

WORCESTERSHIRE WASTE CORE STRATEGY BACKGROUND DOCUMENT

COMMERCIAL AND INDUSTRIAL WASTE

MARCH 2011

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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 part of the evidence for the Worcestershire Minerals and Waste Development Framework regarding waste arising from commercial and industrial activities.

It includes a simple summary of commercial and industrial (C&I) waste in a national, regional and local policy context. It also includes details of the waste arisings and available capacity to manage C&I waste within the County.

What is Commercial and Industrial Waste?

Commercial and Industrial (C&I) waste is waste that is produced by businesses:

- Commercial waste is waste arising from businesses such as wholesalers, catering establishments, shops, offices (in both the public and private sectors) and leisure facilities.
- Industrial waste is waste arising from factories and industrial plants.

Neither of these categories includes consideration of wastes from the construction, demolition or excavation activities¹.

Within the general category of Commercial and Industrial waste there are several waste streams which are required to undergo specific waste management processes.

- Hazardous waste
- Clinical Waste
- Animal By-Products

All of these wastes are managed separately from other C and I waste. References to C and I waste in this document do not therefore include hazardous, clinical or animal by-product waste, unless specified. Separate Waste Core Strategy background documents have been prepared to consider clinical waste and hazardous waste. The treatment of animal by-product waste is considered in the background document: *Resource Recovery from biodegradable waste* (see [appendix 1](#)).

Waste produced by businesses accounts for nearly a quarter of the total waste produced in England, amounting to 68 million tonnes in 2002/03². Levels of industrial waste nationally reduced by about 6% between 1998/99 to 2002/03, whilst commercial waste grew by 65% over this period. These changes are

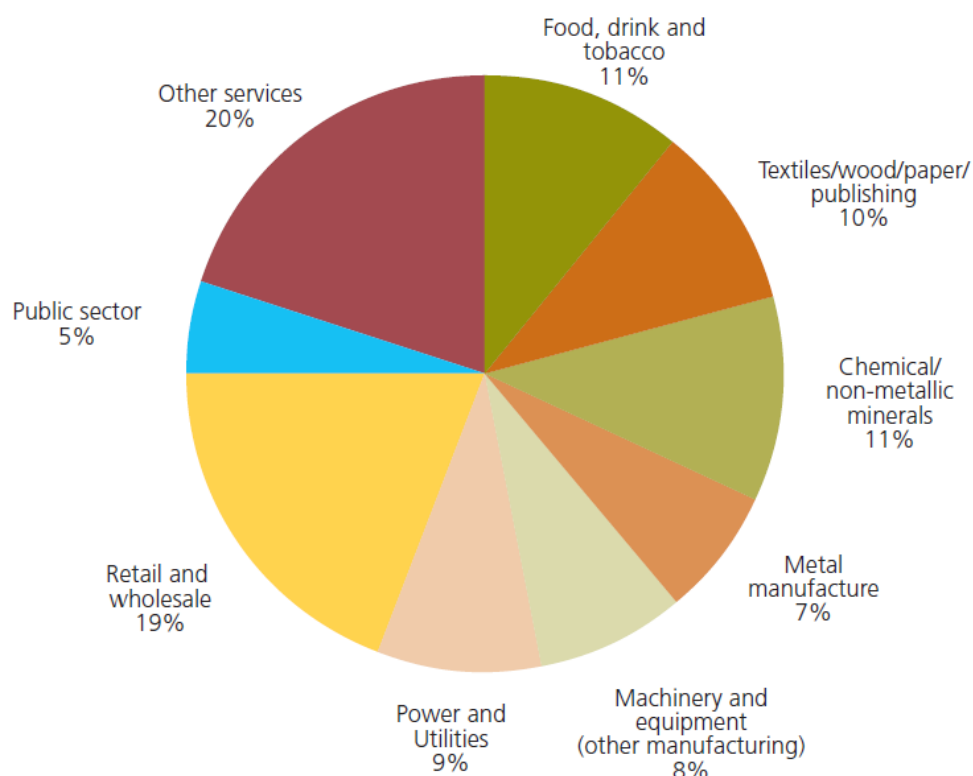
¹ Defra (2007) Waste Strategy for England: Annex C2

² Defra (2007) Waste Strategy for England: Annex C2

thought to reflect increased employment in the service sector and a decrease in industrial activity, along with increasing reliance on imports.³

Figure 1 breaks down waste by sector. The retail and wholesale sector produced the most waste, generating 12.7 million tonnes of waste in 2002/03. The food and drink industry was the largest manufacturing waste producer, generating around 7.2 million tonnes.⁴

Figure 1: Commercial and Industrial Waste by industry group, England (2002/03)⁵



Source: Defra (2007) Waste Strategy for England: Annex C2 p2 (Crown Copyright)

In 2002/03 around 40% of commercial and industrial waste came from business locations employing fewer than 50 people.⁶ There was also a clear divide between **industrial** and **commercial waste** in terms of waste per employee with manufacturing being much more waste intensive than professional services and public administration.⁷

There is also an important divide between businesses which consciously manage their waste and those who don't. DEFRA estimate that of 4 million businesses in England (2007), 1.16 million do not recycle any materials. Only 71% of SMEs undertake any form of recycling and "it is probable that those that are recycling

³ Defra (2007) Waste Strategy for England: Annex C2

⁴ Defra (2007) Waste Strategy for England: Annex C2

⁵ Reproduced by permission from Defra, 2007, Waste Strategy for England, Crown copyright.

⁶ Defra (2007) Waste Strategy for England: Annex C2

⁷ Defra (2007) Waste Strategy for England: Annex C2

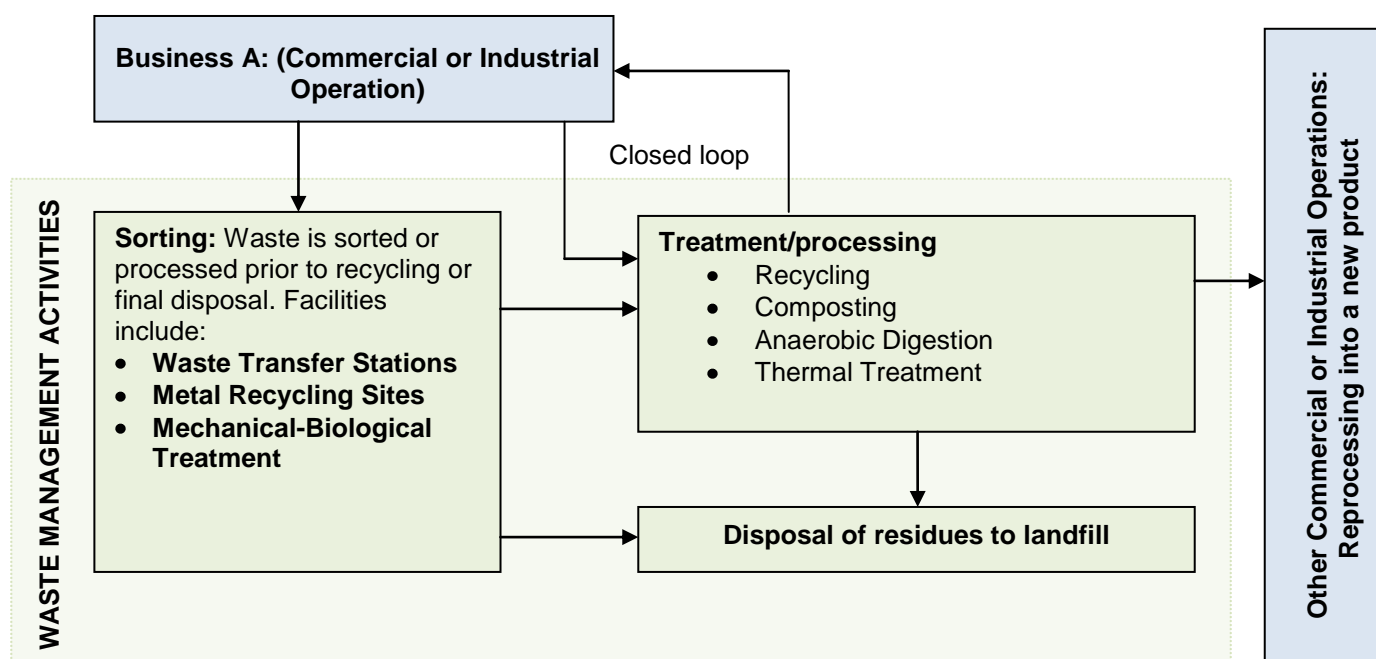
are able to recycle more. ...there appears to be a significant marketing opportunity to set up trade recycling services for SME."⁸

How is Commercial and Industrial Waste Treated?

Possible options

There are a range of facilities which can be used to treat C&I waste. Figure 2 gives an indication of the types of management options which may be used.

Figure 2: Commercial and Industrial Waste: Illustrative Management Options



All businesses are responsible for ensuring that the waste they produce is treated before it is disposed of. Treatment is defined as a physical, thermal or biological process which changes the characteristics of the waste, for example:

- Reducing the volume of the waste;
- Reducing the hazardous nature of the waste;
- Making handling or recovery easier⁹.

Examples of treatment include¹⁰:

- Collecting waste streams separately to recycle one or more of the separated components;
- Biological treatments such as composting or anaerobic digestion;
- Thermal Treatment such as incineration.

⁸ Defra (2009) Commercial and Industrial Waste in England. Statement of aims and actions 2009. Page 17

⁹ <http://environment-agency.gov.uk/netregs/businesses/89675.aspx#Q8>

¹⁰ <http://environment-agency.gov.uk/netregs/businesses/89675.aspx#Q8>

Compaction is not considered a treatment (a squashed cardboard box, for example, has the same potential for impact on health or the environment as the original box¹¹).

As all C&I waste must be treated before disposal, the first stage in the waste management process is usually to sort the waste into separated components. This is usually done either on site by the business, or at a waste transfer station¹², or metal recycling site¹³. Mechanical-biological treatment may be used to further separate waste streams. It is possible for some waste to be handled by more than one of these facilities as it is further separated into specific fractions.

Once sorted, waste can be treated through a range of processes including

- Recycling: Reprocessing waste into a useable 'raw material';
- Composting: Degradation of biodegradable waste into compost. This reduces mass and produces a stabilised end material, reducing methane emissions if it were to be landfilled¹⁴;
- Anaerobic Digestion: Degradation of biodegradable waste in the absence of oxygen, to produce biogas for energy and a stabilised end product, which can be used as a soil improver¹⁵;
- Thermal treatment: Thermal treatment, such as incineration, reduces the volume of the material and usually involves energy recovery techniques.

Outputs from these processes can then be used, reprocessed into new products or, in the case of composting and anaerobic digestion, used as a soil improver. Following treatment, however, some "residual waste" will nonetheless be effectively unusable and will need to be disposed of to landfill¹⁶.

In some cases recycled 'raw materials' can be returned directly to the industry from which the waste arose in a 'closed loop'. An example of this was given during meeting with industry in the Worcestershire, with one facility processing off-specification plastic car trim into granulised pellets and returning it to the original factory for reprocessing.

Current situation

The main methods used for the management of C&I waste are illustrated in Figure 3. In 2002/03 recovery of commercial and industrial waste, for example through recycling, energy recovery and land recovery, had for the first time overtaken landfill as the most common method of waste management.¹⁷ Amongst these options recycling was the most prominent.

Figure 3: Management of Commercial and Industrial waste in England 1998/99 - 2002/03

¹¹ <http://environment-agency.gov.uk/netregs/businesses/89675.aspx#Q8>

¹² For further details see *Worcestershire Waste Core Strategy Background Document: Waste Transfer Stations*

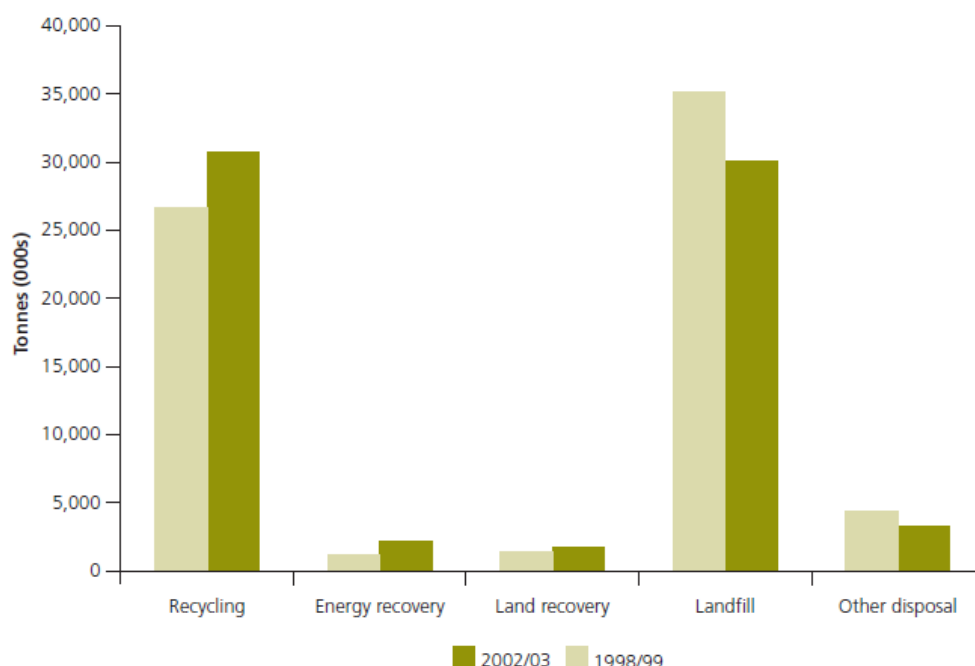
¹³ For further details see *Worcestershire Waste Core Strategy Background Document: Landfill*

¹⁴ For further details see *Worcestershire Waste Core Strategy Background Document: Resource Recovery from Biodegradable Waste: Composting and Anaerobic Digestion*

¹⁵ For further details see *Worcestershire Waste Core Strategy Background Document: Resource Recovery from Biodegradable Waste: Composting and Anaerobic Digestion* and *Worcestershire Waste Core Strategy Background Document: Recovering Energy from Waste: Thermal and Biological Treatment Technologies*.

¹⁶ For further details see *Worcestershire Waste Core Strategy Background Document: Metal Recycling*

¹⁷ Defra (2007) *Waste Strategy for England: Annex C2*



Source: Defra (2007) Waste Strategy for England: Annex C2 p3 (Crown Copyright)

A brief overview of different types of waste management facilities is provided in *Worcestershire Waste Core Strategy Background Document: Types of Facilities*. Specific issues relating to different treatment facilities are covered in more detail in other Worcestershire Waste Core Strategy Background Documents, which cover topics including:

- Landfill
- Metal Recycling Sites
- Waste Transfer Stations
- Resource Recovery from Biodegradable Waste: Composting and Anaerobic Digestion
- Recovering Energy from Waste: Biological and Thermal Treatment Technologies

Specialised Waste Streams

Within the category of commercial and industrial waste there are several waste streams which are required to undergo specific waste management processes.

Hazardous Waste

Hazardous wastes are specifically defined in European law¹⁸ because they possess one or more of the hazardous properties set out in the Hazardous Waste Directive. Different kinds of hazardous waste require different types of specialised facility to handle them. However, as tonnages across the country are relatively small this has led to a proportionally small number of facilities serving a wider market area.

Further details regarding hazardous waste in Worcestershire are set out in *Worcestershire Waste Core Strategy Background Document: Hazardous Waste*.

¹⁸ the European Commission (the European Waste Catalogue 2002 (EWC), transposed into UK Law by the List of Waste (England) Regulations)

Clinical Waste

Clinical Waste should be segregated from other types of waste. Infectious waste should be rendered safe before disposal, by treatment using either heat, chemicals or irradiation. Further details are available in *Worcestershire Waste Core Strategy Background Document: Waste Arisings from Healthcare and Related Activities: Clinical Waste and Low Level Radioactive Waste*.

Animal By-Products

The Animal By-Product Regulations (2005) define three categories of waste, each having different disposal requirements, as illustrated in Table 1. This includes certain wastes from retail and catering sectors.

Table 1: Summary of the categorisation of animal by-products according to the ABPR

Category	Examples	Disposal routes
Category 1i	Very High Risk Material: <ul style="list-style-type: none"> • All body parts of animals infected or suspected of being infected by TSE • Animals containing residues of prohibited substances or environmental contaminants • Animals from experimental institutes • Specified risk material ie brain and spinal chord 	<ul style="list-style-type: none"> • Incineration or thermal treatment followed by landfill of residues • Rendering followed by incineration followed by landfill of residues
Category 1ii	<ul style="list-style-type: none"> • Catering waste from transport operating internationally 	In addition to options for Cat1i <ul style="list-style-type: none"> • Landfill at authorised sites with deep burial
Category 2	High Risk Material: <ul style="list-style-type: none"> • Diseased animals • Animals that die on farms from causes other than slaughter • Animal products containing residues of veterinary drugs exceeding permitted level • Manure and digestive tract content • Material from slaughterhouse wastewater treatment 	<ul style="list-style-type: none"> • Incineration or thermal treatment followed by landfill of residues • Rendering followed by landfill or incineration • Rendering followed by anaerobic digestion or in-vessel composting • Manure can be land-spread or used in AD or composting without pre-treatment
Category 3i	Low Risk material fit, but not intended for, human consumption. <ul style="list-style-type: none"> • Parts of slaughtered animals fit for human consumption but not used for commercial reasons. • Raw meat&fish from retail and butcher shops • Raw meat-containing waste from food processing operations • Cooked meats from food processors or retailers • Fresh by-products from fish processing operations • Former foodstuffs; meat-containing products 	<ul style="list-style-type: none"> • Incineration or thermal treatment followed by landfill of residues • Rendering followed by landfill • Incineration followed by landfill or residues • Anaerobic digestion or in-vessel composting (subject to meeting minimum requirements) followed by use as a soil enhancer • Appropriate use as pet food
Category 3ii	Catering Waste <ul style="list-style-type: none"> • Meat-containing (raw and cooked) wastes from food service operations • Meat-containing (raw and cooked) wastes 	<ul style="list-style-type: none"> • Landfill • Treated as Category 3i for use in anaerobic digestion or in-vessel composting sites.

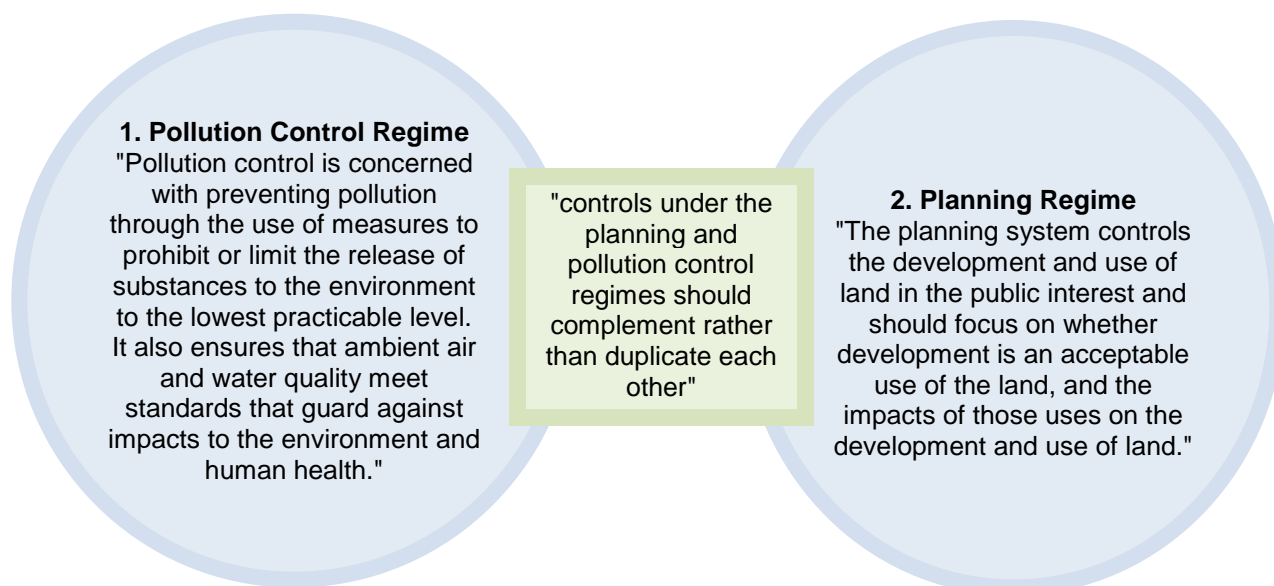
	from household and central kitchens	
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Source: Adapted from Resource Efficiency Knowledge Transfer Network and the Food Processing Knowledge Transfer Network (June 2008) *Animal By-Products Regulations: Impact on the food industry* (p9)

REGULATION

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

Figure 4: Regulation of Waste Management



Source: Information adapted from PPS10 (2005) p13

The Pollution Control Regime.

Under the *Environmental Protection Act (1990)* it is unlawful to deposit, recover or dispose of controlled waste without a waste management license, contrary to the conditions of a license 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 Regulations¹⁹. 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.²⁰

Planning Regime

Planning decisions are 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 development plan. The national and regional policy context for the management of commercial and industrial waste is set out in the next section of this paper.

¹⁹ 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.

²⁰ Planning Policy Statement 10: Planning for Sustainable Waste Management (2005) p13

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 commercial and industrial waste.

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 target has been set for at least 20% **reduction of landfill for commercial and industrial waste** in England by 2010 compared to 2004. These Targets have been set as part of the Courtauld Commitment which aims to reduce household food waste and packaging waste by 2008 and 2010 respectively.²¹

Regional Policy

West Midlands Regional Spatial Strategy (2008)

The RSS aims 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 is scope for this to be taken further in individual waste plans.

Development plans should include proposals which will enable a reduction in the proportion of industrial and commercial waste which is disposed of to landfill to, at the most, 85% of 1998 levels by 2005.

In preparing development plans, local planning authorities should take into account the needs outlined in Table 2. The RSS states that, where necessary, and in accordance with the principles of best practicable environmental option (BPEO) and proximity, local authorities should seek agreement with neighbouring authorities to make provision in their plans to meet these needs (neither BPEO or the proximity principle are part of current national planning policy).

Table 2: RSS: Need for Waste Management Facilities by Sub-Region

²¹ Defra (2007) Waste Strategy for England: Annex C2

	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		
Sub Region	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

The RSS also requires 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 (Phase 2 Revision)

The emerging RSS revision takes 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 is based on this premise.

Policy W1 states that:

- *"Waste should be considered as a resource and each Waste Planning Authority, or sub-region, should allocate enough land in its LDDs 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 Phase 2 Revision also sets out that:

- Through its Development Framework Worcestershire will 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: Commercial & Industrial Waste Diversion (Worcestershire)

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
441,000	320,000	503,000	271,000	627,000	268,000	858,000	286,000	858,000	286,000

(Source WMRSS Phase 2 Revision: Draft Preferred Options Table 6)

- In addition authorities which have a 'treatment gap' in facilities to manage waste should make provision in their LDDs for a pattern of sites and areas suitable for new or enhanced waste management facilities. Treatment gap is worked out by taking account of estimated waste arisings in an area and the waste management capacity in an area. If arisings exceed the management capacity then there is said to be a treatment gap.
- For Worcestershire, facilities to meet the treatment gap should be in, or in close proximity to, settlements such as Worcester, Bromsgrove, Droitwich, Kidderminster and Redditch. 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). At the time the Phase 2 Revision was published, Worcestershire had a projected treatment gap of 0.91 million tonnes.
- Provision will 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 will 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).

- 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 circumstance;
- 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. Businesses, including agricultural undertakings, should adopt sustainable waste management practices, and where relevant, best agricultural practice, with regard to their waste arisings (Policy W6).

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).

WORCESTERSHIRE: THE CURRENT SITUATION

Data relating to C&I waste falls into two categories:

- **Waste Arisings:** the waste generated within the county, in essence what we need to manage; and
- **Waste Managed:** the waste that is currently being managed or disposed of within the County.

Comparisons between the two kinds of figures are useful in revealing what is happening (as waste managed) and what needs to be addressed (as waste arisings).

The Environment Agency (EA) has a duty to assess what C&I waste is produced and collects data from operators' estimates of the waste they manage at their sites. The EA is working with Defra to improve data collection but limitations of existing data are acknowledged. The West Midlands Regional Technical Advisory Body for Waste (WMRTAB) has supplemented this information with research of its own.

C&I waste arisings: alternative methods of estimation

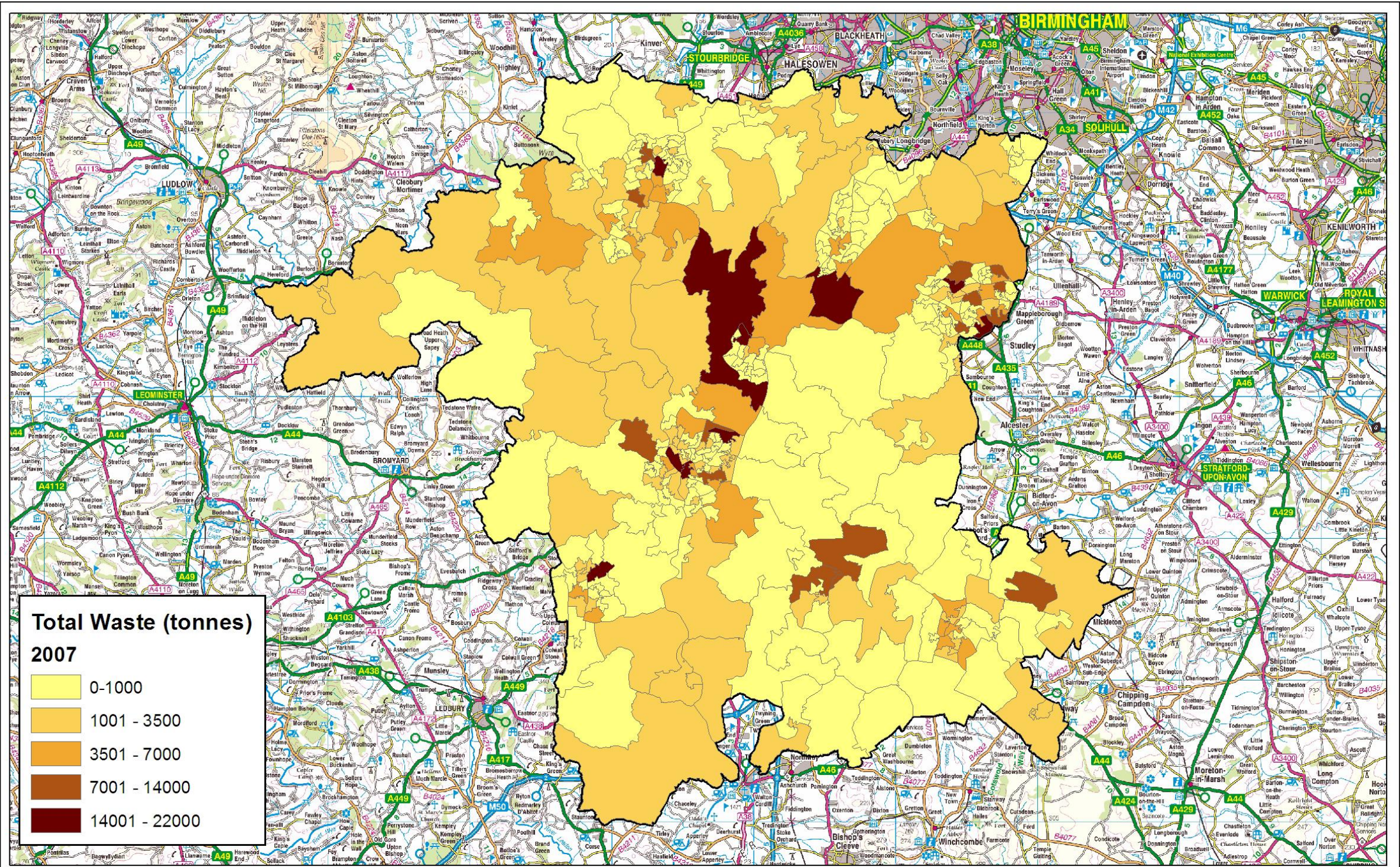
We have considered several methods for estimating arisings of C&I waste:

- The Environment Agency Strategic Waste Management Assessment (SWMA)
- Study into Commercial and Industrial Waste Arisings, ADAS April 2009 ("the ADAS Study")
- "Waste a Future Resource for Business: Developing the evidence for a targeted market intervention strategy for the West Midlands" (March 2008) (SLR/AWM)
- The Environment Agency Regional Attached Tonnage System (RATS)
- The Environment Agency Waste Data Interrogator

Full discussion of these alternatives is set out in Background Document *Waste Arisings*. The Preferred Method for establishing current waste arisings is to use projections from the ADAS study which gives estimates of C&I waste arisings in Worcestershire of 568,199 tonnes (2007).

The distribution of C&I waste arisings is shown in Figure 5.

Figure 5: Waste Arisings by Lower Level Super Output Area, Worcestershire 2007



Total C and I Waste Arisings by Lower Super Output Area

Based on ADAS Study into Commercial and Industrial Waste Arisings April 2009

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Figure 6: Distribution of Commercial and Industrial Waste Management Facilities in Worcestershire

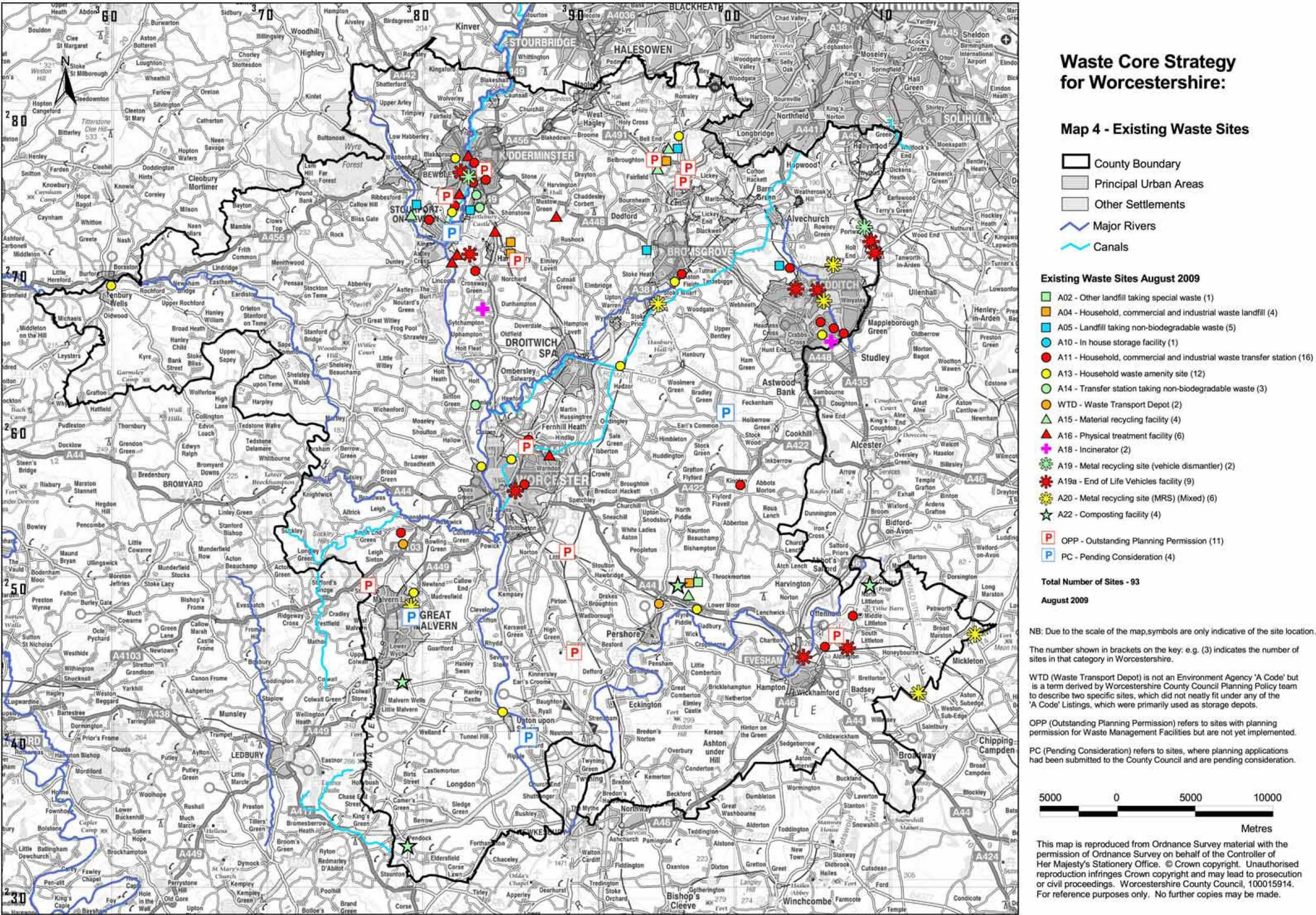
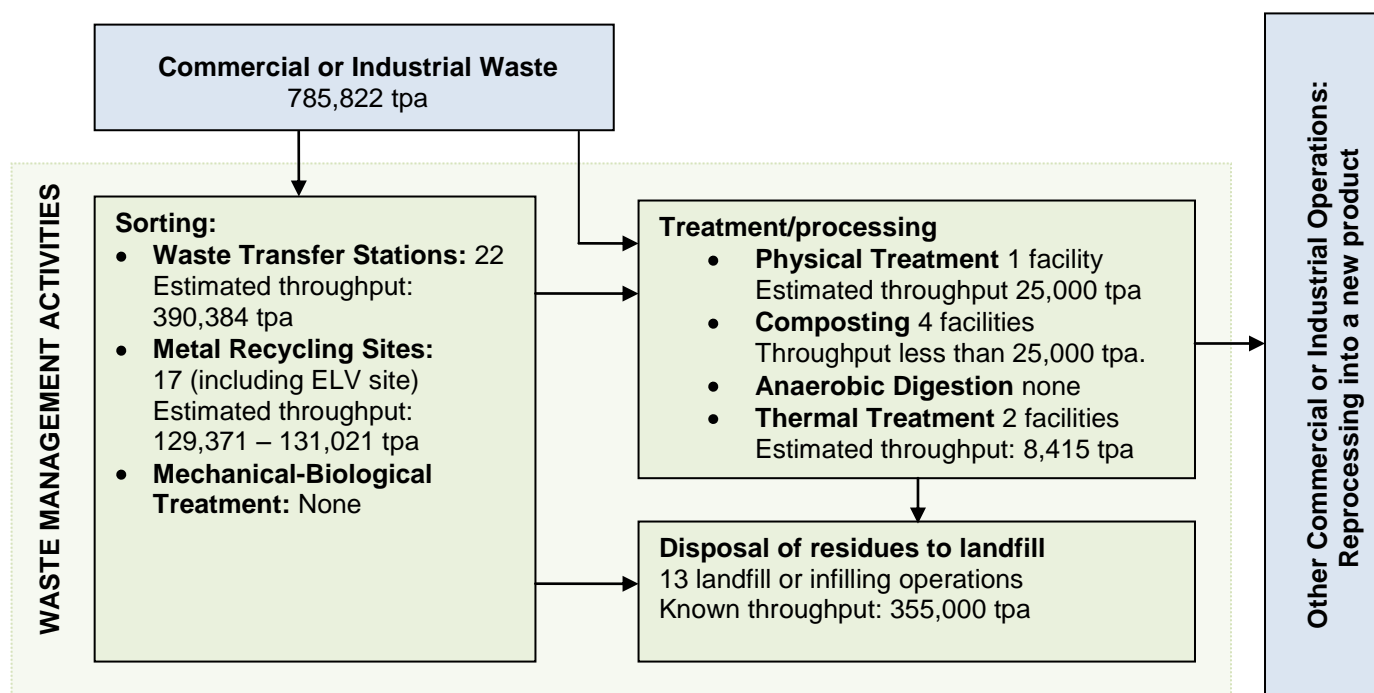


Table 4 Current Throughput of Waste Management Facilities in Worcestershire by Waste Management Type



Note: Commercial and Industrial Waste based on 2005/6 projections as outlined in table 6. Site numbers and estimated throughputs based on EA data presented in Waste Data Interrogator 2007 and the Council's own research.

Some specialised streams such as biodegradable waste and metal waste are looked at in detail in other background documents (see appendix A). The location of all of the sites handling C and I waste in Worcestershire are set out in Figure 6: Distribution of Commercial and Industrial Waste Management Facilities in Worcestershire (see above).

Details of all of these can be found in our Background document, "Waste Sites in Worcestershire" on the council's website www.worcestershire.gov.uk/wcs.

Capacity Gap

Table 5 shows the projected capacity gap for C&I waste re-use, recycling and recovery facilities. This shows that more capacity for C&I waste in Worcestershire is required.

Table 5: Capacity Gap for C&I waste

	2010/11	2015/16	2020/21	2025/26	2030/31	2035/36
Projected arisings	601,790.4	644,038.8	692,072.6	746,684	808,773.9	879,366.2
Current Capacity	273,057.3	273,057.3	273,057.3	273,057.3	273,057.3	273,057.3

Capacity Gap	328,733.1	370,981.5	419,015.3	473,626.7	535,716.6	606,308.9
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CONCLUSIONS

We intend at present to develop the Waste Core Strategy on the basis of Table 5: Capacity Gap for C&I waste above.

APPENDIX A: OTHER 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.