

Worcestershire Waste Core Strategy Background Document



Municipal Waste

Working Draft – September 2010

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The Council is preparing a *Waste Core Strategy*: a plan for how to manage all the waste produced in Worcestershire up to 2027. To help provide a robust evidence base for the Waste Core Strategy the Council has prepared a series of background documents. These outline current thinking and have informed the approach taken in the development of the Waste Core Strategy.

We welcome any comments you would like to make on any of the background documents during the *Publication Document (Regulation 27) Consultation*. The consultation will run from **22nd March – 4th May 2011**.

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INTRODUCTION AND BACKGROUND

This paper provides a background to the Worcestershire Minerals and Waste Development Framework in respect of Municipal Solid Waste (MSW). It includes information relating to national and local policy and details of the waste arisings and available capacity for treatment of municipal waste within Worcestershire. It will also give some consideration to arisings and treatment capacity in Herefordshire, as Herefordshire and Worcestershire's municipal waste is managed through a joint contract.

This paper will inform the development of Worcestershire's Waste Core Strategy.

The Council has adopted the Reviewed Joint Municipal Waste Management Strategy (JMWMS) (2009). The JMWMS is a strategy that sets out how all six of the Borough, City and District Councils in Worcestershire and Herefordshire Council will collect municipal waste and how Worcestershire County Council and Herefordshire Council will manage and dispose of it between now and 2034. The Joint Municipal Waste Management Strategy and Waste Core Strategy are being developed in parallel and will influence and take account of each other. They are however separate plans, produced under separate laws and regulations and cover different aspects of how and which, wastes will be managed. The most significant overlap between them is that the JMWMS sets out what is required and how to manage municipal waste and the Waste Core Strategy will set out how and broadly where the sites for these will be permitted. The JMWMS relates to the County Council's role as a waste disposal authority, where as the Waste Core Strategy relates to the Council's role as a Waste Planning Authority.

What is Municipal Solid Waste?

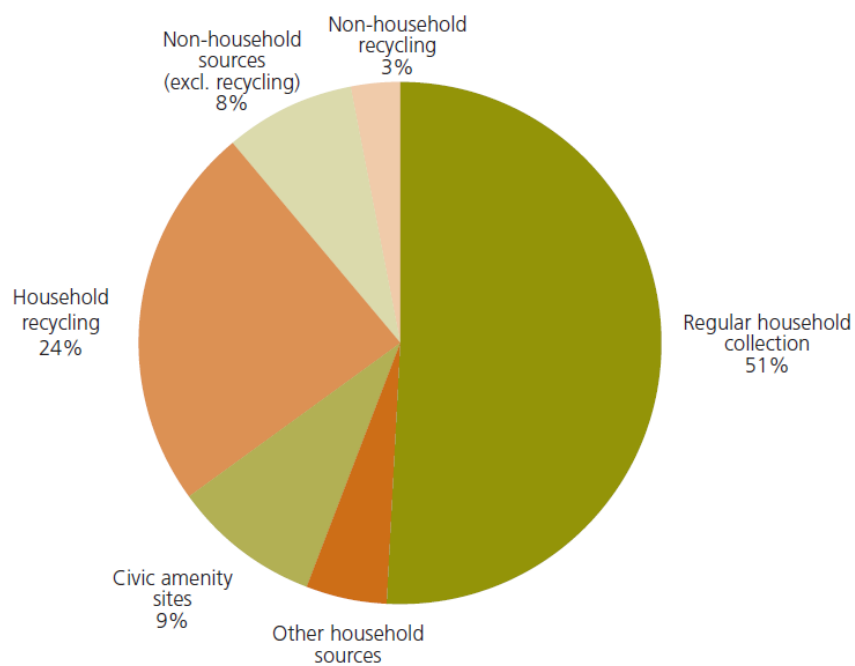
Municipal Solid Waste (MSW) consists of household ("dustbin") waste and waste received at Household Waste Sites, but also includes street cleansing waste and waste resulting from the clearance of fly tipped material. The County Council (the waste disposal authority) and the City, District and Borough councils (the waste collection authorities) have a statutory responsibility to collect and dispose of this waste. They are also obliged to collect commercial and industrial waste from the private sector on request¹. Most such collections are from shops and offices in town centres and only make up a small amount of the total in Worcestershire.

In 2005/06, local authorities collected an estimated 28.7 million tonnes of municipal waste in England, with around 89% of this municipal waste coming from households. Figure 1 shows the main sources of municipal waste in England in 2005/6.²

Figure 1: Sources of municipal waste arisings, England (2005/06)

¹ Once collected it is re-categorised as MSW.

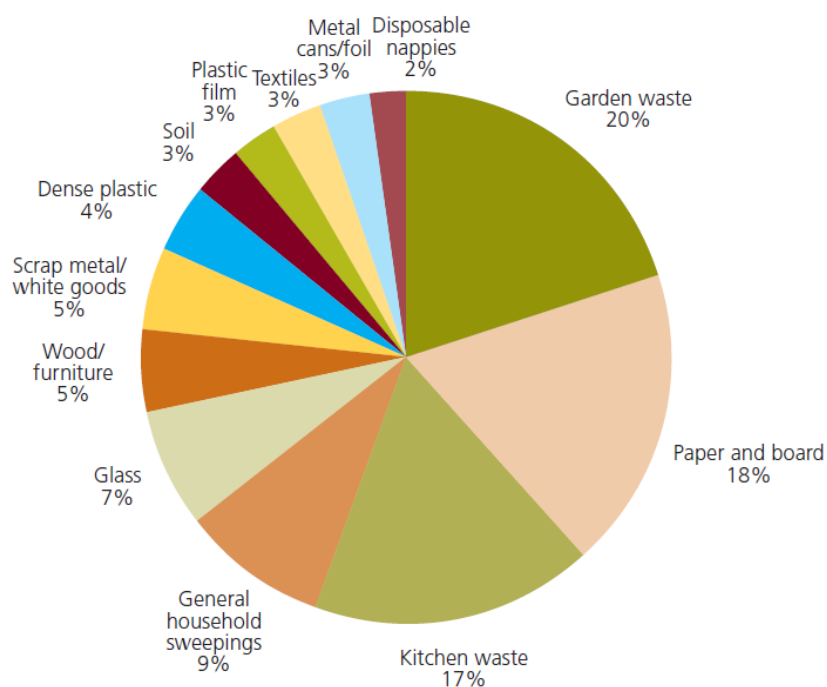
² Defra (2007) Waste Strategy for England: Annex C1 Municipal Waste



Source: Defra (2007) Waste Strategy for England: Annex C1 Municipal Waste

Figure 2 gives an indication of the composition of household waste, this only includes the 89% of this municipal waste that comes from households and does not take account of municipal waste that comes from other sources.

Figure 2: Household waste composition, England (2000/01)

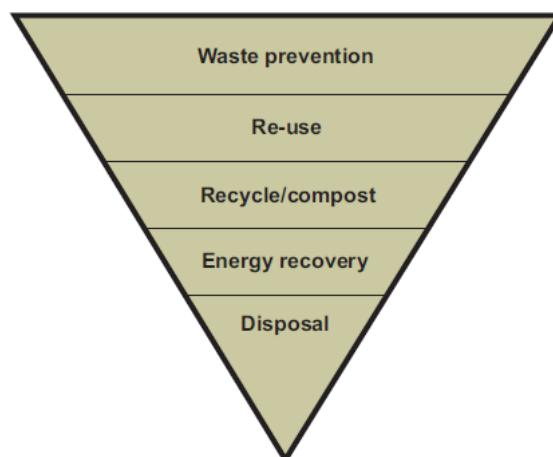


Source: Defra (2007) Waste Strategy for England: Annex C1 Municipal Waste

How is Municipal Solid Waste Managed?

The management of MSW is guided by the Waste Hierarchy, as set out in Figure 3. This promotes waste prevention and resource recovery, and places disposal options such as landfill at the bottom of the waste hierarchy as the least desirable option.

Figure 3: Waste Hierarchy



Source: Defra (2007) *Waste Strategy for England* p9

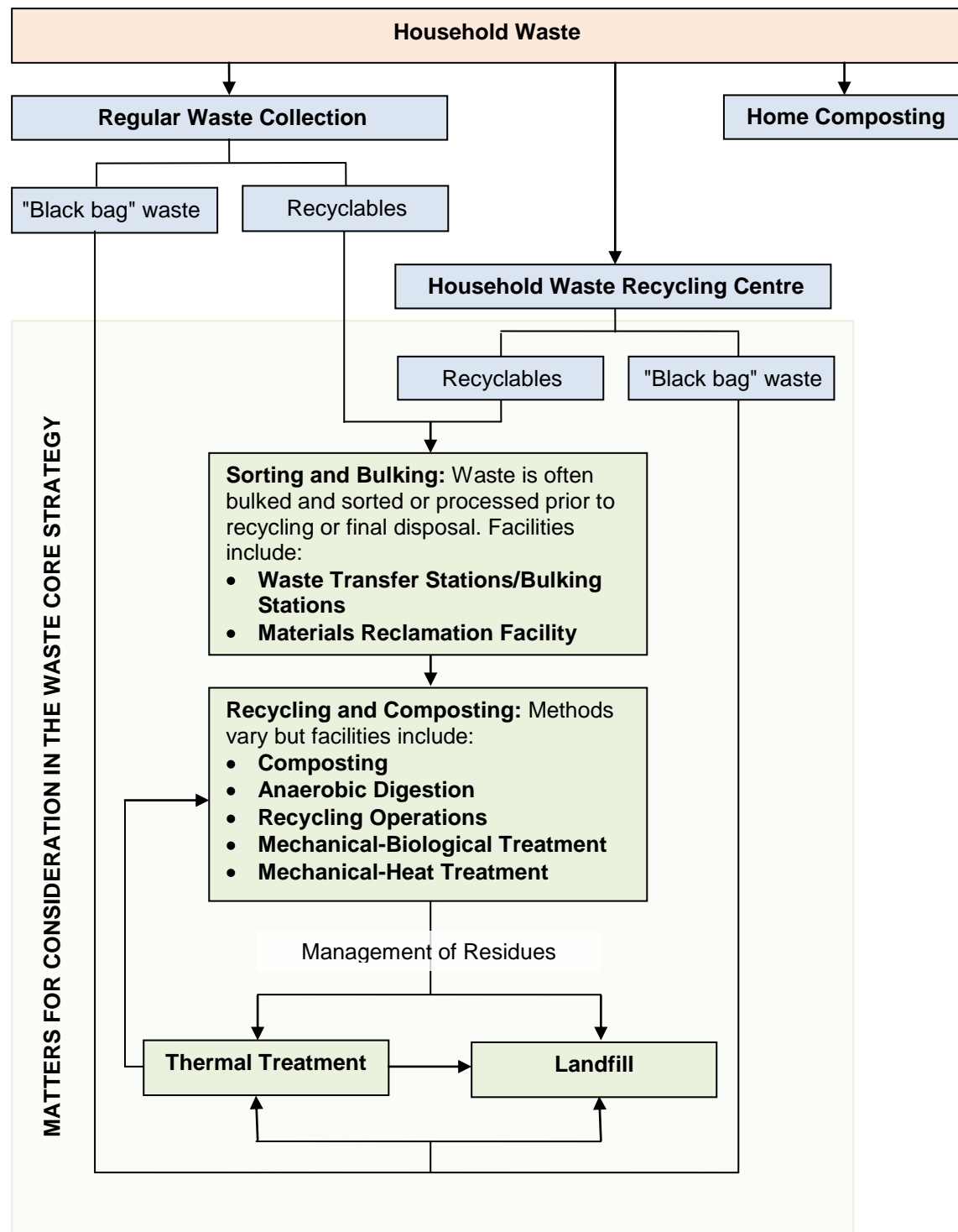
Municipal waste is collected by local authorities through regular waste collection and the provision of Household waste sites (also known as civic amenity sites). Household waste sites are facilities where members of the public can take their household waste for recycling, composting and disposal. Municipal waste also comes from litter and street sweepings, the special collection of bulky household wastes and from businesses and fly tipped materials³.

Home composting can also play a part in disposing of household waste. Home composting is encouraged by the Council through the Joint Municipal Waste Management Strategy.

Once collected there are a range of facilities which can be used to treat municipal waste. Figure 4 gives an indication of the types of management options which may be used. This is a very simplified illustration and does not show all flows of wastes. It should not be interpreted literally, but is intended to give an indication of the types of facilities which might be used to manage Municipal waste.

Figure 4: Household Waste: Illustrative Management Options

³ Defra (2007) *Waste Strategy for England Annex C1: Municipal Waste*.



Note: This figure is purely illustrative and intended to give an indication of the types of flow which might occur; as such it should not be interpreted literally as a precise model for the way municipal waste is managed.

Used in this context 'thermal treatment' includes such processes as incineration, pyrolysis, gasification and plasma arc.

Sorting and Bulking

Bulking

Once waste is collected in refuse vehicles it is often taken to waste transfer stations or bulking stations. Here refuse collection vehicles can discharge their loads. These are then picked up for onward transport by larger vehicles. This allows refuse vehicles to return to collection rounds more quickly. It also reduces vehicle movements; normal refuse vehicle will hold about 8 tonnes of rubbish, however bulk vehicles can hold up to 25 tonnes, thus reducing vehicle movements by a ratio of 3:1⁴. These facilities are more common where there are larger distances between the waste source and treatment facilities. In Worcestershire there are currently transfers to bulking stations in Redditch, Kidderminster and Bromsgrove.

Sorting

Following collection, and possible bulking, recyclable materials can then either be sent directly to re-processors, as happens for about a third of recyclables in Worcestershire, or they can be taken to Materials Reclamation Facilities where they are separated into individual material streams and prepared for sale to re-processors. Materials Reclamation Facilities are also known as MRFs, Materials Recycling Facilities or Materials Recovery Facilities, and Waste Transfer Stations.

MRFs often use a mixture of mechanical and/or hand sorting techniques, including hand picking, mechanical sorting, screening or sieving, magnetic separation, light and density separators, and air separators to separate recyclables⁵.

Due to the range of wastes dealt with and the processes used, there is no standard type of MRF; however three primary phases in the MRF sorting process are common:

- Receiving and preparing materials for the sorting process
- Sorting the materials into their individual material streams
- Inspecting, baling, storing and shipping sorted materials⁶

These and the storage of separated and baled materials are usually undertaken indoors. For some materials, particularly paper, storage in a weather-protected area is essential prior to its being shipped to market.⁷

Further details are set out in *Worcestershire Waste Core Strategy Background Document: Types of Facilities* and *Worcestershire Waste Core Strategy Background Document: Waste Transfer Stations*.

Recycling and Composting

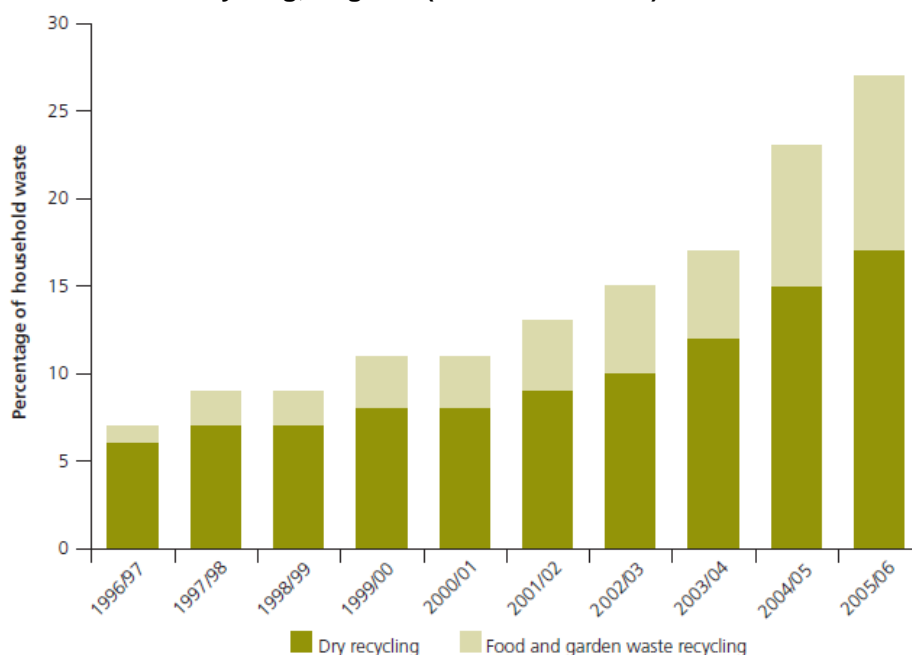
In England the proportion of municipal waste being recycled or composted increased from 11.2% in 2001/02 to 26.7% in 2005/06⁸, as shown in Figure 5.

⁴ www.veoliaenvironmentalservices.co.uk

⁵ ODPM (2004) Planning for Waste Management Facilities: A Research Study

⁶ Waste and Resources Action Programme (WRAP), 2006, 'Materials Recovery Facilities Comparison Study'

⁷ For further information on types of MRF facilities and the processes in such facilities see the WRAP website - www.wrap.org.uk/wrap_corporate/about_wrap/mrf_home_page.html.

Figure 5: Household Recycling, England (1996/97 - 2005/06)

Source: Defra (2007) Waste Strategy for England

Composting

The compostable biodegradable material collected can be treated by:

- **Windrow composting:** Shredded and mixed organic waste is formed into long heaps called 'windrows'. These heaps are usually 1.5 to 3 metres in height and approximately 4 to 6 metres across the base⁹. To get air into the windrows they are either turned by machinery or air is forced into the piles using fans. The process takes around three months and is usually undertaken outdoors¹⁰ but can take place within a large building.

Windrow composting is only suitable for 'green waste' such as garden waste, due to the requirements set out in the Animal By-product Regulations 2005 (as amended).

- **In-vessel composting (IVC)** is undertaken within an enclosed container where the control systems for material degradation are fully automated and moisture, temperature and odour can be regulated. The process is quicker than outdoor windrow composting.

Its temperatures can also be controlled at a level which ensures that pathogens are killed, meaning that it is used for a wider range of waste, including food waste¹¹.

⁸ Defra (2007) Waste Strategy for England

⁹ ODPM (2004) "Planning Waste Management Facilities: A Research Study"

¹⁰ ODPM (2004) "Planning Waste Management Facilities: A Research Study" p36, 61-62

¹¹ (Defra 2004) "Review of Environmental and Health Effects of Waste Management: Municipal Solid Waste and Similar Wastes" p34

- **Anaerobic digestion** is the biological treatment of organic wastes in the absence of oxygen. It breaks down organic waste and produces biogas, liquor and residual fibre. The biogas (mostly methane) can then be used as an energy source and the liquor can be used as liquid fertiliser. The solid fraction can be spread on land as a soil improver.

Further details are set out in *Worcestershire Waste Core Strategy Background Document: Resource Recovery from Biodegradable Waste: Composting and Anaerobic Digestion*.

Recycling Operations

Once sorted other 'dry' recyclable materials are usually sold to re-processors and will then be recycled into useable materials using specialised techniques depending on the material and desired end use.

Mechanical-Biological Treatment

Mechanical Biological Treatment is used to treat the waste remaining after it has been sorted for recycling and composting. This waste is known as residual waste.

The term Mechanical Biological Treatment (MBT) is used to describe a combination of different technologies brought together in an integrated process¹². The main purposes of MBT are to:

- stabilise and separate out recyclables and compostable materials from residual waste.
- reduce the environmental impact of residual wastes sent to landfill.

MBT compliments, but does not replace, other waste management technologies such as recycling and composting¹³. In its simplest form MBT provides a drying and bulking reduction operation prior to landfill. However, other MBT systems¹⁴ exist to:

- treat and separate out materials (such as metals and glass) from residual waste for recycling,
- produce a combustible fraction (sometimes known as refuse derived fuel or solid recovered fuel) for energy recovery or
- produce an organic rich fraction (derived from, for example, food and garden waste and paper/card), which may have a use as landfill cover or for land restoration.

The remaining residual waste is sent for energy recovery, or disposed of to landfill.

Mechanical-Heat Treatment

Mechanical Heat Treatment (MHT) is a term that is used to describe a number of different processes that involve the mechanical separation and thermal heat treatment of waste.¹⁵

The most common method of heat treatment currently being used in this way is Autoclaving. This method is a steam treatment process that is often used for

¹² http://www.ciwem.org/policy/policies/mechanical_biological_treatment_of_waste.asp

¹³ Defra (2007) *Mechanical Biological Treatment of Municipal Solid Waste*

¹⁴ Defra (2007) *Waste Strategy for England Annex C1* p2

¹⁵ www.wasteawarenesswales.org.uk

treating clinical (hospital) waste. Waste is processed for about an hour in a pressurised container; this converts the waste into a fibrous material. Metals and glass will be partially cleaned by the process and can be removed and recycled. Plastics become deformed in the process and some types become suitable for recycling whereas others become more difficult to recycle. Once recyclables have been removed, the remaining material can be used as fuel in a thermal heating process to produce energy & heat¹⁶.

Thermal Treatment

The purpose of thermal treatment of waste is to reduce the bulk of waste needing ultimate disposal in landfills to an inert inorganic ash residue¹⁷ or flock. This residue has been stabilised, meaning that unlike the majority of waste sent directly to landfill it will produce much lower levels of landfill gas, which contains the greenhouse gasses methane and carbon dioxide¹⁸. Any energy recovered in the process can be used to generate electricity exported to the national grid, or used for localised heating systems, and displaces the production of energy or heat from other sources.¹⁹

Thermal treatment includes²⁰:

- Direct combustion (conventional mass burn incineration);
- Use of secondary recovered fuel (SRF) which is output from mechanical and biological treatment processes (MBT). SRF is usually sent to either cement kilns or landfilled but some is burnt for energy recovery; and
- Advanced thermal treatments such as Pyrolysis, Gasification, Autoclave and Plasma Arc Heating (either on the waste directly or using SRF). Advanced thermal treatment technologies heat the waste under controlled conditions to produce low-to-medium-heating fuel gases, together with tars, char and ash.

Conventional mass burn incineration reduces the volume of waste solids by around 90% and reduces the weight by around 75%. It may be possible to recycle some of the residues from thermal treatment.

Further details are set out in *Worcestershire Waste Core Strategy Background Document: Recovering Energy from Waste: Thermal and Biological Treatment Technologies*.

Landfill

To comply with the requirements of the European Landfill Directive, England must landfill no more than:

- 11.2 million tonnes of biodegradable municipal waste by 2009/10;
- 7.5 million tonnes by 2012/13; and

¹⁶ www.wasteawarenesswales.org.uk

¹⁷ AEA Technology (2001) Report for the European Commission: *Waste Management Options and Climate Change*

¹⁸ See *Worcestershire Waste Core Strategy Background Document: Climate Change and Waste Management*.

¹⁹ Mayor of London (2008) *Greenhouse gas balances of waste management scenarios: Appendix D Literature Review*

²⁰ Environmental Knowledge Transfer Network (2007) *Priority Technology Area 1: Energy from Waste*

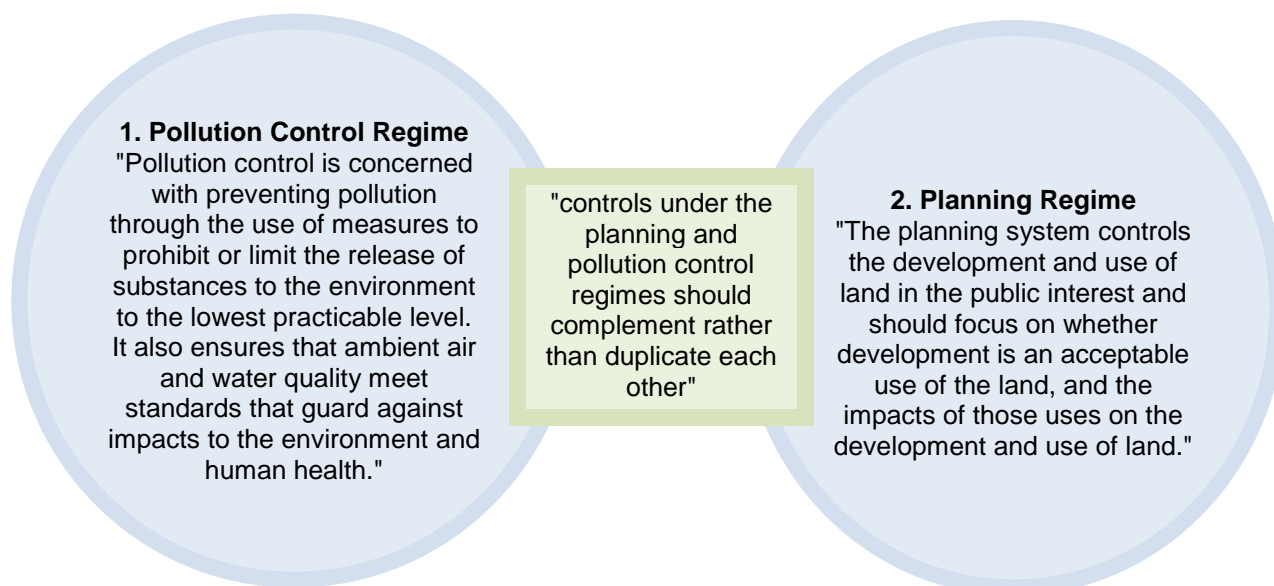
- 5.2 million tonnes in 2019/20.

The landfill tax increases the price of waste sent to landfill, encouraging diversion of waste from landfill to more sustainable ways of managing waste. In addition, each Waste Disposal Authority (WDA) in England has been allocated a maximum amount of waste they are allowed to landfill each year, under the Landfill Allowance Trading Scheme (LATS). The WDA can trade this allowance, bank it for future years or use a small amount of its future allowance in advance, but a penalty of £150/tonne will be incurred if the WDA sends more waste to landfill than it has allowances for.

REGULATION

There are two main ways in which waste management activities are regulated:

Figure 6: Regulation of Waste Management



Source: Information adapted from PPS10 (2005) p13 and PPS23 (2004) p4

The Pollution Control Regime:

Under the *Environmental Protection Act (1990)* it is unlawful to deposit, recover or dispose of controlled²¹ waste without an environmental permit, contrary to the conditions of a permit or the terms of an exemption, or in a way which causes pollution of the environment or harm to human health.

The *Environment Agency* is the pollution control body responsible for issuing and monitoring of Environmental Permits under the Environmental Permitting Regulations²². Following a successful planning application for waste recycling, recovery or disposal operations, the developer is required to apply for an Environmental Permit and Waste Planning Authorities should work on the assumption that the relevant pollution control regime will be properly applied and enforced.²³

Planning Regime

The determination of planning applications is based upon the development plan, national policy and other relevant material considerations. This document will contribute towards the production of the Core strategy which forms part of the

²¹ The term "controlled waste" is defined in the Controlled Waste Regulations (1992) and refers to most types of municipal, commercial and industrial and construction and demolition waste. Some types of agricultural wastes are excluded from this definition.

²² The Environmental Permitting Regulations (EPR) came into force on 6 April 2008 prior to this the environment agency issued waste management licenses, under the requirements of either the Environmental Protection Act 1990 (EPA 1990) or the Pollution Prevention and Control (PPC) Regulations 2000.

²³ Planning Policy Statement 10: Planning for Sustainable Waste Management (2005) p13

development plan. The national and regional policy context for municipal waste management is set out in the next section of this paper.

POLICY CONTEXT

National Policy

Planning Policy Statement 10: Planning for Sustainable Waste Management (2005)

PPS10 sets out the Government's policies on Waste Management planning. The overall objective is to protect human health and the environment by producing less waste and by using it as a resource wherever possible.

Positive planning has an important role in delivering sustainable waste management through the development of appropriate strategies for growth, regeneration and the prudent use of resources; and by providing sufficient opportunities for new waste management facilities of the right type, in the right place and at the right time. In doing this, waste development frameworks should consider municipal waste and it should both inform and in turn be informed by any relevant municipal waste management strategy.

Waste Strategy for England (2007)

The Government's key objectives are to decouple waste growth from economic growth, by encouraging prevention and re-use and to divert waste from landfill through investment in infrastructure, in order to get the most environmental benefit. The expected effect of the strategy is to reduce global greenhouse gas emissions from waste management.

A key objective of the strategy is to meet and exceed the Landfill Directive diversion targets for biodegradable municipal waste in 2010, 2013 and 2020; and to secure better integration of the treatment of municipal and non-municipal waste.

It sets targets for:

- recycling and composting of household waste – at least 40% by 2010, 45% by 2015 and 50% by 2020; and
- recovery of municipal waste – 53% by 2010, 67% by 2015 and 75% by 2020.

New policies and actions put forward in this strategy include, increasing the (environmental and financial) value obtained from recycle material collected by local authorities and encouraging a variety of energy recovery technologies Recovering energy from waste (EfW) which cannot sensibly be recycled. Energy from waste is expected to account for 25% of municipal waste treatment by 2020 compared to 10% in 2007.

Regional Policy

West Midlands Regional Spatial Strategy (2008)

According to PPS10, RSSs should provide sufficient opportunities to meet the identified waste management needs of their area for all waste streams. In turn, planning authorities should prepare local development documents that reflect

their contribution to delivering the RSS²⁴. Following the change of government in May 2010, the Secretary of State has expressed an intention to revoke Regional Spatial Strategies and this is a material planning consideration. However, the evidence upon which the RSS and RSS phase 2 revision was based is still considered to be valid and the ideas in the RSS reflect national policy.

The RSS aimed to maintain regional self-sufficiency and incorporates targets for increased quantities of waste to be treated further up the waste hierarchy and the adoption of the 'proximity principle' where there was scope for this to be taken further in individual waste plans.

It set out that development plans should include proposals which enable the following regional targets to be met:

- to recover value from at least 40% of municipal waste by 2005; 45% by 2010; and 67% by 2015;
- to recycle or compost at least 25% of household waste by 2005; 30% by 2010; and 33% by 2015;

These targets are now outdated and are currently in the process of revision, as part of a Phase 2 of the RSS Revision (see below).

Table 1 below outlined the needs to be met through the development plan. It estimates the total capacity required for the treatment of municipal waste. The RSS set out that where necessary local authorities should seek agreement with neighbouring authorities to make provision in their plans to meet these needs.

Table 1: Needs for Waste Management Facilities by Sub-Region

Sub Region	Municipal waste recycling and composting facilities	Municipal waste recovery	Cumulative landfill void capacity required for all waste streams taking into account the target reductions in the National Waste Strategy 1998/99 – 2020/21		
	Annual throughput capacity required by 2020/21 ('000 tonnes)	Annual throughput capacity required by 2020/21 ('000 tonnes)	Municipal ('000 tonnes)	Industrial & commercial ('000 tonnes)	Construction & demolition ('000 tonnes)
Herefordshire	44	45	1,227	1,693	
Metropolitan area	845	1,020	16,616	31,709	
Shropshire, Telford & Wrekin	150	155	4,216	7,562	
Staffordshire, Stoke on Trent	364	383	7,837	18,010	
Warwickshire	172	173	4,479	9,379	
Worcestershire	159	164	4,414	6,883	
West Midlands Region	1,734	1,940	38,789	75,236	28,700*

* data not available to enable a sub-regional assessment

Source: Regional Spatial Strategy for the West Midlands (2008) p95

A proportion of the requirements set out in Table 1 has already been met by existing facilities however the estimated need for new facilities for the treatment of municipal waste management is set out in Table 2.

²⁴ PPS10 (2005) p6

Table 2: Additional Municipal Waste Management Facilities Required by 2021

Sub Region	Recycling and Composting		Recovery – either EfW or MRF		
	Additional capacity required by 2021 (annual throughput capacity in '000 tonnes)	Equivalent number of facilities @ 50,000 tonnes pa capacity	Additional capacity required by 2021 (annual throughput capacity, '000 tonnes)	Equivalent number of EfW facilities required at 300,000 tonnes pa	Equivalent number of MRFs required at 50,000 tonnes pa
Herefordshire	38	0.5	45	-	1
Metropolitan Area	781	16	382	1	8
Shropshire, Telford & Wrekin	136	2.5	155	0.5	3
Staffordshire, Stoke on Trent	284	5.5	187	0.5	4
Warwickshire	151	3	173	0.5	3
Worcestershire	134	2.5	164	0.5	3
West Midlands Region	1,524	30	1,106	3-4	22

The RSS set out that development plans should include policies to guide the siting of facilities to appropriate locations, having regard to the proximity principle and other environmental and amenity principles, encouraging the use of rail and water transport in preference to road transport where possible.

Where possible site-specific proposals for new waste management facilities should be included in development plans. In doing so consideration should be given to the potential advantages of making provision for waste management in the form of small-scale facilities that may be more easily integrated into the local setting.

Development plans should also restrict the granting of planning permission for new sites for landfill to proposals which are necessary to restore despoiled or degraded land, including mineral workings, or which are otherwise necessary to meet specific local circumstances.

The Emerging Regional Spatial Strategy Revision: Phase 2

The Draft Strategy took the stance that the importance of considering waste as a resource at every level of the hierarchy cannot be over emphasised with the current concern about 'sustainability' and 'climate change', and the policy on Commercial and Industrial Waste was based on this premise.

Policy W1 stated that:

"Waste should be considered as a resource and each Waste Planning Authority, or sub-region, should allocate enough land in its LDDs [Local Development Document] to manage an equivalent tonnage of waste to that arising from all waste streams within its boundary, taking into account the Waste Hierarchy. In addition to facilities to reprocess, reuse, recycle and recover waste an allowance will need to be made for waste transfer stations and where appropriate for landfill."

The proposed revision included new assessments of waste arisings and what was needed to replace them. The revision set out that, through its Development Framework, Worcestershire would need to plan for a minimum provision of new facilities to reprocess and manage waste in accordance with the tonnages set out in Table 3, at sites distributed across the county.

Table 3: Municipal Waste Diversion from Landfill (Worcestershire and Herefordshire combined)

2005/6		2010/11		2015/16		2020/21		2025/26	
Min. Diversion from Landfill	Max. Landfill	Min. Diversion from Landfill	Max. Landfill	Min. Diversion from Landfill	Max. Landfill	Min. Diversion from Landfill	Max. Landfill	Min. Diversion from Landfill	Max. Landfill
102,000	302,000	203,000	240,000	272,000	196,000	242,000	172,000	328,000	176,000

Source: Adapted from RSS Phase 2 Revision Table 5: Municipal Waste Diversion by Planning Authority

In addition it set out that authorities which had a 'Treatment Gap' in facilities to manage waste should make provision in their Local Development Documents (LDDs) for a pattern of sites and areas suitable for new or enhanced waste management facilities in, or in close proximity to, settlements such as Worcester, Bromsgrove, Droitwich, Kidderminster and Redditch (Policy W3). In addition to meeting local needs, these locations are well placed to accommodate facilities of a regional and/or sub regional scale to reprocess, re-use, recycle or recover value from waste, allowing for the requirements of different technologies (Policy W3).

The Revision also set out that provision would need to be made in LDDs for sufficient land to provide facilities to manage waste. In some cases this may involve identifying specific sites which are suitable for particular waste management facilities, but more frequently it would be a case of identifying which particular industrial areas are suitable for waste management facilities, provided that they meet a range of environmental and amenity criteria and have good transport connections, and ensuring sufficient land is available on a range of sites of different sizes and locations, either within or on the edge of settlements, or at a distance from sensitive receptors. In the first instance such sites should be either:

- sites with current use rights for waste management purposes; or
- active mineral working sites or landfills where the proposal is both operationally related to the permitted use and for a temporary period commensurate with the permitted use of the site; or
- Previous or existing industrial land; or
- Contaminated or derelict land; or
- Land within or adjoining a sewage treatment works; or
- Redundant agricultural or forestry buildings and their curtilage.

In every case the proposal should be capable of meeting local environmental and amenity criteria, and not pose risks to European and National protected sites (Policy W5).

It set out that in the case of landfill site, the granting of planning permission for new sites should be restricted to those which:

- are necessary to restore despoiled or degraded land, including mineral workings;
- are otherwise necessary to meet specific local circumstances;

- are supported by robust evidence of suitability and need arising from a shortage of local capacity that exists in the plan period; and
- where geological conditions are suitable for landfill operations (WD11).

All Waste Planning Authorities outside the Major Urban Areas should identify sites for the treatment and management of waste arising from areas of low population and scattered communities and for facilities which need to be at a distance from 'sensitive receptors'. Additional sustainable waste management capacity in rural areas for waste recovery or recycling should be based on effective protection of amenity and the environment and the proposed activity being appropriate to the area proposed.

Waste management facilities should only be permitted on open land, including land within the greenbelt:

- where they are close to the communities producing the waste; and
- where there are no preferable alternative sites; and
- where it would not harm the openness of land, or the objectives of greenbelt; and
- where it can be demonstrated to be necessary to support an existing essential activity and to facilitate other key development, would assist in agricultural diversification or would not adversely affect the biodiversity and geodiversity value of the area (Policy W7).

In addition Waste Planning Authorities should safeguard and/or expand suitable sites with an existing waste management use, provided that they meet local environmental and amenity criteria, and do not pose risks to European and National protected sites. Waste Planning Authorities should not allow the continued operation of existing sites to be compromised by new development on adjoining land (Policy W4).

Managing Waste for a brighter future...The Joint Municipal Waste Strategy for Herefordshire and Worcestershire 2004 – 2034

The main objective of the strategy is to move the management of waste up the waste hierarchy. The Strategy considers national targets and means of achieving them, focusing on waste prevention.

The Joint Municipal Waste Strategy for Herefordshire and Worcestershire 2004 – 2034 First Review 2009 (Yet to be adopted by all partners)

The Revised Strategy makes predictions based on an unchanged level of waste per household but a growth in household numbers²⁵, estimating a 89,204 tpa increase in waste over the lifetime of the Joint Municipal Waste Strategy. Further details of this are set out in Annex A of the JMWMS review consultation document and in the next section of this report.

The Strategy's approach to managing this waste continues to be based on promoting waste treatment to the higher levels of the waste hierarchy.

**Prevention
Re-use
Recycle/Compost,**

²⁵ To 2034, based on the figures set out in RSS option 2.

Energy Recovery Safe disposal to landfill

The review also sets out ten principles for municipal waste management:

1. Meeting the Challenge of Climate Change by viewing waste as a resource.
2. Commitment to the Waste Hierarchy of which Waste Prevention is top.
3. Influencing Government, Waste Producers and the Wider Community.
4. Continued Commitment to Re-use, Recycling and Composting.
5. Minimising the Use of Landfill.
6. Partnership.
7. Monitoring and Review.
8. Customer Focus.
9. Value for Money.
10. Consideration of Social, Environmental and Economic Impacts.

Following this approach targets are set. Waste prevention forms a key area of the strategy, with specific targets being set.

Table 4: Waste Prevention Targets

Authority	Kg per household 2000	Current performance	Target 2010	Target 2015	Target 2020
Herefordshire	1,077	914	764	700	592
Worcestershire	1,075	849	763	699	591

The JMWMS also aims to:

- achieve national recycling/composting levels of household waste of 40% by 2010, 45% by 2015 and 50% by 2020.
- recover value from a minimum of 78% of municipal waste by 2015,
- reduce the amount of biodegradable municipal waste landfilled in order to meet the yearly allowances set by Government under the Landfill Allowance Trading Scheme. The combined targets for Herefordshire and Worcestershire are:
 - 154,164 tonnes during April 2009 to March 2010
 - 102,684 tonnes during April 2012 to March 2013
 - 71,851 tonnes during April 2019 to March 2020

The revised Strategy states that the targets will be met by concentrating on waste prevention,(i.e. limiting the amount of non recyclable waste collected, promoting re-use and home composting and maximising on the amount recycled and composted through collection and disposal systems) but recognises that some residual waste will nonetheless need to be disposed of.

The Strategy includes an assessment of a range of options and alternative technologies which might be used to manage this residual waste, but concludes that "the Partnership needs to ensure that this Strategy is flexible so that we can take advantage of.... new technologies, as well as established and proven technologies, thereby enabling us to meet the challenging targets for the future." The Strategy resolves therefore that these options and the conclusions of the appraisal should inform the decision on any application for planning permission for a waste treatment

which might come forward but leaves it to the councils' contractor to propose the technology and location.

The Action Plan for the revised JMWMS only includes one specific proposal. This is to create a new or improved Household Recycling Site in Tenbury Wells.

It does however imply both the continuity of the existing facilities and the development of a "waste treatment solution" for an increasing volume of residual waste that cannot be recycled. In broad terms therefore the Waste Core Strategy needs to include policies which will enable the following to be realised:

- Some form of Treatment facility or facilities to treat up to 250,000tpa of residual MSW, and
- to ensure that sufficient composting facilities to treat at least 25,000 tpa of biodegradable MSW are maintained for the life of the Strategy: and
- Sufficient landfill space to deposit a cumulative total of up to 2,824,084 tonnes between 2007 and 2027.

WORCESTERSHIRE: THE CURRENT SITUATION

Worcestershire's Municipal Waste is currently managed in partnership through the Herefordshire and Worcestershire Joint Members Waste and Resource Forum, comprising of:

- Worcestershire County Council (Waste Disposal Authority (WDA))
- Herefordshire Council (WDA and Waste Collection Authority (WCA))
- Bromsgrove District Council (WCA)
- Malvern Hills District Council (WCA)
- Redditch Borough Council (WCA)
- Worcester City Council (WCA)
- Wychavon District Council (WCA)
- Wyre Forest District Council (WCA)

Waste Arisings

Municipal waste is one of the few waste streams where current, accurate data is available about the collection, movement and disposal of waste. The figures below set out the total municipal waste for Worcestershire and Herefordshire in 2005-6 to 2008-9.

Table 5: Municipal Waste Statistics: Herefordshire and Worcestershire

Year	Worcestershire (tonnes)	Herefordshire (tonnes)	Two-counties total (tonnes)
2005-6	315,502	100,317	415,819
2006-7	318,543	102,070	420,613
2007-8	299,863	96,039	395,902
2008-9	265,255	92,371	357,626

Source: Defra Municipal Waste Management Statistics collected via *Waste Data Flow*:
<http://www.defra.gov.uk/environment/statistics/wastats/index.htm>

A forecast of MSW growth has been made, as detailed in the *Worcestershire Waste Core Strategy Background Document: Arisings and capacity*.

Table 6: MSW Projections; tonnes p.a. (Worcestershire and Herefordshire combined)

	2010/1	2015/6	2020/1	2025/6	2030/31	2035/36
MSW arisings projection (Herefordshire and Worcestershire)	395,993	405,139	421,817	438,496	455,175	471,854

Note: These figures are based on a stable level of arisings per household with an annual increase based on the number of households.

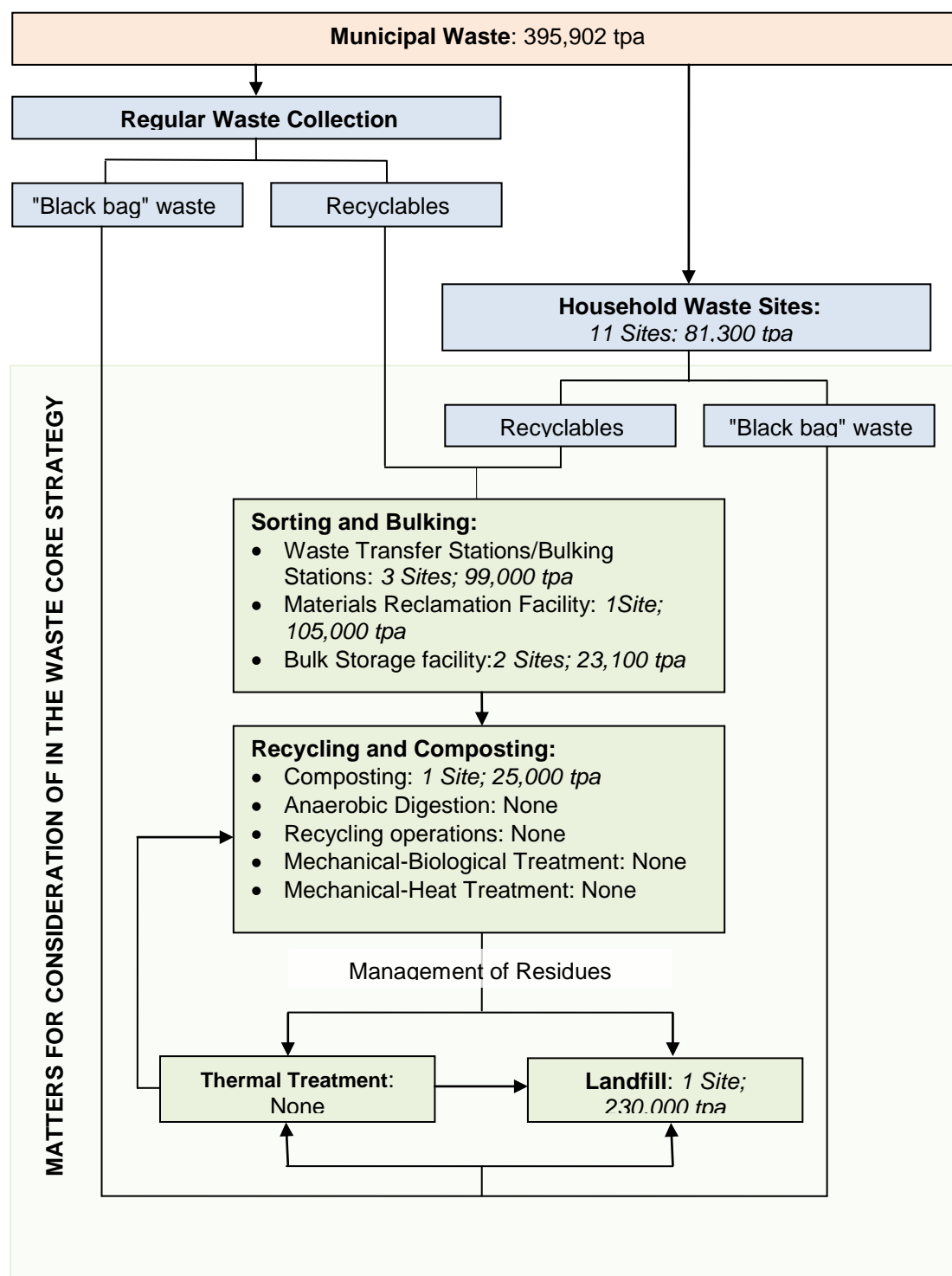
Source: Herefordshire and Worcestershire Joint Municipal Waste Strategy Review 2009: Annex A. See Appendix 2 of this document.

Existing Treatment Capacity to manage MSW in Worcestershire

In Worcestershire there are 19 sites which are dedicated to the management of municipal waste and several others which have some role in the management of this waste stream alongside other commercial and industrial waste.

Figure 7 gives an indication of the total throughput of the sites in Worcestershire which are used primarily to manage municipal waste. Further details of these sites are set out in Appendix 1.

Figure 7: Waste Management Facilities in Worcestershire primarily managing Municipal Waste



Source: Municipal Waste Arisings Worcestershire and Herefordshire 2007/8 (Defra). Waste Management Site numbers based on active site as at July 2009, throughputs based on EA Waste data interrogator and supplement with information from WCC site visits where relevant (See Worcestershire Waste Core Strategy Background Document: Waste Sites in Worcestershire for further details.)

Note: This figure shows municipal waste managed at dedicated sites. Small volumes of MSW, including a few hundred tonnes of green waste are also managed on other sites outside the County.

This figure is purely illustrative and intended to give an indication of the types of flow which might occur; as such it should not be interpreted literally as a precise model for the way municipal waste is managed. Used in this context 'thermal treatment' includes such processes as incineration, pyrolysis, gasification and plasma arc.

Note: It is the Council's intention to update Figure 7 in the future to include sites in Herefordshire.

There are 3 additional landfill sites which accept municipal waste; Waresley and Hartlebury Quarry in Wychavon and Sandy Lane in Bromsgrove and two private companies in the county are known to handle small amounts of municipal waste as part of a sub-contract from Severn Waste Services. The quantity of municipal waste managed at these sites is not known.

Capacity gap

Details of how the capacity gap has been calculated are set out in *Worcestershire County Council Background Document: Arisings and Capacity*

Figure 8: MSW capacity gap

	2010/11	2015/16	2020/21	2025/26	2030/31	2035/36
Re-use and recycling capacity gap (tonnes per annum)	186,000	195,000	229,000	238,500	259,500	267,000
'Other recovery' capacity gap (tonnes per annum)	113,500	118,000	123,000	127,500	132,000	136,000
Sorting and transfer capacity gap (tonnes per annum)	0	0	0	0	0	0
Disposal and landfill capacity gap (cubic metres)	0	0	0	0	0	0

In March 2011 the County Council Planning and Regulatory committee resolved that they were minded to grant approval for development of an Energy from Waste (EfW) facility for the combustion of non-hazardous waste and the recovery of energy at Oak Drive Hartlebury Trading Estate, Hartlebury.

The application has been referred to the Department for Communities and Local Government, in accordance with the Town and Country Planning (Consultation)(England) Direction 2009, as the proposal is a departure from Green Belt policy. If the Secretary of State does not wish to intervene planning permission will be granted, subject to conditions.

This facility is for the approval of 200,000 tonnes per annum of residual waste. If approved it is anticipated to become operational in summer 2014. This has not been taken into account when calculating the MSW capacity gap.

CONCLUSIONS

The Waste Core Strategy needs to make sure that:

- All of the existing facilities to manage MSW are protected and maintained during the life of the Strategy.
- All of the new facilities prescribed in the revised JMWMS are established in time to meet national and JMWMS targets.

It is government policy that the Waste Core Strategy should be in general conformity with these, national and RSS and the JMWMS policies. The Core Strategy will therefore need to include monitoring criteria to measure success and identify when the Strategy needs revising.

APPENDIX 1: MUNICIPAL WASTE MANAGEMENT FACILITIES IN WORCESTERSHIRE

Worcestershire Waste Core Strategy Background Document: Relationship Between Size and Capacity sets out the size and capacity of all known waste management facilities in the County. This is based on a range of sources, including Environment Agency data and information received during site meetings. Table 7 sets out the size and throughput of facilities handling municipal waste, based on the information included in the background document (updated to include MRF at Norton and Bulking at Hill and Moor). Table 8 sets out the capacity of the Household Waste Sites as per the Service Delivery Plan, the Site Licences and the Working Plans.

Table 7: Municipal Waste Management Facilities in Worcestershire

District	Site	Size	Throughput
Household Waste Site			
Bromsgrove	Quantry Lane (Bromsgrove) Household Waste Site Off Money Lane Romsley Bromsgrove, DY9 9UU.	0.4 ha	5,800 tpa
Malvern Hills	Upton-on-Severn Household Waste Site, Sink Lane, Hanley Castle Road, Upton on Severn, WR8 0HU.	0.1 ha	2,500 tpa
Malvern Hills	Tenbury Wells Household Waste Site, Palmers Meadow Car Park, Tenbury Wells, WR15 8SF.	0.01 ha	800 tpa
Malvern Hills	Newlands (Malvern) Household Waste Site, Worcester Road, Malvern Link, Malvern, WR13 5AX.	0.3 ha	11,300 tpa
Redditch	Redditch Household Waste Site, Crossgate Road, Park Farm Industrial Estate, Redditch, B98 7SN.	0.2 ha	11,500 tpa
Worcester City	Bilford Road (Worcester East) Household Waste Site, Perdiswell, Worcester, WR3 8PU.	0.7 ha	13,400 tpa
Worcester City	Hallow Road (Worcester West) Household Waste Site, St Johns, Worcester, WR2 6BZ.	0.5 ha	4,500 tpa
Wychavon	Droitwich (Hanbury) Household Waste Site, Hanbury Wharf, Hanbury Road Droitwich, B60 4DA.	0.3 ha	7,700 tpa
Wychavon	Hill & Moor (Pershore) Household Waste Site, Throckmorton Road, Lower Moor, Pershore, WR10 2PW.	0.4 ha	7,800 tpa
Wyre Forest	Kidderminster (Hoobrook) Household Waste Site, Hoobrook Industrial Estate, Kidderminster, DY10 1LB.	0.4 ha	7,000 tpa
Wyre Forest	Stourport (Bonemill) Household Waste Site, Minster Road, Stourport on Severn, DY13 8AA.	0.5 ha	9,000 tpa
Waste Transfer Station			
Bromsgrove	Bromsgrove Bulking Bays and transfer station, Aston Road, Aston Fields Industrial Estate, Bromsgrove, B60 3EX.	0.2 ha	13,000 tpa
Redditch	Redditch WTS, Crossgate Road, Park Farm Industrial Estate, Redditch, B98 7SN	0.4 ha	27,000 tpa
Bulk storage of recyclables			
Wyre Forest	Kidderminster Bulk Storage, Hoobrook Industrial Estate, Kidderminster, DY10 1HY.	0.2 ha	14,400 tpa
Redditch	Redditch Bulk Bays, Crossgate Road, Park Farm Industrial Estate, Redditch, B98 7SN.	0.3 ha	8,700 tpa

District	Site	Size	Throughput
Wychavon	Hill & Moor Landfill Site, Throckmorton Road, Lower Moor, Pershore, WR10 2PW.	0.8 ha	95,000 tpa
MRF			
Wychavon	Norton MRF, Area 7 Norton Business Park, Norton.	0.7 ha	105,000 tpa
Composting			
Wychavon	Hill & Moor Landfill Site, Throckmorton Road, Lower Moor, Pershore, WR10 2PW.	1.4 ha	25,000 tpa
Landfill			
Wychavon	Hill & Moor Landfill Site, Throckmorton Road, Lower Moor, Pershore, WR10 2PW.	130 ha	230,000 tpa

Note: It is the Council's intention to update this table in the future to include relevant sites in Herefordshire

Table 8: Worcestershire Household Waste Site Capacity Information¹

Household Waste Site	Service Delivery Plan	Site Licence	Working Plan
Quantry Lane	12,480	25,000	24,999
	10,139 mixed	25,000 combined	10,000 mixed
	1,712 green		6,000 green
	629 recyclables		6,000 recyclables
			2,999 household hazardous waste
Upton-upon-Severn	1,538	50.115 (per day)	
	791 mixed	50 bulky household	
	473 green	0.05 waste oil	
	274 recyclables	0.005 oil contaminated materials	
		0.05 empty waste oil containers	
		0.01 scrap batteries	
Tenbury Wells	452	10.07(per day)	
	274 mixed	10 bulky household	
	88 green	0.005 waste oil	
	90 recyclables	0.005 oil contaminated	
		0.05 empty waste oil containers	
		0.01 scrap batteries	
Newlands	18,000	19,000	18,000
(Malvern)	10,000 mixed waste	2,500 inert	10,000 mixed waste
	5,000 green	1,000 metal	5,000 green
	3,000 recyclables	1,150 special waste	3,000 recyclables

		(asbestos)	
		11,350 degradable	
		3,000 other (recyclables)	
Redditch	12,200	552 (per day)	19,500
	8,500 mixed waste	15 inert	13,500 mixed
	2,500 green	2 special waste (asbestos)	4,000 green
	1,200 recyclables	280 degradable	2,000 recyclables
		210 other (recyclables)	
		15 scrap rubber	
		10 empty containers	
		10 street sweepings	
		5 animal bedding	
		5 food waste	
Bilford Road	7,927	24,999	24,999
(Worcester east)	5,628 mixed	24,999 combined	24,999 combined
	1,528 green	special waste not permitted	
	771 recyclables		
Hallow Road	4,318	25,000	24,999
(Worcester west)	2,505 mixed	25,000 combined	10,000 mixed
	1,371 green		6,000 green
	442 recyclables		6,000 recyclables
			2,999 household hazardous
Droitwich	5,800	5,500	13,800
(Hanbury)	4,000 mixed	5,500 combined	10,000 mixed
	1,300 green	special waste not permitted	3,000 green
	500 recyclables		800 recyclables
Hill & Moor	9,000	24,999	24,999
(Pershire)	6,000 mixed	as per working plan	14,000 mixed
	2,000 green		6,000 green
	1,000 recyclables		4,999 recyclables
Kidderminster ²		275 (per day)	
(Hoo Brook)		150 domestic & commercial	
		50 ca arising	
		20 non-hazardous industrial - potentially combustible	
		20 non-hazardous industrial - inert and non-flammable	
		20 building and demolition	
		10 excavated materials	
		5 gully and interceptor waste	
Stourport		14,500	14,500

	14,500		
(Bonemill)	10,000 mixed	14,500 combined	10,000 mixed
	3,000 green		3,000 green
	1,500 recyclables		1,500 recyclables

- Note:
1. Capacity in tonnes per annum, unless otherwise stated. Information provided by Worcestershire County Council Waste Management team.
 2. Only the site licence information was available for Kidderminster.

APPENDIX 2: MUNICIPAL WASTE GROWTH SCENARIOS

Year	MSW arising from JMWMS for the partnership	Recycling	Composting	Non HHW recycled or composted	Maximum Landfill of MSW	Residual tonnes available for treatment
2007 - 2008	395,993				284,121	
2008 - 2009	399,200				255,081	
2009 - 2010	401,803				220,234	
2010 - 2011	405,139	102,095	43,755	21,000	195,719	238,289
2011 - 2012	408,474	102,936	44,115	21,173	171,206	240,251
2012 - 2013	411,810	103,776	44,475	21,346	146,691	242,213
2013 - 2014	415,146	112,463	48,198	21,519	140,399	232,966
2014 - 2015	418,482	113,367	48,586	21,692	134,107	234,838
2015 - 2016	421,817	114,270	48,973	21,865	92,800	236,710
2016 - 2017	425,153	120,531	51,656	22,037	93,534	230,929
2017 - 2018	428,489	121,477	52,061	22,210	94,268	232,741
2018 - 2019	431,825	122,422	52,467	22,383	95,001	234,552
2019 - 2020	435,160	123,368	52,872	22,556	95,735	236,364
2020 - 2021	438,496	138,126	59,197	22,729	96,469	218,444
2021 - 2022	441,832	139,177	59,647	22,902	97,203	220,106
2022 - 2023	445,168	140,228	60,098	23,075	97,937	221,767
2023 - 2024	448,504	141,279	60,548	23,248	98,671	223,429
2024 - 2025	451,839	142,329	60,998	23,421	99,405	225,091
2025 - 2026	455,175	143,380	61,449	23,594	100,139	226,753
2026 - 2027	458,511	144,431	61,899	23,766	100,872	228,414
2027 - 2028	461,847	145,482	62,349	23,939	101,606	230,076
2028 - 2029	465,182	146,532	62,800	24,112	102,340	231,738
2029 - 2030	468,518	147,583	63,250	24,285	103,074	233,400
2030 - 2031	471,854	148,634	63,700	24,458	103,808	235,061
2031 - 2032	475,190	149,685	64,151	24,631	104,542	236,723
2032 - 2033	478,525	150,735	64,601	24,804	105,276	238,385
2033 - 2034	481,861	151,786	65,051	24,977	106,009	240,047
2034 - 2035	485,197	152,837	65,502	25,150	106,743	241,709

Key:

MSW - Municipal Solid Waste

JMWMS - Joint Municipal Waste Management Strategy

HHW - Household Waste

Assumptions:

MSW tonnages from JMWMS

HHW recycling and composting split 70% - 30% based on tonnages used to meet Target 3 of the JMWMS, 40% to 2012/13, 43% to 2015/16, 45% to 2019/20 and 50% thereafter

Recycling and composting to comply with JMWMS Target 3 and Waste Strategy 2007 National Targets

Growth in non HHW recycling and composting reflects MSW growth

Maximum landfill tonnages allow us to meet Best Practical Environmental Option and Landfill Allowance Trading Scheme, whichever is more stringent in each year.

LATS runs until 2020

Waste growth is based on household growth only.

Figures for Herefordshire and Worcestershire combined

APPENDIX 3: WORCESTERSHIRE WASTE CORE STRATEGY BACKGROUND DOCUMENTS

To help provide a robust evidence base for the Waste Core Strategy the Council has prepared a series of background documents. These outline current thinking and have informed the approach taken to date in the development of the waste core strategy. All of these background documents are *living document* and are in a state of development and comments are invited on all available documents during the consultation period.

Key Themes

- *Towards a Vision Statement:* sets out the vision which is driving the Waste Core Strategy and details how it has evolved through consultation process.
- *Spatial Portrait:* provides additional detail to the spatial portrait set out in this consultation. It includes a description of the County and the local factors that need to be taken into account in developing the Waste Core Strategy.
- *Spatial Strategy:* Set out how the Spatial Strategy for the WCS has been developed
- *Arising and capacity gap:* considers waste arisings in Worcestershire and makes projections about future arisings, treatment capacity and the need for facilities.
- *Monitoring Baseline:* Establishes the baseline for indicators set out in the WCS monitoring schedule and makes recommendations for those indicators that are not currently monitored
- *Identifying 'areas of search':* sets out the approach to identifying locations suitable for waste management development, termed 'areas of search' and details all of the alternatives methods considered. It lists all potential locations assessed and details why they were, or were not, considered suitable for waste management development. This document has been informed by *ERM Industrial Estate Report*.
- *Climate Change:* is intended to form a basis for addressing climate change issues in the Waste Core Strategy. It considers mitigation through the reduction of greenhouse gas emissions, energy demands and the adaptation of waste management facilities to climate change.
- *Links with Districts & Neighbouring Local Authorities Plans and Strategies:* identifies the aspects of the guidance 'Creating Strong, Safe and Prosperous Communities' which are relevant to the production of the Waste Core Strategy. As a result of the guidance, this paper goes on to examine the links to waste in Worcestershire's Districts and neighbouring Local Authorities plans and strategies. It also evaluates what these links mean for the Waste Core Strategy.

- *Waste Sites in Worcestershire*: details existing waste management operations in Worcestershire and analysis of the relationship between size and throughput. In order to gain this information, the majority of known waste sites in the County were visited between September 2008 and July 2009. During these visits operators were asked about any issues currently faced, any future changes anticipated, these meetings are summarised in the report.
- *Inland Waterways*: The document was developed in response to consultation comments received on behalf of British Waterways regarding the Worcestershire County Council Waste Core Strategy: Refreshed Issues & Options Consultation. It sets out the policy context relating to Inland Waterways in Worcestershire.
- *Waste Freight by Rail*: considers the potential for movements of waste by rail in Worcestershire.

Waste Streams

- *Municipal Waste*: sets out the national and local policy context. It also includes details of the waste arisings and available capacity for treatment of municipal waste within the County.
- *Commercial and Industrial Waste*: sets out the national and local policy context. It also includes details of the waste arisings and available capacity for treatment of municipal waste within the County.
- *Construction and Demolition Waste*: sets out the national and local policy context. It also includes details of the waste arisings and available capacity for treatment of municipal waste within the County.
- *Agricultural Waste*: considers waste arising from agricultural activities in Worcestershire. It examines what agricultural waste is, how it is treated and explores the planning permitted development rights. and identifies the potential options for making provision through the Waste Core Strategy.
- *Hazardous Waste*: The document considers hazardous waste arising in Worcestershire. It includes information relating to hazardous waste in a national and regional policy context and includes details of the demand and available capacity for the treatment of hazardous waste within the County.
- *Waste Arisings from Healthcare and Related Activities - Clinical Waste and Low Level Radioactive Waste*: considers waste arising from health care and related activities, focusing on Clinical waste; and Non-nuclear low level radioactive waste. It includes information relating to clinical waste and non-nuclear low level radioactive waste in a policy context. It also includes details of the demand and available capacity for treatment of clinical and non-nuclear low level radioactive waste within the County.

Annex I considers low level radioactive waste from the nuclear industry in more detail, however it is not felt to be a significant issue in the County and is, therefore, not considered in the main body of the report.

Management Facilities

- *Types of Facilities:* is intended to be a simple guide that gives an overview of the processes that tend to happen at a range of different facilities and lists the things that might need to be thought about when deciding where a facility would be best situated. It also sets out some of the possible impacts and benefits of each type of facility.
- *Landfill* includes background data and considers issues around types of landfill and the policy context. It also details of the demand and available capacity for landfill within the County, based on EA data and the Council's own research.
- *Metal Recycling Sites:* considers all sites in Worcestershire involved in the recycling of metal, this includes sites which sort, bulk and/or process metal and any other sites that form part of the chain of processes of recycling waste metal into a material which can be re-used. It sets out the context and background data relating to metal recycling, detailing the demand and available capacity for metal recycling within the County.
- *Waste Transfer Stations:* considers Waste transfer stations, looking at the current need and capacity in Worcestershire and wider policy context.
- *Resource Recovery from Biodegradable Waste - Composting and Anaerobic Digestion* The document considers composting and anaerobic digestion. These treatment options are considered in the same document as they both offer the opportunity to recover resources from biodegradable waste. It sets out the context and background data relating to composting and anaerobic digestion.
- *Recovering Energy from Waste - Biological and Thermal Treatment Technologies:* sets out the context and background data relating to biological and thermal technologies for recovering energy from waste including anaerobic digestion, incineration and refuse derived fuels. There is some overlap with the Worcestershire Waste Core Strategy Background Document: Resource Recovery from Biodegradable Waste: Composting and Anaerobic Digestion.
- *Waste Water Treatment Infrastructure:* examines the need for waste water treatment infrastructure in Worcestershire. It includes information relating to waste water treatment policy context. It also proposes a possible way forward for the potential issues regarding who is responsible for what aspects of managing waste water treatment and related development.