A Municipal Waste Management Strategy

for West Berkshire Council

"We must all reduce the amount of waste we produce, and recycle as much as we can, for the wellbeing of everyone, today and for the future."

2002 - 2022

West Berkshire Council

Foreword

The Waste Strategy for West Berkshire sets out the long-term vision for the management of the rubbish which we all throw away. In 2001 West Berkshire Council made the important decision to adopt the waste management strategy of maximising recycling and composting.

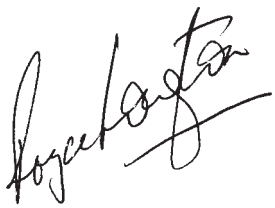
The strategy supports one of West Berkshire Council's Strategic Priorities to Improve Environmental Resource Management by maximising recycling and composting, limiting the amount of waste confined to landfill. In addition it supports the aims of the Community Plan, in particular the need for sustainable development and the protection of the environment.

Since the adoption of this strategy West Berkshire Council has been successful in securing £23.4 million in funding for West Berkshire's integrated waste management contract which will build the required waste disposal infra-structure.

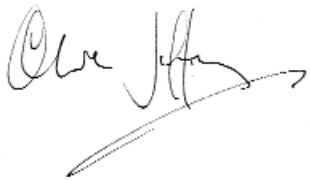
This Waste Strategy is just the start, work is now underway to develop the infrastructure for waste management in West Berkshire which will include high quality collection services, improved recycling and composting facilities and sustainable resource management.

We all produce waste and for this Strategy to work we must all take responsibility for our rubbish and together reduce, recycle and compost our waste. We must all reduce the amount of waste we produce, and recycle as much as we can, for the wellbeing of everyone, today and for the future.

Signed



Royce Longton
Leader of the Council



Owen Jeffery
Deputy Leader of the Council
Executive Member for Planning Environment and Waste

WEST BERKSHIRE Sustainable

reth!nk rubbish

In West Berkshire

Introduction

In May 2000, the Government published the national waste strategy 'Waste Strategy 2000' for sustainable waste management in England and Wales. This strategy sets challenging national targets for recycling, composting, and recovery of household and municipal wastes. These national targets have been cascaded down to the local level and statutory performance standards for recycling have been set for every local authority in England and Wales for 2003/04 and 2005/06.

An initial waste management strategy was developed in 2000 which identified and analysed a number of future waste management options for West Berkshire. Following consultation and member approval in January 2001 a future waste management option was identified as the best practicable way forward for West Berkshire. The Government subsequently published new guidance on municipal waste management strategies in March 2001 which detailed the content and structure of local authority strategies. This Municipal Waste Management Strategy for West Berkshire meets the requirements of this guidance and sets out the strategic framework for the management of municipal waste arising in the district over the next 20 years. It is intended to be adaptable and flexible and will be reviewed as circumstances, performance in achieving standards, advances in technology and legislation demand, with major reviews taking place every five years. It follows the waste hierarchy, and the most environmentally acceptable methods of waste management will be implemented and optimised whilst having regard for the best practicable environmental option (BPEO) for each waste stream.

This strategy:

- Sets out the Council's objectives and standards for the management of municipal waste in the district.
- Includes policies and plans on how these objectives and standards will be achieved.
- Provides a framework for evaluating progress.
- Communicates these plans to Government, key stakeholders, partners, and the wider community.
- Incorporates the statutory Recycling Plan which Waste Collection Authorities are required to prepare.
- Addresses how the Council will meet it's tradable permit allocation for the landfill of biodegradable municipal waste.
- Takes into account the Council's Best Value Review of Waste Disposal and the Council's Sustainable Development Strategy (1998 - 2003).

West Berkshire District Council believes that this Municipal Waste Management Strategy sets out ambitious but achievable plans and policies to facilitate the achievement of the targets set out in the National Waste Strategy. The Council is committed to playing a key part in the development of sustainable waste management practices in the district in partnership with the community, voluntary sector, industry, and business.

"West Berkshire is committed to movement towards more sustainable waste management practices."

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1. Executive Summary

In May 2000, the Government published the national waste strategy 'Waste Strategy 2000' for sustainable waste management in England and Wales. This strategy sets challenging national targets for recycling, composting, and recovery of household and municipal wastes. These national targets have been cascaded down to the local level and statutory performance standards for recycling have been set for every local authority in England and Wales for 2003/04 and 2005/06.

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What is happening at the moment in West Berkshire?

West Berkshire District Council became a Unitary Authority in April 1998 and now has the responsibility for both waste collection and waste disposal. In 2000/01 78,924 tonnes of household waste was produced in West Berkshire, of which 8,990 tonnes was recycled generating a recycling rate of 11.4%. Household waste arisings in West Berkshire relate to an average of 26 kg per household per week, or 1.35 tonnes per household per year.

Household waste arisings rose by an average of 7.5% per annum between 1994 - 1998. However, since West Berkshire became a unitary authority, the rate of household waste growth has decreased to 2% per annum compared to the national average growth rate of 3% per annum.

Domestic refuse is collected weekly from properties in wheeled bins and a voluntary kerbside collection scheme has been operating in West Berkshire since November 1996. Recyclable material is collected on a fortnightly basis from two boxes, one for glass, cans (ferrous and non-ferrous) and textiles, and one for paper and magazines. All municipal waste collected in the district that is not recycled or composted is disposed of to Hermitage Farm Landfill.

There is one civic amenity facility (Pinchington Lane) in West Berkshire which accepts household waste and recyclables, DIY waste, bulky items and white goods, and suitable trade waste. In addition to Pinchington Lane Civic Amenity Site there is also a Green Waste and Recycling Centre which is dedicated for the sole purpose of recycling. Paices Hill Green Waste and Recycling Centre re-opened in April 2000, and currently accepts green garden waste and recyclables directly into containers from householders. The green waste collected on site is transported to a composting facility in Hampshire where it is composted to produce the compost product 'ProGrow' and sold to the general public. General household waste and trade waste is not accepted at this site.

What is forcing change?

The main drivers that are encouraging local authorities to review their waste management systems can be grouped into three categories: European, National, and Financial. These will have a profound impact on the available waste disposal routes, waste management capacity, waste collection methods and overall economics of waste management.

One of the most notable drivers at present is the Landfill Directive (Council Directive 1999/31/EC on the Landfill of Waste) which was agreed in Europe in 1999 and has now been transposed into UK law. This seeks to prevent or reduce possible negative environmental effects from the landfilling of waste by introducing uniform standards throughout the EU. The Directive sets ambitious targets for the reduction of biodegradable municipal waste (BMW) that is disposed of to landfill. It is widely accepted that the introduction of such measures will result in the most fundamental changes in waste management practices experienced in the UK.

The National Waste Strategy for England and Wales 'Waste Strategy 2000' was published in May 2000 and sets out the Government's policy and vision for the promotion of sustainable waste management over the next twenty years. The national waste strategy sets a series of targets for recycling and composting and recovery for 2005, 2010, and 2015. To ensure that all local authorities contribute to achieving these targets, the Government has set statutory performance standards for recycling and composting for each local authority for 2003/04 and 2005/06.

West Berkshire's statutory performance standards are:

- To recycle or compost at least 20% of household waste by 2003/04
- To recycle or compost at least 30% of household waste by 2005/06

Financial drivers have been most apparent in landfill disposal. The present growth in landfill costs can be attributable to the stricter regulation of landfill activities, improved engineering standards, and the limited capacity of landfill void space particularly in the South East. Landfill tax was imposed in October 1996 and is a specifically targeted levy on the disposal of wastes in landfill sites throughout the UK. The current rate of landfill tax is £12 per tonne and this will rise annually by £1 per tonne until 2004 when a major Government review is planned. In all probability, the rate of the tax will continue to increase after 2004, and rises may be substantial if the tax is to be harmonised to reach average European levels of £35/tonne. Such increases will further increase the cost of landfill and introduce financial risks for landfill orientated waste management solutions over the medium and long term.

"West Berkshire considers the progressive development of more sustainable waste management practices to be a legitimate strategic goal."

What are the options available to West Berkshire?

At present landfill is generally the lowest cost disposal option for waste disposal in the UK. But landfill costs are increasing as suitable sites become more scarce and as environmental standards for managing and restoring sites become more demanding. The predicted increase in landfill tax rates will further increase the cost of landfill disposal. Local landfill sites are nearing capacity and very limited opportunities exist in Berkshire for the future development of suitable landfill sites. Municipal waste in West Berkshire is also increasing at a rate of 2% per annum, and the transportation of waste to distant landfill sites will be expensive. It is also likely to require transfer facilities to improve the haulage efficiencies. The greater the distance, the greater the environmental impacts caused by transportation, the greater the financial cost, which is why the Government is encouraging local authorities to give full consideration to the proximity principle for the management of municipal waste.

In developing this waste management strategy, the Council looked at various ways of dealing with West Berkshire's waste in the future. Regardless of the waste management methods chosen to manage the waste produced in West Berkshire, waste minimisation, education and re-use programmes will need to be developed as a priority with the aim of reducing the growth in waste arisings. The five disposal options considered were:

- **Option 1 (Continuation of existing situation)** involved landfilling as the sole disposal method supplemented by the existing kerbside, civic amenity and bank recycling schemes.

- **Option 2 (Maximised recycling and composting)** was based on maximising recycling and composting through the expansion of the kerbside collection to a triple bin collection system, and optimising the efficiencies of civic amenity recycling and bring bank recycling. This option required householders to sort their waste into 3 separate receptacles for: dry recyclables, kitchen and green waste for composting, and other waste to be disposed of to landfill. Public participation in the recycling schemes would have to be increased substantially to 55% by 2003/04 and 70% by 2005/06. The residual waste would be disposal of to landfill, and a transfer station would be required in the district to improve haulage efficiencies.

- **Option 3 (Maximum energy from waste and sustained recycling)** was aimed at maximising the recovery of energy through an energy from waste facility as the sole treatment method, supplemented by the existing kerbside, civic amenity and bank recycling schemes.

- **Option 4 (Highest level of sustainability)** was aimed at delivering the highest level of sustainability through adopting the waste management hierarchy and maximising the diversion of waste from landfill. Recycling, green waste composting, and the composting of kitchen organic waste would be maximised with the remainder of the waste being treated by an energy from waste facility. Similar to Option 2, this would require all households to sort their waste into 3 bins for recyclables, kitchen organic and green waste, and residual waste.

- **Option 5 (Rural/Urban)** represented a rural/urban option for West Berkshire whereby the kerbside collection of recyclables is intensified in the urban areas, but in the rural areas the collection of dry recyclables is replaced by the collection of compostable materials (e.g. kitchen and green wastes). The residual waste would be treated by an energy from waste facility.

The modelling of the costs and environmental impacts of the various waste management options presents a complex picture, but represents an essential framework for the decision making process for investment in, and development of, appropriate waste management infrastructure. Table 1.1 provides an overview of the performance of each strategy. Performance indicators include financial aspects (capital investment requirements and 20 year averaged gate fees) and environmental factors.

Table 1.1 Summary of Economic and Environmental Impacts of Waste Disposal Options

Performance Indicator	Waste Disposal Option					Details
	1	2	3	4	5	
Financial Performance						
Total Capital Cost (£ million)	£9.6M	£12.9M	£38.3M	£39.4M	£37.6M	
Annual Operating Cost (£ million/year)	£3.3M	£3.7M	£7.4M	£7.7M	£7.4M	Averaged over 20-year contract period.
Gate Fee (£/tonne)	£29.86/ t	£33.08/ t	£66.13/ t	£69.33/ t	£65.91/ t	Averaged over 20-year contract period.
Gate Fee (£/tonne) if large scale EfW used	N/A	N/A	£50.18/ t	£57.41/ t	£53.99/ t	Averaged over 20-year contract period.
Cost (£) per Household per year	£57.07	£63.99	£127.97	£133.16	£127.97	Averaged over 20 year contract period
20 year average annual tonnage of untreated waste to be disposed of to landfill.	89,790 t	64,601 t	6,165 t	6,165 t	6,165 t	This will incur landfill tax at the higher active waste rate
20 year average annual tonnage of EfW ashes to be disposed of to landfill	0	0	28,563 t	19,959 t	23,995 t	This will incur landfill tax at the lower inert waste rate.
Environmental Performance						
Recycling Rate (%)	20%	44.2%	20%	44.2%	33.2%	Exclusive of bottom ash recycling
Recovery Rate (%) and Landfill Diversion (%)	19.7%	43.4%	94.5%	94.5%	94.5%	
Local Statutory Recycling Target - 2003	✔	✔	✔	✔	✔	If implemented before 2003. Exclusive of bottom ash recycling
Local Statutory Recycling Target - 2005	✘	✔	✘	✔	✔	Exclusive of bottom ash recycling
Achievement of national 2010 Landfill Directive target	✔	✔	✔	✔	✔	
Achievement of national 2013 Landfill Directive target	✘	✔	✔	✔	✔	
Achievement of national 2020 Landfill Directive target	✘	✘	✔	✔	✔	
Achievement of statutory Landfill Directive targets	✘	✘	✔	✔	✔	
Global Warming Potential	0	+	++	++	++	*Global warming potential will increase over the strategy horizon due to increasing quantities of waste landfill.
Acidification Potential	0	+	++	++	++	
Local air pollution	0	-	-	-	-	

Key to environmental ranking **Worse impact = " - " Similar magnitude of impact** = " 0 " **better = " + " much better = " ++ "**

Waste Management Options 2, 4 and 5 all require an expansion in the kerbside collection of recyclable and compostable materials within West Berkshire. This expansion requires the provision of an additional or replacement receptacles (boxes or wheeled bins) to enable segregation of these materials by the householder, as well as a new and expanded collection infrastructure.

There are numerous different collection options available with variations in the type of receptacle, frequency of collection, size of container etc. Modelled costs for the schemes will result in a 2 to 2.3 fold increase (to between £4 million to £5.4 million) in the averaged annual waste collection costs for West Berkshire compared with the situation in 2001/2002.

This reflects:

- Expansion of kerbside collection of dry recyclables
- Introduction of kerbside collection organic wastes
- Provision of additional home composting units
- Additional resources required to collect growing quantities of waste

By combining the costs of the various waste management options with the modelled collection costs, the total integrated waste management costs can be analysed. Under all projected integrated scenarios, waste management costs are projected to rise. The highest costs are associated with systems incorporating a significant element of energy from waste, reflecting the high capital costs associated with these plants. Those integrated waste management options which involve a high level of recycling and composting (e.g. IWMS 2 and IWMS 4) incur substantially increased waste collection costs. However, even the baseline scenario which involves landfilling a considerable portion of West Berkshire waste (and will not fulfil statutory requirements), can also be expected to result in a 23% rise in waste management costs together with a considerable level of risk associated with increasing landfill tax and the securing of additional landfill permits in an open market.

Table 1.2 Total Annual Costs for Integrated Waste Management (20 year contract period)

Annual Cost (£/annum)	Current	IWMS 1	IWMS 2	IWMS 3	IWMS 4	IWMS 5
Waste Collection	2,366,540	2,993,417	4,012,581	2,993,417	4,012,581	3,536,695
Waste Disposal	2,425,700	3,337,707	3,697,884	7,392,345	7,750,058	7,368,482
CA Sites	300,790	300,790	300,790	300,790	300,790	300,790
Street Cleansing	941,290	941,290	941,290	941,290	941,290	941,290
Education/Waste Min	-	30,000	70,000	30,000	70,000	70,000
Grounds Maintenance	852,000	852,000	852,000	852,000	852,000	852,000
TOTAL excluding Landfill Tax	**6,886,320**	**8,455,204**	**9,874,545**	**12,509,842**	**13,926,719**	**13,069,257**

Key

IWMS Option 1 - Waste Disposal Option 1 (BaseCase) plus existing waste collection system.
IWMS Option 2 - Waste Disposal Option 2 (maximised recycling and composting) plus Waste Collection Scheme A (weekly residual waste collection and fortnightly kerbside collection of dry recyclables and organic waste).
IWMS Option 3 - Waste Disposal Option 3 (maximum energy from waste) plus existing waste collection system.
IWMS Option 4 - Waste Disposal Option 4 (highest level of sustainability) plus Waste Collection Scheme A (weekly residual waste collection and fortnightly kerbside collection of dry recyclables and organic waste).
IWMS Option 5 - Waste Disposal Option 5 (urban/rural option) plus Waste Collection Scheme A (weekly residual waste collection and fortnightly kerbside collection of dry recyclables and organic waste).

West Berkshire's Preferred Waste Management Option

Guidance on the choice of options is given both by the Government in *"Waste Strategy 2000"*, the Landfill Directive, Best Value, and by the plans and policies detailed in this waste management strategy. These all indicate that waste minimisation is the preferred option for managing future waste arisings and that recycling and composting must therefore be maximised. "Waste Strategy 2000" states that "where energy from waste solutions are considered, the strategy should demonstrate that all opportunities for waste reduction, re-use, recycling and composting have been considered first".

The assessment of waste disposal options in this strategy indicates that maximising recycling and composting (Option 2) is a potentially cost effective and viable solution for West Berkshire over the short to medium term. However in order to fulfil the longer term Government recovery targets the Council recognises that further alternative technologies may need to be established in the long term.

West Berkshire Council recognises the importance of waste awareness and education in the successful implementation of the maximised recycling and composting option. The Council is committed to promoting waste education and awareness in the community and will introduce measures to see this is achieved.

Key achievements to date

The waste recycling targets set in the former Newbury District Recycling Plan (1993) were largely aspirational and although the targets themselves have not been achieved, the district has increased its recycling rates from 3.4% in 1993 to 11% in 2002. Other key achievements since 1993 have included:

- The launch of a composting campaign which resulted in over 1758 (2000/01) households purchasing home compost bins at subsidised rates.
- Establishing 13 local recycling centres which collect recyclable materials delivered by the public.
- Establishing a fortnightly kerbside recycling collection scheme for glass, paper, cans, and textiles.
- Promoting local voluntary organisations such as Community Furniture Project for the re-use of household furniture, electrical goods, and toys.
- The launch of a waste minimisation campaign in partnership with the other Berkshire districts.
- Introducing the use of emails by all council services to reduce paper wastage.

"West Berkshire will seek to engage in a full and interactive dialogue with all members of the community on waste management issues within West Berkshire."

Implementation Plan to meet the targets

1. In the short term (to 2003/04)

In order to meet the 2003/04 recycling target the Council in partnership with the current waste management contractor will look to improve the participation rate of householders using the existing kerbside collection scheme for dry recyclables. A new education and publicity programme will be launched, and non-participating residents, particularly those in new areas, lapsed recyclers, and those in multiple occupancy properties will be specifically targeted.

In order to maximise the recycling rates achieved at the Civic Amenity Sites, facilities for recycling and composting at Pinchington Lane and Paices Hill will be heavily publicised and a segregated bay for the collection of green waste at Pinchington Lane will be developed. West Berkshire will also continue to develop additional waste minimisation initiatives to supplement the existing schemes.

In order to demonstrate its commitment to waste minimisation and recycling the Council has created a new post within Waste Services for a Waste Minimisation and Recycling Officer whose role it will be to promote and develop new initiatives in order to meet the forthcoming targets.

2. In the short to medium term (to 2005/06)

The Government has recently made additional PFI (Private Finance Initiative) credits for waste management available to local authorities. These are now targeted at recycling and composting initiatives in line with *Waste Strategy 2000,* and capped at £25 million per project and therefore appropriate to small and medium sized local authorities. The Government's emphasis on increasing levels of recycling and composting is very much in line with West Berkshire's waste management strategy and the preferred option of *Maximising Recycling and Composting.* The Council has therefore decided to submit an application for government - PFI funding for an integrated contract to commence from 2004/05.

In order to ensure continuity of service provision West Berkshire will be required to extend where possible, and re-tender interim contracts following their expiry in September 2003 to the start of the new integrated contract in 2004/05. The Council will start a procurement process for the integrated contract following a decision from the Government on PFI funding.

West Berkshire Council has recently commissioned a feasibility study into the opportunities for developing a conceptual ecology village in the district. The ecology village will be fundamental to the integrated contract and West Berkshire's commitment for waste minimisation and maximising recycling and composting.

In order to meet the 2005/06 recycling targets the Council aims to have boosted public participation in the kerbside recycling to approximately 70%, implemented schemes for the collection and composting of organic (garden) wastes, and incorporated the management and recycling of the district's school waste within the integrated contract.

3. Medium term (beyond 2005/06)

The integrated contract will be fully implemented and will be achieving high levels of recycling and composting in excess of 40%. The Council will continuously review the landfill diversion rates being achieved and the delivery of diversion targets. Technological developments in waste recovery techniques will be monitored closely and options for implementing recovery facilities and establishing partnerships with other authorities will remain flexible.

Action Plan

This Action Plan outlines the actions that will be undertaken by West Berkshire Council in the short and medium term.

Action	Activities
Waste Awareness Campaigning	• Home Composting Campaign • Trial Green Waste Segregation for Composting • Real Nappy Campaign • Re>Paint Promotion • Waste Awareness Day - Rubbish Revolution • West Berkshire Recycling Directory • Waste Awareness Talks • Kerbside Recycling Scheme - Information Leaflet • West Berkshire's Waste Identity - Rethink Rubbish • Promotion of Kerbside Collection Scheme
Fund Raising	• Application to relevant grant bodies for recycling and waste minimisation project funding • Investigate pooling resources with other West Berkshire authorities to fund waste education and waste minimisation campaigns
Recycling Schemes	• Provide bring bank recycling (achieved but ongoing) • Provide CA Site and Green Waste and Recycling Centre (achieved but ongoing) • Provide kerbside recycling scheme (achieved but ongoing) • Trial green waste segregation scheme • Investigate the viability of collecting a greater variety of recyclables • Improve in-house recycling
Improvement of Bring and Collection Schemes	• Recruit a Waste Minimisation and Recycling Officer (achieved) • Investigate collection of recyclables from blocks of flats • Improve and Review existing recycling facilities • Review Paices Hill opening times
Waste Management - General	• PFI funding application • Short Term Contract Procurement • Long Term Contract Procurement • Technology Development • Management of Municipal Waste Management Strategy

West Berkshire's Strategic Waste Management Policies

SWMP 1 West Berkshire in partnership with parish councils, community groups and other Agencies will seek to deliver a programme of awareness, promotion and publicity to encourage a fuller understanding of sustainable waste management issues and practices throughout the community.

SWMP 2 West Berkshire will seek to engage in a full and interactive dialogue with all members of the community on waste management issues within West Berkshire. In doing so the Council will endeavour to ensure that all opinions are duly expressed and fully considered as part of any decision making process. The Council will ensure that the process of making such decisions is open and fully transparent to all in West Berkshire.

SWMP 3 West Berkshire will enter in to and maintain meaningful dialogue with the Environment Agency, nearby local authorities and other Agencies on the development of future waste management solutions for West Berkshire to ensure that our strategy and plans are both consistent and pragmatic in a Regional context.

SWMP 4 West Berkshire in conjunction with the Environment Agency, other local authorities and other parties will encourage the reduction and re-use of waste. This will form an objective of a promotional and awareness programme focused on waste.

SWMP 5 West Berkshire shall establish a leading example within our community by examining how it purchases, uses and manages materials in the course of its normal activities. The objective of this work will be to identify ways of reducing consumption and preventing waste production, using where practicable, environmentally superior materials and employing more sustainable practices.

SWMP 6 West Berkshire will establish a programme of waste minimisation, re-use, recycling of waste materials in respect of its own functions and the services it provides.

SWMP 7 West Berkshire will establish a challenging series of targets for minimising the municipal waste it collects from the community. The Council will seek to forge partnerships with parish councils and community groups with a view to establishing common aims and goals in this respect.


Picture courtesy of Alupro. www.alupro.gov.uk

SWMP 8 West Berkshire believe the first and most meaningful target for waste minimisation in the short term, should be reducing waste growth in West Berkshire to the national average. Subsequent targets will be set following regular periodic review and should seek to achieve more significant reductions in waste generation.

SWMP 9 In consultation with the Environment Agency, nearby Local Authorities and other Agencies and having regard to material planning considerations, West Berkshire will promote the development of new and existing facilities for waste transfer, recycling and composting provided that:

- These facilities are developed as part of integrated network to deliver West Berkshires needs and contribute to Regional self sufficiency
- The facilities are consistent with the aims and objectives of the waste management strategy for West Berkshire
- There is demonstrable need for the facility.


Picture courtesy of the EnvironmentAgency.gov.uk

SWMP 10 West Berkshire will develop practical initiatives to support waste segregation at source in the household and encourage similar initiatives in business premises.

SWMP 11 West Berkshire in partnership with the Environment Agency, community groups and others encourage recycling and composting at home and in the workplace.

SWMP 12 West Berkshire is committed to movement towards more sustainable waste management practices. It will seek to influence such change wherever it can and particularly through the exercise of its statutory functions.

SWMP 13 In respect of current Government guidance on sustainable development and waste management, West Berkshire considers the progressive development of more sustainable waste management practices to be a legitimate strategic goal to be achieved over the short, medium and long term.

SWMP 14 Through the implementation of its waste management strategy and future contracts, West Berkshire will seek to progressively reduce the amount and proportion of West Berkshires municipal waste being disposed of to landfill. In so doing West Berkshire will seek to divert municipal waste towards more sustainable waste management practices which lie higher in the waste management hierarchy.

SWMP 15 West Berkshire supports the proximity principle and the concept of regional self sufficiency in respect of waste management facilities. Wherever it is consistent with the best practicable environmental option available, West Berkshire will endeavour to ensure that the waste produced by our community is managed and dealt with within West Berkshire, or failing this the Region, wherever this is possible.

SWMP 16 West Berkshire will not normally support the export or import of waste from the Region for treatment or disposal unless circumstances demonstrably show that this is the best practicable environmental option.

SWMP 17 In working towards more sustainable waste management West Berkshire will seek through the implementation of its strategy, to deliver statutory Government performance standards for waste management.

SWMP 18 West Berkshire will seek to deliver continuous and demonstrable improvement in the quality, sustainability and efficiency of the waste management services it delivers.

SWMP 19 Through the implementation future waste management contracts, West Berkshire will encourage its future contractors to be proactive and innovative in identifying areas for delivering service improvement and achieving its core policies and goals.

SWMP 20 In line with Government targets for waste recovery, West Berkshire will look to recover more value from waste as part of its waste management strategy over the medium to long term. The Council will maintain a watching brief on the technologies available for this purpose and seek to engage in partnerships with others where this can deliver the best practicable environmental option in way which is consistent with best value.

"West Berkshire will seek to deliver continuous and demonstrable improvement in the quality, sustainability and efficiency of the waste management services it delivers."

2. Background Information

West Berkshire Council became a Unitary Authority in April 1998 and now has the responsibility for both waste collection and waste disposal. As a Waste Collection Authority (WCA), Waste Disposal Authority (WDA), and a Principal Litter Authority, West Berkshire Council has a number of statutory duties. These include:

- A duty under Section 45 of the Environmental Protection Act 1990 (EPA 1990) to collect household waste and, if requested, commercial waste within West Berkshire.
- Responsibility under Section 53 of the EPA 1990 to arrange and provide places for the disposal of waste collected by West Berkshire District Council within its function as a WDA.
- A duty under Section 89 of the EPA 1990 to ensure that relevant land is, so far as practicable, kept free of litter and refuse.
- A requirement under Section 49 of the EPA 1990 to prepare and update plans for waste recycling.

Before sustainable waste management solutions can be developed for West Berkshire, a better understanding is needed of how much waste is generated and how it is currently managed. Other factors such as the socio-demographic characteristics of the area, local and regional planning policies, and statutory and legislative drivers will determine the range of suitable waste management solutions. This Chapter summarises the background conditions and potential future developments that will influence the management of municipal waste in West Berkshire.

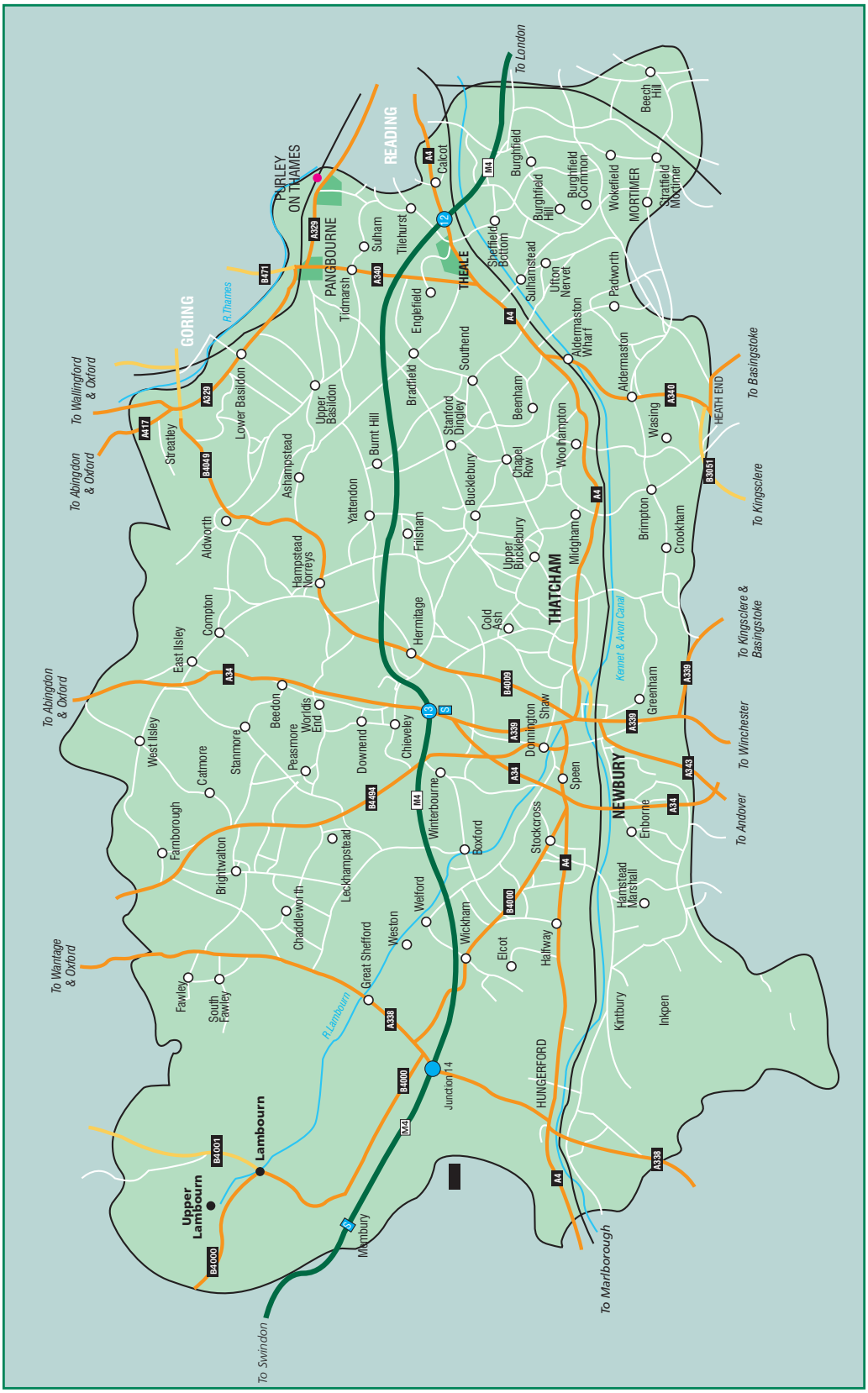
2.1 Socio-demographic Profile

West Berkshire Council accounts for over half (56%) of the former County of Berkshire, encompassing 70,484 hectares (272 square miles) of the western end of the County (Figure 2.1). Over half of the district lies within the North Wessex Downs Area of Outstanding Natural Beauty, and borders the Counties of Oxfordshire, Wiltshire and Hampshire with Reading Borough Council and Wokingham District Council to the east.

The population of West Berkshire is based in three main centres, Hungerford in the West, Newbury and Thatcham in the centre, and Tilehurst and Theale in the East. The population is split approximately 80:20 between urban and rural, although the area of the district is largely rural. The population density in the rural areas is very low.

The district has experienced substantial housing and population growth over the past twenty years. In the period between 1981 and 1998, 13,100 dwellings were built, increasing the housing stock by 30%. The Berkshire Structure Plan makes provision for about 9,000 dwellings to be built in West Berkshire in the period 1991-2006. This provision was split into three phases: 2,700 dwellings between 1991-1996, 3,250 dwellings between 1996-2001 and 3,050 dwellings between 2001-2006. This housing development has contributed to an increase in population of 119,750 in 1981 to 143,400 in 1997, which is a rise of 19.7% (1.23% per annum).

Figure 2.1 - West Berkshire



In 2000/01 West Berkshire had a population of 144,283 and there were 58,247 properties. The London Research Centre has predicted that West Berkshire's population will increase by a further 3.6% by 2006, to 148,500 (Table 2.1), with the greatest growth being in the Newbury and Thatcham areas (9.6%) where major housing development is taking place at Dunston Park, North Thatcham. The eastern part of the district is expected to experience a slight fall in population during the period to 2006.

Table 2.1 Population and Housing Predictions to 2006

	1991	1997	2001	2006
Population	136,700	143,396	146,169	148,508
Households	51,429	54,636	57,138	59,964
Average household size	2.66	2.6	2.53	2.45
Dwellings	52,648	56,744	59,342	62,277

Source: Planning Commitments for Housing at March 1999, September 1999.

2.1.1 Relevance of Socio-demographic Characteristics

The implications of West Berkshire's socio-economic characteristics for developing a long-term waste management strategy are summarised below:

1. The historical trends and future projections of population growth and increases in household numbers, along with a trend towards smaller households and single occupancy, have important implications on future household waste arisings in West Berkshire.

2. A significant proportion of the population (80%) is resident within urban areas which means that the majority of household waste arisings are concentrated in a defined area. This will make waste collection and kerbside recycling systems relatively efficient in these areas.

3. The remaining rural population within the district is spread out at very low densities. Although the main road network in the district is relatively well developed, much of the district is served by narrow country lanes, making waste collection and kerbside recycling systems in these areas less efficient due to the low housing density, greater travel distances and travel times.

4. High car ownership rates (83% of households having a private car, and 47% of households having two or more cars) suggest that gaining access to recycling centres and "Bring" sites should not be a significant issue for West Berkshire. 'Bring' sites can be made more accessible if they are located on journey routes such as supermarket sites.

5. The nature of the housing stock should facilitate the promotion of home composting and the intensification of the kerbside collection system.

6. The large number of properties with gardens in the district is likely to result in a high proportion of green waste during the growing season.

7. Unemployment in the district is low (unemployment rate averaging 0.7% in the district), so the additional social benefits from the development of waste management infrastructure, in terms of job creation, may not be a critical area of importance for West Berkshire.

8. With over half of the district designated as an Area of Outstanding Natural Beauty, sites with development potential for waste management infrastructure are limited.

2.2 Waste Arisings in West Berkshire

2.2.1 Household Waste Arisings

In 2000/01 78,924 tonnes of household waste was produced in West Berkshire, of which 8,990 tonnes was recycled generating a recycling rate of 11.4%. Household waste arisings in West Berkshire relate to an average of 26 kg per household per week, or 1.35 tonnes per household per year.

Table 2.2 Household Waste Arisings

Household Waste Category	1999/2000 Tonnage	2000/01 Tonnage
Collection Round (bin) waste	51,130	51,474
Street Sweepings	1,251	3,229
Civic Amenity Waste	17,416	15,231
Kerbside Recyclables	5,080	5,605
Bank Recyclables	included in CA recyclables	650
Other Recycling at Civic Amenity Site	2,432	2,736
TOTAL Household Waste	**77,309**	**78,924**

2.2.2 Municipal Waste Arisings

In 2000/01 81,006 tonnes of municipal waste was generated in West Berkshire, 97% of which is made up of household waste. West Berkshire only collects a limited amount of non-household waste which includes fly-tipped materials, abandoned vehicles, and trade waste at the Pinchington Lane Civic Amenity Site.

Table 2.3 Municipal Waste Arisings 2000/01

Non-Household Waste collected by WBC	2000/01 Tonnage
Trade Waste	1,012
Inert	348
Abandoned Vehicles*	697
Hard bonded Asbestos	25
Non-Household Waste Subtotal	**2,082**
Household Waste Subtotal	**78,924**
Municipal Waste (Household Waste + Non-Household Waste)	81,006

** 1 vehicle = 1 tonne (CIPFA 2000/01 waste statistics)*

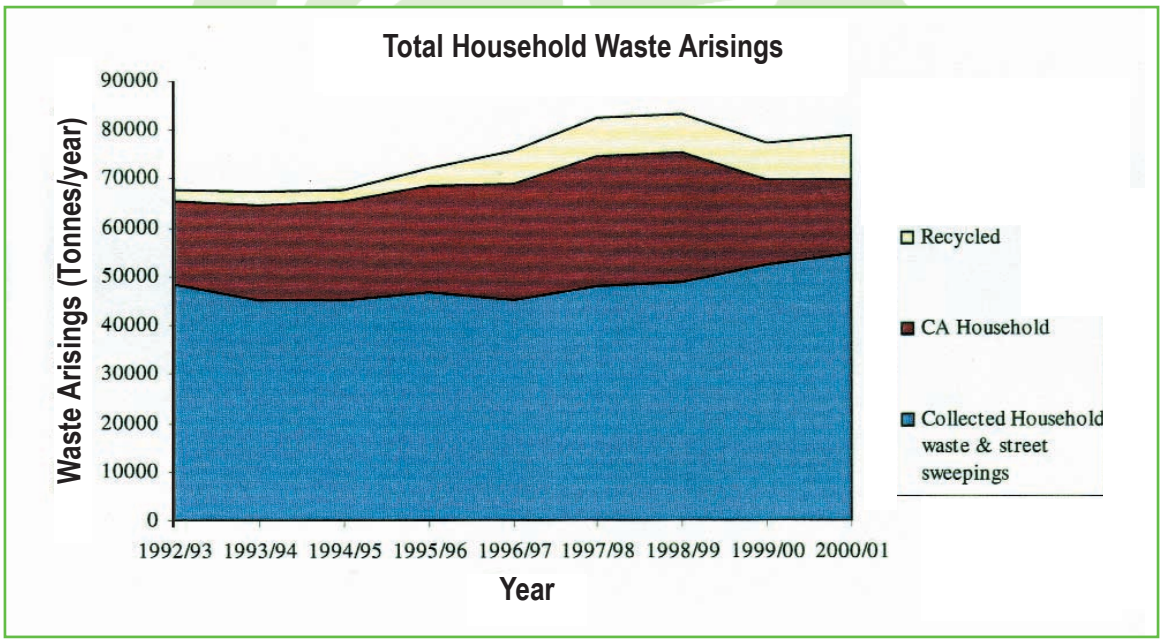
2.2.3 Historical Trends

The method of reporting waste statistics, the formal definition of household and municipal waste, and waste management operations in West Berkshire have witnessed significant changes over the last few years. West Berkshire Council also inherited pre-1998 waste data from the former Berkshire County Council on becoming unitary in 1998.

Although the existing data from Berkshire County Council maybe assumed to be correct, there is no audit trail and method of validation. The interpretation and analysis of short, medium and long term trends must therefore be treated with a degree of caution.

Waste data collated by the Chartered Institute of Finance and Accountancy (CIPFA) is presented in Figure 2.2 below. The graph illustrates a marked decline in civic amenity waste in 1999, which can be accounted for by the closure of Paices Hill Civic Amenity Site in April 1999. However, Paices Hill re-opened as a Green Waste and Recycling Centre in April 2000 and no longer accepts general household waste for disposal. This action by the Council has reduced the civic amenity waste arisings and resulted in higher recycling rates at Pinchington Lane and Paices Hill. The operational changes at Paices Hill have not created a significant impact upon the collected household waste arisings in West Berkshire. Collected household waste (excluding street sweepings) has remained relatively stable over the last year, rising by only 0.6% from 51,130 tonnes in 1999/00 to 51,474 in 2000/01. This would indicate that a significant proportion of the civic amenity waste (for disposal) previously accepted at Paices Hill originated from outside the district.

Figure 2.2 Household Waste Arisings



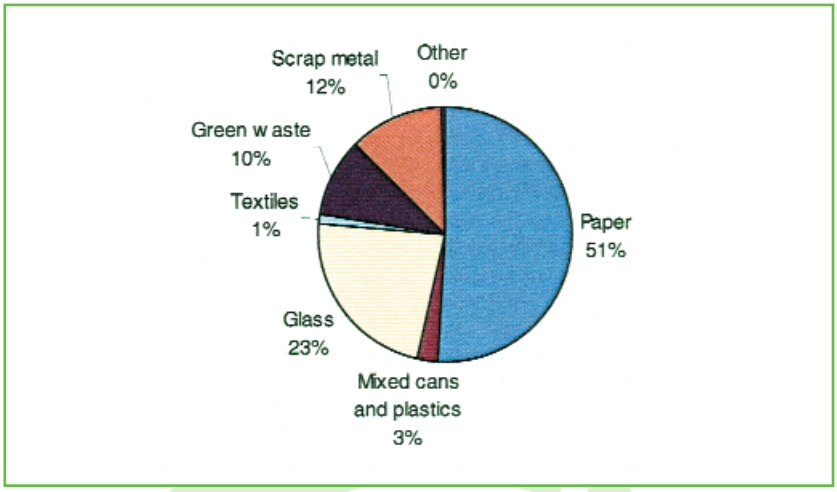
2.2.4 Materials Recycled

West Berkshire currently recycles 11.4% of household waste through a combination of kerbside collection, recycling centres (bring banks), and recycling facilities at Pinchington Lane Civic Amenity Site and Paices Hill Green Waste and Recycling Centre. Table 2.4 indicates the source of the collected recyclables, and Figure 2.3 illustrates the breakdown of materials recycled in 2000/01.

Table 2.4 Recycling in 2000/01

Recycling Scheme	2000/01 Tonnage	Recycling Rate (% of Household Waste)
Kerbside Collection	5,605 tonnes	7.1%
Recycling Centres (Bring Banks)	650 tonnes	0.8%
Civic Amenity Site Recycling	2,736 tonnes	3.5%
TOTAL	**8,991 tonnes**	**11.4%**

Figure 2.3 Breakdown of Materials Recycled in 2000/01



2.2.5 Waste Composition

A household waste characterisation study was undertaken in 1998 and more recently in February 2002. It can be seen that there are differences between West Berkshire's waste composition and the typical composition for the UK (Table 2.5). The content of paper and card, dense plastics, and miscellaneous combustibles is significantly higher in West Berkshire in comparison to the national average, and the content of ferrous metals, and fines is significantly less. The high paper and card content may be a result of the social class and the affluent nature of the district. Disposable nappies are classified as miscellaneous combustibles but on their own comprise 3.4% of the total household waste stream, which is in line with the national average of 4%. The putrescible category is made up of kitchen waste (12.9%) and green garden waste (10.3%). Due to the nature of household waste, variations in waste composition are common - such variations can be seasonal, annual, and geographical.

Table 2.5 Composition of Household Waste

CATEGORY	National average household waste composition (%)	Combined composition(%) of West Berkshire's residual waste and kerbside recyclables in 1998	Combined composition (%) of West Berkshire's residual waste and kerbside recyclables in 2002
Paper/Card	30.7	33.7	33.9
Plastic Film	4.6	3.1	4.7
Dense Plastics	3.4	3.8	5.9
Textiles	3.3	1.9	3.9
Miscellaneous Combustibles	5.2	6.9	7.8
Misc Non-combustibles	2.5	4.8	2.0
Glass	7.9	8.1	6.5
Putrescible	22.5	28.5	23.2
Ferrous Metal	7.5	3	4.9
Non Ferrous Metal	1.2	0.6	1.1
Fines	11.2	3.3	6.2
Liquids	0	2.3	0
TOTAL	**100**	**100**	**100**

2.2.6 Future Waste Projections

Population change and housing development has been used to predict future waste arisings. Waste is assumed to increase at a rate similar to population growth, so by calculating the average amount of waste generated per person a projection can be made.

In the period between 1981 and 1998, 13,100 dwellings were built, which contributed to an increase in population of 119,750 in 1981 to 143,400 in 1997 which is a rise of 19.7% (1.23% per annum). The London Research Centre has predicted West Berkshire's population to rise by 3.6% by 2006 to 148,500.

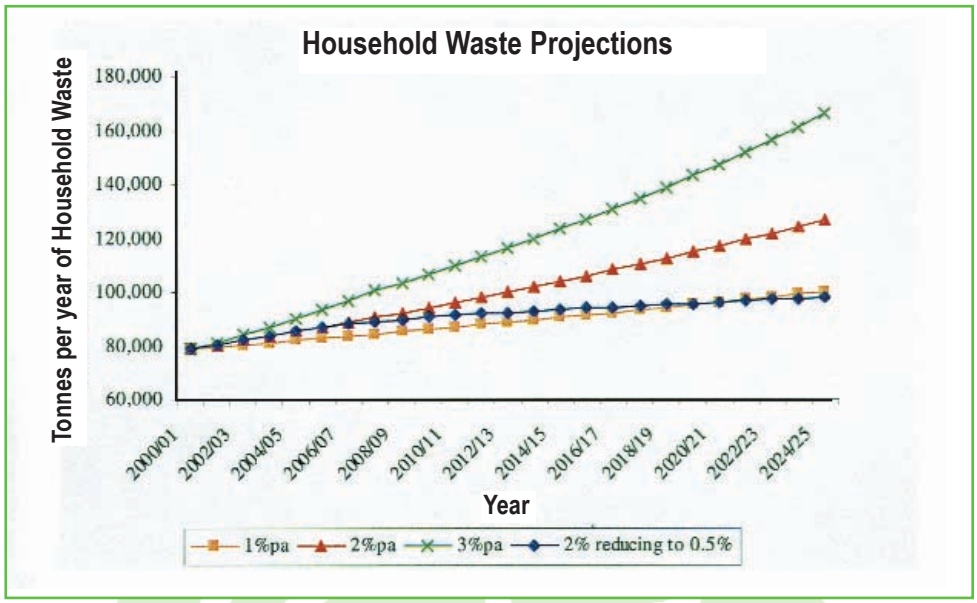
The method of reporting waste statistics, the formal definition of household, and waste management operations in West Berkshire have witnessed significant changes over the last few years. West Berkshire Council also inherited pre-1998 waste data from the former Berkshire County Council on becoming unitary in 1998. Household waste arisings rose by an average of 7.5% per annum between 1994 - 1998. Since West Berkshire became a unitary authority, the rate of household waste growth has decreased to 2% per annum (1999/2000 - 2000/2001). The national average growth in household waste arisings is currently 3% per annum. Household waste disposed of to landfill has not increased since 1999/2000, so the increase in total household waste arisings can be attributed to the increase in recycling, which has yet to have an impact on reducing the total household waste disposed of to landfill.

The growth in population is predicted to slow to approximately 0.3% per annum from 1.23% per annum, but a similar reduction in the growth rate of household waste arisings is unlikely in the short term due to a number of factors. One of the major influential factors inhibiting the reduction in the growth rate of waste is the trend towards smaller households and single occupancy (e.g. each household receives the same "junk mail" irrespective of the number of occupiers). The number of households in West Berkshire is predicted to increase by 1.1% per annum until 2006, with the average household size predicted to decrease from 2.6 to 2.45.

Taking all these conditions into account, we would expect the growth in household waste arisings to continue to increase by approximately 2% per year until 2005. A fundamental element of the new integrated waste management contract due to start in 2004/05 will be a heavy commitment towards waste minimisation with the aim of slowing the rate of household waste growth to 1% by 2010, and 0.5% thereafter. Figure 2.4 illustrates different growth rates in household waste arisings.

"West Berkshire believe the first and most meaningful target for waste minimisation in the short term, should be reducing waste growth to the national average."

Figure 2.4 Projected Growth in Household Waste Arisings in West Berkshire



2.3 *Current Arrangements for Waste Management in West Berkshire*

2.3.1 Waste Minimisation & Education

West Berkshire Council in association with the other local authorities in Berkshire have promoted waste minimisation through a Berkshire wide campaign titled 'Honey I shrunk the waste'. This scheme was launched in October 2000 and was funded through landfill tax credits.

WBC in partnership with Straight Recycling Systems and Thames Water launched a home composting campaign **(www.getcomposting.com/wb)** in West Berkshire during the summer of 2000, which enables residents of West Berkshire to purchase home composting units and water butts at less than half the recommended retail price. Over 1,758 (2000/01) home composting units have been sold, and the scheme is supported by composting information and on-going help and support from the supplier, to allow householders to gain the most from their new composting bin. In addition to the benefits of producing garden compost, the promotion and use of home composting bins acts to minimise the quantity of waste West Berkshire Council has to collect and dispose of.

"West Berkshire in conjunction with the Environment Agency, other local authorities and other parties will encourage the reduction and re-use of waste."

The Council publicises the scheme by hosting an annual event in conjunction with the UK's Compost Association Compost Awareness Week, involving exhibitions, displays, and press coverage encouraging residents to join the scheme and purchase a home composting bin.

As disposable nappies make up nearly 4% of the household waste stream in West Berkshire, the Council, with support from the Real Nappy Association and a local independent nappy consultant called Twinkle Twinkle, run a regular 'Real Nappy Week' campaign to raise awareness of the advantages of using real nappies. The Council hosts a number of displays, exhibitions and workshops at local venues, and distributes information packs which have been developed by the Real Nappy Project with support from Biffaward. The Real Nappy Pack contains information about nappies and health, the environment, costs and details of suppliers. The pack aims to provide information for health professionals to help parents make an informed choice when buying nappies.

West Berkshire Council also promotes a local charitable organisation called Community Furniture Project which collects unwanted household furniture, electrical goods, and toys and sells them at low cost to people in need in the local community. This project makes a significant contribution to waste minimisation in the district as the unwanted goods are reused within the community and do not enter the waste stream for collection and disposal by the Council.

Operational changes that have also driven waste minimisation within the district have included the opening of the Paices Hill Green Waste and Recycling Centre. Previously the site had been a Civic Amenity Site that accepted household waste for disposal. Since it's re-opening in April 2000, the total arisings of civic amenity waste for disposal has declined, the recycling rates have increased and there has been no evidence of an increase in the collected household waste arisings. In order to restrict the amount of household waste put out for collection the Council also has a policy of not accepting 'Side Refuse' so that refuse not contained within the wheeled bins will not be collected (excluding bank holiday arrangements).

"West Berkshire will establish a programme of waste minimisation, re-use, recycling of waste materials in respect of its own functions and the services it provides."

2.3.2 Bring Bank Recycling

As of June 2000 there were 13 bring bank recycling sites in West Berkshire which cater for the collection of glass, cans, paper, textiles, and books.

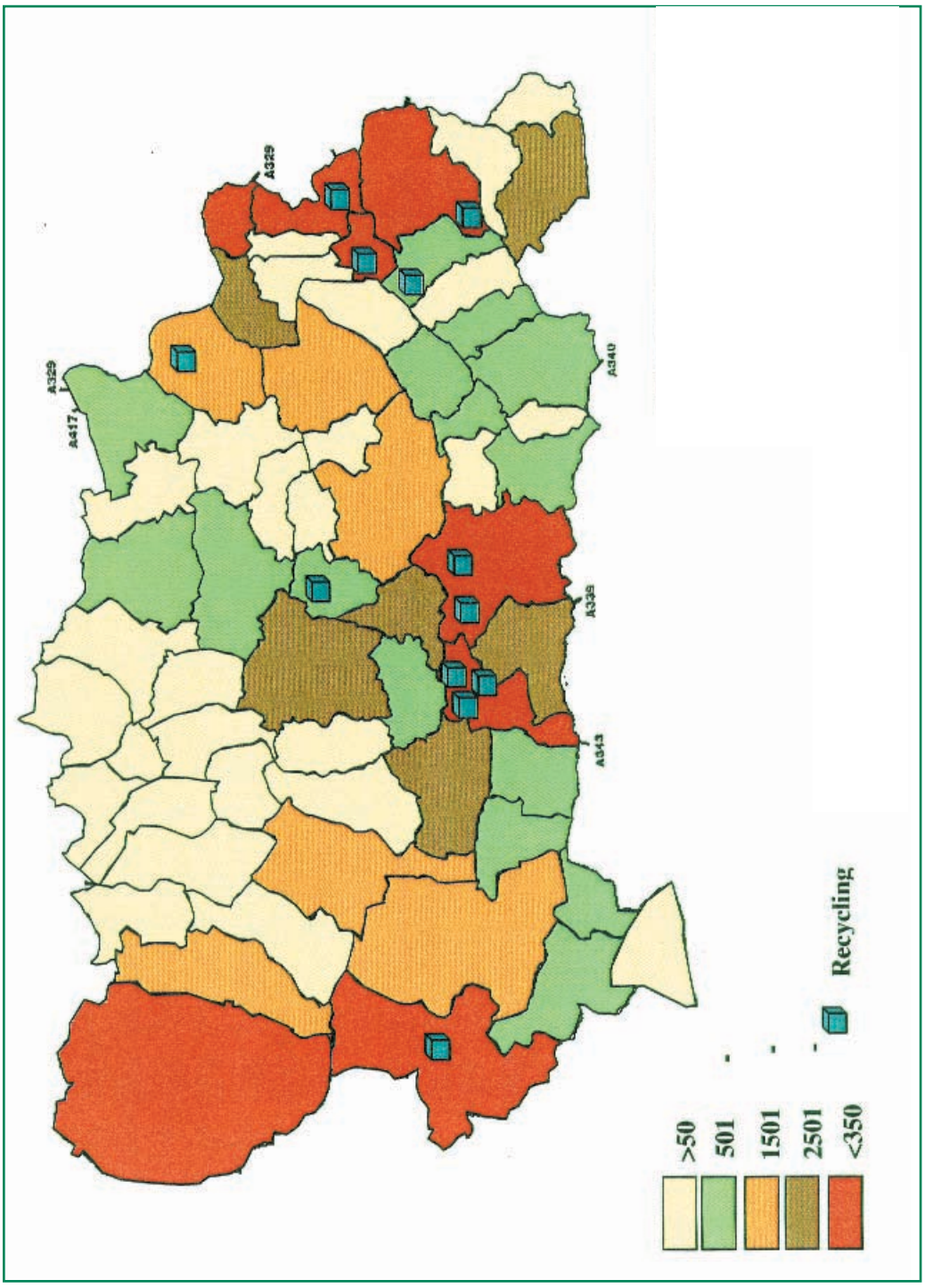
Table 2.6 Locations of Bring Bank Recycling Centres

Town	Location	Paper	Cans	Glass (Green)	Glass (Clear)	Glass (Brown)	Textiles	Books
Newbury	Tesco Superstore	◆	◆	◆◆◆	◆◆	◆	◆	◆
	Northcroft Lane Car Park	◆		◆◆	◆◆	◆	◆	
	Sainsbury's Superstore	◆	◆	◆◆	◆	◆	◆	◆
Hermitage	Hilliers Garden Centre			◆	◆	◆	◆	
Hungerford	Station Car Park	◆		◆	◆	◆	◆	
Thatcham	Pound Lane	◆		◆	◆	◆	◆	
	Kingsland Centre	◆		◆◆	◆	◆	◆	◆
Theale	Station Car park			◆	◆	◆	◆	
Sulhamstead	Mulligans Restaurant			◆	◆	◆	◆	
Calcot	Savacentre	◆	◆	◆◆◆	◆◆◆	◆	◆◆	◆
Burghfield Common	Willink School			◆	◆	◆	◆	
Lower Basildon	Crown Inn			◆	◆	◆	◆	
Purley on Thames	Social Club			◆	◆	◆		

Figure 2.5 shows the spatial distribution of the 'Bring' banks and overlays this with the population of the individual parishes in West Berkshire. The banks are concentrated in the Newbury/Thatcham area and at the eastern corner of the district with the largest site being located in Calcot. There is an average of 1 recycling bank (site) per 12,000 head of population which equates to 1:4553 households. Although there is full coverage of the kerbside collection throughout the district, the number of recycling sites is low with some of the larger parishes being quite far away from the nearest bring bank sites.

> ***"West Berkshire supports the proximity principle and the concept of regional self sufficiency in respect of waste management facilities."***

Figure 2.5 Parish Population (1991 Census and location of Bring Bank)



The Council also operates an annual recycling campaign for old Yellow Pages. The campaign is supported by The Directory Recycling Scheme which is sponsored by Yellow Pages. Special recycling banks are temporarily sited across the district for the collection of old directories when the new year's directories are released. The old Yellow Pages directories are shredded to make animal bedding for stables, farms, and animal sanctuaries.

2.3.3 Civic Amenity Sites

There is one civic amenity facility in West Berkshire namely Pinchington Lane in Newbury. The Civic Amenity Site currently accepts household waste and recyclables, DIY waste, bulky items and white goods, and suitable trade waste. Household waste and trade waste is tipped directly into the tipping hall, and recyclables are placed in banks and containers. Green waste is not collected separately and is deposited directly into the tipping hall along with the general household waste, which is currently disposed to Hermitage Landfill. However, the Council does operate an annual Christmas tree recycling scheme where discarded trees are collected separately for shredding and used for landscaping former landfill sites. Approximately 3000 Christmas trees were collected through this scheme in January 2002.

In addition to Pinchington Lane Civic Amenity Site there is also a Green Waste and Recycling Centre which is dedicated for the sole purpose of recycling. Paices Hill Green Waste and Recycling Centre re-opened in April 2000, and currently accepts green garden waste and recyclables directly in containers from householders. The green waste collected on site is transported to Hampshire where it is composted to produce the compost product 'ProGrow' and sold to the general public. General household waste and trade waste is no longer accepted on this site.

Charges are levied for DIY and trade waste received at Pinchington Lane by means of a pre-paid voucher system, which is based on a 3 tier classification of Gross Vehicle Weights. Vehicles with a Gross Vehicle Weight in excess of 4 tonnes are not permitted on the site.

Figure 2.6 Pinchington Lane Civic Amenity Site

Figure 2.7 Paices Hill Green Waste and Recycling Centre

2.3.4 Kerbside Recycling

A kerbside collection scheme has been operating in West Berkshire since November 1996. The scheme is voluntary and covers the whole of the district. Recyclable material is collected on a fortnightly basis from two boxes, one for glass, cans (ferrous and non-ferrous) and textiles, and one for paper and magazines.

2.3.5 Waste collection

Refuse collection

Domestic refuse is collected weekly from properties in wheeled bins (120, 240, and 360 litre) provided by the Council. Some 2000 dwellings (flats, isolated properties, and accommodation for the elderly) are provided with plastic sacks.

Figure 2.8 Household Waste Collection & Kerbside Recycling Collection

Bulky Household Waste Collection

There is a special collection service available 'free of charge' for bulky household items. This includes items such as furniture, fridges, freezers, washing machines, or other household appliances. This service does not accept garden waste, fixtures or fittings, or DIY waste. If items are in good condition, arrangements can be made with the Community Furniture Project who will collect and sell the items at low cost to people in need in the local community.

Household Clinical Waste Collection

West Berkshire Council has a statutory responsibility to arrange for the collection and disposal of clinical waste that is classified as household waste, and also commercial waste upon request. A separate weekly collection service is provided for household clinical waste from selected properties (approximately 40 properties a week). All clinical waste is presented for collection in securely tied clinical waste sacks, which are distributed by the contractor, and the clinical waste is then transported to a clinical waste incinerator.

2.3.6 Waste Disposal

All household waste collected in the district is delivered directly to Hermitage Farm Landfill, which is located approximately four miles northeast of Newbury. Smallmead Landfill has also been historically used as a disposal point for moderate quantities of waste (circa 10,000t/yr), but was discontinued in February 2000 as part of a service review and assessment.

The bulky household waste collection service delivers items to Hermitage Landfill and Pinchington Lane Civic Amenity Site, and some street sweepings collected during bad weather are delivered to the Pinchington Lane site for onward transfer to Hermitage Landfill.

Figure 2.9 Street Sweeping Operations

"West Berkshire will encourage its future contractors to be proactive and innovative in identifying areas for delivering service improvement and achieving its core policies and goals."

3. Waste Management Drivers

This Chapter provides an overview of the policy framework and key statutory requirements that impact on the development of future waste management provisions. The fulfilment of statutory and non-statutory requirements will represent an important consideration in the decision making process undertaken by West Berkshire Council and the decisions concerning these will impact on the scope, duration, flexibility, and costs of the future contract(s) for waste management that are let by the Council.

The main drivers that are encouraging local authorities to review their waste management systems can be grouped into three categories: European, National, and Financial. These will have a profound impact on the available waste disposal routes, waste management capacity, waste collection methods, and overall economics of waste management.

European pressure

One of the most notable pressures at present is the Landfill Directive (Council Directive 1999/31/EC on the Landfill of Waste) which was agreed in Europe in 1999 and has now been transposed into UK law. This seeks to prevent or reduce possible negative environmental effects from the landfilling of waste by introducing uniform standards throughout the EU. The Directive sets ambitious targets for the reduction of biodegradable municipal waste (BMW) that is disposed of to landfill. Table 3.1 indicates the UK national diversion targets.

Table 3.1 National Diversion Targets for Biodegradable Municipal Waste

- By 2010 biodegradable municipal waste (BMW) must be reduced to 75% of the total BMW (by weight) produced in 1995.
- By 2013 BMW must be reduced to 50% of the total BMW (by weight) produced in 1995.
- By 2020 BMW must be reduced to 35% of the total BMW (by weight) produced in 1995.

It is widely accepted that the introduction of such measures will result in the most fundamental changes in waste management practices experienced in the UK. The Landfill Directive and the Council's strategic plans to reduce the amount of biodegradable waste disposed of to landfill is considered in more detail in Chapter 7.

Other key European legislation which specifically affects waste management, either at present or in the future includes:

EU Directive on Waste 75/442/EEC (amended 91/156/EEC and 91/692/EEC), Articles 3, 4 & 5

This requires there to be regard to the need to minimise waste, encourage recycling and waste recovery. There must also be regard to the need to protect the environment and human health in the context of potentially polluting developments.

Producer Responsibility Directives

The first of these directives was 94/62/EEC Directive on Packaging and Packaging Waste. This was implemented in England by two pieces of legislation: the Producer Responsibility Obligations (Packaging Waste) Regulations 1997, and the Packaging (Essential Requirements) Regulations 1998.

The first of these sets targets for the recycling of packaging waste, placing the responsibility upon those in the packaging chain. Packaging also includes the boxes and pallets used in the delivery systems. All obligated companies have to arrange for the recycling or recovery of a proportion of the packaging they handle. The EU has set 2006 targets of 60-75% overall recovery and 55-70% overall recycling, with material-specific recycling targets for glass of 60%, paper and board 55%, metals 50%, and plastics 20%. This may have the effect of encouraging producers to fund more recycling of packaging in household waste, and could have an effect on prices of materials or infrastructure. However, despite increasing targets there has been little effect on the recycling of packaging materials in West Berkshire from these regulations, as any funding put into the system by producers has not filtered down to most local authorities.

In June 2000 the European Commission published a proposal for a Directive on Waste Electrical and Electronic Equipment (WEEE). The proposal sets collection targets for WEEE from private households, specifies selective treatment requirements and sets recovery and reuse/recycling targets. The Directive may be finally adopted during 2002 with collection and recovery targets set possibly for 2005/6. Government guidance is that local authorities should consider working with producers (i.e. manufacturers and importers for electrical and electronic equipment), who will be responsible for treatment, recovery and meeting recycling targets. The community sector may also have a role to play.

A proposed producer responsibility Batteries Directive will require the separate collection and recycling of all types of batteries in the EU. Current national collection and recycling rates vary significantly across Europe. The Directive aims to harmonise the very different situations in member states and sets high recovery targets. In doing so, the Directive aims to reduce the quantities of post consumer batteries entering the waste stream. Under the new proposal, targets have been set to collect 75% by weight of all spent consumer batteries and 95% of spent industrial and automotive batteries. Batteries containing mercury will be banned immediately and those containing more than 5ppm of cadmium by weight will be banned from 2008. The Batteries Directive poses a significant challenge to the UK as there are no operational collections for mixed domestic batteries at present. The Government is currently funding research into the cost implications of recycling household batteries in the UK, and a pilot scheme has started in Lancashire.

The End of Life Vehicles Directive 2000/53/EC

The UK must transpose this directive into national law by April 2002. This directive:

- requires that end of life vehicles can only be treated by authorised dismantlers or shredders who must meet tightened environmental standards
- requires vehicle producers, dismantlers, and shredders ("economic operators") to establish adequate systems for the collection of end of life vehicles
- states that owners must be able to return their vehicles into these systems free of charge from 2007

- requires producers to pay all or a significant part of the costs of takeback and treatment from January 2007
- sets rising re-use, recycling, and recovery targets which must be met by economic operators by January 2006 and 2015
- restricts the use of heavy metals in new vehicles from July 2003

Picture courtesy ot the EnvironmentAgency.gov.uk

Regulation (EC) No 2037/2000 of the European Parliament and of the Council of 29 June 2000 on substances that deplete the ozone layer

This regulation came in force on 1st January 2002 and requires that CFCs in the coolant and in the foam in fridges and freezers is either recycled or treated by approved environmentally acceptable destruction technology. There is no such technology in the UK at present, so like the majority of local authorities West Berkshire has been forced to make arrangements for the storage of fridges and freezers until a suitable facility becomes operational.

European Directive 96/59/EC on the Disposal of Polychlorinated Biphenyls (PCBs) and Polychlorinated Terphenyls (PCTs)

This requires that where reasonably practicable, PCB containing equipment which is less that 5 litres in volume and which is contained within another piece of equipment shall be removed and collected separately when the latter equipment is taken out of use, recycled or disposed of. The PCB containing equipment will need to be treated as special waste. The components involved consist of small capacitors in electrical equipment such as refrigerators, washing machines, cookers, and fluorescent light fittings which were manufactured between the 1950s and 1986.

Hazardous waste or "special" waste legislation

The Hazardous Waste List (94/904/EC) has been refined, increased in length and incorporated within the European Waste Catalogue, which is the new standard by which all waste in the EU must be defined. This means that many items which were formerly not considered hazardous will in future be considered as such, for example much electrical equipment, and fluorescent tubes. It also sets out standards for composting, anaerobic digestion and mechanical-biological treatment, and for compost labelling, and proposes that public authorities procure the compost, particularly as a substitute for peat.

National pressure

The National Waste Strategy for England and Wales[1] was published in May 2000 and sets out the Government's policy and vision for the promotion of sustainable waste management over the next twenty years. The document expands on information previously published in the Government's White Paper "A Way with Waste" [2] , by providing additional detail on the Government's aspirations over the short, medium, and long term and the contributions that local authorities will be required to provide in meeting the national objectives. Local authorities are required to consider BPEO (Best Practicable Environmental Option) with reference to the framework provided by the waste hierarchy and the proximity principle when making strategic waste management decisions. The national waste strategy sets a series of targets for recycling and composting and recovery for 2005, 2010, and 2015.

[1] Department of the Environment, Transport and the Regions (2000). Waste Strategy 2000. ISBN 0 10 146932 2 May 2000.

[2] A Way with Waste: A draft waste strategy for England and Wales Parts 1 and 2. Department of the Environment, Transport and the Regions, June 1999.

The key national targets set out in Waste Strategy 2000 are:

Table 3.2 National Targets for the Recycling and Composting of Household Waste

- To recycle or compost at least 25% of household waste by 2005
- To recycle or compost at least 30% of household waste by 2010
- To recycle or compost at least 33% of household waste by 2015

Table 3.3 National Targets for the Recovery* of Municipal Waste

- To recover value from 40% of municipal waste by 2005
- To recover value from 45% of municipal waste by 2010
- To recover value from 67% of municipal waste by 2015

** Recovery means to obtain value from waste through recycling, composting, other forms of material recovery, or recovery of energy.*

To ensure that all local authorities contribute to achieving these targets, the Government has set statutory performance standards for recycling and composting for each local authority for 2003/04 and 2005/06.

West Berkshire's statutory performance standards are:

- **To recycle or compost at least 20% of household waste by 2003/04**
- **To recycle or compost at least 30% of household waste by 2005/06**

The Government will also set statutory performance standards for local authorities for 2010 and 2015.

Animal By-Products Order

As a result of the recent foot and mouth crisis in the UK, the Government amended the Animal By Products Order in May 2001 which stated that composting is not a permitted disposal route for any material that has possibly been contaminated by meat products. This prevents kitchen material from being composted, even if vegetable material only has been targeted for a collection campaign. DEFRA have commissioned a risk assessment on the composting of kitchen waste, the results of which are due in 2002. The Animal By Products Order as it stands means that mixed compost with kitchen waste may not be used on land where animals (including wild birds) may have access. However, this position is set to change as a draft EU Regulation on Animal By-Products will allow the use of properly composted mixed waste on all land except pasture land. This regulation is expected to come into force in the Spring of 2002.

Financial pressure

Financial drivers have been most apparent in landfill disposal. The present growth in landfill costs can be attributable to the stricter regulation of landfill activities, improved engineering standards, and the limited capacity of landfill void space particularly in the South East.

Landfill tax was imposed in October 1996 at a rate of £7 per tonne. The tax is a specifically targeted levy on the disposal of wastes in landfill sites throughout the UK. It has two main objectives:

- To ensure as far as practicable, that the cost of landfill properly reflects the impact which it has upon the environment
- To help ensure that targets for more sustainable waste management in the UK are achieved

The current rate of landfill tax is £12 per tonne and this will rise annually by £1 per tonne until 2004 when a major Government review is planned. In all probability, the rate of the tax will continue to increase after 2004, and rises may be substantial if the tax is to be harmonised to reach average European levels of £35/tonne. Such increases will further increase the cost of landfill and introduce financial risks for landfill orientated waste management solutions over the medium and long term.

3.1 Implications for West Berkshire

In estimating the future requirement for waste management facilities, it is important that all the potential influences on waste arisings and management requirements are considered and the key ones are outlined above. The following section uses the waste projections in Chapter 2 in order to determine the tonnage of material that requires recycling and recovery in order for West Berkshire to meet the requirements of the National Waste Strategy. The Implications of the Landfill Directive are addressed in Chapter 7.

In order that West Berkshire meets it's 2003/04 statutory performance standard, it will have to double it's recycling/composting rate from 10% (1998/99 baseline) to 20% by 2003/4, rising to 30% by 2005/6. The current recycling rate (2000/01) is 11%, so an increase of 9% is required over the next two years, and 19% over the next four years.

Table 3.4 indicates how much waste will need to be recycled/composted and recovered, based on a range of annual waste growth rates, in order for West Berkshire to meet the targets.

Picture courtesy ot the EnvironmentAgency.gov.uk

"West Berkshire will seek to progressively reduce the amount of waste being disposed of to landfill. In so doing West Berkshire will seek to divert municipal waste towards more sustainable waste management practices."

Table 3.4 Estimated Tonnages of Waste to be Recycled and Recovered in West Berkshire to meet the Performance Standards and National Targets

Year	Statutory Performance Standards & National Targets	Tonnes to be recycled/composted and recovered		
		1%pa increase in waste arisings	2%pa increase in waste arisings	3%pa increase in waste arisings
Local Performance Standards				
2003/04	To double 1998/99 household waste recycling /composting rate (i.e. 20%)	16,263	16,751	17,450
2005/06	To triple 1998/99 household waste recycling /composting rate (i.e. 30%)	24,885	26,142	28,094
2010	*Standard to be introduced in 2006*	-	-	-
National Recovery Targets				
2005	To meet 40% recovery of Municipal waste	34,055	35,775	37,563
2010	To meet 45% recovery of Municipal waste	40,267	44,436	48,990
2015	To meet 67% recovery of Municipal waste	63,011	73,046	84,558

The recycling rate that can be achieved in a local authority is dependant upon a number of factors including waste composition, type of collection receptacle provided, the frequency of collection, the support programme available to maintain public participation, the demographics of the district, etc.

Using the data from the Compositional Survey as a basis for identifying the total percentage composition of dry recyclables and compostables in the collected waste stream, and using a participation rate of 70%, the total dry recyclable tonnage in the collected household waste stream can be determined. Table 3.5 shows the maximum recycling tonnage for West Berkshire for 2000/1.

This table excludes bring bank recycling and recycling on the Civic Amenity Site. A recovery rate of 70% and a participation rate of 70% (equating to 49% of that available in 2000/01) has been assumed.

"West Berkshire will develop practical initiatives to support waste segregation at source in the household"

Table 3.5 Recycling Potential in West Berkshire in 2000/01

Category	Composition in West Berkshire %	2000/01 Tonnage composition	Maximum practicable recycling tonnage*
Paper/Card	33.9%	19,350	9,481
Dense Plastics	5.9%	3,368	1,650
Plastic Film	4.7%	2,683	1,315
Ferrous Metals	4.9%	2,797	1,370
Non-Ferrous Metals	1.1%	628	308
Glass	6.5%	3,710	1,818
Textiles	3.9%	2,226	1,091
Sub Total Dry	**60.9%**	**34,762**	**17,033**
Putrescible	23.2%	13,242	6,489
Sub Total Wet	**23.2%**	**13,242**	**6,489**
Total Recyclable	**84.1%**	**48,004**	**23,522**

** Assuming 70% participation rates and 70% recovery rates.*

This data indicates that there is the potential to collect approximately 17,033 tonnes of dry recyclables from the collected household waste stream based on 2000/01 waste arisings (excluding bring banks and civic amenity recycling). In 2000/01, West Berkshire collected 5,605 tonnes from the existing kerbside collection scheme.

There are a number of ways West Berkshire may achieve its recycling targets for 2003/04 and 2005/06 based on existing activities and future options of targeting different recoverable waste streams at the kerbside. Using the data in Table 3.5 and assuming a growth in waste arisings of 2% per annum Table 3.6 illustrates how targeting different materials at the kerbside can contribute to meeting the recycling targets.

"West Berkshire will seek through the implementation of its strategy, to deliver statutory Government performance standards for waste management."

Table 3.6 Examples of Recycling Options

Recycling Option	Tonnage of recyclable material collected in 2003/04 and 2005/06 (Tonnes)					
	Kerbside collection of dry recyclables	Kerbside collection of green garden waste	Kerbside collection of kitchen organic waste	Existing bank & civic amenity recycling*	Total Recycling tonnage	Recycling Target surplus/ shortfall ***
2003/04 Recycling Target = 16,751 tonnes						
Existing situation	5,948	0	0	3,593	9,541	- 7,210
Maximised kerbside collection of dry recyclables only	18,076	0	0	3,593	21,669	4,918
Maximised kerbside collection of dry recyclables and separate collection of green garden waste	18,076	3,057	0	3,593	24,726	7,975
Maximised kerbside collection of dry recyclables and separate collection of green garden waste and kitchen organic waste	18,076	3,057	3,829	3,593	28,555	11,804
2005/06 Recycling Target = 26,142 tonnes						
Existing situation	6,188	0	0	3,738	9,926	- 16,216
Maximised kerbside collection of dry recyclables only	18,806	0	0	3,738	22,544	-3,598
Maximised kerbside collection of dry recyclables and separate collection of green garden waste	18,806	3,181	0	3,738	25,725	-417
Maximised kerbside collection of dry recyclables and separate collection of green garden waste and kitchen organic waste	18,806	3,181	3,984	3,738	29,709	3,567

* Assumes that bring bank and Civic Amenity Site recycling continues at existing levels +2% per annum
** A negative number indicates a shortfall in achieving the recycling target, a positive number indicates the target being exceeded.

Table 3.6 illustrates that West Berkshire could achieve the 2003/04 recycling target by maximising the participation and recovery rates to 70% for the existing kerbside collection service of dry recyclables. This would achieve 21,669 tonnes in 2003/04 exceeding the target by 4,918 tonnes. However it is unlikely that participation could be increased to a rate of 70% by 2003/04, but if a participation rate of 55% could be achieved in the short term, the 2003/04 recycling target could still be met.

The collection of dry recyclables alone however, would fall short of meeting the 2005/06 target by 3,598 tonnes (assuming 70% participation). Assuming that there is no increase in the recycling at bring banks and at the Civic Amenity Site, a separate collection of green garden waste and kitchen organic waste at the kerbside would be required to meet the 2005/06 recycling target. This analysis affects the future waste management options available to West Berkshire. These are considered in more detail in Chapter 4.

4. Future Options for Waste Management in West Berkshire

4.1 Waste Disposal Options

At present landfill is generally the lowest cost disposal option for waste disposal in the UK. But landfill costs are increasing as suitable sites become more scarce and as environmental standards for managing and restoring sites become more demanding. The predicted increase in landfill tax rates will further increase the cost of landfill disposal. Local landfill sites are nearing capacity and very limited opportunities exist in Berkshire for the future development of suitable landfill sites. Municipal waste in West Berkshire is also increasing at a rate of 2% per annum, and the transportation of waste to distant landfill sites will be expensive and is likely to require transfer facilities to improve the haulage efficiencies. The greater the distance, the greater the environmental impacts caused by transportation, the greater the financial cost, which is why the Government is encouraging local authorities to give full consideration to the proximity principle for the management of municipal waste.

Picture courtesy of Alupro. www.alupro.gov.uk

In developing this waste management strategy, the Council looked at various ways of dealing with West Berkshire's waste in the future. Regardless of the waste management methods chosen to manage the waste produced in West Berkshire, waste minimisation, education and re-use programmes will need to be developed as a priority with the aim of reducing the growth in waste arisings. The five options considered were:

- **Option 1 (Continuation of existing situation)** involved landfilling as the sole disposal method supplemented by the existing kerbside, civic amenity and bank recycling schemes. A transfer station would be required in the district when the local landfill void has been depleted.

- **Option 2 (Maximised recycling and composting)** was based on maximising recycling and composting through the expansion of the kerbside collection to a triple bin collection system, and optimising the efficiencies of civic amenity recycling and bring bank recycling. This option required householders to sort their waste into 3 separate receptacles for: dry recyclables, kitchen and green waste for composting, and other waste to be disposed of to landfill. Public participation in the recycling schemes would have to be increased substantially to 55% by 2003/04 and 70% by 2005/06. The residual waste would be disposal of to landfill, and a transfer station would be required in the district to improve haulage efficiencies.

- **Option 3 (Maximum energy from waste and sustained recycling)** was aimed at maximising the recovery of energy through an energy from waste facility as the sole treatment method, supplemented by the existing kerbside, civic amenity and bank recycling schemes.

- **Option 4 (Highest level of sustainability)** was aimed at delivering the highest level of sustainability through adopting the waste management hierarchy and maximising the diversion of waste from landfill. Recycling, green waste composting, and the composting of kitchen organic waste would be maximised with the remainder of the waste being treated by an energy from waste facility. Similarly to Option 2, this would require all households to sort their waste into 3 bins for recyclables, kitchen organic and green waste, and residual waste.

- **Option 5 (Rural/Urban)** represented a rural/urban option for West Berkshire whereby the kerbside collection of recyclables is intensified in the urban areas, but in the rural areas the collection of dry recyclables is replaced by the collection of compostable materials (e.g. kitchen and green wastes). The residual waste would be treated by an energy from waste facility.

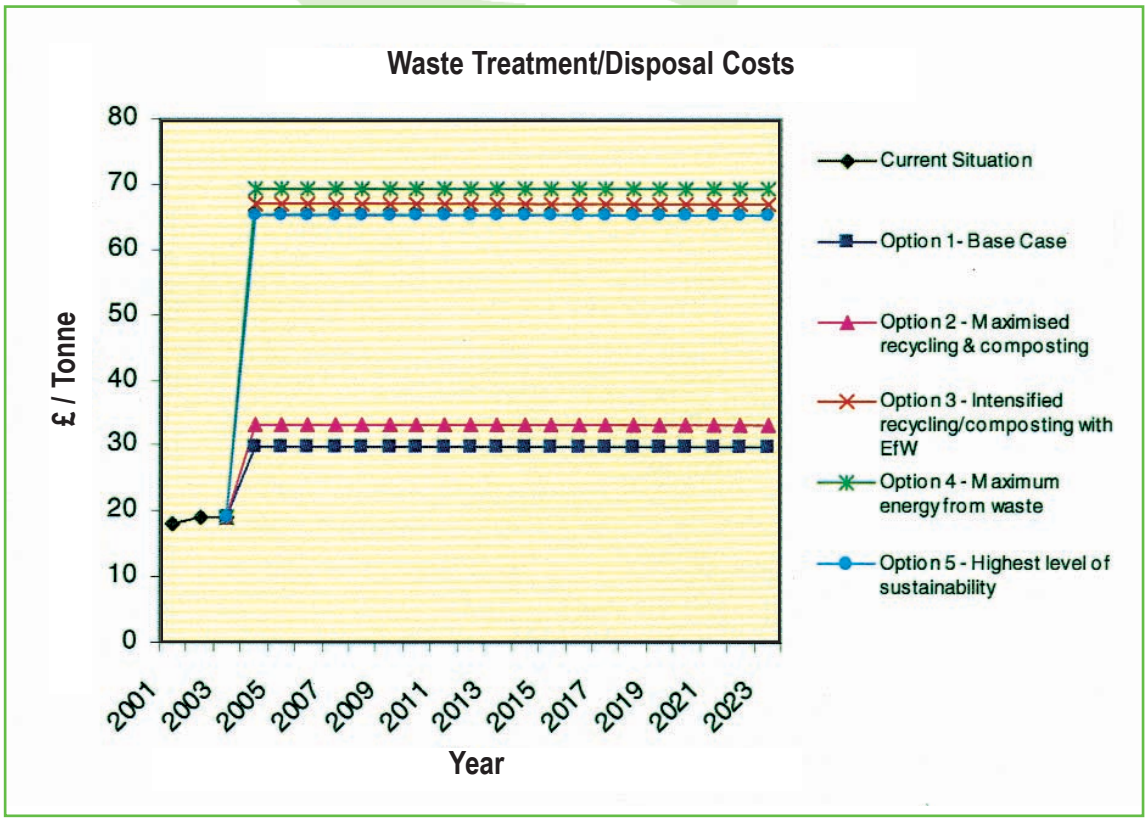
4.1.1 Assessment of Disposal Options

A Best Practicable Environmental Option (BPEO) assessment of the available options requires an informed evaluation of the economic and environmental consequences of each waste management option.

Economic

As part of the option appraisal detailed financial models were developed for all five options. Figure 4.1 illustrates the increase in costs which is predicted when waste disposal services are transferred from the current situation to more sustainable facilities (2003). An increase in costs is apparent for all the options compared with the current situation.

Figure 4.1 Projected 20 year Averaged Gate Fees for Options 1 - 5



The above results are based on current landfill costs and current capital and operating costs for other plant, however it is also important to consider the sensitivities of these costs to possible changes in the future. Such changes may result from new, cheaper technologies becoming available, scarcity of landfill void, increases in landfill tax, additional costs of complying with new environmental regulations etc.

As a result of the Landfill Directive and the political desire to move up the waste hierarchy, the costs associated with landfilling are likely to experience the greatest changes. The landfill tax is set to increase by £1 per year until 2004. It is not known what will happen after 2004 but it is expected to continue to rise steadily and may rise to the average European level, which is currently £35 per tonne. Options that rely on significant quantities of waste being disposed to landfill are those most sensitive to cost increases. The maximised recycling and composting option (Option 2) closely follows the increases in the landfill base case option (Option 1) as they both involve a high percentage of landfilling, whereas the options which result in significant landfill diversion become more competitive compared with the base case option (Option 1) from about 2012. Large increases in landfill gate fees would not be unrealistic for West Berkshire to expect, as landfill in the region is becoming scarce and waste would have to be transported over longer distances involving far greater haulage costs.

The waste management options that have been modelled are based upon implementing new facilities at capacities capable of treating West Berkshire's waste alone over a 20 year period assuming a 2% per annum increase in waste arisings. Economies of scale exist for waste management technologies i.e. larger plant capacity results in lower gate fees (£/tonne), particularly the capital-intensive plant such as energy from waste facilities. West Berkshire's municipal waste arisings are relatively small, and the residual waste after what has been recycled and composted, could only support the establishment of a moderate scale energy from waste facility (~80,000t/y) which would be significantly more expensive to operate than a larger facility of 300,000 - 450,000t/y capacity. A regional approach and partnership with other local authorities would support larger facilities and thus economies of scale could be secured.

The impacts of securing capacity at a larger energy from waste facility (400,000t/y) rather than a moderate facility (80,000t/y) have been modelled for Options 3, 4 and 5 to illustrate the likely reduction in gate fees.

Table 4.1 Disposal Costs of Options 1-5

Waste Management Option	Total Disposal Cost (£/tonne)	Total Disposal Cost (£/tonne) if capacity secured at large scale EfW facility
1	£29.86 / tonne	N/A
2	£33.08 / tonne	N/A
3	£66.13 / tonne	£50.18 / tonne
4	£69.33 / tonne	£57.41 / tonne
5	£65.91 / tonne	£53.99 / tonne

Environmental

A preliminary analysis of the environmental impacts arising from each of the disposal options was carried out using a series of generic models covering the type and capacity of each waste management plant in association with each option. The main purpose of this appraisal was to provide rational information on which the main environmental impacts associated with each option could be examined and considered for the purpose of BPEO determination[3].

> ***"A BPEO is the outcome of a systematic and consultative decision making procedure, which emphasises the protection of the environment and the conservation of the environment across land, air and water. The BPEO procedure establishes, for a given set of objectives, the option that provides the most benefits or the least damage to the environment as a whole, at an acceptable cost, in the long term as well as the short term."***

Each of the Options was also assessed against the requirements of Waste Strategy 2000 in terms of recycling and recovery rates, and the Landfill Directive targets.

• Recycling Rate

Recycling rates were calculated as a fraction of the total household waste arisings and relate to waste that is recycled through materials recycling or composting (excluding home composting). It is evident from the modelling that the 2003/04 performance standard for recycling can be achieved through optimising the existing recycling service, raising awareness of existing schemes, and increasing the public participation rate to 55%. However, the later recycling targets would require a change to the existing kerbside collection system to enable more dry recyclables to be collected, supplemented by a greater emphasis on green waste and kitchen waste composting (subject to changes to the Animal By Products Order).

All of the Options relate to post 2004/05 when the new contract would commence. Options 2, 4 and 5 would all meet West Berkshire's statutory performance standards for 2005/06. Options 1 and 3 would only deliver a recycling rate of 20% and would therefore fail to achieve the 2005/06 statutory standard of 30%. Although the 2010 performance standards have not yet been set at a local level, Options 2 and 4 would both achieve a recycling rate of 45%, and Option 5 would achieve a recycling rate of 33%.

• Recovery Rate

Recovery rates refer to the recycling of waste (through material recycling or composting) and the use of waste in a process that generates energy (for example incineration with energy recovery or anaerobic digestion). Recovery rates are calculated as a fraction of the total municipal waste arisings.

The options that involve an element of energy recovery (Options 3, 4 and 5) achieve a recovery rate of 94.5% once the recovery facilities are operational. Option 2 would achieve a recovery rate of 43.4% through material recycling and composting without the use of an energy recovery facility. However, Option 2 would fall short of the 67% recovery targets by a substantial margin if further technologies and facilities were not established. Option 1, the continuation of the existing situation, does not make any contribution to achieving the national recovery targets.

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[3]Royal Commission on Environmental Pollution: 12th Report: Best Practicable Environmental Option (1988). HMSO London Feb. 1988. ISBN 0-0-103102-5

- **Biodegradable Municipal Waste Diversion Targets**

West Berkshire will have to reduce the tonnage of biodegradable waste disposed directly to landfill in order to meet the statutory diversion targets under the Landfill Directive. The amount of biodegradable waste that is diverted from direct disposal to landfill has been modelled, and the options assessed against the Landfill Directive targets (Figure 4.2).

Figure 4.2 Biodegradable Municipal Waste Diversion

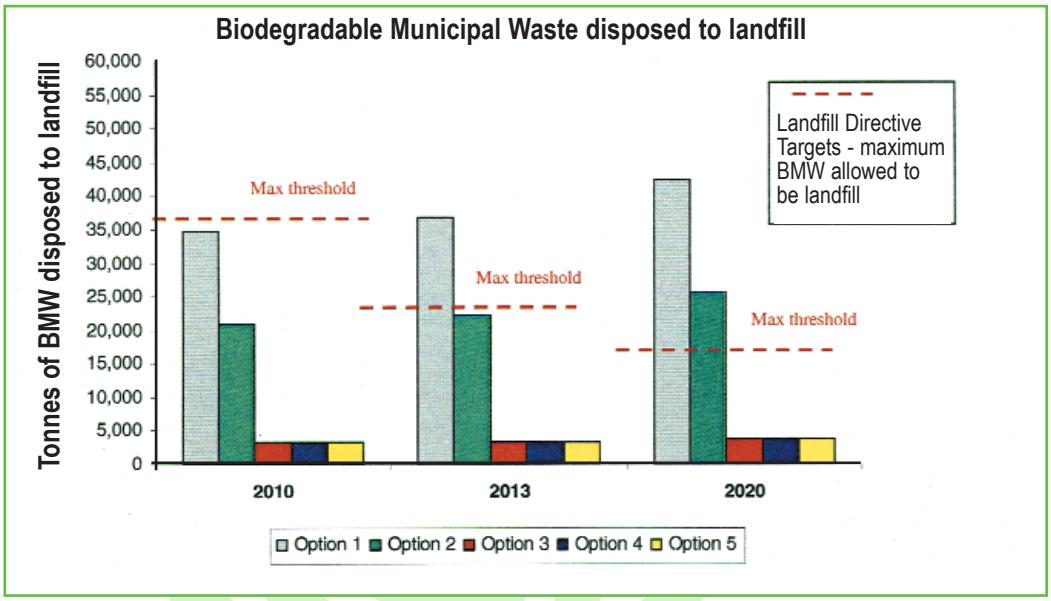


Figure 4.2 indicates that Option 1 meets the 2010 national diversion target of the Landfill Directive by a small margin but fails to meet the 2013 and 2020 targets i.e. the tonnage of biodegradable municipal waste (BMW) disposed to landfill exceeds the maximum permitted tonnage of BMW allowed to be landfilled. Option 2 diverts a large proportion of the biodegradable waste from landfill through maximising recycling and composting of garden and kitchen waste. Option 2 is able to achieve the 2010 and 2013 target, but would fall short of the 2020 target by a substantial margin if further technologies and facilities were not established. Options 3, 4 and 5 will meet all of the targets for 2010, 2013 and 2020 as the majority of untreated municipal waste is diverted away from landfill disposal via a range of treatment technologies including energy from waste.

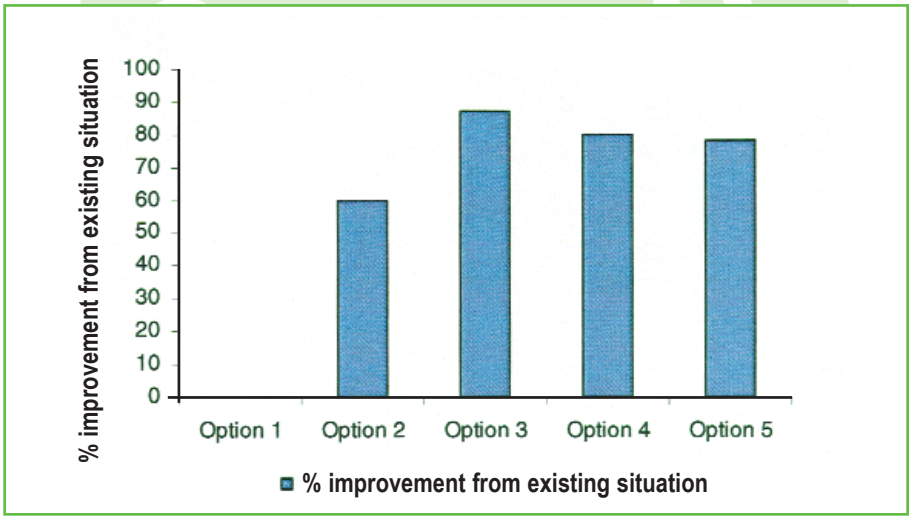
A system of landfill permits will be introduced in England to limit the amount of BMW authorities can landfill. The implementation of such a system will have significant financial implications for the future waste management options. Option 1, which relies heavily on landfill as the sole disposal method would necessitate the Council purchasing additional landfill permits from other local authorities as the Council would be exceeding it's permitted level of landfill allocation soon after 2010. As the landfill permit allocation declines over time, to meet the targets required by the Directive, the Council would have to purchase more and more permits in order to continue disposing of the waste to landfill. This would be a substantial financial risk for the Council. Option 2 would also require the Council to purchase additional landfill permits from other local authorities from 2014 as the amount of BMW being disposed of to landfill would exceed the level of permits held by the Council.

Options 3, 4 and 5 however, which divert over 90% of untreated municipal waste, would result in an excess of landfill permits available to the Council which could then be traded to other local authorities. The Council's strategic plan for achieving the Landfill Directive and the management of landfill permits is dealt with in Chapter 7.

• Global Warming Impacts

The global warming potential of a waste management system is dominated by the generation of methane emissions, as methane is a much more potent greenhouse gas compared to carbon dioxide. The global warming potential of each scenario is thus linked to the methane emissions, which is dependant upon the amount of biodegradable waste disposed of to landfill. As the existing situation (Option 1) relies solely on landfill disposal, it represents the worst case in terms of its global warming potential. Figure 4.3 illustrates the reduction in the global warming potentials achieved by each of the scenarios relative to the existing landfill situation.

Figure 4.3 Global Warming Potential (20 year time horizon)

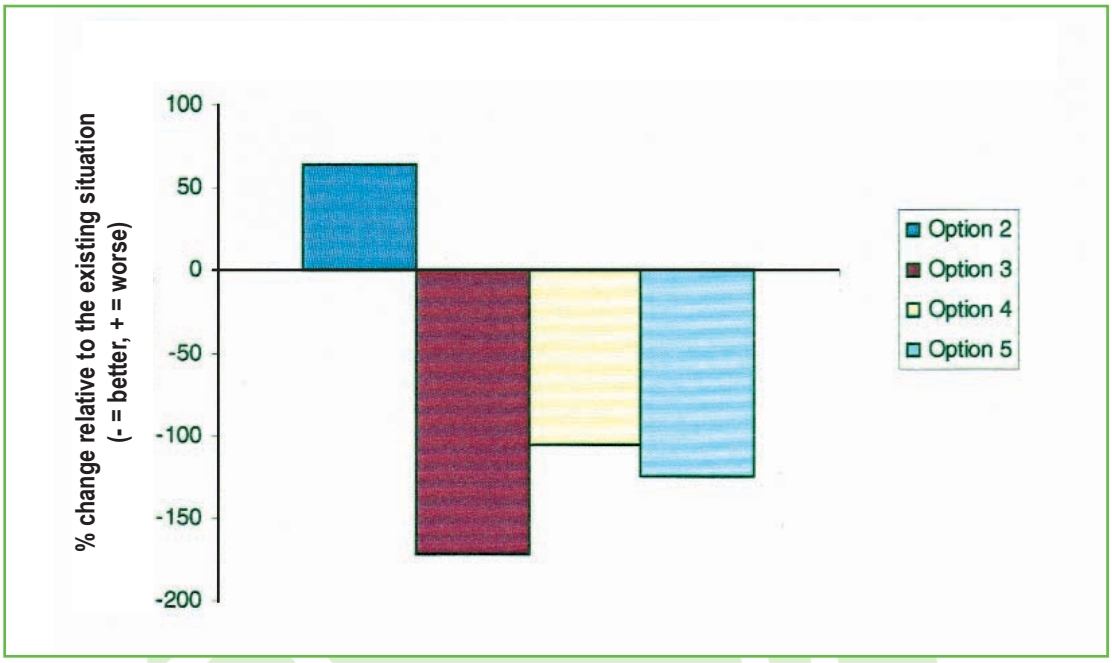


The Global Warming Potentials have been calculated assuming that where there is power generation, the associated emissions have been offset against the avoided global warming potential from coal power stations. The options which involve an element of combustion (Options 3, 4 & 5) produce approximately a 75-90% reduction in global warming potential, and the recycling and composting option (Option 2) a 60% reduction compared to the existing situation.

• Acidification

The four main gases that contribute to acidification include: sulphur dioxide (SO2), nitrogen oxides (NOx), hydrogen chloride (HCL), and hydrogen fluoride (HF). SO2 has a greater impact upon acidification compared to the other acid gases, and so for the purposes of this modelling each of the gases have been weighted according to Heijung's acidification factors. Where the global warming potentials indicate global warming effects as CO2 equivalents, the acidification potential indicates acidification effects as SO2 equivalents. The acidification potentials have also been calculated assuming that where there is a net energy recovery, emissions have been offset against the avoided acid gases generated from the coal fired power stations (Figure 4.4).

Figure 4.4 Acidification potential relative to the existing situation



Due to the high generation rate of sulphur dioxide emissions from traditional coal fired power stations, the options that involve an element of waste combustion have the net effect of reducing acid gas emissions by displacing the acid gas emissions from coal power stations. If no avoided emissions were assumed, the scenarios involving waste combustion would be worse than the existing situation. This shows that energy from waste has key environmental benefits over waste incineration without energy recovery. The acid gas emissions from options 1 & 2 are generated from the landfill gas engine which is assumed for all of the scenarios. It must also be noted that transport contributes to acidification, and thus scenarios involving greater transport will result in an increased acidification impact.

- **Local Pollution impacts**

The effects of the various waste management options on local air quality will depend on the level of emissions and local dispersion characteristics. Although it is beyond the scope of this strategy to undertake dispersion modelling, a planning application for a major facility would necessitate an environmental statement which would include an analysis of the impacts of the proposal on the local air quality.

This modelling relates solely to emissions from the treatment technologies and the on-site vehicle movements, and does not take into account the NOx emissions from the refuse collection vehicles and kerbside recycling vehicles. Figure 4.5 provides comparative analysis of the emissions of nitrogen oxides from both low altitude sources (i.e. transport and landfill gas engines) and high altitude sources (i.e. incinerator stack emissions).

Figure 4.5 Low altitude and high altitude emissions of Nitrogen Oxides (NOX) to atmosphere

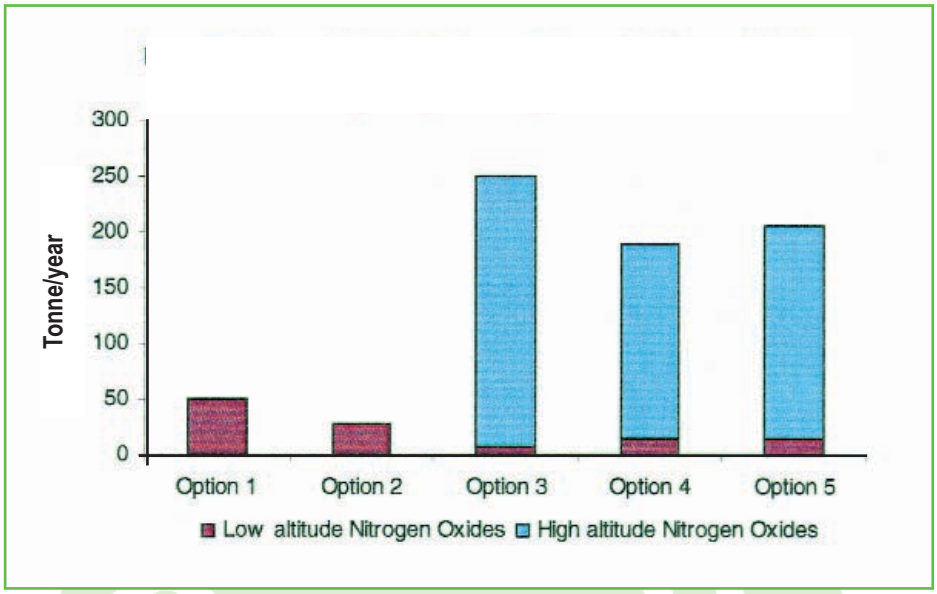


Figure 4.5 illustrates that Options 3, 4 and 5 emit much greater levels of Nitrogen Oxides than the existing situation, although the majority of the emissions are at a high altitude. As emissions from incinerator stacks occur at much higher altitudes compared to emissions from transport and landfill gas engines, they would be influenced by considerable dispersion and dilution characteristics which would reduce the potential impact of the emissions before reaching ground level.

Option 2 performs the best in terms of NOx emissions, even in comparison to the existing situation. This is as a result of a smaller tonnage of waste being disposed to landfill , reducing the volume of landfill gas and thus reducing the emissions of NOx from the landfill gas engine.

- **Dioxins**

Dioxins are highly toxic, being thought to be carcinogenic at low exposure levels. The term 'dioxins' is generally used to refer to two groups of compounds: polychlorinated dibenzodioxins and polychlorinated dibenzofurans.

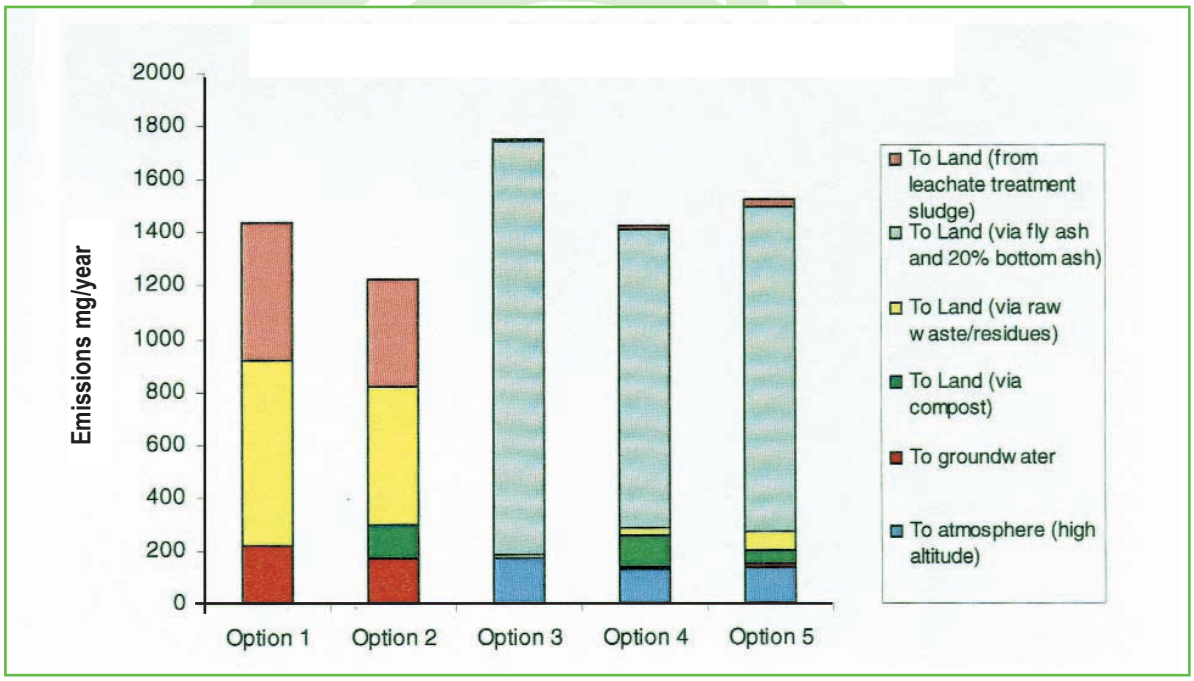
Dioxins have been shown to occur ubiquitously in the environment, and are formed as a result of most combustion processes, and as by-products of many chemical processes and metal smelting. Because they are so widespread in the environment, in many of the materials we use, handle and eat, they are present in waste as it is collected and so they will be transferred to all downstream operations. Dioxins have been measured in compost, landfill gas and leachate, gases and residues from recycling as well as the more commonly cited waste combustion gases and ashes.

The environmental impacts of dioxins are not so much dependant on the absolute emissions, but on the pathway to humans and the potential to cause harm to health. Whilst dioxins released into the air from waste combustion sources can affect humans from absorption through the lungs or from deposition onto the skin, the major route is from deposition onto vegetation, which is then eaten by grazing animals.

Accumulation in the food chain is the most significant route into human intake. In this respect, dioxins in composts and in groundwater may be of greater concern to those released to air from combustion processes.

Figure 4.6 shows the relative rates of dioxin emission to various media for each of the options. This shows that all options involving energy from waste generate the greatest dioxin emissions to atmosphere. Option 1 results in the highest emissions of dioxins to groundwater which arise from the large volumes of landfill leachate. All options contribute to emissions of dioxins to land; Option 1 and 2 through composts and leachate treatment sludges, and Options 3, 4 and 5 from ashes derived from the energy from waste facilities.

Figure 4.6 Dioxin Emissions



4.1.2 Summary of Waste Disposal Options

The modelling of the costs and environmental impacts of the various waste management options presents a complex picture, but represents an essential framework for the decision making process for investment in, and development of, appropriate waste management infrastructure. Table 4.2 provides an overview of the performance of each strategy. Performance indicators include financial aspects (capital investment requirements and 20 year averaged gate fees) and environmental factors.

> ***"West Berkshire will not normally support the export or import of waste from the Region for treatment or disposal unless circumstances demonstrably show that this is the best practicable environmental option."***

Table 4.2 Summary of Economic and Environmental Impacts of Waste Disposal Options

Performance Indicator	Waste Disposal Option					Details
	1	2	3	4	5	
Financial Performance						
Total Capital Cost (£ million)	£9.6M	£12.9M	£38.3M	£39.4M	£37.6M	
Annual Operating Cost (£ million/year)	£3.3M	£3.7M	£7.4M	£7.7M	£7.4M	Averaged over 20-year contract period.
Gate Fee (£/tonne)	£29.86/ t	£33.08/ t	£66.13/ t	£69.33/ t	£65.91/ t	Averaged over 20-year contract period.
Gate Fee (£/tonne) if large scale EfW used	N/A	N/A	£50.18/ t	£57.41/ t	£53.99/ t	Averaged over 20-year contract period.
Cost (£) per Household per year	£57.07	£63.99	£127.97	£133.16	£127.97	Averaged over 20 year contract period
20 year average annual tonnage of untreated waste to be disposed of to landfill	89,790 t	64,601 t	6,165 t	6,165 t	6,165 t	This will incur landfill tax at the higher active waste rate
20 year average annual tonnage of EfW ashes to be disposed of to landfill	0	0	28,563 t	19,959 t	23,995 t	This will incur landfill tax at the lower inert waste rate
Environmental Performance						
Recycling Rate (%)	20%	44.2%	20%	44.2%	33.2%	Exclusive of bottom ash recycling
Recovery Rate (%) and Landfill Diversion (%)	19.7%	43.4%	94.5%	94.5%	94.5%	
Local Statutory Recycling Target - 2003	✔	✔	✔	✔	✔	If implemented before 2003. Exclusive of bottom ash recycling
Local Statutory Recycling Target - 2005	✘	✔	✘	✔	✔	Exclusive of bottom ash recycling
Achievement of national 2010 Landfill Directive target	✔	✔	✔	✔	✔	
Achievement of national 2013 Landfill Directive target	✘	✔	✔	✔	✔	
Achievement of national 2020 Landfill Directive target	✘	✘	✔	✔	✔	
Achievement of statutory Landfill Directive targets	✘	✘	✔	✔	✔	
Global Warming Potential	0	+	++	++	++	*Global warming potential will increase over the strategy horizon due to increasing quantities of waste landfill.
Acidification Potential	0	+	++	++	++	
Local air pollution	0	-	-	-	-	

Key to environmental ranking

Worse impact = " - "
Similar magnitude of impact = " 0 "
better = " + "
much better = " ++ "

From the analysis, the following general points can be made regarding each of the options:

Option 1

Landfilling at the current time is the cheapest option but it has several environmental burdens, compared to other options. This option is the most sensitive to increases in landfill gate fees and landfill tax, and will become less competitive in the future compared to other options that rely less heavily on landfill. This option does not meet any of statutory recycling targets post 2003/04 or recovery targets and could not meet the statutory obligations under the Landfill Directive. The environmental burdens are largely due to the production of leachate and landfill gas emissions, which contribute to global warming as well as reducing local air quality.

Option 1 is not considered a viable waste management option for West Berkshire. The lack of current and future landfill capacity in the area, the requirements of the Landfill Directive, the obligations to meet statutory recycling and recovery targets, and the long term financial profile of this option with the added risk of landfill tax and the requirement to purchase additional landfill permits would necessitate capital investment in alternative waste treatment technologies.

Option 2

This recycling and composting option would achieve a recycling rate of 44.2% and would meet the 2005/06 statutory performance standard for recycling. Due to the emphasis on maximising recycling and composting this option also has the ability to meet the 2010 and 2013 national targets of the Landfill Directive.

Due to the considerable reliance on landfill, this option would be sensitive to cost increases of landfill and landfill tax. It would also retain many of the environmental disadvantages of landfilling in addition to the increased transportation and its associated environmental impacts due to the need for an intensive three-bin collection system. Integrated collection of recyclables and putrescibles with the rest of the household waste stream would reduce transport distances but this is likely to require considerable capital investment in new vehicles and containers.

Option 2 is a viable option for West Berkshire in the short to medium term, but it would necessitate the establishment of further technologies/facilities in the longer term to increase the landfill diversion and recovery rates.

Option 3

The maximum energy from waste option offers several possible environmental benefits in that, it achieves a high landfill diversion and recovery rate, the net production of energy, and reduced global warming and acidification potentials due to the displacement of emissions from the traditional powers stations.

Option 3 will not meet any of the local statutory recycling targets post 2003/04 but it will meet the national recovery targets and Landfill Directive Targets. Option 3 is not considered to be a viable option to fulfil West Berkshire's short term requirements. However, elements of this option combined with greater emphasis on recycling and composting in the short term could provide a means of meeting the Governments medium and long-term targets for waste recovery.

Option 4

This option which represents the highest level of sustainability is the most expensive in terms of waste management costs and the collection costs from the intensive triple bin collection system. Option 4 will meet the 2005, 2010 and 2015 targets for recycling and recovery and would achieve the Landfill Directive targets. It is considered to be a viable technical option for West Berkshire in the medium to long term, although issues relating to affordability would require further analysis.

Option 5

This option is similar in technological terms to the highest level of sustainability option, but optimises the efficiency of the solution by targeting the collection of specific materials from specific areas. This reduces the waste collection and treatment costs and the sizes of facilities required. Although option 5 will meet the Landfill Directive targets and the national recovery targets this option will only achieve a recycling rate of 33%.

4.2 Residual Household Waste Collection

West Berkshire Council has a contract with Biffa for household waste collection and the provision of a kerbside recyclables collection service. Household waste is collected from properties on a weekly basis using wheeled bins, and the kerbside collection of recyclables is a fortnightly service based on two boxes for glass, cans, paper and magazines and textiles.

West Berkshire's budget for waste collection is estimated at £1.74 million for the financial year 2001/02. This equates to charge of £22.09 per tonne of household waste or £30.12 per household per year.

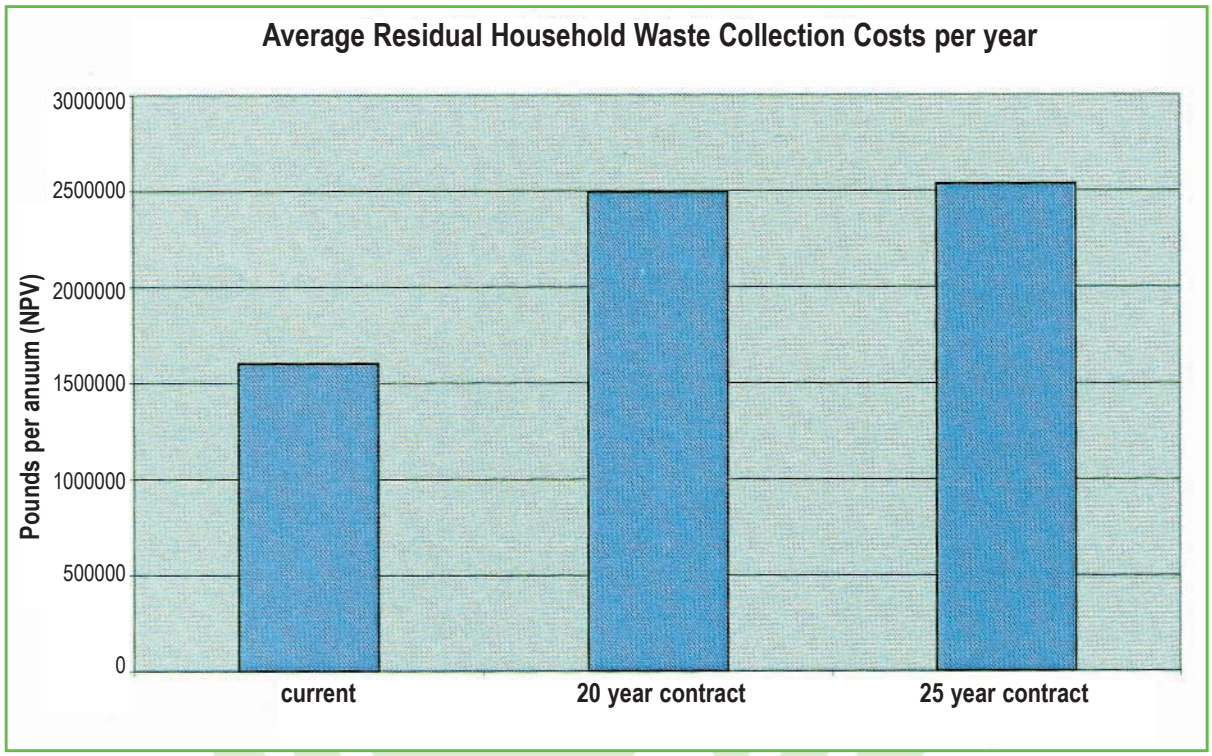
If household waste arisings in West Berkshire were to increase at the national rate of 3.0% per annum this would result in a doubling of the quantity of household waste requiring both collection and management/disposal by 2020. This emphasises the importance of waste minimisation, which will form a core principle of the waste management strategy.

The rates of waste growth in West Berkshire will have important technical and financial consequences for waste collection. Using the existing waste collection as a basis for modelling, Entec estimates that the continuation and required expansion of the residual household waste collection system in West Berkshire will result in a significant increase in budgetary requirements. These estimates do not include the cost of the current kerbside scheme or its expansion. The costings are based on the use of conventional waste collection vehicles.

Over a contract period of 20 years the average cost of residual waste collection is projected to rise to £2.5 million per year at present day costs. This equates to an averaged cost of £28.2 per tonne and an averaged cost of £37 per household over a 20-year contract period. Extension of the collection contract over a 25 year period would have an effect of reducing these indicators by almost 5%.

> ***"West Berkshire will establish a challenging series of targets for minimising the municipal waste it collects from the community."***

Figure 4.7: Projected Annual Costs (averaged over 20 to 25 years) for Residual Household Waste Collection



The extension of the existing household waste collection system is compatible and could be integrated with Waste Management Option 1 (BaseCase - continuation of existing situation) and Waste Management Option 3 (Maximum Energy from Waste). The system on its own would be incompatible with all of the other waste management options considered in this strategy, and particularly any involving the sorting of recyclables on the kerbside or the separate collection of organic wastes.

4.2.1 Current Recycling Schemes

The current household waste recycling schemes in West Berkshire comprise:

1. **A network of bring banks distributed throughout the district.**

2. **A kerbside collection scheme.**

The kerbside collection system essentially comprises of a box system (employing two separate boxes per household), available throughout West Berkshire with dry recyclables collected on fortnightly basis. The 2001/02 costs for the recycling systems in West Berkshire is estimated to be £625,000, which equates to a service provision of £10.81 per household, or £7.93 per tonne of household waste.

4.3 *Kerbside Collection Options*

Waste management Options 2, 4 and 5 all require an expansion in the kerbside collection of recyclable and compostable materials within West Berkshire. This expansion requires the provision of an additional or replacement receptacles (boxes or wheeled bins) to enable segregation of these materials by the householder, as well as a new and expanded collection infrastructure.

There are numerous different collection options available with variations in the type of receptacle, frequency of collection, size of container etc. A selection of example schemes have been modelled which are illustrated in Table 4.3.

Table 4.3 - Household Waste Collection Schemes Modelled

Scheme	Wastes Segregated/ Collected	Materials Segregated	Receptacles Provided	No. & Size of Receptacle	Collection Method	Collection Fequency
A	Dry Recyclables	PC, FM, NFM,T,DP	Wheeled Bin	1 (140l)	RCV	Fortnightly
	Organic Waste	KO, Gr	Wheeled Bin	1 (240L)*	RCV	Fortnightly
	Residual Waste	Residual	Wheeled Bin	1 (140L)	RCV	Weekly
B	Dry Recyclables	PC, FM, NFM,T,DP	Wheeled Bin	1 (140l)	RCV	Weekly
	Organic Waste	KO, Gr	Wheeled Bin	1 (240L)*	RCV	Weekly
	Residual Waste	Residual	Wheeled Bin	1 (140L)	RCV	Weekly
C	Dry Recyclables	PC, FM, G, NFM,T,DP	Boxes	4 (44l)*	Sort Vehicle	Fortnightly
	Organic Waste	KO, Gr	Wheeled Bin	1 (240L)*	RCV	Fortnightly
	Residual Waste	Residual	Wheeled Bin	1 (140L)	RCV	Weekly
D	Dry Recyclables	PC, FM, G, NFM,T,DP	Boxes	1 (44l)*	Sort Vehicle	Weekly
	Organic Waste	KO, Gr	Wheeled Bin	1 (240L)*	RCV	Weekly
	Residual Waste	Residual	Wheeled Bin	1 (140L)	RCV	Weekly

Key

PC - Paper, card and Magazines, **FM** - Ferrous metal, **G** - Glass, **NFM** - Non Ferrous Metal, T- Textiles, **DP** - Dense Plastics, **KO** - Kitchen organic, **Gr** - Green garden waste, **RCV** - Refuse Collection Vehicle, **Sort vehicle** - modified flat bed trucks with caged areas
* - existing wheel bins
** - 2 existing boxes plus 2 new boxes

Any scheme adopted would be introduced throughout West Berkshire and not targeted to specific areas like that outlined in Option 5.

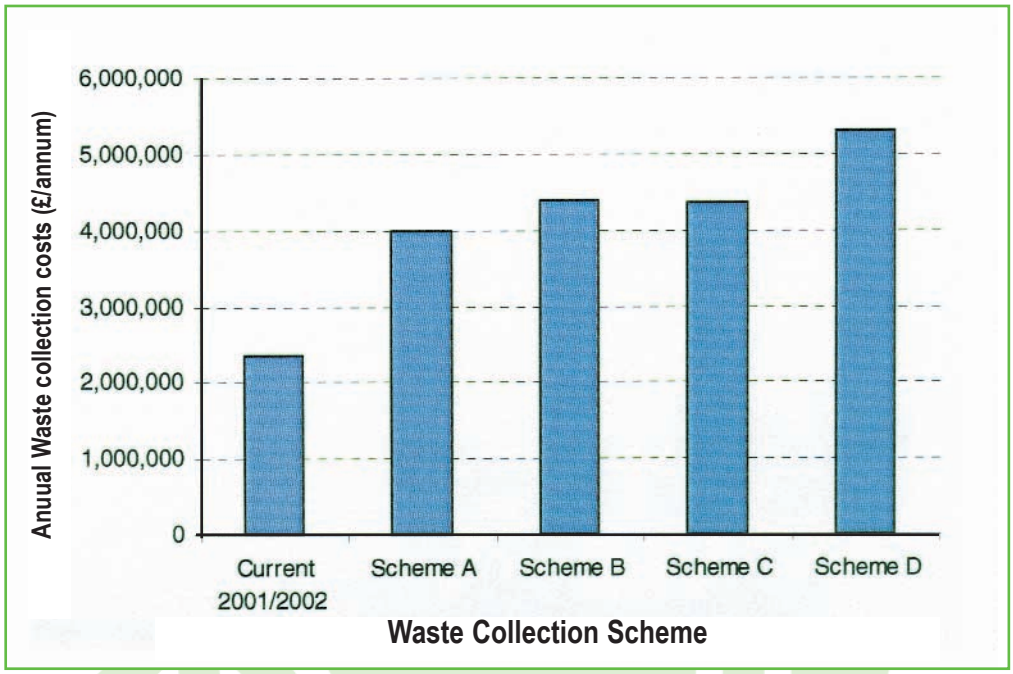
Each modelled option contains a number of common assumptions. These are listed below.

- Waste composition remains constant with time.
- Household waste growth is 2% per annum.
- The split of rural and urban population is 20:80.
- All options contain provision for the expansion of home composting at a rate of 500 units per year.
- Home composting units are discounted to half the recommended retail price.
- Value of recyclables collected remains constant at current market value.
- Facility costs are excluded with the exception of the rental of depot space.
- Damaged or lost receptacles are replaced at a rate of 2% per annum.
- Receptacles are bought in bulk (allowing discounting).
- All receptacles (with the exception of home composting units) are provided in 2003.
- The value of receptacles is depreciated over 10 years.
- The value of vehicles and mobile plant are depreciated over 8 years.
- Interest is charges at a rate of 8% of outstanding capital expenditure.
- RCV's are manned by a driver plus two crew.
- Sort vehicles are manned by a driver plus two crew.
- All input and output costs are presented at net present value (NPV).

Modelled costs for the schemes are presented in Figures 4.8 and 4.9. The systems will result in a 2 to 2.3 fold increase (to between £4 million to £5.4 million) in the averaged annual waste collection costs for West Berkshire compared with the situation in 2001/2002. This reflects:

- Expansion of kerbside collection of dry recyclables.
- Introduction of kerbside collection organic wastes.
- Provision of home composting units.
- Additional resources required to collect growing quantities of waste.

Figure 4.8 Averaged Cost per Annum of Waste Collection Systems



The wheelie bin systems (Scheme A and B) will deliver a 10-14% lower waste collection cost than the box system (Scheme C and D), but in reality this will be compensated to some extent by a reduction in facility costs (blue box schemes requiring bulking/transfer facilities rather than an MRF).

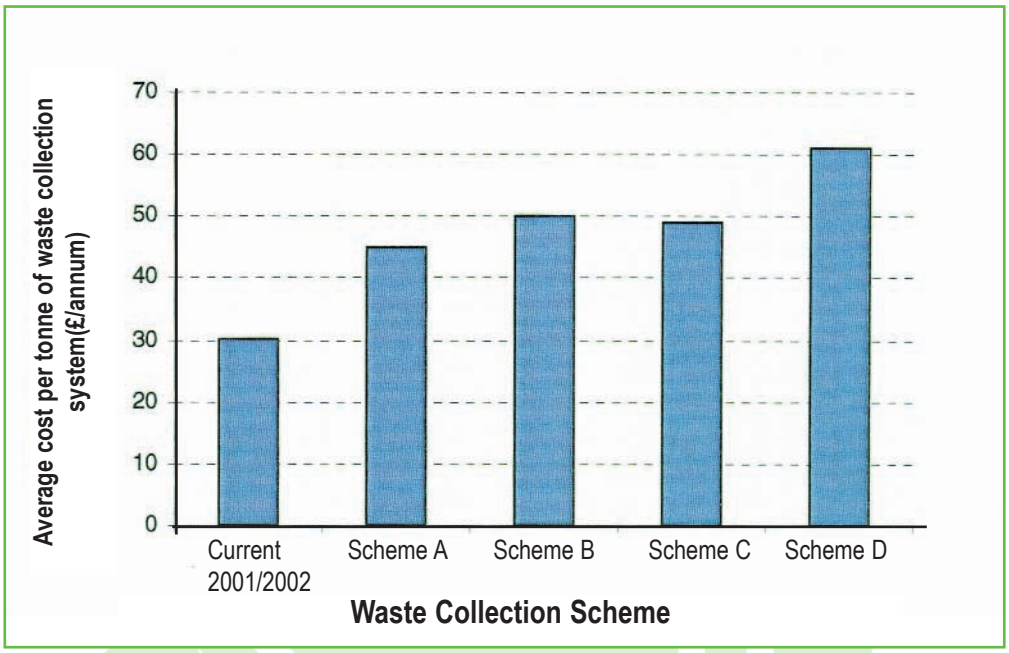
Introducing the weekly collection of recyclables and compostables will result in an increase in the annual cost of 12 to 15 % depending on whether the scheme is a blue box or green bin scheme, while contract length (extending over 20 or 25 years) will have a marginal impact on the averaged cost per annum of the services.

The cost per tonne of waste collected (recyclables, organic waste and residual waste) through each scheme ranges from £45 to £61 per tonne averaged over 20 years (Figure 4.9) which compares to a current cost of £30.02 per tonne of household waste.

"West Berkshire in partnership with the Environment Agency, community groups and others encourage recycling and composting at home and in the workplace."

Picture courtesy of Alupro. www.alupro.gov.uk

Figure 4.9 Averaged Cost per Tonne of Waste Collection Systems



4.4 Integrated Waste Management Options

Integrated waste management refers to a process that consolidates different aspects of waste management into a single cohesive system. This system can be potentially administered through a reduced and rationalised portfolio of contracts. This offers a number of potential benefits to Local Authorities and should be considered in the process of assessing options for service delivery and delivering Best Value.

In the UK different aspects of waste management and particularly waste collection and waste disposal have traditionally been administered by separate elements of the Local Authority system. This was the case in West Berkshire prior to April 1998 when:

- **Municipal waste collection was administered by Newbury District Council.**
- **Municipal waste disposal was administered by the former Berkshire County Council.**

Since 1998 West Berkshire District Council has had responsibility for both of these waste management functions as well as a number of related services: recycling services, street cleaning and litter collection, Civic Amenity Site provision and management, abandoned vehicle removal, grounds, parks and amenity management.

West Berkshire Council is committed to integrating services to deliver increased efficiency, service improvements and Best Value. Some of the potential benefits and drawbacks associated with the development of an integrated waste management system are listed in Table 4.4.

Table 4.4 - Advantages and Disadvantages of Integration of Waste Management Services

Advantages

Economies of scale through the use of a single contractor for outsourcing service provision

More experienced national and international contractors attracted by a larger contract

More co-ordinated Client monitoring as only one lead contractor will be involved in service provision

Better spread and co-ordination of monitoring duties as each Contractor Supervisor could be involved in a range of services within a defined area

Greater service cohesion from collection to disposal Co-ordinated approach to street scene issues

Maximised flexibility and partnership with the selected contractor will enable West Berkshire to respond to changing pressures on Local Authorities resulting from new EU and UK Legislation

The interface between service elements is the responsibility of a single contractor which will prevent disputes

Waste flows are the sole responsibility of the lead contractor

More integration of recycling efforts through the kerbside collection system and at Civic Amenity Sites

Greater investment opportunities for both the Authority and Contractor through the integration of cleansing and collection into long term contracts

Rationalisation of waste management facilities (e.g. facilities designed and developed to deliver several services/ functions e.g. combined vehicle depot, CA site and waste transfer stations)

Increased flexibility in the Contractors use of manpower and resources (providing the contract enables this)

Rationalised point of contact

Commonality in reporting provisions and data collection methods

Lead contractors able to negotiate savings from niche service sub contractors though scale of economies

Management of sub-contractors is the sole responsibility of the lead contractor (i.e. allowing rationalised project management).

More scope to demonstrate best value and continuous improvement across a range of services

Disadvantages

A reduced range of contractors able to provide integrated services

Some services may be peripheral to lead contractors core business (problems in track record and understanding of some niche services)

Contractors will need good project management tools and skills

Contract length for all integrated services will be determined by the time over which capital assets can be repaid. Where this involves major waste management infrastructure this likely to be over a period of 20 to 30 years.

Picture courtesy ot the EnvironmentAgency.gov.uk

By combining the costs of the various waste management options with the modelled collection costs, the total integrated waste management costs can be analysed. Under all projected integrated scenarios, waste management costs are projected to rise based on net present day value (NPV).

Table 4.5 Total Annual Costs for Integrated Waste Management (20 year contract period) Including Risk of Landfill Tax

Annual Cost (£/annum)	Current	IWMS 1	IWMS 2	IWMS 3	IWMS 4	IWMS 5
Waste Collection	2,366,540	2,993,417	4,012,581	2,993,417	4,012,581	3,536,695
Waste Disposal	2,425,700	3,337,707	3,697,884	7,392,345	7,750,058	7,368,482
CA Sites	300,790	300,790	300,790	300,790	300,790	300,790
Street Cleansing	941,290	941,290	941,290	941,290	941,290	941,290
Education/Waste Min	-	30,000	70,000	30,000	70,000	70,000
Grounds maintenance	852,000	852,000	852,000	852,000	852,000	852,000
TOTAL excluding Landfill Tax	**6,886,320**	**8,455,204**	**9,874,545**	**12,509,842**	**13,926,719**	**13,069,257**

Key

IWMS Option 1 - Waste Disposal Option 1 (BaseCase) plus existing waste collection system.
IWMS Option 2 - Waste Disposal Option 2 (maximised recycling and composting) plus Waste Collection Scheme A.
IWMS Option 3 - Waste Disposal Option 3 (maximum energy from waste) plus existing waste collection system.
IWMS Option 4 - Waste Disposal Option 4 (highest level of sustainability) plus Waste Collection Scheme A.
IWMS Option 5 - Waste Disposal Option 5 (urban/rural option) plus Waste Collection Scheme A.

The highest costs are associated with systems incorporating a significant element of energy from waste, reflecting the high capital costs associated with these plants. Those integrated waste management options which involve a high level of recycling and composting (e.g. IWMS 2 and IWMS 4,) incur substantially increased waste collection costs. However, even the baseline scenario which involves landfilling a considerable portion of West Berkshire waste (and will not fulfil statutory requirements), can also be expected to result in a 23% rise in waste management costs together with a considerable level of risk associated with increasing landfill tax and the securing of additional landfill permits in an open market.

In a commercially competitive environment it may be expected that bids by various contractors will straddle the projected costs presented in this strategy. This will reflect the commercial situation of individual contractors, their perception of risk and the level of margin they expect to make. Different approaches to the rationalisation of facilities and resources arising from integrated service provision may also produce variations in individual bids.

4.5 Consultation on Future Options

Consultation is a key requirement of Municipal Waste Management Strategies and Best Value generally and is addressed in greater detail in Chapter 5.2. In 2000, West Berkshire District Council started a consultation process on the future waste management options for the district. This phase of the consultation involved regular workshops, presentations, and meetings with technical officers from nearby local authorities, waste management industry, the Environment Agency, and Council members.

In May 2002 a Waste Information Leaflet was produced and distributed to over 60,000 residential and commercial properties within West Berkshire. The leaflets were also displayed in public libraries throughout the district, Council Offices and were also distributed to local interest groups.

The aim of the leaflet was to inform West Berkshire residents of how their waste is currently managed and how waste will be managed in the future. Residents were requested to complete a detachable questionnaire, which addressed the current service provision and their attitudes towards increasing recycling and composting within the district.

A response rate of 5.5% was achieved which is considered significant for a leaflet consultation exercise of this sort. The results from the questionnaire have provided West Berkshire Council with invaluable information on public attitudes towards recycling and composting and this information will be taken into account during the implementation of the waste management strategy.

From analysing the questionnaire responses the following conclusions can be made:

- 92% of respondents claimed to currently recycle.
- 79% of respondents claimed that they use the fortnightly kerbside collection scheme.
- 49% of respondents stated that they do not home-compost.
- 80% of respondents stated that they could recycle more. The most popular suggestions for achieving this were by: increasing the number of materials that are collected for recycling, the provision of more information on recycling, and improving recycling containers.
- Respondents were very keen to suggest the collection of more types of materials for collection, the three most popular materials that were suggested for collection were plastic, cardboard and organic waste.

It is evident that those who responded to the waste information leaflet actively support the Council's plans and policies to maximise recycling and composting within West Berkshire.

4.6 West Berkshire's Preferred Waste Management Option

Guidance on the choice of options is given both by the Government in "Waste Strategy 2000", the Landfill Directive, Best Value, and by the plans and policies detailed in this waste management strategy. These all indicate that waste minimisation is the preferred option for managing future waste arisings and that recycling and composting must then be maximised. "Waste Strategy 2000" states that "where energy from waste solutions are considered, the strategy should demonstrate that all opportunities for waste reduction, re-use, recycling and composting have been considered first".

The assessment of waste disposal options in this strategy indicates that maximising recycling and composting (Option 2) is a potentially cost effective and viable solution for West Berkshire over the short to medium term. However in order to fulfil the longer term Government recovery targets the Council recognises that further alternative technologies may need to be established in the long term. In January 2001 following consultation members approved Option 2 Maximised Recycling and Composting as the preferred way forward for West Berkshire.

West Berkshire Council recognises the importance of waste awareness and education in the successful implementation of the maximised recycling and composting option. The Council is committed to promoting waste education and awareness in the community and will introduce measures to see this is achieved.

5. Plans and Policies

5.1 Key Achievements to Date

Since its establishment as a Unitary Authority in April 1998 West Berkshire Council has embarked on an on-going and ambitious programme of improving the street cleansing, waste collection and waste disposal services available within the District. This has been achieved whilst cost savings and improvements in service efficiency have also been effected wherever possible.

This programme has resulted in a number of significant improvements including the increased mechanisation of street cleansing operations, the rationalisation of landfills used by WBC, the provision of a dedicated green waste and recycling centre at Paices Hill and an improved level of diligence practised by our current contractors. Table 5.1 summarises the progress to date and WBC's on-going service improvements.

The results from the programme have been achieved within the constraints set by the existing contracts for waste management and related services inherited from the Newbury District Council and Berkshire County Council.

A number of core policies and targets were identified in the former Newbury District Council Waste Recycling Plan 1993. The long term objective of the Plan was to achieve the Government's stated objective of recycling 25% of all household waste. The strategy for expanding the Council's recycling activities in the 1993 Recycling Plan is set out below:

a) In the short term:

- To establish main recycling centres in all the towns, large villages and major centres of population throughout the District;
- To establish smaller recycling centres in the medium sized villages;
- In villages where recycling facilities are not appropriate, to develop a mobile recycling service to serve several areas on a rota basis;
- Wherever possible, to achieve the above using established outlets provided by recycling contractors;

b) To develop plans to encourage treatment of some organic wastes at home;

c) Independently or in association with other bodies, to explore the possibilities of setting up a scheme for the collection and treatment of organic wastes;

d) To encourage and advise the householders and the business community to adopt waste reduction techniques;

e) To co-operate with the voluntary sector in the practice and promotion of recycling;

f) To publicise and promote recycling and the public's use of the Council's recycling schemes.

In implementing the recycling activities set out in the 1993 Recycling Plan, the Council set the following targets:

NRT 1	To develop 4 further recycling centres, to a total of 7, by the end of 1992/93;
NRT 2	To develop a further 7 recycling centres, to a total of 14, by the end of 1993/94;
NRT 3	To develop 20 mini recycling centres in 1994/95 subject to the constraints of implementing such centres;
NRT 4	Beyond that, to add further recycling centres to bring the total up to approximately 1 per 2000 population by the year 2000;
NRT 5	To equip these recycling sites for the collection of glass, paper, and cans and in some cases textiles; to further equip the sites for the collection of other materials as outlets become viable;
NRT 6	To examine for early implementation a small scale collect scheme run by a licensed contractor;
NRT 7	To encourage the home treatment of some household organic wastes to cover the rural areas by the year 2000;
NRT 8	To review during 1994/95 the need for a house-to-house collection scheme and consider the implementation of a pilot scheme;
NRT 9	To publicise during 1992 recycling to the community by the preparation and distribution of a leaflet; to publish a Directory on recycling by mid-1993.

The waste recycling targets set in the former Newbury District Recycling Plan (1993) were largely superseded following the proactive introduction of the kerbside recycling scheme in 1996 which has enabled the district to increase it's recycling rates to 11% in 2001. Other key achievements since 1993 have included:

- The launch of a composting campaign which resulted in over 1,758 (2000/01) households purchasing home compost bins at subsidised rates
- Establishing 13 local recycling centres which collect recyclable materials delivered by the public
- Establishing a fortnightly kerbside recycling collection scheme for glass, paper, cans, and textiles
- Promoting local voluntary organisations such as Community Furniture Project for the re-use of household furniture, electrical goods, and toys
- The launch of a waste minimisation campaign in partnership with the other Berkshire districts
- Introducing the use of emails by all council services to reduce paper wastage

Table 5.1: WBC Service Improvement Programme

WBC Ongoing Initiatives

SCHEME	BENEFIT	COST SAVING
In November 1996, WBC introduced a kerbside recycling scheme across the whole of the district. The scheme collects newspapers & magazines, glass, cans and textiles. To date, the scheme has been extremely successful in introducing recycling to many residents of WBC, and in making the sorting and collection of recyclables relatively easy.	In 1999/00, the scheme collected approximately 4,000 tonnes of recyclables.	
Since becoming a Unitary Authority in April 1998, WBC has worked with all its incumbent Contractors on consolidating the Waste Services provided, and in ensuring the services are run as efficiently and effectively as possible. This has included increased mechanisation in the undertaking of street cleansing operations.	More effective and responsive range of services provided.	
During a re-evaluation and assessment of the Authority's Waste Disposal Services, and the landfill options currently available in Berkshire, Officers were able to identify that through streamlining operations and disposing of all waste arisings at the Hermitage Landfill Site, an overall cost saving would be made.	Cost saving identified which assisted in the funding for re-opening Paices Hill as a Green Waste & Recycling Centre.	£120,000

Table 5.1 continued

SCHEME	BENEFIT	COST SAVING
The provision of a dedicated Green Waste & Recycling Centre at Paices Hill, Aldermaston, from April 2000. A partnership approach was developed with Hampshire County Council in order facilitate the re-opening of Paices Hill. The facility was funded through efficiency savings identified within Waste Services, which funded the majority of the scheme. In addition, significant improvements were made to the site's drainage layout, which resulted in a more environmentally friendly operation. The Centre provides excellent recycling facilities to the local residents and makes the recycling of green waste more accessible. Materials collected at the site include: green garden waste, paper, cardboard, mixed cans/plastics, textiles and glass (green, clear and brown). The green waste recycled collected on-site is sent to a composting plant and recycled into soil improver. The recycled compost is available for purchase on-site, thus promoting 'closed loop' recycling, and the positive benefits of recycling.	The re-opening of the Paices Hill site, providing essential facilities to the public to allow them to recycle more easily.	
The promotion and development of the Nature Discovery Centre, Thatcham, over the past few years has seen it evolve into an extremely well supported interactive environment centre. This has assisted in allowing Countryside & Environment to promote environmental issues to the public, and allow for visitors to become actively involved in experiencing and interpreting key environmental issues. Promoting the needs of sustainability and environmental awareness is also a key issue in meeting many of the new waste targets being published.	Increased promotion, awareness-raising and education associated with environmental issues within West Berkshire.	

SCHEME	BENEFIT	COST SAVING
A review by Waste Services of constraints on the effectiveness of the Council's street cleansing programme identified the treatment and removal of weeds on the footways and highways as a particular environmental constraint in the undertaking of street cleansing works. The previous operational arrangements, relating to the historic split of responsibilities between the former County and Newbury District Councils, involved joint responsibility between weed spraying (Highways) and weed removal (Waste Services). During a review, clear synergies were identified between weed treatment and removal with benefits including improved accountability, effectiveness and productivity in incorporating weed treatment under the current Street Cleansing Contract.	Improved value for money, accountability, effectiveness and productivity.	Improved efficiencies allowed 3 applications instead of the previous 2.
During February and March 2000, West Berkshire launched a new initiative in conjunction with the surrounding authorities within Berkshire and BT to recycle old Yellow Pages. Throughout the district four banks were supplied specifically for the old books, the scheme was well adopted and supported by residents of West Berkshire and the collected over 10 tonnes of old Yellow Pages that was recycled and turned into a animal bedding product.	Separating out Yellow Pages from the normal waste stream will improve the Authority's recycling performance and reduce demand for landfill capacity.	

Table 5.1 Continued

SCHEME	BENEFIT	COST SAVING
WBC in partnership with Straight Recycling Systems and Thames Water launched a home composting campaign (www.getcomposting.com/wb) in West Berkshire during the summer of 2000, which enables residents of West Berkshire to purchase home composting units and water butts at less than half the recommended retail price. The scheme is supported by composting information and on-going help and support from the supplier, to allow householders to gain the most from their new composting bin. The possibility of undertaking a home composting day will continue to be investigated, subject to adequate external funding being secured.	Home composters units have major benefits for the environment through minimising the quantity of waste the Local Authority has to collect and dispose.	
WBC are currently working with our Civic Amenity Site Contractor for Pinchington Lane, to establish opportunities for the separating of green waste from the normal waste stream. Once separated, WBC will need to locate facilities whereby the material can be composted and recycled. Initial trials proved successful during the Christmas period, when several thousand Christmas trees were collected separately at the site and re-used as mulch.	Separating out green waste from the normal waste stream will improve the Authority's recycling performance and reduce demand for landfill capacity.	Cost implication yet to be established.

5.2 *Best Value and Consultation*

Best Value requires local authorities to fundamentally review their services in consultation with their citizens and other stakeholders. In 1999, West Berkshire Council launched a Community Panel which now numbers some 5,500 members, and provides a cross section of the local community who can be asked for their views on a whole range of important topics. The Council consults on a regular basis in relation to Best Value Reviews and service specific issues, and there is a community panel newsletter that keeps members informed of the consultation results.

The Policy and Performance Unit of West Berkshire Council launched it's Consultation Strategy in January 2002. This Strategy provides guidance on undertaking consultative exercises. West Berkshire will consult on each service once every five years as part of Best Value reviews and on Corporate priorities every three years in order to report on a number of Best Value Performance Indicators which will be reviewed in March every year in a Best Value Performance Plan.

It is a statutory requirement for all local government authorities to implement a Community Strategy. As part of this process, the Council will need to share data with other bodies, such as the police and health authority. The Consultation Strategy will facilitate the sharing of data from consultation between all authorities responsible for developing the West Berkshire Community Strategy.

The Consultation Strategy aims to:

- Deliver practical guidance on planning and delivering effective consultation.
- Suggest mechanisms to implement a joined-up, strategic approach to consultation.
- Set the standards for consultation to be followed consistently across the authority.

The strategy is a working document and will assist the Council in ensuring that a joined up, strategic approach to consultation is adopted across the authority. Implementation of this consultation strategy will have the following benefits:

Cost control: saving money by avoiding duplication.

Quality control: helping ensure that consultations are carried out consistently to a high standard, using appropriate methods for the purpose.

Reduce consultation fatigue: only necessary consultations will be carried out and similar consultations will be carried out together where possible.

Using results: ensure results from consultation exercises are used to inform relevant decisions - and that we only consult on issues where we are willing to change as a result of consultation.

Consistency: Help develop consistent corporate policies.

Information: Provide details of resources and contacts within the authority and advice on various consultation techniques.

In November 2000 the Council asked 3,500 members of the Community Panel for their views on a range of topics relating to Council performance and the area in which they live. The survey generated a response rate of 55%. The aim of the survey was to provide an important input into the service planning process, the development of performance measures, and the implementation of Best Value.

Of importance to this municipal waste management strategy are the following results:

Table 5.2 - Satisfaction ratings for Council environmental services

Environmental Service	WBC % Satisfaction	National Average % Satisfaction
Recycling facilities	68%	60%
Household waste collection	90%	83%
Civic Amenity Site	68%	69%
Cleanliness standards	63%	56%

Table 5.2 illustrates that West Berkshire Council achieves high satisfaction levels for refuse collection, and although lower satisfactions levels exist for cleanliness these are significantly higher than the national average.

In 2000/01 the Council achievements included:

- recycling 10.7% of West Berkshire's household waste
- cleaning 98.7% of streets to a high standard
- removing all fly tipped waste within 4 working days of being informed
- removing all abandoned vehicles on public land within 4 days after the official notice to the former owner has expired
- achieving the levels of satisfaction as detailed above in Table 5.2

The Waste Information leaflet that was distributed to 60,000 residential and commercial properties in May 2002 has enabled the Council to develop a consultation database of stakeholders who have expressed their interest in continuing to be involved in the next stages of implementing this Municipal Waste Management Strategy. West Berkshire Council aims to utilise this database and consult with the stakeholder group throughout the implementation of the strategy. The role and function of the stakeholder group may include:

- Giving views on the future plans and policies to meet the waste strategy objectives;
- Considering and advising on information and publicity material;
- Communicating issues and progress to other stakeholders;
- Development of ideas for the creation of local grass roots waste management projects;
- Representing the community at workshops and meetings;
- Giving views on non-technical tender evaluation criteria and service performance monitoring criteria for future waste management contracts.

5.2.1 *Best Value Performance Indicators*

Waste management in West Berkshire is measured by a number of national performance indicators set by the Government. Those that are relevant to this municipal waste management strategy are as set out in Table 5.3.

5.2.2 *Local Agenda 21*

A district wide Local Agenda 21 steering group was set up in November 1998 with the objectives of:

- Guiding the West Berkshire LA21 process and advising West Berkshire Council on policies towards achieving sustainability.
- Identifying methods for encouraging greater participation in LA21 throughout the district.
- Developing West Berkshire as a leading pioneer/example of sustainable development.

The following organisations contribute to the Steering Group: Age Concern, Berkshire Solar Energy Club, CAMBUS, Community Council for Berkshire, Community Furniture Project, Friends of the Earth, Green Party, Hungerford Parish Council, Newbury Soroptimists, Newbury Young People's Council, Pang & Kennet Valley Countryside Projects, Thames Valley Chamber of Commerce, United Nations Association (Newbury & District Branch), Thames Valley Energy Limited, West Berkshire Council, and the Women's Environment Network.

A number of local initiatives have been supported by LA21. These have included:

- Community Furniture Project providing a collection service for furniture, household goods, and toys etc and selling them at low cost to people in need in the local area.
- 'Make your garden even greener'campaign providing home compost bins and water butts at half price to residents of West Berkshire.
- Funding the purchase of the real nappy information packs
- Mars Awards which support schools and businesses taking action for the environment.
- Sustainable Living exhibition at the Thatcham Nature Discovery Centre.
- Thames Valley Energy Agency which promotes renewable energy across the Thames Valley region.

"West Berkshire shall identify ways of reducing consumption and preventing waste production, using where practicable, environmentally superior materials and employing more sustainable practices."

Table 5.3 - Best Value Performance Indicators

Best Value Performance Indicator	Description	Value in 2000/01	Target 2001/02	Value in 2001/02	Target 2002/03	Notes
BV82a	Household waste - % recycled	10.3%	10.00%	10.07%	10.50%	
BV82b	Household waste - % composted	1.10%	2.00%	1.28%	2.00%	
BV82c	Household waste - % used to recover heat, power and other energy	0%	0%	0%	0%	
BV82d	Household waste - % landfilled	88.6%	88.00%	88.65%	87.50%	
BV84	Kg of household waste collected per head	584kg	564kg	599kg	547kg	
BV85	Cost per km of keeping land clear of litter and refuse	£69,076	£69,549	£73,689		The government proposes to delete this indicator from 2002/03
BV86	Cost of waste collection per household	£31.60	£30.89	£36.89	£51.30	Includes kerbside recycling
BV87	Cost of waste disposal per tonne of municipal waste	£40.80	£39.49	£38.52	£39.04	
BV88	No. of collections missed per 100,000 collections of household waste	854	100	39.44		The 00/01 figure includes missed recyclable collections. The large increase also reflects the bad weather conditions during Dec 2000 when collections in a number of areas had to be cancelled. The government proposes to delete this indicator from 2002/03
BV91	% of population served by kerbside collection or within 1km of recycling centre	100%	100%	100%	100%	

Source: Best Value Performance Plan 2002/2003

5.3 Strategic Waste Management Policies & Objectives

5.3.1 Waste Education and Awareness

SWMP 1 West Berkshire in partnership with parish councils, community groups and other Agencies will seek to deliver a programme of awareness, promotion and publicity to encourage a fuller understanding of sustainable waste management issues and practices throughout the community.

5.3.2 Stakeholder Consultation

SWMP 2 West Berkshire will seek to engage in a full and interactive dialogue with all members of the community on waste management issues within West Berkshire. In doing so the Council will endeavour to ensure that all opinions are duly expressed and fully considered as part of any decision making process. The Council will ensure that the process of making such decisions is open and fully transparent to all in West Berkshire.

SWMP 3 West Berkshire will enter into and maintain meaningful dialogue with the Environment Agency, nearby local authorities and other Agencies on the development of future waste management solutions for West Berkshire to ensure that our strategy and plans are both consistent and pragmatic in a Regional context.

5.3.3 Waste Minimisation and Reuse

SWMP 4 West Berkshire in conjunction with the Environment Agency, other local authorities and other parties will encourage the reduction and re-use of waste. This will form an objective of a promotional and awareness programme focused on waste.

SWMP 5 West Berkshire shall establish a leading example within our community by examining how it purchases, uses and manages materials in the course of its normal activities. The objective of this work will be to identify ways of reducing consumption and preventing waste production, using where practicable, environmentally superior materials and employing more sustainable practices.

SWMP 6 West Berkshire will establish a programme of waste minimisation, re-use, recycling of waste materials in respect of its own functions and the services it provides.

SWMP 7 West Berkshire will establish a challenging series of targets for minimising the municipal waste it collects from the community. The Council will seek to forge partnerships with parish councils and community groups with a view to establishing common aims and goals in this respect.

SWMP 8 West Berkshire believe the first and most meaningful target for waste minimisation in the short term, should be reducing waste growth in West Berkshire to the national average. Subsequent targets will be set following regular periodic review and should seek to achieve more significant reductions in waste generation.

5.3.4 Recycling & Composting

SWMP 9 In consultation with the Environment Agency, nearby Local Authorities and other Agencies and having regard to material planning considerations, West Berkshire will promote the development of new and existing facilities for waste transfer, recycling and composting provided that:

- These facilities are developed as part of integrated network to deliver West Berkshires needs and contribute to Regional self sufficiency
- The facilities are consistent with the aims and objectives of the waste management strategy for West Berkshire
- There is demonstrable need for the facility.

SWMP 10 West Berkshire will develop practical initiatives to support waste segregation at source in the household and encourage similar initiatives in business premises.

SWMP 11 West Berkshire in partnership with the Environment Agency, community groups and others encourage recycling and composting at home and in the workplace.

5.3.5 Waste Management

SWMP 12 West Berkshire is committed to movement towards more sustainable waste management practices. It will seek to influence such change wherever it can and particularly through the exercise of its statutory functions.

SWMP 13 In respect of current Government guidance on sustainable development and waste management, West Berkshire considers the progressive development of more sustainable waste management practices to be a legitimate strategic goal to be achieved over the short, medium and long term.

SWMP 14 Through the implementation of its waste management strategy and future contracts, West Berkshire will seek to progressively reduce the amount and proportion of West Berkshires municipal waste being disposed of to landfill. In so doing West Berkshire will seek to divert municipal waste towards more sustainable waste management practices which lie higher in the waste management hierarchy.

SWMP 15 West Berkshire supports the proximity principle and the concept of regional self sufficiency in respect of waste management facilities. Wherever it is consistent with the best practicable environmental option available, West Berkshire will endeavour to ensure that the waste produced by our community is managed and dealt with within West Berkshire, or failing this the Region, wherever this is possible.

SWMP 16 West Berkshire will not normally support the export or import of waste from the Region for treatment or disposal unless circumstances demonstrably show that this is the best practicable environmental option.

SWMP 17 In working towards more sustainable waste management West Berkshire will seek through the implementation of its strategy, to deliver statutory Government performance standards for waste management.

SWMP 18 West Berkshire will seek to deliver continuous and demonstrable improvement in the quality, sustainability and efficiency of the waste management services it delivers.

SWMP 19 Through the implementation future waste management contracts, West Berkshire will encourage its future contractors to be proactive and innovative in identifying areas for delivering service improvement and achieving its core policies and goals.

5.3.6 Waste Recovery

SWMP 20 In line with Government targets for waste recovery, West Berkshire will look to recover more value from waste as part of its waste management strategy over the medium to long term. The Council will maintain a watching brief on the technologies available for this purpose and seek to engage in partnerships with others where this can deliver the best practicable environmental option in a way which is consistent with best value.

5.4 Implementation Plan to Meet the Targets

In the short term (to 2003/04)

In order to meet the 2003/04 recycling target the Council in partnership with the waste management contractor will look to improve the participation rate of householders using the existing kerbside collection scheme for dry recyclables. A new education and publicity programme will be launched, and non-participating residents, particularly those in new areas, lapsed recyclers, and those in multiple occupancy properties will be specifically targeted. Facilities for recycling and composting at Pinchington Lane and Paices Hill will be heavily publicised in order to maximise the recycling rates achieved at the sites. West Berkshire District Council will also continue to develop additional waste minimisation initiatives to supplement the existing schemes.

In order to demonstrate it's commitment to waste minimisation and recycling the Council has created a new post within Waste Services for a Recycling and Waste Minimisation Officer whose role it will be to promote and develop new initiatives in order to meet the forthcoming targets.

In the short to medium term (to 2005/06)

The Government has recently made additional PFI (Private Finance Initiative) credits for waste management available to local authorities. These are now targeted at recycling and composting initiatives in line with 'Waste Strategy 2000', and capped at £25 million per project and therefore appropriate to small and medium sized local authorities.

Picture courtesy of Alupro. www.alupro.gov.uk

The Government's emphasis on increasing levels of recycling and composting is very much in line with this waste management strategy and West Berkshire's preferred option of Maximising Recycling and Composting.

The Council has therefore decided to submit an application to the Government for PFI funding for an integrated contract to commence from 2004/05.

In order to ensure continuity of service provision West Berkshire District Council will be required to extend where possible, and re-tender a series of interim contracts when the majority expire in September 2003. The Council will start a procurement process for the integrated contract following a decision from the Government on PFI funding.

West Berkshire Council has recently commissioned a feasibility study into the opportunities for developing an ecology village in the district. The plan for this site will be fundamental to the integrated contract and West Berkshire's commitment for waste minimisation and maximising recycling and composting.

In order to meet the 2005/06 recycling targets the Council aims to have boosted public participation in the kerbside recycling to approximately 70%, implemented schemes for the collection and composting of organic wastes, and incorporated the management and recycling of school waste within the integrated contract.

Medium term (beyond 2005/06)

The integrated contract will be fully implemented and will achieving high levels of recycling and composting in excess of 40%. The Council will continuously review the landfill diversion rates being achieved and the delivery of diversion targets. Technological developments in waste recovery techniques will be monitored closely and options for implementing recovery facilities and establishing partnerships with other authorities will remain flexible.

"West Berkshire will promote the development of new and existing facilities for waste transfer, recycling and composting."

5.41 Action Plan

Actions		Activities	Date
Waste Awareness Campaigning			
1.	Home Composting Campaign	The continued promotion of subsidised home-composters for householders. This campaign includes exhibitions, displays, press releases, and publicity material about home composting during national Composting Week.	2002 / 03 - 2006 / 07
2.	Trial Green Waste Segregation for Composting	A provisional £49,500 funding has been received through the Government's '£140 million Waste Minimisation and Recycling Fund' to provide a trial green waste segregation facility at Pinchington Lane Civic Amenity Site. The funding will also support a high profile advertising campaign to include printing and distribution of information leaflets to households, banner and poster campaign, and a local press campaign (newspaper and radio).	2002 / 03
3.	Real Nappy Campaign	During the annual national Real Nappy Week, West Berkshire Council will continue to organise local exhibitions, displays and press releases. The Real Nappy campaign encourages parents to use re-useable rather than 'disposable' nappies, as the latter constitute approximately 4% of household waste.	2002 / 03 - 2006 / 07
4.	Re>Paint Promotion	The Re>Paint Scheme takes left over paint from householders and businesses and gives it to community groups and those on low incomes. This diverts the paint from disposal as well as being of benefit to the local community. Re>Paint Newbury is run by Newbury Community Resource Centre Ltd with support from B&Q, West Berkshire Council and Hanson Environment Fund. West Berkshire will help to promote the scheme through press releases and leaflet distribution.	2002 / 03 - 2006 / 07
5.	Waste Awareness Day - Rubbish Revolution.	Run in conjunction with Thatcham Nature Discovery Centre, this annual 'awareness day' involves West Berkshire Council holding an exhibition that provides visitors with information on home composting and recycling.	2002 / 03 - 2006 / 07
6.	West Berkshire Recycling Directory	West Berkshire Council will develop a web page which identifies all the places in West Berkshire that accept recyclables and re-useables from the public. This extends beyond the services provided by WBC, for example those of charity shops and groups. West Berkshire Council will maintain this web page and will update it when necessary. A paper copy will also be made available upon request	2002 / 03 - 2006 / 07

7.	Waste Awareness Talks	West Berkshire Council will hold monthly talks, upon request by schools or interested groups, to inform on waste minimisation and recycling issues. The talks to schools will fit in with the national curriculum.	2002 / 03 - 2006 / 07
8.	Kerbside Recycling Scheme - Information Leaflet	In conjunction with the recycling contractor, West Berkshire Council will produce a leaflet which will provide householders with further information on what can be put into their kerbside collection container as well as giving general waste minimisation advice.	2002 / 03
9.	West Berkshire's Waste Identity - Rethink Rubbish	West Berkshire Council will take advantage of the nation - wide campaign 'Rethink Rubbish', and the logo will be adapted for West Berkshire. This logo will be used to brand all West Berkshire waste minimisation and recycling campaigns whilst tying in with national campaigns.	2002 / 03
10.	Council magazine articles on waste issues	Waste minimisation and recycling articles will be submitted for inclusion within the Council magazine.	2003 / 04 - 2006 / 07
11.	Promotion of the kerbside collection scheme	Review existing participation of the Kerbside Collection Scheme with a view to targeting under-use through active promotion in 2003 / 04.	2002 / 03
Fund Raising			
12.	Application to the Government's '£140 million Waste Minimisation and Recycling Fund'	The 2002/03 application requesting funding for a green waste segregation scheme at Pinchington Lane Civic Amenity Site was successful with a provisional amount of £49,500 of funding received. West Berkshire Council will make another application in 2002/03 for funds to set up further initiatives that will increase West Berkshire's recycling and composting rate in 2003 / 04.	2002 / 03 - Acheived 2002 / 03
13.	Application to Landfill Tax Credits	Applications will be made for funding for waste awareness initiatives. West Berkshire Council is keen to secure funding for the provision of a mobile waste information centre. The Council will explore the opportunities for partnership with other Berkshire Councils.	2002 / 03 - 2006 / 07
14.	Application to New Opportunities Fund	An application will be made for funding to set up initiatives that will increase West Berkshire's recycling and composting rate.	2002 / 03 - 2006 / 07
15.	Partnerships with other Berkshire authorities	Examine opportunities for pooling resources with other Berkshire authorities to fund waste education and waste minimisation campaigns.	2002 / 03 - 2006 / 07

Recycling Schemes			
16.	Bring Bank Recycling	The existing network of bring bank recycling sites in West Berkshire which cater for the collection of glass, cans, paper, textiles, and books will be maintained on an ongoing basis.	Achieved
17.	Civic Amenity Site & Green Waste and Recycling Centre	Pinchington Lane Civic Amenity Site is available for the acceptance of household waste, dry recyclables and green garden waste. Paices Hill Green Waste and Recycling Centre is available for the acceptance of dry recyclables and green garden waste.	Achieved
18.	Kerbside Recycling Scheme	A kerbside collection scheme has been operating in West Berkshire since November 1996. The scheme is voluntary and covers the whole of the district. Recyclable material is collected on a fortnightly basis from two boxes, one for glass, cans (ferrous and non-ferrous) and textiles, and one for paper and magazines.	Achieved
19.	Trial Green Waste Segregation Scheme	Funding has been awarded to West Berkshire Council for a trial green waste segregation scheme at Pinchington Lane CA site. The effectiveness of this scheme will be assessed for future implementation at the end of the trial.	2002 / 03 - 2006 / 07
20.	Cardboard Recycling	The Council will review the markets for cardboard and the viability of its collection by providing more bring banks.	2002 / 03 - 2006 / 07
21.	Recycling of plastics, cans and aluminium foil	The Council will review the markets for plastics, cans and aluminium foil and the viability of collecting these materials by providing more bring banks.	2002 / 03 - 2006 / 07
22.	In-house recycling	Pilot the expansion of materials for recycling in the Council offices.	2003 / 04
Improvement of Bring and Collection Services			
23.	Waste Minimisation and Recycling Officer	Recruit a Waste Minimisation and Recycling Officer to develop and promote recycling initiatives and waste minimisation.	Achieved
24.	Collection of recyclables from blocks of flats West Berkshire	Council will examine the opportunities for improving the recyclable collection scheme from blocks of flats. Collection schemes operating in other local authorities will be investigated and the potential costs of implementation considered. This work will run in parallel with the development of the new Integrated Waste Management Contract.	2002 / 03

25.	Improve the kerbside recycling scheme	In partnership with the recycling contractor, the Council will work to improve the performance of the kerbside recycling scheme.	2002 / 03
26.	Improve the appearance and facilities at bring bank sites including signage	The Council will review the appearance and facilities at West Berkshire's bring sites, and will investigate the costs of improvements. Consider implementing changes (2003/04).	2002 / 03 - 2003 / 04
27.	Review recyclable materials to be included in kerbside collection scheme	Markets and the feasibility of collecting additional recyclables at the kerbside will be investigated. This work will run in parallel with the development of the new Integrated Waste Management Contract.	2003 / 04
28.	Review containers used for kerbside collection scheme	The Council will investigate the practicality of establishing alternative kerbside containers for recyclables collection. This work will run in parallel with the development of the new Integrated Waste Management Contract.	2003 / 04
29.	Review Paices Hill Opening Times	Paices Hill Green Waste & Recycling Centre accepts green garden wastes for composting, paper, magazines, cardboard, mixed cans and plastics, glass, and textiles for recycling. The site is currently only open for three days a week. West Berkshire Council will review the opening times and consult with the contractor and Hampshire County Council on viability of extension.	2002 / 03
30.	Investigate organic waste kerbside collection	The Council will investigate the viability of collecting organic wastes at the kerbside.	2002 / 03
Waste Management General			
31.	PFI funding Application	Develop and submit an Outline Business Case to DEFRA for PFI funding for the future integrated contract.	Achieved
32.	Short Term Contract Procurement	Re-tender, or extend where possible, the existing waste collection, recycling, street cleaning, and grounds maintenance contracts from September 2003 until the new integrated contract starts.	2002 / 03
33.	Long Term Contract Procurement	Procure a long term integrated contract.	2003 / 04
34.	Technology Development	Review developments in waste treatment technologies, in particular mixed organic composting.	2002 / 03
35.	Management of Municipal Waste Management Strategy	Ensure the Municipal Waste Management Strategy and Recycling Plan is implemented and monitored.	Ongoing

5.5 *Waste Minimisation and Recycling Programme*

In the short to medium term, West Berkshire Council will focus on the following issues in order to increase the district's recycling rate:

- Waste awareness campaigning;
- Fund raising for waste awareness, recycling and minimisation projects;
- Maintenance and initiation of recycling schemes; and
- Improvement of bring and collection services.

In 2003/04 the Council will concentrate on giving a common branding to all West Berkshire waste management services including waste minimisation and recycling. This will help residents to link waste information that they receive from various campaigns and services. To take advantage of the nationwide campaign Rethink Rubbish, the logo will be adapted for West Berkshire.

The majority of the waste awareness campaigns that will be initiated by West Berkshire in this period are ongoing campaigns that have been run in the past with great success. The home composting promotion, which is heightened during National Composting Week, has two main purposes. Firstly, to encourage people who have recently taken up composting to continue. Secondly, to encourage people that do not home compost to do so. Feedback from West Berkshire's recent Waste Information Leaflet questionnaire indicated that at least 49% of people do not currently compost.

The Real Nappy Week and Re>Paint scheme are national schemes with a local focus. West Berkshire Council is involved in helping to promote these schemes through leaflet distribution and displays. The 'Rubbish Revolution' Waste Awareness Day is a local event that provides residents, through a manned exhibition, with information about recycling, waste minimisation and composting. An area of priority within the short to medium term is to improve waste awareness within West Berkshire and inform householders about what waste can be recycled and where facilities are located. The Council will achieve this by developing a web based recycling directory, a leaflet informing on the kerbside collection scheme, talks, and press releases.

Regular educational talks to groups and schools on waste issues will be undertaken. It is of great importance to teach children about what happens to waste, what the cost and environmental issues of waste are, and how they can minimise and recycle their waste. There is also the indirect benefit of the children's parents becoming more aware of waste due to the messages that the children take home.

There will be a review of the recycling facilities provided by West Berkshire and the materials that are collected; which will apply to the bring sites and the kerbside collection scheme. The review will be based upon public consultation feedback, market values for recyclables and the availability of facilities such as depots and MRFs that can make the collection of recyclable materials more viable.

In 2002/03, West Berkshire Council will launch a trial green waste segregation scheme at Pinchington Lane Civic Amenity Site. Funding for this pilot was secured from the Government's '£140 million Waste Minimisation and Recycling Fund'. Approximately 20% of all waste deposited at the site is green garden waste, and to date there has been no green waste segregation available. The aim of the trial is to divert green garden waste from landfill and increase West Berkshire's recycling rate. To encourage the use of this facility, the Council will launch an extensive promotion involving press releases and exhibitions. At the site itself there will be prominent signage encouraging visitors to segregate their green waste and use the facility provided. The success of this pilot scheme will be assessed in April 2003 to determine whether the facility should be made permanent.

With regard to improving the kerbside collection service, the Council's Waste Minimisation and Recycling Officer will investigate the viability of collecting recyclables from blocks of flats by researching national schemes. A feasibility report will be written and options for implementation assessed. The performance of the current kerbside collection service will also be reviewed in partnership with the Contractor.

To assist in the initiation of waste minimisation, recycling and awareness projects, West Berkshire Council will apply for funding from external sources. In 2002/03, West Berkshire Council was awarded funding from the Government's £140 million Waste Minimisation and Recycling Fund for a pilot green waste segregation scheme. The Council will seek further funding throughout both the short and long term periods to assist West Berkshire in achieving statutory recycling and composting targets.

5.6 Plan for Other Waste Streams - Non-Household Municipal Waste

5.6.1 Abandoned Vehicles

The Refuse and Disposal (Amenity) Act 1978, the Removal and Disposal of Vehicles Regulations 1986, and the Road Traffic Regulations Act 1984 make it a statutory duty for local authorities to remove abandoned vehicles from the public highway. West Berkshire Council's responsibility only extends to those vehicles that it considers have been genuinely abandoned, and does not include vehicles which are only untaxed or those illegally or dangerously parked. The responsibility for obstructively or dangerously parked vehicles lies with the police who have the power to remove such vehicles.

The Council's procedure is that a vehicle is inspected by a member of the Council's Waste Services Team, who must satisfy themselves that the vehicle has genuinely been abandoned. If a vehicle is considered to be genuinely abandoned and is in such a condition that it ought to be destroyed, a statutory 7-day Notice is placed on the vehicle. This Notice makes it clear that unless the vehicle is removed within 7 days or the owner contacts the Council, the vehicle will be removed by the Council and arrangements made for its destruction.

For a number of years there has been a value to scrap vehicles, merchants paying councils a small amount which has helped offset the costs of the service. More recently, the value has decreased so much that the scrap merchants now charge for collection and disposal.

Table 5.4 - Abandoned Vehicles (1998 - 2001)

	1998-1999	1999-2000	2000-2001
Number of reported abandoned vehicles	314	488	712
Number of destroyed abandoned vehicles	129	223	340
Number of voluntary removal requests	102	269	357
Total cost of collection and disposal of abandoned vehicles	£385	£2,995	£11,980

West Berkshire Council has implemented a proactive policy whereby the Council provides a free of charge removal service for householders' unwanted vehicles upon return of a signed 'Vehicle Removal Form' and confirmation of ownership. The rationale behind this policy, which is not undertaken by the majority of other local authorities, is to try and minimise as far as possible the number of vehicles that are actually abandoned in the district. In 2000/01, some 357 requests were dealt with through this scheme, an increase of some 63% on the previous year.

New legislation to be implemented in April 2002 concerning the End of Life Vehicles Directive (ELV) will require all domestic vehicles to be partly dismantled prior to destruction for scrap and licensed dismantling facilities to be established and regulated. The ELV came into force on 21st October 2000, requiring Member States to transpose the Directive into National Law by April 2002.

The legislation will require the removal of all fluids (engine, brake, transmission), seats and batteries from the vehicles prior to disposal as scrap metal, however the extent of dismantling of a vehicle is still unclear. At present, abandoned vehicles collected within the district are sent directly for scrap at a cost of £25 per vehicle. It is anticipated that the likely costs of collection, treatment and disposal under the new legislation will be in the region of £100 per vehicle. In addition to the increased costs of vehicle disposal, the rapid growth in the number of vehicles being abandoned in the district (average of 60% per year over the last three years) will have significant budgetary implications for the Council.

5.6.2 Construction/ DIY Wastes

Construction and DIY waste is excluded from the definition of household waste and therefore the Council is not obliged to accept this waste at the Civic Amenity Site. However, for the convenience of householders one small initial load will be accepted free of charge if brought to the site by the owner of the house in a private car. A chargeable disposal service is available at the site for larger quantities of construction or demolition waste, DIY waste, or soil and rubble.

5.6.3 Clinical Waste

The collection and disposal of clinical waste from households is carried out as part of the refuse collection service, and is currently disposed of at a clinical waste incinerator in Swindon. No charge is made for the service and clinical waste sacks are provided on demand.

5.6.4 Hazardous Waste

There are certain categories of household waste which are considered to be hazardous. There is currently no collection service for household hazardous wastes, although there are facilities at the Civic Amenity Site for householders to dispose of certain types of hazardous wastes. A waste oil container and a locked cage for the storage of domestic chemical or hazardous waste and car batteries are located at Pinchington Lane Civic Amenity Site. Procedures for other hazardous wastes including asbestos and refrigerators are detailed below:

Asbestos

'Hard bonded asbestos' such as asbestos cement sheet, guttering and pipes is classified as 'Special Waste' which means that special rules apply to its transport and disposal. Small quantities of domestic hard bonded asbestos may be accepted at the Pinchington Lane Civic Amenity Site but it must come from domestic premises and must be brought in by the householder in person in a private car. There is a disposal charge for this service, which is currently £25 for a small load. Hard bonded asbestos from commercial customers will not be accepted at the site as it is not permitted by the site licence issued by the Environment Agency.

CFCs

The main source of CFCs are old refrigerators and freezers. These are either delivered to the Civic Amenity Site or collected free of charge by the Council through the bulky household waste collection service.

The EEC Ozone Depleting Substances Regulations came in force from 1st January 2002, which requires all CFCs and HCFCs to be removed from refrigeration equipment before such appliances are recycled or disposed of. Whilst the CFCs in the liquid refrigerant are already collected, these Regulations also require the HCFCs in the insulation foam to be extracted which requires substantial processing of redundant fridges and freezers. In addition, as a result of the legislation, fridges and freezers will also be classified as special/hazardous waste as a consequence of containing CFCs. There are currently no facilities in the UK capable of extracting CFCs from the insulation foam, so West Berkshire has made arrangements to store refrigeration appliances until a time when facilities are built, commissioned and operational.

The Council collected approximately 1,789 fridges and freezers in 2000/2001 via the bulky household waste collection service, and approximately 2,065 fridges and freezers were delivered by householders directly to the Civic Amenity Site. The number of units collected within West Berkshire has risen to approximately 5,151 in 2001/2002, an increase of almost 40%.

In addition to this level of growth, it is anticipated that current 'take-back' schemes run by the large electrical retailers will stop as a result of this legislation. At least two major retailers have confirmed that their 'take-back 'schemes have stopped, and in the first month of these schemes being stopped West Berkshire has witnessed a 22% increase in the number of refrigeration units being disposed through the CA Site and Bulky Collections.

This legislation, the increasing numbers of units being collected within the district, and disposal costs in the region of £45 per unit is placing considerable pressures on the Council's waste management budget.

5.6.5 Equipment which Contains Low Volumes of PCB's

Electrical equipment such as radios and washing machines sold before 1986 may contain small quantities of polychlorinated biphenyls (PCBs). PCBs are usually contained in electrical capacitors and can cause environmental damage if buried in landfill sites. The Council promotes the Community Furniture Project which is a charity that provides a collection service for unwanted household or electrical goods, furniture and toys for re-use within the community.

> ***"West Berkshire will look to recover more value from waste as part of its waste management strategy over the medium to long term."***

5.6.6 *Packaging*

The Producer Responsibility Obligations (Packaging Waste) Regulations (as amended) encourage re-use and set targets for recovery and recycling of packaging waste. Most businesses which handle packaging (<£2m turnover or 50t per annum packaging) have an obligation to recover and recycle certain tonnages of packaging waste each year, so that the targets in the EU Directive on Packaging and Packing Waste 94/62/EC can be met.

The Environment Agency has a duty to monitor compliance with the regulations in England and Wales, and where appropriate take enforcement action. The Agency also operates a voluntary accreditation scheme in the form of Packaging Waste Recovery Notes, which are evidence of compliance with the packaging regulations.

Currently there are no agreements, partnerships or co-operation between the Council and compliance schemes or obligated companies. Significant benefits could be achieved for both businesses and local authorities in utilising the already well established collection and disposal channels for recycling and recovery. Achieving the statutory performance targets is not dependant on the recycling of commercial waste but it would assist in attaining the national recovery targets and have the potential of generating income for the Council.

A review could investigate the possibility of recovering packaging waste through the Council's collection and disposal services. This should be done in consultation with the larger producers and users of packaging and their representative bodies.

5.6.7 *Proposed Waste Electrical and Electronic Equipment Directive*

The proposed Waste Electrical and Electronic Equipment Directive (WEEE) covers a wide range of electrical and electronic equipment that fall within a voltage range of up to 1,000 volts AC and 1,500 volts DC. There are 10 categories of WEEE:

1. **Large household appliances**
2. **Small household appliances**
3. **IT and telecommunication equipment**
4. **Consumer equipment**
5. **Lighting equipment**
6. **Electrical and electronic tools**
7. **Toys**
8. **Medical equipment systems**
9. **Monitoring and control instruments**
10. **Automatic dispensers**

The objectives of the proposed Directive are

- the prevention of waste electrical and electronic equipment;
- to increase re-use, recycling and other forms of recovery thereby contributing to a higher level of environmental protection and encouraging resource efficiency;
- to improve the environmental performance of all operators involved in the life cycle of electrical and electronic equipment, particularly those involved in the treatment of WEEE.

Currently WEEE from households is either collected through the general waste collection service (small items contained in wheeled bins), collected through the bulky household collection service, collected by the Community Furniture Project, or delivered directly by householders to the Civic Amenity Site.

WEEE collected with the normal refuse collection service is currently landfilled, and WEEE collected via the bulky service and through the Civic Amenity Site is either stored in the case of refrigerants, or refurbished, or disposed of to landfill.

Progress of the European Waste Electrical and Electronic Equipment Directive will be monitored closely. Current arrangements will be reviewed when the Directive is adopted in 2002 with the aim of establishing agreements with producers to achieve targets to reuse and recycle WEEE from domestic properties. Significant benefits could be achieved for both producers and local authorities in utilising the already well established collection and disposal channels for reuse and recycling. The Council also recognises the role that the community sector could play in providing kerbside collection schemes for WEEE.

Picture courtesy of Alupro. www.alupro.gov.uk

5.7 Partnerships

Most important to the delivery of this Strategy are strong partnerships between local authorities, relevant organisations and community groups acting in a co-ordinated way to achieve a common vision for sustainable waste management.

The section describes the background to some partnerships that are currently in place.

Berkshire Authorities

West Berkshire in partnership with the other local authorities in Berkshire (The Berkshire Waste Forum) launched a Berkshire-wide waste minimisation campaign titled 'Honey I shrunk the waste'. This scheme was launched in October 2000 and was funded through landfill tax credits. West Berkshire is keen to pursue further partnering opportunities with the other Berkshire authorities.

West Berkshire has an agreement with Reading Borough Council for West Berkshire residents to use a Civic Amenity Site located in Island Road, Reading, as it is recognised that the Island Road site Civic Amenity Site is more accessible and convenient for residents living in the east of the district.

Regional and Wider

West Berkshire is fully committed to seeking opportunities for partnering with other local authorities in the South of England. The first step in this process was a strategic waste management workshop in January 2000 hosted by West Berkshire Council at the Thatcham Nature Discovery Centre. The purpose of the workshop was to bring together technical officers from nearby authorities to:

- Identify the regional waste management position
- share information on current initiatives
- discuss issues arising from Government and Council policies
- outline potential areas of mutual interest and possibilities for future partnerships.

The workshop was attended by a representative from the Environment Agency, and technical officers from all of the Berkshire authorities, Hampshire County Council, Wiltshire County Council, Oxford County Council, Kennet District Council.

No partnerships have, as yet, been developed outside of Berkshire with other authorities. However West Berkshire is alert to the possibilities of regional alliances and partnerships where they may be in line with this Municipal Waste Management Strategy.

Waste Management Industry, Reprocessors, and Others

West Berkshire in partnership with Straight Recycling Systems and Thames Water have launched a home composting campaign (www.getcomposting.com/wb) whereby residents within West Berkshire can purchase home composting units and water butts at less than half the recommended retail price.

"West Berkshire will ensure that our strategy and plans are both consistent and pragmatic in a Regional context"

Business Groups, Colleges and Schools

The Council has little information on recycling in schools, colleges, commercial businesses, and hospitals in West Berkshire. To effectively target these organisations with respect to education and implementing recycling schemes, the Council needs to be proactive in identifying the necessary information and current levels of understanding.

Landfill Tax Environmental Trusts

West Berkshire in association with Biffaward and Organic Resource Agency Ltd (ORA) funded a research project to analyse the viability of separately collecting green garden waste from the kerbside with a view to composting the material[4] . The Council could investigate further opportunities for securing additional Environmental Trust Funding to fund specific waste management projects and pilot programmes.

Community Groups and Charities

The Council actively promotes a local charity called Community Furniture Project which provides a collection service for unwanted household or electrical goods, furniture and toys for re-use within the community.

The Council also has arrangements with charitable organisations including Oxfam, and Traid.

Packaging Compliance Schemes

Currently there are no agreements, partnerships or co-operation between the Council and compliance schemes or obligated companies. The current arrangements could be reviewed and opportunities for including collection and disposal of packaging waste within the forthcoming integrated contract could be considered.

> ***"West Berkshire in partnership with parish councils, community groups and other Agencies will seek to deliver a programme of awareness, promotion and publicity to encourage a fuller understanding of sustainable waste management issues and practices throughout the community."***

[4] West Berkshire Council, Organic Resource Agency Ltd, Elm Farm Research Centre and Biffaward (July 1999) - Kerbside collection of source separated compostable household waste.

6. Part 3 - Recycling Plan

6.1 Introduction

Part 3 of this Municipal Waste Management Strategy provides the essential data required to be provided in a Recycling Plan. This requirement is set out in Section 49 (3) of the Environmental Protection Act, 1990 and paragraphs 2 to 7 below set out the Council's formal response to these legal requirements.

The majority of waste management contracts held by West Berkshire Council terminate in 2003, although contracts will be extended where possible or re-tendered for a period until September 2004. The Council will be seeking a new integrated waste management and environmental contract to commence from September 2004. Because of this major change, the period of this recycling plan is 2002 - 2005 only. A new or revised plan will be needed when the new waste management arrangements are known.

6.2 Controlled Wastes expected to be collected during 2002-2005

6.2.1 Waste Quantities

Household waste arisings rose by an average of +7.5% per annum between 1994 - 1998. Since West Berkshire became a unitary authority, the rate of household waste growth has reduced to +2% per annum (1999/2000 - 2000/2001). The national average growth in household waste arisings is currently +3% per annum.

The growth in population is predicted to slow to approximately 0.3% per annum from 1.23% per annum, but a similar reduction in the growth rate of household waste arisings is unlikely in the short term due to a number of factors. One of the major influential factors inhibiting the reduction in the growth rate of waste is the trend towards smaller households and single occupancy (e.g. each household receives the same "junk mail" irrespective of the number of occupiers). The number of households in West Berkshire is predicted to increase by 1.1% per annum until 2006, with the average household size predicted to decrease from 2.6 to 2.45. Taking all these conditions into account, we would expect the growth in household waste arisings to continue to increase by approximately 2% per year until 2005. A fundamental element of the new integrated waste management contract due to start in 2004/05 will be a heavy commitment towards waste minimisation with the aim of slowing the rate of household waste growth to 1% by 2010.

Calculations are based on the actual waste arisings for 2000/2001.

Table 6.1 Controlled Wastes to be Collected

Type of waste collected	2001-2002	2002-2003	2003-2004	2004-2005
Household waste	80,502	82,113	83,755	85,430
Other Municipal waste	2,103	2,124	2,145	2,167
TOTAL	**82,605**	**84,237**	**85,900**	**87,597**

6.3 *Controlled Wastes expected to be purchased during 2002-2005*

The Council does not expect to purchase any controlled waste during 2002-2005.

6.4 *Controlled Waste expected to be dealt with by separating, baling or otherwise packaging it for the purposes of recycling*

Working from the present levels of waste recycled, and the statutory performance standards for recycling, the Council expects the following quantities to be dealt with by separating, baling or otherwise packaging it for the purposes of recycling (exclusive of waste dealt with by home composting).

Table 6.2 Controlled Wastes to be Recycled

Type of waste collected	2001-2002	2002-2003	2003-2004	2004-2005
Household waste	11,270	13,959	16,751	21,358
Other municipal waste	704	711	718	725
TOTAL	**11,974**	**14,670**	**17,469**	**22,083**

6.5 *Arrangements expected to be made with waste disposal contractors during 2002-2005*

West Berkshire Council is a unitary authority and is responsible for both waste collection, recycling and disposal. The Council currently has a contractual arrangement with WRG for the disposal of municipal waste in the Hermitage Farm Landfill Site. This contract is related to the life of the landfill site, which is currently permitted to accept waste until 2004. WRG are currently seeking an extension to the planning application to extend the life of the site beyond 2004.

The Council, therefore, does not expect to make arrangements directly with other waste disposal contractors before September 2004 when the new integrated contract will commence.

6.6 *Plant and equipment expected to be provided for sorting and baling waste during 2002-2005*

West Berkshire District Council has a contract with Biffa Waste Services who operates a Civic Amenity Site at Pinchington Lane. This site provides facilities for the reception of household and commercial waste, and containers for dry recyclables. The Council is currently seeking opportunities to provide separate containers for the receipt of green waste, which is likely to take effect during the life of this plan.

West Berkshire District Council operates one Green Waste and Recycling Centre at Paices Hill. This site provides containers for the receipt of dry recyclables and green waste from private households only.

The Council, although likely to provide additional containers and storage facilities for the purposes of recycling, does not expect to provide any plant or equipment for sorting or baling waste during 2002-2005.

6.7 *Estimated costs and benefits resulting from proposed actions outlined in this plan during 2002-2005*

6.7.1 *Estimated costs*

West Berkshire's budget for waste collection and kerbside recycling is estimated at £2.36 million for the financial year 2001/2002. This equates to a charge of £30.02 per tonne of household waste collected or £40.92 per household per year.

The Council is seeking to procure a new long term integrated contract to commence from September 2004 which will include waste collection, recycling, Civic Amenity Site management, other related environmental services and a phased introduction of waste disposal. In order to ensure continuity of waste services in the intervening period, the Council will be required to extend, where possible, or re-tender the existing contracts to meet the long term contract start date. Likely costs of service provision during the intervening period (2003-2004) cannot be anticipated at present, as the costs may be affected by the short term nature of the contracts/extensions and will be dependant upon contract negotiations with potential service providers.

6.7.2 *Estimated savings/benefits*

West Berkshire currently only receives a revenue from the sale of textiles collected in bring banks. This is estimated to be approximately £10,000 for 2001/2002. Likely future savings and benefits from the sales of recyclables, in addition to the revenue from the textile banks, will depend upon the new service specification for the kerbside collection scheme, and ultimately the market price for the various recyclables.

7. Part 4 - *Landfill Directive: Strategic Plan to Reduce Landfill*

7.1 National Diversion Targets

The European Council Directive 1999/31/EC on the landfill of waste came into force in the EU in 1999 and its requirements have now been transposed into UK law. This seeks to prevent or reduce possible negative environmental effects from the landfilling of waste by introducing uniform standards throughout the EU.

One of the key articles of the Directive sets a timetable for the progressive reduction of biodegradable municipal waste going to landfill. **The UK national targets are:**

- By 2010 biodegradable municipal waste (BMW) must be reduced to 75% of the total BMW (by weight) produced in 1995.
- By 2013 BMW must be reduced to 50% of the total BMW (by weight) produced in 1995.
- By 2020 BMW must be reduced to 35% of the total BMW (by weight) produced in 1995.

To comply with the Landfill Directive, the Government has established national targets for recovery of municipal waste, and recycling/composting of household waste. These national targets are supported by statutory performance standards for household recycling/composting, and tradable permits to restrict the amount of biodegradable municipal waste that authorities can landfill. The mechanism by which tradable landfill permits will be implemented is currently going through a statutory consultation stage.

The permits will be allocated free to waste disposal authorities and apply to BMW only. The permits will be tradable allowing authorities that divert more waste away from landfill to trade their permits to those authorities that do not. In any given period an authority will be able to landfill BMW up to the level of permits held. If an authority does not require all of the permits for a particular year, then the authority will be able to trade them, although authorities will not be obliged to trade them if they do not wish to. Equally if an authority does not have enough permits to cover the amount of waste it intended to landfill, it would either have to increase its rate of diversion or purchase additional permits.

At present the Government's initial view is that both the initial allocation of permits and the allocation of targets should be on the basis of the amount of BMW landfilled, requiring each waste disposal authority to make a proportionate reduction in the amount of waste they landfill to meet the targets. Targets for each authority would be reduced linearly each year to meet the targets required by the Directive.

7.2 *Implications for West Berkshire*

In order to identify West Berkshire's obligations under the Landfill Directive it is necessary to determine the biodegradable content of the municipal waste collected in the borough. Table 7.1 shows the portion of waste components considered to be biodegradable[5] . Using this data and the data from the waste composition analysis undertaken in 2002, the biodegradable proportion of West Berkshire's household waste is estimated to be 67%. This compares to the UK national average of 60%.

It is currently not clear whether local authorities must calculate their Biodegradable Municipal Waste (BMW) arisings from the national average biodegradable content of 60% or from their actual biodegradable contents derived from compositional analyses (WBC BMW = 67%). If local authorities are required to calculate their obligations from their actual biodegradable content, the composition of municipal waste will need to be analysed over a full year due to seasonal variations in composition and the sample size will need to be representative of the whole district's population. As West Berkshire Council has not yet analysed the seasonal trend in waste composition, the national average biodegradable content of 60% will be used for the purpose of calculating the Council's obligations under the Landfill Directive.

Table 7.1 Biodegradable Components of Household Waste

Waste Component	Portion of Household Waste (% dry weight)	Biodegradable content (%)	Biodegradable portion of household waste stream
Paper/Card	33.9%	100%	33.9 %
Putrescibles	23.2%	100%	23.2%
Textiles	3.9%	50%	1.9%
Fines	6.2%	50%	3.1%
Misc. combustibles	7.8%	50%	3.9%
Misc. non-combustibles	2.0%	50%	1.0%
Other (ferrous & non-ferrous metal, glass, plastic)	23%	0%	0%
Total biodegradable content of West Berkshire's household waste			67%

In 1995/96 80,929 tonnes of municipal waste was produced with West Berkshire, of which 48,557 tonnes would be classified as biodegradable (60%).

[5]Department of the Environment, Transport and the Regions (1999). Limiting Landfill: A Consultation paper on limiting landfill to meet the EC's Landfill Directive targets for the landfill of biodegradable waste. 99EP0394 October 1999.

In order for West Berkshire Council to meet its obligations under the Landfill Directive, the maximum amount of biodegradable municipal waste that would be allowed to be disposed of to landfill must not exceed the tonnages shown in Table 7.2

Table 7.2 Maximum BMW Allowed to be Landfilled

Target Date	Based on the national average biodegradable content 60%
2010	36,418 tonnes
2013	24,279 tonnes
2020	16,995 tonnes

The growth rate of municipal waste arisings in West Berkshire will have severe implications on the future waste management system if the Landfill Directive targets are to be met. Table 7.3 illustrates the amount of biodegradable municipal waste that would have to be diverted from landfill for the target years of the Directive based on a range of growth rate escalators.

Table 7.3 Estimated Tonnages of Biodegradable Waste to be Diverted from Landfill by West Berkshire Council - based on the National Average BMW content of 60%

Target	Growth rate of municipal waste (% / year)			
	2% reducing to 0.5% after 2010	2%	3%	4%
	Tonnes BMW to be diverted from landfill			
To meet 2010 target	19,982	22,830	28,902	35,528
To meet 2013 target	32,971	38,595	47,098	56,650
To meet 2020 target	42,289	55,228	70,789	89,502

7.3 Strategic Plan to Meet the Targets

The implementation of a landfill permit system will have significant financial implications for future waste management options. In developing this Municipal Waste Management Strategy the impact of the Landfill Directive was a key criteria in the Council's selection of the preferred waste management option.

It is West Berkshire Council's plan to meet all of the targets for 2010, 2013 and 2020 by reducing the growth rate in municipal waste arisings and diverting more municipal waste away from landfill disposal by maximising recycling and composting. The Council is committed to moving away from landfill disposal and towards more sustainable waste management methods. The Council does not want to exceed the maximum permitted tonnage of BMW disposed to landfill and rely on purchasing landfill permits from other local authorities. This would result in a significant financial risk to the Council. Landfill permit allocations will decline over time to meet the targets required by the Directive, and the Council would have to purchase more and more permits in order to continue disposing of the waste to landfill.

West Berkshire's preferred waste management option (Chapter 4.6) is based on maximising recycling and composting, although the Council appreciates the need for maintaining flexibility over the medium and longer term. The Council will closely monitor the diversion rates achieved and will continuously review technological developments in treatment and recovery technologies.

"West Berkshire's preferred waste management option is based on maximising recycling and composting"

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