatment/disposal of Hertfordshire's residual LACW is being considered.

3.19 The interim arrangements are a combination of landfill and ERF destinations and will be in place until 2018, there is an option to extend the contracts until 2021 albeit that any extension is subject to capacity requirements and cost being agreed.

3.20 These arrangements have resulted in a shift from predominantly using landfill facilities to dispose of residual LACW to ERFs. The interim arrangements are with the following facilities:

Energy Recovery

- Ardley, Oxfordshire
- Greatmoor, Buckinghamshire

Landfill

- Bletchley, Buckinghamshire
- Milton, Cambridgeshire
- Westmill, Hertfordshire

3.21 In addition to the existing interim arrangements, the WDA sends waste to the Edmonton ERF in North London although the longstanding arrangement is due to expire in the short term which would increase the cost of waste transfer and treatment.

Waterdale Waste Transfer Station

3.22 Residual LACW generated in the southern, western and central parts of the county (Dacorum, Hertsmere, St Albans, Stevenage, Watford, Welwyn Hatfield and Three Rivers district and borough councils) is currently directed to the county council's WTS at Waterdale in Three Rivers.

3.23 The Waterdale WTS was built in 1982, is owned by the county council and is currently operated by FCC Environment. It receives in the region of 190,000 tonnes of LACW per annum.

3.24 The Waterdale WTS currently receives residual waste regularly from 11 of the county's HWRCs. The facility is also used to bulk co-mingled recycling collected by two WCAs, street sweepings collected by three WCAs and clinical waste collected by all ten of the WCAs.

3.25 At the station, residual waste material is transferred from waste collection vehicles to 20-tonne container vehicles for transportation to Bletchley Landfill, Buckinghamshire and ERFs at Ardley in Oxfordshire, Greatmoor in Buckinghamshire and Edmonton in North London. The collection of co-mingled recycling is coordinated by the WCAs contractor, Pearce Recycling based in St

Albans. Street sweepings are collected for reprocessing by Eastern Waste Disposal in Essex. Clinical waste is collected by Healthcare Environmental Services and sent to Rainham and Sandwich for processing.

Residual waste tipping hall at Waterdale Waste Transfer Station

3.26 The reliance on the Waterdale WTS for such a large proportion of the County's residual waste is less than ideal in business continuity and resilience terms and a clear preference for increased options is required. This may be direct delivery to an in-County facility or, failing provision of a direct delivery option(s), an increased number of strategically placed WTSs.

Bury Mead Road

3.27 The Bury Mead Road transfer station is used to transfer residual LACW from North Hertfordshire. The depot is owned by North Hertfordshire District Council and is operated by FCC Environment under contract to the WDA until 2018. The site handles circa 21,000 tonnes of Hertfordshire's LACW per annum and also receives commercial waste. This waste is transferred to 20-tonne container vehicles for transportation to the Greatmoor ERF and/or the Bletchley Landfill,

Buckinghamshire. Street sweepings are also bulked at this site ready for collection and reprocessing by Eastern Waste Disposal in Essex.

3.28 The facility has limited capacity and is not capable of accommodating future waste growth. The restrictive nature of the site also restricts the separate bulking of waste materials.

3.29 Plan 1 identifies the location of existing WCA owned and managed depots in the county and also the Waterdale WTS. Broxbourne, Dacorum, Hertsmere, St Albans and Stevenage WCAs have bulking capacity at their depots for waste types such as street sweepings.

Private (commercial or 'merchant') facilities

3.30 Waste bulking and transfer facilities within the county are limited. The only direct delivery disposal option for residual waste is the Westmill landfill site which has planning permission until the end of 2017, even with extension of permission (decision outstanding at the time of writing), this site will only be available for WCAs to directly deliver to in the short term. The current practise of transferring the majority of Hertfordshire's residual waste outside of the county and for WCAs to travel a reasonable time to a point of treatment/disposal highlights the need for a more sustainable in-County solution or, should that not come to fruition, additional bulking and transfer facilities.

3.31 Plan 1 illustrates the limited provision of private bulking and transfer facilities with appropriate capacity within the county.

Residual Waste Projections 2031

3.32 The latest projection of LACW in Hertfordshire over the period to 2031 was carried out by the WDA in August 2016 and is shown in table 4. Waste growth projections suggest an increase in residual waste of 11% between 2016/17 to 2030/31, an increase of 31,916 tonnes.

Table 4: Projected residual waste growth

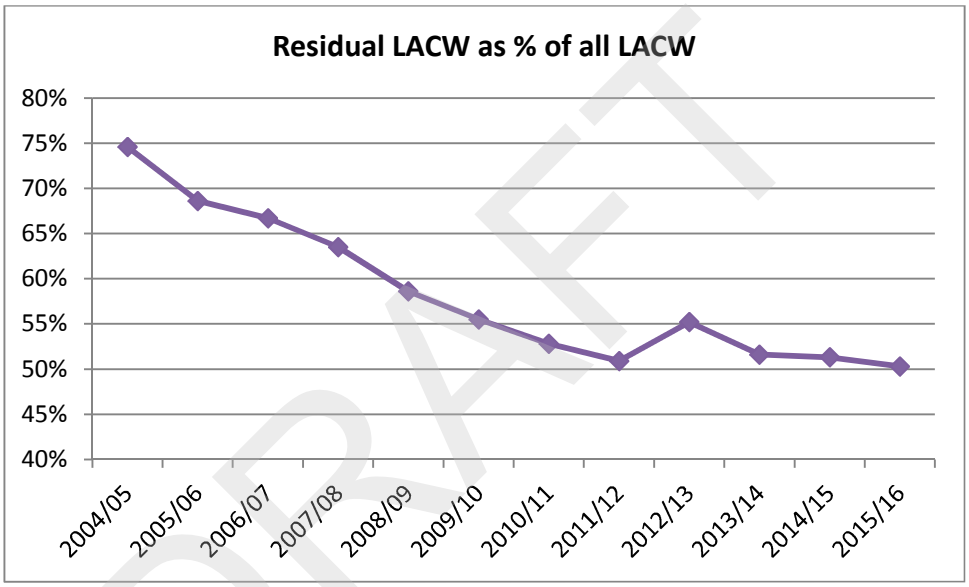
Year	Household growth of 15.18% (Tonnes)	Achievement of 60% recycling rate (Tonnes)	Proposal for a national recycling rate of 65% (Tonnes)
2016/17	262,240	262,240	262,240
2017/18	262,223	260,613	258,475
2018/19	263,825	258,986	254,710
2019/20	266,176	257,358	250,944
2020/21	269,515	255,731	247,179
2021/22	271,874	254,103	243,413
2022/23	274,307	252,476	239,648
2023/24	276,788	250,849	235,882
2024/25	279,269	249,221	232,117
2025/26	281,750	247,594	228,352
2026/27	284,231	245,966	224,586
2027/28	286,712	244,339	220,821
2028/29	289,193	242,712	217,055
2029/30	291,675	241,084	213,290
2030/31	294,156	239,457	209,525

3.33 A simple sensitivity test which assumes that the amount of recycled, reused and composted LACW will gradually increase to 60% and residual LACW will decrease to 40% of the total LACW by 2031 confirms that, the volume of residual LACW at 2030/31 would remain significant at in the region 239,457 tonnes.

3.34 Although there is currently a high level of uncertainty over the impact, if any, of new legislation for waste following the decision of the UK to leave the European Union, consideration can be given to the potential introduction of national and/or local recycling targets as have been proposed during the EU Circular Economy Strategy discussions in recent years. Applying a 65% recycling, reuse and composting rate for LACW is still projected to result in 209,525 tonnes of residual LACW by 2031.

3.35 As is shown by figure 3 below, improvements in reducing the percentage of residual LACW is evident but so is the 'plateau' in recent years at around the 50% level of all waste received. With consideration that comprehensive services are already in place across the County, this might be considered to represent the level of activity residents currently feel is acceptable in separation of their waste at the kerbside and HWRCs given current service provision. It also demonstrates the challenges faced in capturing this material through changing services, behaviour and/or enforcement.

Figure 3: Residual LACW as a percentage of all LACW



3.36 Although the challenge of further separation is acknowledged, waste compositional analysis in 2015 (see Appendix 2) identified that 51.2% of waste placed into residual bins at the kerbside could have been recycled at the kerbside. At HWRCs 49.1% of waste deposited in the residual waste stream could have been placed into alternative collection points within the HWRC. This shows that even without the introduction of new recycling targets, there is significant potential to reduce the quantity of residual waste being produced and this should remain a priority with further consideration given by the Hertfordshire Waste Partnership to reduced receptacle sizes and/or less frequent collections for residual LACW.

Residual waste infrastructure requirements

3.37 The provision of privately owned facilities for the treatment/disposal of residual LACW within Hertfordshire is limited to the Westmill landfill site which, even with extension of permission (decision outstanding at the time of writing) is only available for part way through the planned term. Privately operated facilities located outside of the county are too far for the direct delivery of residual waste by the WCAs.

3.38 Development of a residual waste treatment facility within Hertfordshire or within close proximity to the county is preferred in order to treat waste in line with the proximity principle championed in the National Planning Policy for Waste 2014 (see Appendix 1). A facility within or close to Hertfordshire would also provide surety for the necessary treatment of residual wastes remaining after increased efforts to prevent waste and direct material for reuse, recycling and organic waste treatment.

3.39 The residual LACW arrangements will need to be flexible enough to manage changes in composition and volume. Work to provide significant improvement in the reduction of residual LACW should remain a priority but arrangements have to be capable of effectively handling increased volumes should improvements not be made. The provision of too little capacity for disposal would cause significant problems and increase costs.

3.40 A network of residual LACW options i.e. direct delivery and/or WTSs that reduce the travel time of WCA vehicles to the point of disposal is required. This network would enable collection vehicles to spend the majority of their time on collection rounds instead of travelling to and from a remote point of disposal. It would also reduce the environmental and financial impact of transporting waste.

Residual Waste Spatial Strategy

3.41 The WDAs spatial strategy for treating/disposing of residual LACW reflects the specific needs of Hertfordshire. In developing a spatial strategy the WDA has considered a wide range of government guidance and information.

3.42 As a WDA the council must take all such measures available to it as are reasonable in the circumstances to apply the waste hierarchy. Locally this policy was mirrored

in the Hertfordshire Joint Municipal Waste Management Strategy 2007 which contains a commitment to move away from a reliance on landfill for the disposal of residual waste and, in the longer term, to ensure that residual waste treatment by energy recovery is in place.

3.43 The National Planning Policy for Waste 2014 states that positive planning plays a pivotal role in delivering the county's waste ambitions through ensuring that waste management is considered alongside other spatial planning concerns, such as housing and transport. Sites within Hertfordshire have been safeguarded for the management of waste within the Minerals and Waste Development framework for Hertfordshire, although the size and location of identified sites may not lend themselves to the development of an efficient and strategic waste management network. It is recognised that the predominantly residential and light industrial nature of development within the county combined with limited availability of land not allocated as Green Belt within district and borough Local Development Plans presents challenges in identifying waste management sites.

3.44 Given the needs and characteristics of Hertfordshire and the appropriate requirement to strongly support a solution that is deliverable in commercial and planning terms, the WDA's residual waste strategy is to promote/enable the provision of a major new waste treatment facility in the county, supported by strategically located WTSs.

3.45 In terms of the potential locations for new waste treatment and/or transfer facilities, the WDA has identified four strategic locations in the county. Facilities within easy travelling distance of the identified locations would be close to the major road network and accessible to WCA vehicles.

- Land in the vicinity of the M1 / A405 junction in the west of the county.
- Land in the vicinity of the A1 / A414 junction in the centre of the county.
- Land in the vicinity of the A10 / A602 junction in the east of the county.
- Land in the vicinity of the A1 / A505 junction in the north of the county.

3.46 The county council's Waterdale WTS lies close to the M1 / A405 junction in the west of the county and is a strategically important and efficient facility and as such is safeguarded and allocated within the adopted Waste Local Plan. As a result, a new facility is not required in this location.

3.47 Whilst the WDA has no particular preference as to which of the three remaining strategic locations should be the chosen location for the Waste Treatment Facility and recognises that this will be market driven though an alternative site assessment waste planning process, provision of a facility in or within easy travelling distance from one of the identified locations would likely still require a need for at least one new WTS to enable efficient waste collection rounds across Hertfordshire.

Rationale

3.48 For waste under the WDA's control, it has a statutory power to direct WCAs to whatever point of disposal the WDA has arranged. Theoretically this means that WCAs could be asked by the WDA to deliver their residual LACW directly to any given waste disposal facility or WTS. However the WDA would need to make a 'reasonable' payment to the WCAs and therefore, the distance to a waste disposal facility or WTS is important for both tier authorities in Hertfordshire.

3.49 The residual waste strategy seeks to strike a balance between:

- The cost and environmental benefits of providing a small number of relatively large waste treatment/transfer facilities to meet the county's residual waste requirements and;

- The benefits of limiting the overall distance that waste vehicles have to travel to dispose of their load at a waste treatment and/or transfer facility. In order to promote efficient WCA rounds and reduce the environmental impact of transporting waste.

3.50 The WDA believes that the VES proposal represents a deliverable and appropriate solution to safeguard the treatment of Hertfordshire's residual LACW. The technology proposed is efficient and flexible and the contract terms represent a

value for money solution and do not restrict the authority's ability to improve residual LACW minimisation or inhibit reuse, recycling and composting ambitions.

3.51 All of the county's major centres of population lie within approximately 20 minutes' drive time of at least one of the four strategic locations (see plan 2). Through providing waste treatment / transfer facilities in strategic locations that are no more than 20 minutes' drive time from the county's main population centres, the strategy will mean that waste collection vehicles will not have to spend more than an hour delivering their load to a facility (assuming a 20 minute drive there and back plus 20 minutes 'tipping time' at the facility). This will enable collection vehicles to spend the majority of their working day on their rounds rather than travelling to and from a waste treatment/transfer facility, thereby enabling more efficient waste collection rounds.

3.52 Whilst the 20 minute isochrones can only be a 'rule of thumb' in this respect, it generally accords with the distances travelled by those WCAs that travel to the Waterdale WTS and the Westmill landfill site.

Landfill facilities

3.53 The Westmill landfill site in Ware is the only landfill site operating in Hertfordshire. The site has planning permission until 2017. Continued availability of this site is subject to an extension of planning permission (decision outstanding at the time of writing) and dependant on remaining void capacity.

3.54 Notwithstanding the provision of new waste treatment and waste transfer facilities, the WDA accepts that there may be a requirement for some landfill capacity to accommodate certain 'untreatable' wastes. Whilst this would in the main fall to VES to provide should the Ratty's Lane, Hoddesdon ERF be delivered (exceptions would include asbestos, chemicals and some clinical wastes), if it is not, the requirement for landfill and/or pre-treatment capacity increases.

3.55 Whilst quantifying the amount of untreatable waste is difficult as it is often collected alongside other residual LACW such as litter and street cleansing activities, it is also likely that some landfill capacity within, or within reach of Hertfordshire is

necessary in order to dispose of wastes which are unsuitable for disposal through ERFs, such as bulky wastes e.g. mattresses.

Transfer facilities

3.56 The WDA considers the following WTS requirements, in addition to the Waterdale Transfer Station, are necessary to support the residual waste spatial strategy:

- Provision of a Waste Transfer Facility in the eastern part of the county to serve Broxbourne Borough Council, East Hertfordshire District Council and potentially Welwyn Hatfield District Council with capacity for circa 140,000 tonnes of waste and located close to the strategic road network. A preferred location is in the vicinity of the A10/A602 junction see plan 2. A transfer station for residual LACW to serve the east of Hertfordshire may not be necessary if planning permission for the proposed ERF at Ratty's Lane, Rye House, Hoddesdon is achieved as this is considered by the WDA to be 'easy travelling distance' for the proximate WCAs.

- Provision of a WTS in the northern part of the county to serve North Hertfordshire District Council and Stevenage Borough Council with capacity of at least 100,000 tonnes. A preferred location is in the vicinity of the A1 / A505 junction, see plan 3. The WDA considers the Bury Mead Road depot to be unsuitable for development as the site is constrained by its size and layout. Also, increased operations at the site may impact the local highway and the safe operation of the site.

3.57 The proposed ERF at Ratty's Lane, Hoddesdon and/or a new WTS network would reduce the travel time for WCAs to the point of disposal and reduce transport subsidies paid by the WDA to the WCAs as an increased collection area would be closer to the defined 'reasonable' travelling distance within the Hertfordshire Waste Partnership Agreement.

3.58 In line with the Waste Local Plans, this spatial strategy promotes the co-location of WCA depots, WDA transfer facilities and HWRCs. Co-location could offer service delivery benefits such as decreased travel for refuse collection vehicles and better value for money when developing a site. Current co-location opportunities include:

- A WTS facility and HWRC to serve the north of the county potentially co-located with a new depot for North Hertfordshire District Council.
- A WTS facility to serve the east of the county combined with an improved HWRC at the Ware HWRC site, potentially co-located with a WCA depot. Should the proposed Ratty's Lane, Hoddesdon ERF be delivered, this site may still provide co-located waste management uses such as a WCA depot, privately owned transfer station, street sweeping facility and/or a Materials Recovery Facility.
- A new HWRC to replace the Turnford HWRC co-located with a replacement depot for Broxbourne Borough Council should land at Brookfield, west of the A10 be developed.

4 Recycled waste

Summary

The amount of recycled and reused waste has increased to 27% of all LACW in 2015/16, combined with treated organic waste, a recycling rate of 49% was achieved in 2015/16.

The WCAs may at any time introduce service changes that affect the quantity of recyclables collected at the kerbside. The market for recyclables fluctuates, in 2015/16 the average annual price per tonne for the majority of materials decreased. Only one commercial Material Recovery Facility (MRF) is located within Hertfordshire.

Whilst it is recommended that development of an in-County MRF for Hertfordshire is explored through the Hertfordshire Waste Partnership, future needs can be also be met by increased flexibility within a network of WDA transfer stations and WCA depots.

Increased options would also improve the WCA's and WDA's resilience to market fluctuations and ability to use MRFs outside of the county, thereby increasing competition for provision of the services.

4.1 The total amount of LACW recycled and reused in 2004/5 was 16% of all LACW and this figure has steadily increased to 27% in 2015/16 as demonstrated in table 5. Recyclable waste is separated through facilities at HWRCs and at the kerbside in the form of either co-mingled recycling collections or pre-sorted collections.

4.2 HWRCs provide facilities for residents to dispose of waste such as large amounts of green garden waste, bulky wastes, domestic electrical appliances and wood waste. At the point of disposal, waste is segregated into recyclables and items for reuse and recovery. A total of up to 33 different materials can be diverted from the residual waste stream and in 2015/16; the HWRCs handled 53,553 tonnes of recyclable LACW with a recycling rate of 68%. All materials recycled and

recovered are sent to a wide range of privately owned facilities for reprocessing. Items for reuse are sold at the HWRCs (a total of 998 tonnes in 2015/16).

4.3 A detailed analysis of the HWRC network is underway (linked to the introduction of ANPR and CCTV to assist in capacity assessments) and will inform the development of an Annex to this waste spatial strategy (anticipated to be available in summer 2017). This will include detailed consideration of reuse across the network.

Table 5: LACW recycling rates

Year	LACW Recycled and Reused (Tonnes)	% of total LACW Recycled and Reused
2004/05	90,999	16.4%
2005/06	99,887	17.6%
2006/07[1]	109,328	18.4%
2007/08	115,754	20.5%
2008/09	120,359	21.5%
2009/10	125,393	23.1%

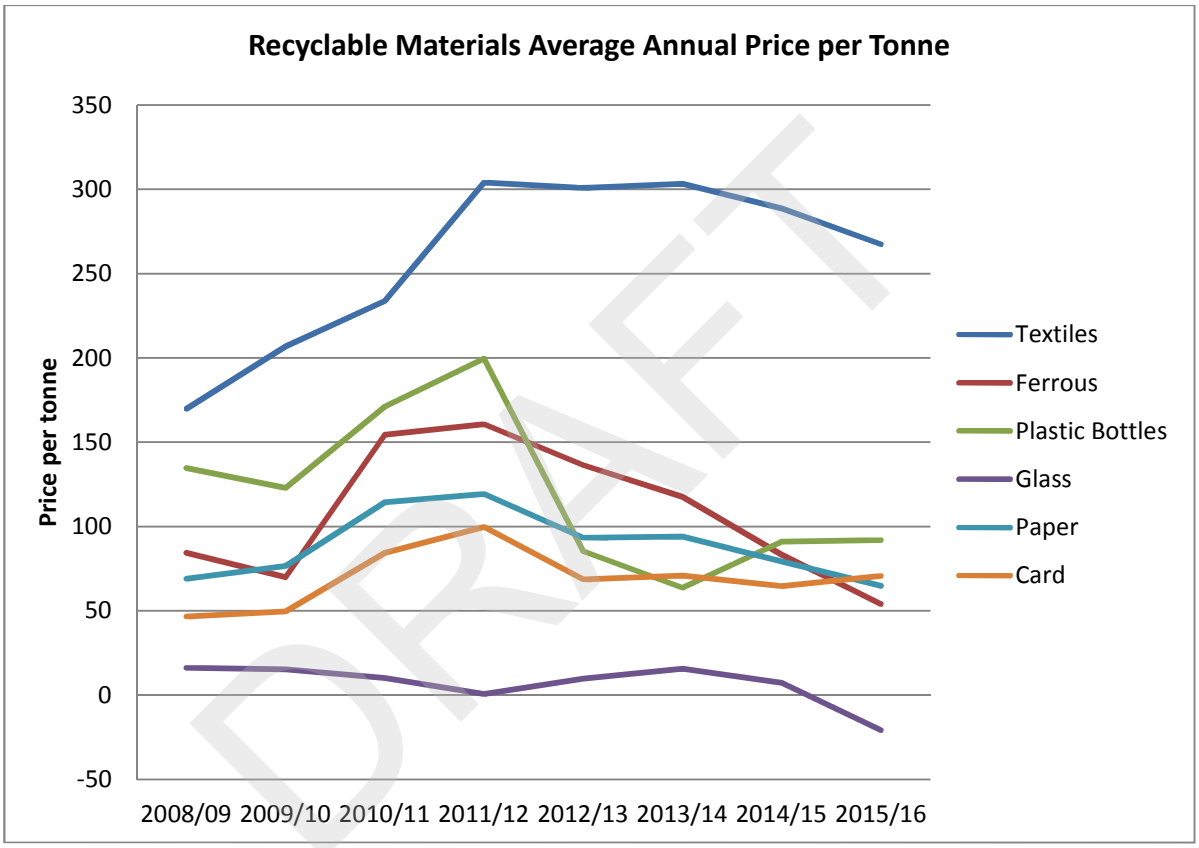
Year	LACW Recycled and Reused (Tonnes)	% of total LACW Recycled and Reused
2010/11	129,688	24.2%
2011/12[1]	131,874	24.5%
2012/13	118,730	22.5%
2013/14	134,069	24.8%
2014/15	138,037	25.8%
2015/16	144,153	27.3%

4.4 Kerbside collected recyclables predominantly consist of waste discarded on a daily basis such as card, paper, plastic, cans and glass packaging. In 2015/16 104,242 tonnes of recyclable materials were retained by the WCAs who make their own arrangements with privately operated facilities and/or waste brokers for the sorting and reprocessing of these materials.

4.5 The market for recyclables fluctuates as shown in figure 4. Depending on the strength of the market the WCAs/WDA will either receive an income for recyclable material or pay for its treatment. The average annual price per tonne for the majority of materials decreased in 2015/16. Recent procurements for recycling services across the county reflect a trend of a net payment for treatment of material once transport costs and bulking arrangements are taken into consideration.

4.6 The majority of the WCAs now provide comprehensive kerbside recycling schemes and therefore, whilst continued high increases in recycling volumes are not anticipated, the waste composition data (see Appendix 2) suggests that LACW recycling rates could significantly improve at the kerbside. This indicates the aspirational HWP recycling rate of 60% and proposal for a potential national recycling rate of 65% is an achievable but challenging prospect.

Figure 4: Recyclable materials average annual price per tonne



Appraisal of current provision

4.7 Only one Material Recovery Facility (MRF) is located within Hertfordshire, this is located in St Albans. This privately owned facility receives the majority of Hertfordshire's LACW recycling from the HWRCs and seven WCAs.

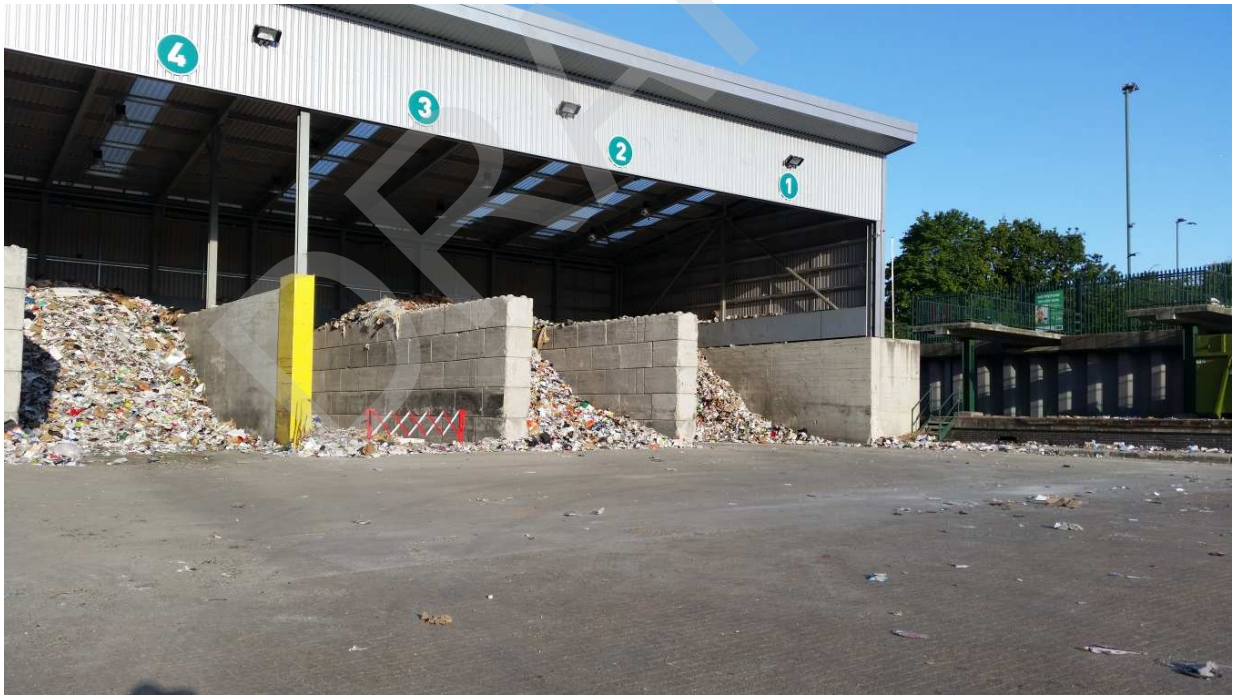
4.8 Whilst some recyclable materials collected by the WCAs are taken directly to waste treatment facilities, the majority is taken first to intermediate bulking facilities such as depots and waste transfer stations. These include:-

- The Waterdale Waste Transfer Station, Watford
- The North Hertfordshire contractor provided Radwell Barn, Nr. Baldock
- WCA Depots e.g. Cavendish Road, Stevenage and Cupid Green, Dacorum

4.9 Depots owned and managed by the WCAs perform an important role in the bulking of recyclable materials such as street sweepings, paper and Waste Electrical and Electronic Equipment (WEEE). Stevenage Borough Council and Dacorum Borough Council bulk dry recyclable materials at their depots and send them directly to nationwide reprocessing facilities.

4.10 To accommodate the increase in co-mingled recyclables collected by the WCAs a structure for the bulking of recyclable materials was built at Waterdale in 2013. This facility is used to bulk dry recyclable materials from two WCAs and street sweepings from three WCAs.

Recycling bays at Waterdale Waste Transfer Station



Recycling projections to 2031

4.11 Three models have been used to project recycling levels until 2031 (shown in table 6 below):

a) Current level of recycling with household growth of 15.18% until 2031

b) Achievement of a 60% recycling rate by 2031 (sensitivity test)

c) Proposals for a national recycling rate target of 65%

Table 6: Recycling projections

Year	Household growth of 15.18% (Tonnes)	Achievement of 60% recycling rate (Tonnes)	Proposal for a national recycling rate of 65% (Tonnes)
2016/17	147,762	147,762	147,762
2017/18	149,654	151,209	152,376
2018/19	151,211	154,656	156,990
2019/20	152,611	158,103	161,603
2020/21	154,561	161,550	166,217
2021/22	155,953	164,997	170,831
2022/23	157,357	168,444	175,445
2023/24	158,750	171,891	180,059
2024/25	160,038	175,338	184,672
2025/26	161,327	178,785	189,286
2026/27	162,615	182,232	193,900
2027/28	163,903	185,679	198,514
2028/29	165,191	189,126	203,128
2029/30	166,479	192,573	207,742
2030/31	167,767	196,020	212,355

Analysis of influencing factors

4.12 WCAs may at any time introduce service changes that affect the amount of recyclables collected at the kerbside. Co-mingled collections have demonstrated a greater participation rate in Hertfordshire and have increased the amount of waste recycled. However, under the Waste (England and Wales) Regulations 2012 the separate collection of recyclables by WCAs may be required unless it is not technically, environmentally or economically practicable (TEEP) as detailed in

Appendix 1. These separate collection requirements are designed to promote high quality recycling but they could have an adverse effect on recycling rates through reduced participation and impact the ability of the UK to achieve the current 50% recycling rate target by 2020 for household waste.

Recycling infrastructure requirements

4.13 Plan 4, identifies existing Material Recovery Facilities (MRF) and facilities with planning permission within 30 miles from the centre of Hertfordshire. Only one MRF is located within Hertfordshire.

4.14 The WDA considers that increased provision of privately operated MRF(s) within Hertfordshire would increase competition and reduce the WDA and WCAs reliance on a single service provider. Alternatively, more assurance and secure arrangements could be provided through the development of a WDA and/or WCA owned MRF within Hertfordshire. Support should be given to further privately owned provision of MRF in the County by the WDA.

4.15 In the absence of increased direct delivery options, the infrastructure requirement is for flexibility in a network of WTSs as a minimum. This would need to provide sufficient capacity to bulk recyclable materials in co-mingled and/or separated forms. Should recycling rates remain at the current level, despite proposals for a 65% recycling rate, waste levels are still projected to grow and additional capacity to treat/bulk recyclables is required.

4.16 In the absence of direct delivery options for recyclable waste, a network of WTSs and depots that reduces the travel time of WCA vehicles to the point of tipping would be beneficial. As is the case with residual LACW proximity to arisings, this WTS network would enable collection vehicles to spend the majority of their time on collection rounds instead of travelling to and from a remote point of disposal.

4.17 Furthermore, co-location of WCA depots and WDA transfer stations could deliver operational efficiencies and increase bulking capacity. The WDA considers there is a need to work closely with the WCAs over the period to 2031 to maximise this potential. This could also advance thinking in areas such as bulky waste reuse and consolidate tipping locations in a joined up manner.

5 Organic waste

Summary

The amount of organic waste treated in 2015/16 was 22% of LACW. To reflect the different practices in the collection of organic wastes, a range of technologies are used to treat the waste including Windrow Composting, In-Vessel Composting and Anaerobic Digestion.

The WCAs may introduce service changes at any stage throughout the plan period and the separate collection of food waste and green garden waste has the potential to increase, although an emerging trend for WCAs to introduce charges for the collection of green garden waste may affect the volume of organic waste collected at the kerbside and perhaps at the HWRCs.

The number of organic waste treatment facilities within the county has improved but they are not equally dispersed and there is a lack of facilities in the west of the county. To facilitate the use of organic waste facilities by the WCAs and to increase resilience against contract failure/enforcement, compliant bulking facilities would be beneficial.

In consideration of the likely risks in changes to service provision at the kerbside it is not thought that privately owned long term organic waste treatment facilities in the County are required.

5.1 Organic waste comprises green garden waste and food waste. The amount of organic waste treated in 2004/5 was 9% of all LACW. This figure has steadily increased to 22% in 2015/16, as noted in table 7. The amount of waste treated through composting rapidly increased due to the roll-out of kerbside collections across Hertfordshire in the early years of this period and fluctuations are generally associated with differing growing seasons.

Table 7: LACW recycling and composting rates

Year	LACW Composted (Tonnes)	% of total LACW Composted
2004/05	49,886	9.0%
2005/06	78,319	13.8%
2006/07[3]	88,873	14.9%
2007/08	90,718	16.0%
2008/09	111,009	19.9%
2009/10	116,310	21.4%

Year	LACW Composted (Tonnes)	% of total LACW Composted
2010/11	123,706	23.0%
2011/12[3]	132,555	24.6%
2012/13	117,580	22.3%
2013/14	127,126	23.6%
2014/15	122,308	22.9%
2015/16	118,474	22.4%

5.2 Organic waste is separated through facilities at the HWRCs and at the kerbside in the form of either a green garden waste bin and a separate food caddy or a co-mingled green garden waste and food waste collection. To reflect the different methods used to collect organic waste three processes are used for its treatment; Windrow Composting, In Vessel Composting (IVC) and Anaerobic Digestion.

- Windrow composting - organic material is shredded and constructed into elongated open-air piles called windrows, each typically 1.5 to 3 metres high. The windrows are turned periodically to introduce fresh air and watered to maintain ideal conditions for composting.

- In Vessel Composting (IVC) - similar to windrow composting but is carried out in an enclosed vessel or building. This allows a greater degree of control of the process temperature, oxygen and moisture. This is necessary to treat food waste collected with green garden waste.

- Anaerobic Digestion (AD) – a process by which micro-organisms break down biodegradable material, such as food waste, in the absence of

oxygen. Methane gas captured in the digester tank is used to produce energy and a stabilised residue known as leachate is used as fertiliser.

Appraisal of Current Provision

5.3 In 2015/16 118,474 tonnes of organic waste was treated. All facilities used for the treatment of organic waste are privately operated facilities.

5.4 The WDA procured contracts until 2025 for the provision of IVC, see table 8. These contracts were procured at a time when best practice guidance identified the joint collection of green garden waste, cardboard and food waste as the best way of diverting biodegradable waste away from the residual waste stream. Contracts are also in place for the short term provision of windrow composting and Anaerobic Digestion.

Table 8: Organic Waste Treatment in 2015/16

Facility Type	Site	Location	Contract end Date
In Vessel Composting	Cumberlow Green	North Hertfordshire	April 2025
	Agrivert	South Mimms	April 2024
	Envar	St Ives, Cambs	April 2018
Windrow Composting	West London Composting	Harefield, Hillingdon	April 2018
	D Williams	Enfield	April 2018
Anaerobic Digestion	Agrivert	Chertsey	April 2018

Organic waste projections 2031

5.5 Three models have been used to project organic waste arisings until 2031 (shown in table 9 below):-:

a) Current level of composting with household growth of 15.18% until 2031
b) Achievement of a 60% recycling rate by 2031 (sensitivity test)
c) Proposals for a national recycling rate target of 65%

Table 9: Treated organic waste stream projections

Year	Household growth of 15.18% (Tonnes)	Achievement of 60% recycling rate (Tonnes)	Proposal for a national recycling rate of 65% (Tonnes)
2016/17	118,697	118,697	118,697
2017/18	121,675	121,873	122,844
2018/19	123,428	125,049	126,992
2019/20	124,593	128,225	131,139
2020/21	126,191	131,402	135,287
2021/22	127,378	134,578	139,434
2022/23	128,566	137,754	143,582
2023/24	129,727	140,931	147,729
2024/25	130,726	144,107	151,877
2025/26	131,725	147,283	156,024
2026/27	132,724	150,460	160,172
2027/28	133,722	153,636	164,319
2028/29	134,721	156,812	168,467
2029/30	135,720	159,988	172,614
2030/31	136,719	163,165	176,762

Analysis of influencing factors

5.6 The waste composition analysis, see appendix 2, identified 32.8% of waste placed into residual bins was food waste. This suggests that LACW recycling and organic waste treatment rates could significantly improve at the kerbside. This indicates the aspirational HWP recycling rate of 60% and proposal for a potential national recycling rate of 65% could best be met with comprehensive provision of food waste services at the kerbside.

5.7 The separate collection of food waste and green garden waste by the WCAs has the potential to increase as WCAs identify further ways to divert organic material

away from the residual waste stream. Evidence from WCAs in Hertfordshire clearly demonstrates that a weekly food waste collection service results in the most food waste being diverted from the residual waste stream.

5.8 WCAs can unilaterally introduce service changes that affect the composition of organic waste kerbside collections. Currently two WCAs collect green garden waste and food waste separately at the kerbside; this is set to rise to three authorities from spring 2017. The number of WCAs collecting organic waste using this method has the potential to further increase as WCAs do not have a statutory duty to provide a free collection service for green garden waste.

5.9 There is an emerging national trend for WCAs to introduce charges for the collection of green garden waste. This approach has recently been taken by one WCA in Hertfordshire with a further authority set to introduce a charging scheme from spring 2017.

5.10 This approach has the potential to reduce the amount of green garden waste collected by the WCAs but could increase the amount of residual waste collected if a separate food waste collection is not offered. Potential additional effects include an increase the amount of green garden waste taken to HWRCs and an increase in home composting.

5.11 Nationally, charging for the collection of green garden waste may also impact the ability of the UK to achieve the 50% recycling rate target by 2020 for household waste.

5.12 Currently nine of the ten WCAs directly deliver green garden waste to treatment facilities. Only Cupid Green, Dacorum's depot, is used to bulk green garden waste and food waste. St Albans are able to bulk food waste at their Sandridge depot prior to transferring this to the Cupid Green depot for collection by the reprocessing contractor.

5.13 Nine of the WCAs are unable to bulk large quantities of green garden waste, separate food waste and combined green garden waste and food waste at their depots.

Organic infrastructure requirements

5.14 While significant in its own right, the cost of developing organic waste treatment facilities such as IVC, windrow composting and AD is considerably less expensive than developing residual waste facilities. This means the WDA considers it more viable for the treatment of organic waste to occur in multiple locations and as close as possible to the origins of the waste (the proximity principle). Although it is recognised that this is not always achievable as:

- Treatment facilities are not equally dispersed throughout the county and
- The type of facility required will depend on the organic waste collection method used by the WCA.

5.15 Plans 5, 6 and 7 identify existing privately owned organic waste treatment facilities and sites with planning permission that are within 30 miles of the centre of Hertfordshire. The plans demonstrate a lack of privately owned facilities in the west of the county but generally adequate provision elsewhere.

5.16 Where suitable facilities are not close to the point of origin it will be necessary to bulk mixed organic waste and organic waste in the separate forms of green garden waste and food waste. Plan 2 identifies depots and bulking facilities within the county and demonstrates a lack of privately owned facilities, especially in central and eastern Hertfordshire.

5.17 At the present time, WCAs are moving away from the joint collection of green garden waste and food waste therefore it is possible that IVC facilities may adapt to meet the needs of the market and introduce windrow composting and AD to their facilities. If this does not occur provision for the disposal of separated green garden waste and food waste will be required along with bulking facilities to accommodate WCAs not located within a reasonable distance of a treatment facility. As a result the development of a network of waste facilities capable of bulking a range of wastes in fluctuating quantities is again key to meeting future needs. This network includes the full utilisation of WCA depots and the development of Waste Transfer Stations.

5.18 The current number of facilities and facilities with planning permission suggests there is adequate privately owned capacity, as demonstrated in table 10, within Hertfordshire for the 136,719 tonnes of organic waste projected in 2030/31.

Table 10: Organic waste treatment capacity in Hertfordshire

Method	Capacity (tonnage)
Aerobic Digestion	182,000
Windrow	164,000
IVC	115,000

5.19 Whilst there may be sufficient capacity to meet the WDAs projected needs, it should be noted that there is competition for use of the facilities from other authority areas and the commercial waste sector. The capacity is provided by a small number of reasonably sized facilities and as such, should one or more become unavailable, capacity would quickly reduce.

5.20 An expansion of existing capacity and new privately owned organic waste facilities in the County would increase competition and bolster resilience and should therefore be supported by the WDA.

5.21 The methods used by the WCAs to collect organic waste are expected to continue to evolve in the short and medium term so, in response to these changes, shorter, more flexible contracting arrangements are currently preferred for the treatment of organic waste. This would enable the WDA to respond to changes and for the most appropriate and best value method of organic waste treatment to be procured without the need to invest in long term contracts for the development of new infrastructure for direct delivery in-County treatment of organic LACW.

6 Summary and conclusions

6.1 The WDA considers that the existing waste management infrastructure within the County requires improvement over the period to 2031 in order to address:

- The local management of waste generated in Hertfordshire
- Population and housing growth
- Flexibility within the waste management network
- Efficiency savings
- Improvements and resilience to service delivery

6.2 A new waste treatment facility that replaces existing landfill use and enables residual waste to be treated within the county is desired. Such a facility will significantly reduce the distance residual waste currently needs to travel in order to be treated and/or disposed of and reduce the pressures of increasing costs for waste management haulage and treatment/disposal.

6.3 Should planning permission for an ERF at Hoddesdon not be granted two new WTSs to complement the existing Waterdale WTS will be required, one to serve the north of the county and another to serve the east of the county. These combined with fully utilised WCA depots, will introduce flexibility within the waste management network. WTSs will enable best value for money to be achieved by accessing the cheapest available disposal points when sending waste for treatment/disposal.

6.4 Flexibility in design of the WTS will facilitate the bulking and separation of waste types, allowing the WDA and WCAs to respond to changes in legislation and developments in waste treatment technologies. Should the ERF gain planning permission it will not be necessary to develop a WTS to serve the east of the county's residual LACW needs, as WCAs in this area would be able to directly deliver residual waste to the facility, although there would remain huge potential for use of the site as an asset for the authority and/or alternate waste management needs such as more efficient in-County street sweeping or MRF provision or a co-location opportunity for a WCA depot.

6.5 The WDA considers that there is adequate capacity provided by existing privately owned facilities and facilities with planning permission to treat projected organic waste levels up to 2030/31 but applications for expansion of existing and/or further provision of privately owned windrow facilities, especially in the West of the County, should be encouraged.

6.6 The development of co-located WCA depots WTS/HWRC and/or other local authority functions will enable better value for money to be achieved when developing sites. Land, infrastructure and machinery can be fully utilised when facilities are shared. There is also the potential for the cost of development to be reduced through co-funding.

6.7 Many of the existing HWRCs are not fit to sustain service delivery over the plan period and investment in more modern, larger ‘super sites’ is required. These could be fewer in number but would need to improve service delivery, promote visible reuse and reduce residual waste levels by enabling more waste to be sorted and redirected for reuse/recycling, composting and recovery. A detailed analysis of the HWRC network and associated WDA reuse improvements in line with the waste hierarchy will be set out in an Annex to the Waste Spatial Strategy once complete.

6.8 These requirements will be kept under review with representations made at appropriate stages of the Waste Local Plans process.

7 Glossary

Anaerobic Digestion	is a collection of processes by which microorganisms break down biodegradable material in the absence of oxygen. The process is used for industrial or domestic purposes to manage waste and/or to produce fuels;
Bulk / Bulking	the gathering and loading of LACW ready for onward transportation to a treatment or disposal facility.
Bulking Facility	a facility where LACW is delivered and bulked for onward transportation to a treatment or disposal facility.
Co-mingled collections	Mixed dry recyclables (cans, card, glass, papers and plastics) collected together for sorting at a Materials Recycling Facility
Commercial Waste	Waste from premises used wholly or mainly for the purposes of a trade or business or for the purpose of sport, recreation, education or entertainment, but excluding household, agricultural or industrial waste.
Composting	means a biological process in which biodegradable wastes, such as garden and food wastes, are decomposed in the presence of air to produce compost or soil conditioner;
Disposal	means any waste management operation serving or carrying out the final treatment and disposal of waste;
EPA	means the Environmental Protection Act 1990;
Food Waste	biodegradable waste derived from food materials typically consisting of cooked and uncooked fruit and vegetables, meat and fish scraps, excess or spoiled prepared food, and other discards from domestic kitchens;
Green Waste	biodegradable waste such as green catering waste (i.e. raw fruit and vegetables), vegetation and plant matter (includes trimmings, leaves, shrubs, plants,

	grass, and trees etc.) from household gardens, local authority parks and gardens, and commercial landscaping;
Household Waste	as defined in the Controlled Waste Regulations 1992 and includes wastes from household collection rounds, street cleansing, bulky household waste collections, household hazardous waste and clinical waste;
HWRCs	Household Waste Recycling Centres;
HWRS	Household Waste Recycling Service;
In Vessel Composting	generally describes a group of methods that which confine the composting materials within a building, container, or vessel. In-vessel composting systems can consist of metal or plastic tanks or concrete bunkers in which air flow and temperature can be controlled, using the principles of a "bioreactor". Generally the air circulation is metered in via buried tubes that allow fresh air to be injected under pressure, with the exhaust being extracted through a biofilter, with temperature and moisture conditions monitored using probes in the mass to allow maintenance of optimum aerobic decomposition conditions.
Joint Municipal Waste Management Strategy / JMWMS	means the Joint Municipal Waste Management Strategy for Hertfordshire agreed by the Partners in 2007;
Landfill	a landfill (also known as a tip, dump, rubbish dump or dumping ground) is a site for the disposal of waste materials by burial and is the oldest form of waste treatment;
Local Authority Collected Waste (LACW)	All waste collected by the local authority including commercial and industrial waste;
Materials Recycling Facility	a materials recycling facility is a specialized plant that receives, separates and prepares recyclable materials for marketing to end-users;

Municipal Waste	household waste and that from other sources which is similar in nature and composition, which will include a significant proportion of waste generated by businesses and not collected by Local Authorities
Open Windrow Composting	is the production of compost by piling organic matter or biodegradable waste, such as animal manure and crop residues, in long rows (windrows). This method is suited to producing large volumes of compost. These rows are generally turned to improve porosity and oxygen content, mix in or remove moisture, and redistribute cooler and hotter portions of the pile. Windrow composting is a commonly used farm scale composting method.
Organic Waste	Food waste and / or green waste collected by the WCAs pursuant to section 45 of the EPA;
Recovery	means (i) the recovery of waste by means of recycling or, reuse or any other process with a view to extracting secondary raw materials; or (ii) the use of waste as a source of energy;
Recycling	means the collection and separation of selected materials and subsequent processing to produce marketable products;
Reduce	means the reduction of waste at source, by understanding and changing processes to reduce and prevent waste;
Residual Waste	waste other than that collected for reuse, composting or recycling;
Reuse	the use of waste items for their original or for another purpose without reprocessing;
Revised Waste Framework Directive	means EU Directive 2008/98/EC which sets a framework for waste management in the

	EU, promoting both reuse and recycling, including energy recovery as a recovery activity within the revised waste hierarchy;
Energy Recovery Facility	generates a usable form of energy which also reduce the solid volume of residual waste
Waste Collection Authority or WCA	means a waste collection authority pursuant to section 30(3)(a) of the EPA;
Waste Disposal Authority or WDA	means a waste disposal authority pursuant to section 30(2)(a) of the EPA;
Waste Transfer Station	a facility where waste is bulked ready for onward transport to a recycling facility or disposal facility.

Appendix 1 - National and Local Policy

Summary

How the Waste Disposal Authority manages LACW is shaped by European Directives and national policies and strategies. The European Union referendum result is likely to affect how the WDA manages LACW in the future.

The general direction of law and strategy is one which aims to create a society that concentrates on prevention, reuse, recycling and energy recovery based on the notion that waste is a resource, especially under the context of the circular economy[2].

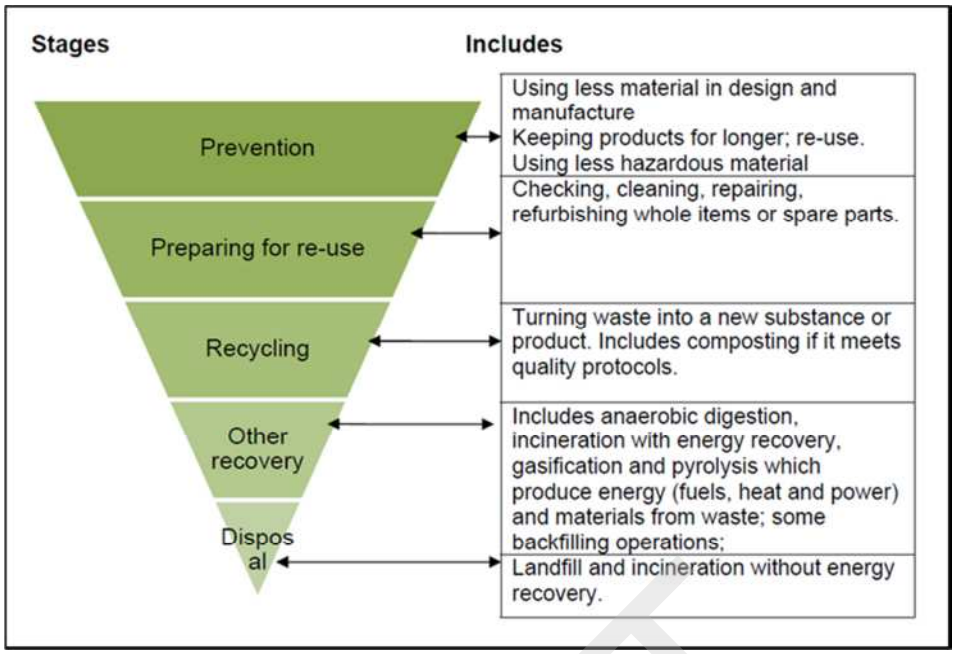
The EU referendum result adds uncertainty to current and future waste disposal arrangements, as well as potential recycling targets. The WDA will monitor proposals for potential national recycling targets which may impact at local level. Within the waste industry there is a general consensus of opinion that the current legislation within which the industry operates will remain broadly similar.

The following national and local policies have been considered, this is not an exhaustive list.

The (revised) Waste Framework Directive (WFD)

A guiding principle of both European and national waste management is the concept of the waste hierarchy. In general terms the hierarchy identifies that the best way to manage waste is not to generate it in the first place (prevention), followed by reusing and then recycling / composting and recovering energy where practicable. Generally the disposal of waste to landfill is considered to be the least preferred option. The revised WFD amended the waste hierarchy as shown below:

[2] An economy in which we keep resources in use for as long as possible.



The revised hierarchy draws a distinction between the reuse of materials which do not require preparation and those which do. It also confirms that waste to energy recovery processes is preferential to disposal e.g. landfill, especially when considered under the context of carbon reduction requirements.

The WFD originally provided guidance on the effective management of wastes throughout the EU. It was and remains one of the main European legislative drivers requiring the production of national strategies to encourage waste prevention and reuse along with appropriate recovery and disposal technologies supported by regulatory frameworks that protect the environment and public health.

The EU adopted a revised WFD on the 12 December 2008 which was subsequently transposed into UK law through the Waste (England and Wales) Regulations 2011. Significant updates in the revised WFD include targets as noted below:

- Recycling 50% of household waste by 2020
- Recycling and / or reusing 70% of non-hazardous construction and demolition waste by 2020
- Separate collections for paper, metal, plastic and glass by January 2015
- Implementation of waste prevention programmes by December 2013.

(revised) Waste Framework Directive - targets

The revised Waste Framework Directive (rWFD) sets a household waste recycling target for member states of 50% by 2020. This is reflected in a similar national target versus the Hertfordshire Waste Partnership Joint Municipal Waste Management Strategy that set a 50% target by March 2013.

Whilst the Hertfordshire Waste Partnership (HWP) achieved 50% recycling by March 2012 subsequent issues with non-compostable material in the organic waste stream saw recycling drop to 45.5% in 2012/13 before climbing to 49.3% in 2013/14 and 49.4% in 2014/15. The household waste outturn for 2015/16 is 50.4% and the LACW outturn 49.7%.

EU targets are national level targets with Member states free to decide how such targets are translated into national law. The response in Northern Ireland, Scotland and Wales has been to set statutory targets for local authorities designed to exceed the 50% target by 2020. However, considering that over 80% of the tonnage relevant to the UK target arises in England, based on current trajectories, the UK as a whole is required to significantly improve from its current 'flat-lining' position to achieve 50% by 2020.

The situation is compounded by the fact that English local authorities have not had statutory targets since 2007/08. This was highlighted by a House of Commons Environment, Food & Rural Affairs Committee report into the state of waste management in England. In assessing barriers to achieving 50% recycling by 2020 the report raises the prospect of reintroducing statutory targets for local authorities and noted that fiscal pressures on local authorities could lead to changes such as charged green garden waste services which could negatively affect the rates achieved.

The National Waste Strategy 2007 / The Defra Waste Review 2011

The National Waste Strategy was last properly revised in 2007 with new national recycling targets set at 40% by 2010 and 50% by 2020 in line with the European 50% recycling target also to be achieved by 2020.

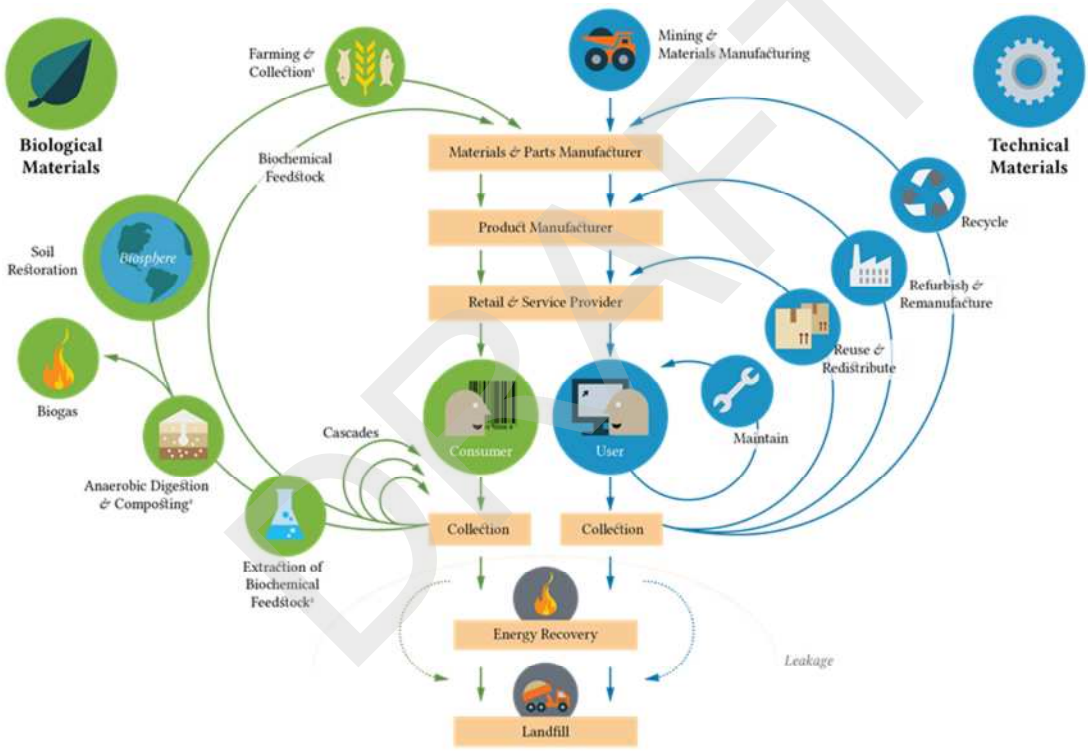
However since then, despite the Government undertaking a waste policy review in 2011, other than the removal of statutory targets for English local authorities, no fundamental

changes have been made to national policy that significantly impact local waste management services.

EU Circular Economy Strategy

A circular economy is an alternative to a traditional 'linear' economy (i.e. make, use, dispose) in which we keep resources in use for as long as possible, extract the maximum value from them whilst in use, then recover and regenerate products and materials at the end of each service life.

The circular economy. Source: Ellen MacArthur Foundation



Published on 2 December 2015, the Strategy aims to transform Europe into a more competitive resource-efficient economy, addressing a range of economic sectors, including waste.

The new strategy set out in its EU Action Plan for the Circular Economy and accompanying Annex, includes a proposal to impose legally binding targets on most member states to recycle 65% of all municipal waste by 2030. Currently the UK has a

household waste recycling rate of 44% and is already struggling to meet the current target of 50% by 2020.

The key provisions of the Strategy are as follows;

- A common EU target for recycling 65% of municipal waste by 2030;
- A common EU target for recycling 75% of packaging waste by 2030;
- A binding landfill target to reduce landfill to maximum of 10% of all waste by 2030;
- A ban on landfilling separately collected waste;
- Promotion of economic instruments to discourage landfilling;
- Simplified and improved definitions and harmonised calculation methods for recycling rates throughout the EU;
- Concrete measures to promote reuse and stimulate industrial symbiosis - turning one industry's by-product into another industry's raw material;
- Economic incentives for producers to put 'greener' products on the market, i.e. support recovery and recycling schemes such as, for packaging, batteries, electrical and electronic equipment and vehicles.

In order to achieve a 65% recycling target, Hertfordshire authorities, through the Hertfordshire Waste Partnership (HWP), would need to 'capture' significant amounts of material currently within the residual waste stream. The size of the challenge may require the following list of issues to be considered:

- Weekly recycling – perhaps one of the last significant operational changes still available across the UK is to increase kerbside recycling to a weekly service to prioritise efforts to divert waste from landfill.
- Reductions in residual waste capacity – WCAs could consider further reductions in residual waste capacity either through reducing bin sizes in line with the approaches in North Hertfordshire and Three Rivers or through further frequency reductions as implemented elsewhere in the UK. A smaller residual waste bin encourages behavioural change by encouraging people to recycle and reuse more and reduce the amount of waste they produce.
- Weekly food waste collections – recent waste compositional analysis indicates that food waste continues to make up approximately 30% of the residual waste bin in

Hertfordshire. If this could be effectively captured it could make one of the biggest contributions to closing the gap between current performance and 65% recycling by 2030. Currently three WCAs provide a separate food waste collection service and another WCA is due to start in 2017.

- Commercial Waste Recycling – The revised Waste Framework Directive, which applied from January 2015 onwards, requires the separate collection of paper, metals, plastics and glass of commercial waste. The clear intention is that all commercial waste service providers should now be providing recycling services. That said the overall level of commercial waste handled by Hertfordshire authorities is not currently significant and therefore any recycling extracted from this waste stream is likely to make a minimal contribution to meeting future targets.
- Legislative tools – to support such efforts waste authorities may need to consider whether the current suite of legislative tools available are sufficient or whether additional powers such as being able to ban food waste from residual waste bins with subsequent enforcement, is needed.
- WasteAware[3] – an important part of any future service in Hertfordshire will be the continued and enhanced promotion of services that support efforts to prevent, reduce and recycle on the part of residents and local businesses.

Waste (England and Wales) (Amendment) Regulations 2012

The regulations require that separate kerbside collections must be deemed to be practical in each of the assessment areas, i.e. technically, environmentally and economically practicable (TEEP). If separate collections fail in any one of these areas then they are not required.

Based on the TEEP tests conducted across the country so far it would appear that whilst technical practicality does not present any issues the majority of the time economical practicality cannot be established when aspects such as vehicle costs are taken into account, i.e. greater income through keeping materials separate does not usually

[3] WasteAware is a partnership between the 10 District and Borough Councils and the County Council working together to promote waste issues.

compensate for higher collection costs. A situation exacerbated by recent significant falls in prices for a number of recyclates.

In addition it should be considered that fully commingled collections also tend to outperform sorting wastes into separate containers at the kerbside in terms of tonnage capture reflecting their ease for residents. Therefore even taking into account higher contamination levels, it is increasingly being argued that separate collections also fail the environmental practicability test as a result of diverting less material from landfill whilst using additional vehicle resources.

The Landfill Directive 1999

The Directive sets targets for the reduction of biodegradable municipal wastes (BMW) such as green garden waste and food waste sent to landfill. Transposition of the Directive into UK law took advantage of a 4 year exemption available to a number of member states with historic reliance on landfill. The relevant targets for the UK were / are to have reduced the amount of BMW going to landfill by:-

- 75% of that produced in 1995 by 2010
- 50% of that produced in 1995 by 2013
- 35% of that produced in 1995 by 2020

National Planning Policy for Waste 2014

The National Planning Policy for Waste (NPPW) 2014 seeks to enable local authorities to put planning strategies in place through their local development plans which shape the type of waste facilities in their area and where they should go. The NPPW states that positive planning plays a pivotal role in delivering the country's waste ambitions through:

- delivery of sustainable development and resource efficiency, including provision of modern infrastructure, local employment opportunities and wider climate change benefits, by driving waste up the waste hierarchy;

- ensuring that waste management is considered alongside other spatial planning concerns, such as housing and transport, recognising the positive contribution that waste management can make to the development of sustainable communities;
- providing a framework in which communities and businesses are engaged with and take more responsibility for their own waste, including by enabling waste to be disposed of or, in the case of mixed municipal waste from households, recovered, in line with the proximity principle;
- helping to secure the reuse, recovery or disposal of waste without endangering human health and without harming the environment; and
- ensuring the design and layout of new residential and commercial development and other infrastructure (such as safe and reliable transport links) complements sustainable waste management, including the provision of appropriate storage and segregation facilities to facilitate high quality collections of waste.

The policy requires that a proportionate evidence base flowing from a robust analysis of the best available data and information is used to plan provision.

The policy states that when identifying a need for waste management facilities local authorities should work collaboratively, through the statutory duty to co-operate, to provide a sustainable network of facilities to develop sustainable waste management.

It states the disposal of waste and recovery of mixed municipal waste should be planned for in line with the proximity principle. With opportunities for the co-location of waste management facilities considered.

It also states that priority should be given to the reuse of previously developed land and sites identified for employment use and that the capacity of existing and potential transport infrastructure to support the sustainable movement of waste be assessed.

Minerals and Waste Local Plans for Hertfordshire

The Minerals and Waste Local Plans for Hertfordshire is written by the Spatial Planning and Economy Unit of HCC and identifies the strategy for the future of minerals and waste planning in the county.

The Waste Development Framework is made up of the Waste Core Strategy and Development Management Policies Development Plan Document. The Waste Core Strategy sets out the vision, objectives and spatial strategy for waste planning in Hertfordshire up to 2026 providing the basis for a longer term spatial strategy that complements the Hertfordshire Waste Partnership Joint Municipal Waste Management Strategy 2007.

The vision for waste management in 2026 is:

Through engagement with the community and working with partners, by 2026, Hertfordshire will be waste aware and responsible, and the county council and its partners will lead the county in its adoption, promotion and implementation of the waste hierarchy. Members of the general community, industry, local councils and the county council alike will place significant emphasis on waste prevention, reduction, reuse and recycling, with waste disposal to landfill minimised. A mix of established, newer emerging technologies and waste recycling markets that maximise recovery value are being embraced to ensure that waste is innovatively and effectively managed within Hertfordshire.

Waste management facilities will be well designed, appropriately sized and sensitively located so that they reduce the environmental and social impacts, meet the needs of communities and businesses, and seek enhancement of the locality. Sufficient waste management facilities (to reduce, reuse, recycle) will be located as close as practicable to the origin of waste, making use of sustainable transport links, where practicable, to ensure existing and new communities deal with their own waste, especially in relation to areas where future growth is likely to occur.

To achieve the vision Hertfordshire specific objectives and strategic policies have been developed, including the safeguarding of land and sites where planning permission exists but is not yet implemented; or land and sites on which planning permission is subsequently granted for waste management facilities. The Waste Planning Authority (HCC) may oppose development proposals which are likely to prevent or prejudice the use

of land identified or safeguarded for waste management purposes unless alternative or enhanced provision is made.

Hertfordshire Joint Municipal Waste Management Strategy 2007

The WDA and the WCAs in Hertfordshire work jointly in the collection and disposal of waste through the Hertfordshire Waste Partnership (HWP).

In 2002, the Partnership endorsed a Joint Municipal Waste Management Strategy (JMWMS 2002). This strategy was reviewed in 2007, taking on board developments since 2002 including changes in Government policy, changes in recycling and composting and changes in the growth of waste. A further review of the strategy commenced in 2015.

The JMWMS 2007 and accompanying Action Plan set out how the Partnership intends to manage LACW over the period to 2020 and beyond. Central to the Strategy and Action Plan is a commitment to recycle at least 50% of household waste by 2012 and reduce residual household waste to less than 285 kg per person by that time.

The JMWMS 2007 identified a core objective 'to manage a growing proportion of Hertfordshire's residual waste within the county and manage all other waste at the nearest appropriate facility by the most appropriate method or technology'. It acknowledged that there would always be some waste material that cannot be reused or recycled but contained a commitment to moving away from a reliance on landfill for the disposal of this waste. It set out the following objectives

- To ensure a minimum of 60-80,000 tonnes per annum of residual waste treatment capacity is in place by 2011/12.
- In the longer term (to 2020), to ensure that additional residual waste treatment capacity is in place.

It was recommended in the JMWMS 2007 that capacity decisions be reviewed at the appropriate juncture in line with growth rates and recycling/composting performance.

A review of the JMWMS is currently underway. This section of the spatial strategy will be updated to reflect any notable changes to the JMWMS.

Appendix 2 - Waste Composition Analysis

A waste composition analysis was completed in May 2015. Waste from eight HWRCs and domestic kerbside collections of residual and recycled waste streams from nine WCAs were analysed. The main findings were:

Waste from HWRCs

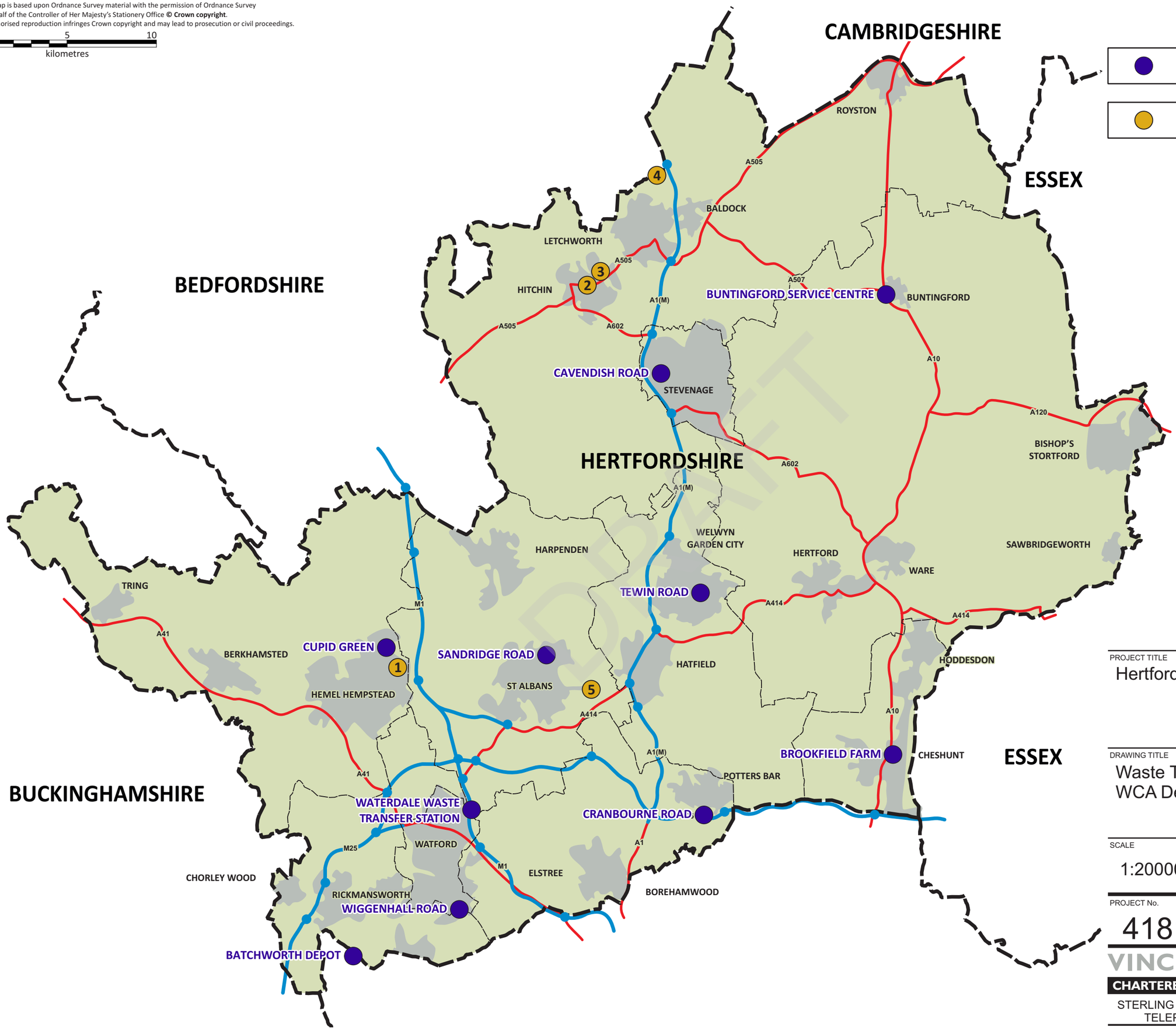
- Overall 13.3% of the waste being disposed of could have been recycled at the kerbside.
- 49.1% of waste deposited in the residual waste stream could have been placed into alternative collection points within an HWRC.

Waste from Kerbside

- Food waste was seen to be the major component of residual waste forming 32.8% of the total.
- 10% of the residual waste was paper items – 63.2% of this was recyclable at the kerbside.
- 2.9% of the residual waste was metallic – 47.6% of this was recyclable at the kerbside.
- 3% of the residual waste was glass – 89.7% of this was due to glass bottles and jars which can be recycled at the kerbside.
- Overall 15.4% of collected residual waste could have been placed into the mixed dry recycling containers.
- Overall 35.8% of collected residual waste could have been placed into the organic recycling containers.
- In total 51.2% of residual waste collected could have been recycled at the kerbside.

0 5 10
kilometres

PLAN 1



WASTE TRANSFER STATION AND WCA DEPOTS

PRIVATE TRANSFER & BULKING FACILITY:

1 Holywell Haulage, Maxted Close, HEMEL HEMPSTEAD
2 Winters Haulage Limited, Huntin Gate HITCHIN
3 FCC Env, Burymead Road, HITCHIN
4 Veolia Environmental Services, Radwell, BALDOCK
5 Veolia Environmental Services, Acrewood Way, ST ALBANS

PROJECT TITLE
Hertfordshire LACW Spatial Strategy

DRAWING TITLE
Waste Transfer Station and WCA Depots

SCALE	DATE	CHECKED
1:200000	MAY 2009	
	DRAWN HNA	DATE

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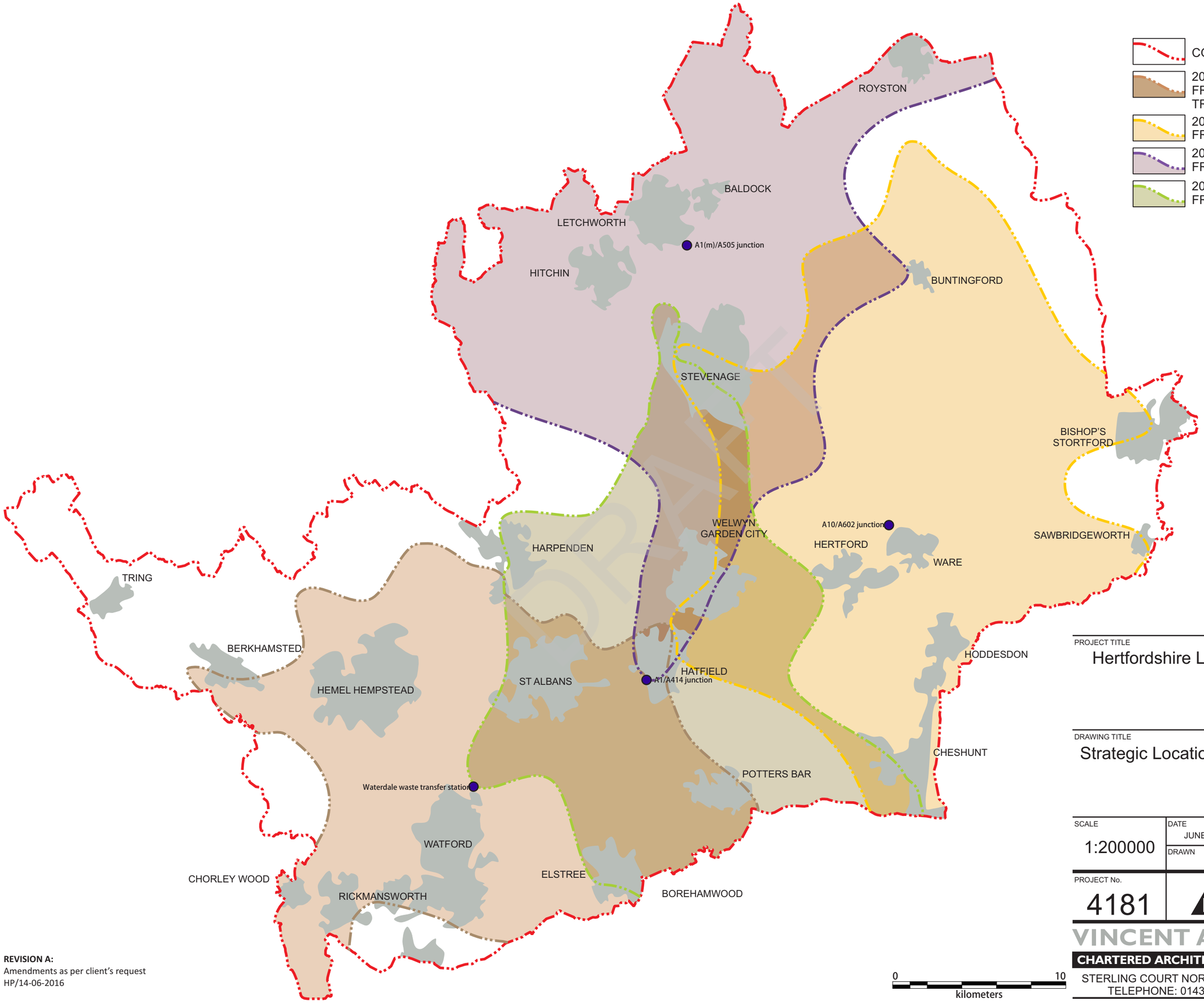
PLAN 2



COUNTY BOUNDARY

20min DRIVE-TIME COVERAGE FROM WATERDALE WASTE TRANSFER SITE

20min DRIVE-TIME COVERAGE FROM A10/A602 JUNCTION

20min DRIVE-TIME COVERAGE FROM A1(M)/A505 JUNCTION

20min DRIVE-TIME COVERAGE FROM A1/A414 JUNCTION

PROJECT TITLE
Hertfordshire LACW Spatial Strategy

DRAWING TITLE
Strategic Locations Isochrones

SCALE	DATE	CHECKED
1:200000	JUNE 2009	
	DRAWN HNA	DATE

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REVISION A:
Amendments as per client's request
HP/14-06-2016

Proposed Waste Transfer Station Network

Plan 3

Proposed Eastern Transfer Station

Waterdale Waste Transfer Station

Area of Search for Northern Waste Transfer Station

Local Authority District Boundary

CAMBRIDGESHIRE

ESSEX

BEDFORDSHIRE

BUCKINGHAMSHIRE

ESSEX

Area of Search for Northern Transfer Station

Eastern Waste Transfer Station

Waterdale Waste Transfer Station

ROYSTON
A505
A10
A505
BALDOCK
LETCHWORTH
HITCHIN
A507
BUNTINGFORD
A602
A505
STEVENAGE
A10
A120
BISHOPS STORTFORD
A1(M)
A602
A5(T)
M1
HARPENDEN
WARE
SAWBRIDGEWORTH
WELWYN GARDEN CITY
HERTFORD
A414
A414
TRING
A41
HODDESDON
HATFIELD
BERKHAMSTED
ST ALBANS
HEMEL HEMPSTEAD
BROXBOURNE
A10
M1
A414
A405
A41
M25
CHESHUNT
POTTERS BAR
M25
WALTHAM CROSS
M25
A1
WATFORD
BOREHAMWOOD
A41
CHORLEYWOOD
RICKMANSWORTH
M1
M25

Scale 1:225,000

0 10 20 30 40 Miles

Hertfordshire

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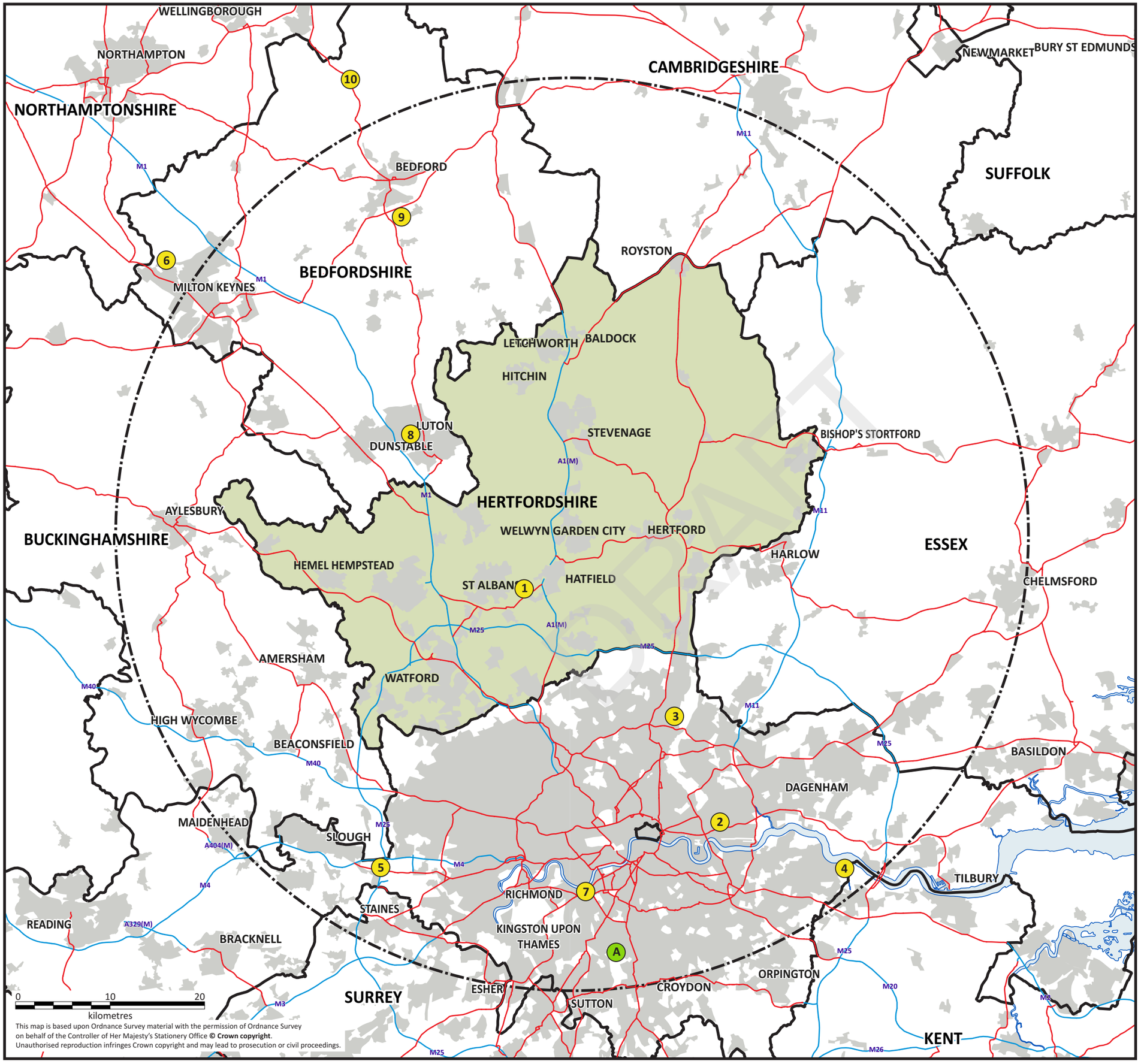
PLAN 4



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30 MILE RADIUS FROM HERTFORDSHIRE'S CENTROID

OPERATIONAL MATERIAL RECOVERY FACILITY

1 Pearce Recycling, Acrewood Way, ST. ALBANS
2 Bywaters, Bow, LONDON
3 Biffa Waste Services, Meridian Way, ENFIELD
4 Viridor, Bilton Road, ERITH
5 Grundons, Colnbrook By-Pass, COLNBROOK
6 Viridor, Old Wolverton, MILTON KEYNES
7 Western Riverside, Smugglers Way, WANDSWORTH
8 Cawleys, LUTON
9 Shanks, Wilstead Road, ELSTOW
10 Monoworld Limited, Rushden Road, SHARNBROOK

PLANNING PERMISSION GRANTED-MATERIAL RECOVERY FACILITY

A Sita, MITCHAM

REVISION B:
Amendments as per client's request
HP/14-06-2016
REVISION A:
Amendments as per client's request
HNA/20-07-2015

PROJECT TITLE
Hertfordshire LACW Spatial Strategy

DRAWING TITLE
Waste treatment facilities:
Material recovery facilities

SCALE	DATE	CHECKED
NOT TO SCALE	MAY 2015	
	DRAWN HNA	DATE

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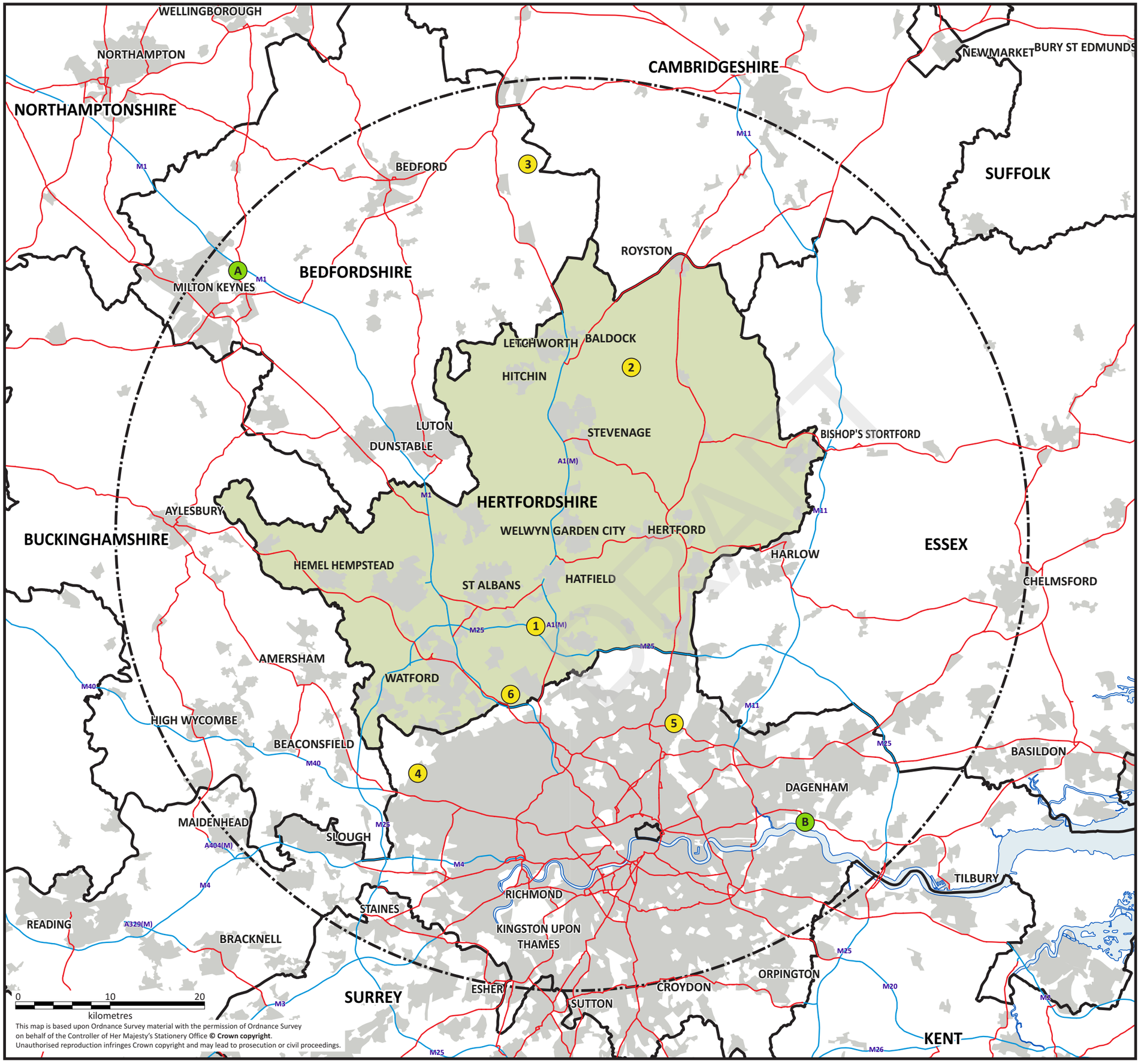
PLAN 5



30 MILE RADIUS FROM HERTFORDSHIRE'S CENTROID

OPERATIONAL IN VESSEL COMPOSTING FACILITY

1 Ridge Wood Farm, RIDGE
2 Cumberlow Green Farm, RUSHDEN
3 The Hanger, TEMPSFORD
4 High View Farm, HAREFIELD
5 London Waste EcoPark, ENFIELD
6 Reviva Composting Ltd, ELSTREE

PLANNING PERMISSION GRANTED - IN VESSEL COMPOSTING FACILITY

A Portway, Pineham, MILTON KEYNES
B Hindmans Way, DAGENHAM

REVISION B:
Amendments as per client's request
HP/14-06-2016
REVISION A:
Amendments as per client's request
HNA/20-07-2015

PROJECT TITLE
Hertfordshire LACW Spatial Strategy

DRAWING TITLE
Waste treatment facilities:
In vessel composting facilities

SCALE	DATE	CHECKED
NOT TO SCALE	MAY 2015	
	DRAWN HNA	DATE

PROJECT No. 4181 — N — 9 0 3 B

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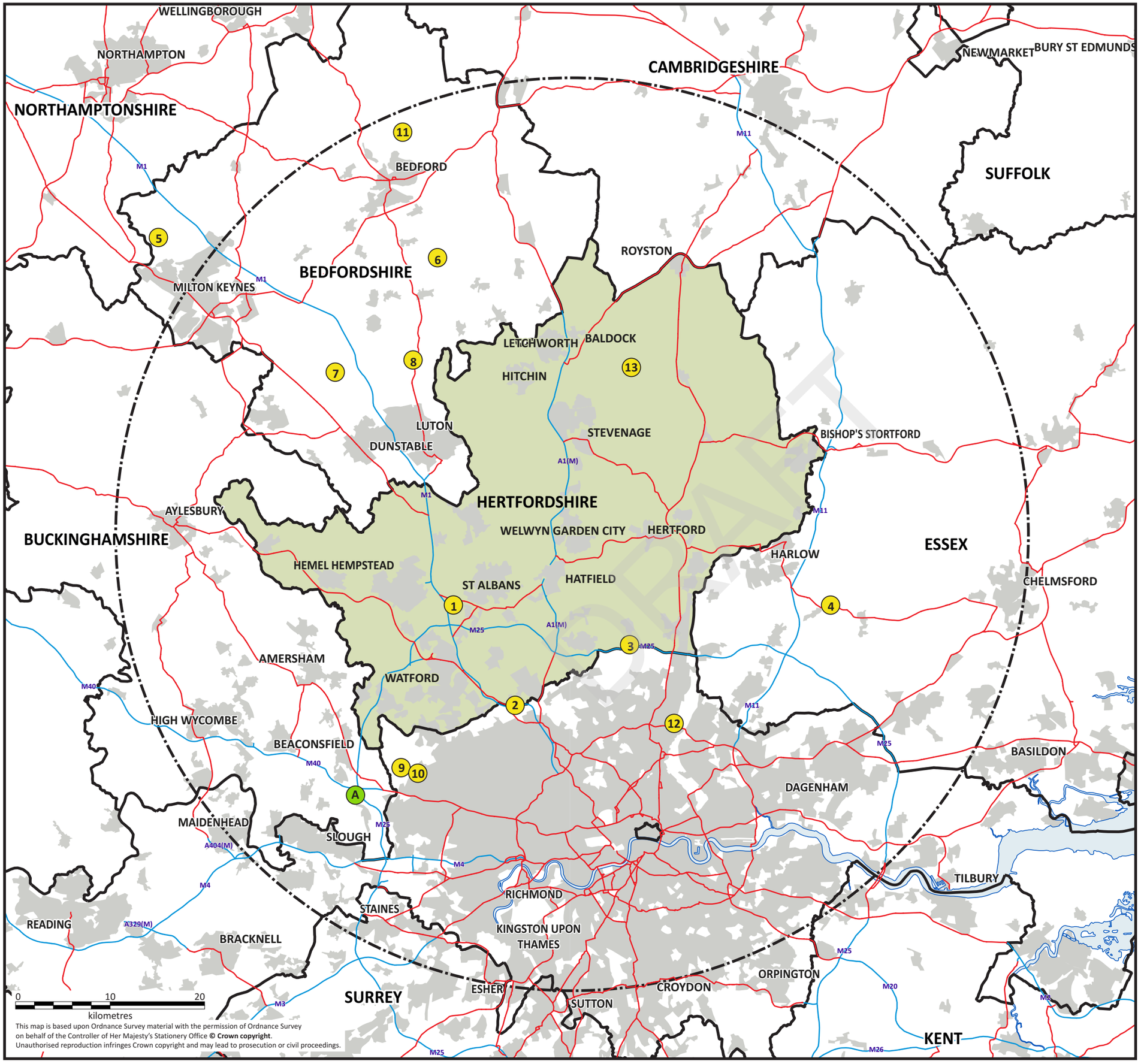
PLAN 6



30 MILE RADIUS FROM HERTFORDSHIRE'S CENTROID

OPERATIONAL WINDROW COMPOSTING FACILITY

1 Appspond Lane, ST. ALBANS
2 Elstree Hill South, ELSTREE
3 Cattlegate Farm, ENFIELD
4 Ashlyn's Organic Farm, ONGAR
5 Home Farm, CASTLETHORPE
6 HAYNES
7 Herne Grange Farm, TODDINGTON
8 Faldo Farm, BARTON-LE-CLAY
9 Crows Nest Farm, HAREFIELD
10 High View Farm, HAREFIELD
11 Ravensden Composting Facility, RAVENSDEN
12 London Waste EcoPark, ENFIELD
13 Cumberlow Green Farm, RUSHDEN

PLANNING PERMISSION GRANTED - WINDROW COMPOSTING FACILITY

A Alderbourne Farm, IVER

REVISION B:
Amendments as per client's request
HP/14-06-2016
REVISION A:
Amendments as per client's request
HNA/20-07-2015

PROJECT TITLE
Hertfordshire LACW Spatial Strategy

DRAWING TITLE
Waste treatment facilities:
Windrow composting facilities

SCALE	DATE	CHECKED
NOT TO SCALE	MAY 2015	
	DRAWN HNA	DATE

PROJECT No. 4181

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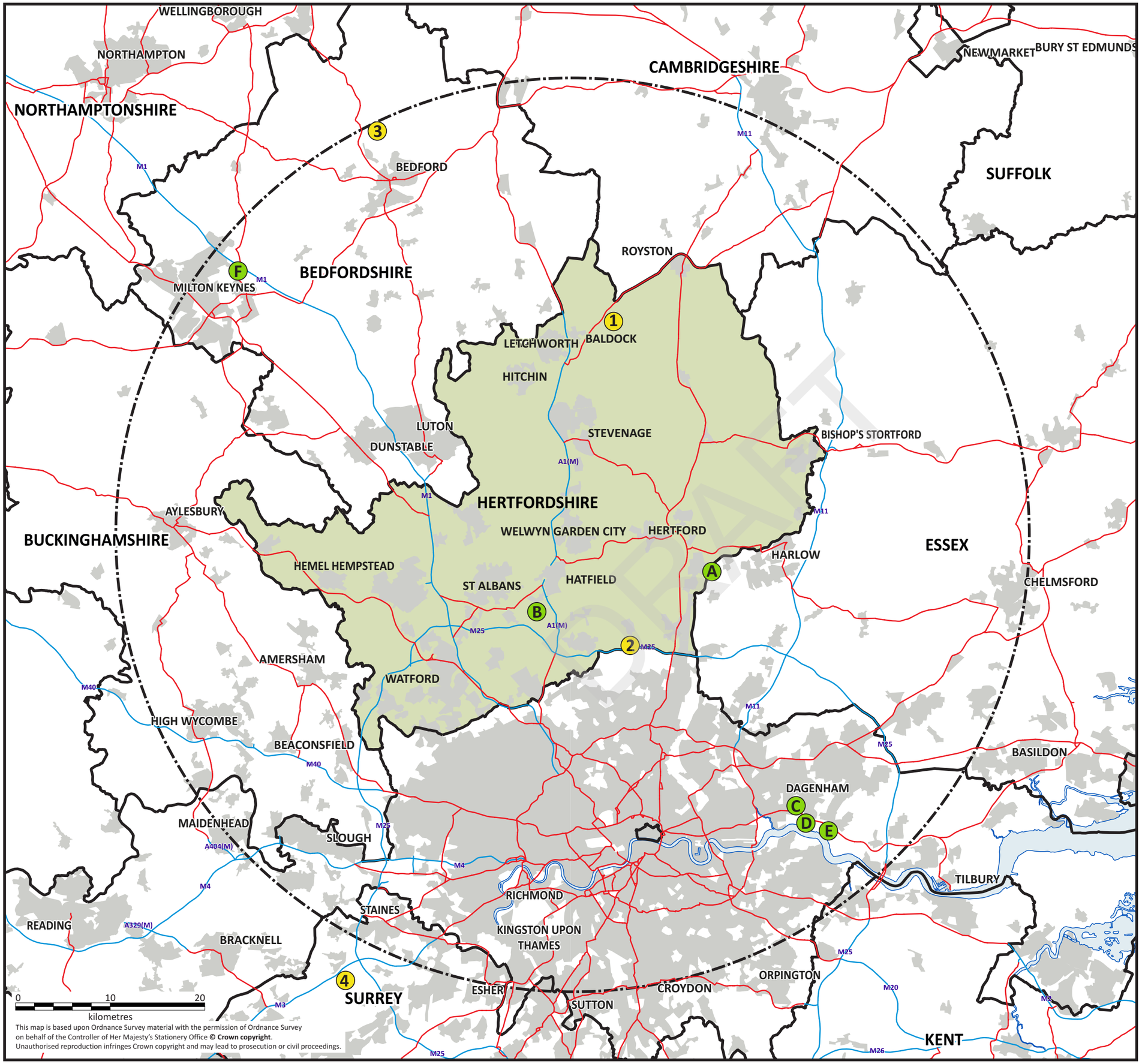
PLAN 7



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30 MILE RADIUS FROM HERTFORDSHIRE'S CENTROID

OPERATIONAL ANAEROBIC DIGESTION FACILITY

1 Lodge Farm, BYGRAVE
2 Cattlegate Farm, ENFIELD
3 Oakley Little Wood, MILTON ERNEST
4 Agrivert West London, CHERTSEY

PLANNING PERMISSION GRANTED - ANAEROBIC DIGESTION FACILITY

A Ratty's lane, HODDESDON
B Coursers Farm, ST. ALBANS
C DAGENHAM
D Hindmans Way, DAGENHAM
E Creek Way, Frog Island, RAINHAM
F Portway, Pineham, MILTON KEYNES

REVISION B:
Amendments as per client's request
HP/14-06-2016
REVISION A:
Amendments as per client's request
HNA/20-07-2015

PROJECT TITLE
Hertfordshire LACW Spatial Strategy

DRAWING TITLE
Waste treatment facilities:
Anaerobic digestion facilities

SCALE	DATE	CHECKED
NOT TO SCALE	MAY 2015	
	DRAWN HNA	DATE

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