

Joint Municipal Waste Management Strategy for Dorset



A joint strategy by the Dorset councils to guide the way that waste will be dealt with over the next 25 years



Dorset councils have worked together to produce this strategy. It will guide the way we deal with our waste over the next 25 years.

Our challenge... Everyone produces rubbish, how we deal with it now and in years to come is a significant challenge.

Our opportunity... Waste is a valuable resource, not a disposal problem - but what are the best options for making the most of it?

Our future... We all produce waste and we all have a part to play in dealing with it.

Foreword

Our challenge, our opportunity, our future

This strategy presents a brand new vision for waste management in Dorset. It is the result of local councils working closely together and wide-ranging public consultation.

At 45 per cent (2007/08), Dorset can proudly claim one of the highest recycling rates in the whole country, but more still needs to be done to change the way we approach the whole issue of waste.

Competition for natural resources, pressure to reduce carbon emissions, emerging technology, new national and European policies plus economic pressures, such as landfill tax, mean that waste management needs to have flexibility in a rapidly changing world.

We all need to change our attitude towards waste in order to meet these challenges ... and that includes local councils, Government, business and retailers as well as householders and even summer visitors.

Our emphasis

This strategy includes 10 key policies with an emphasis on:

- Reducing the amount of total waste that is produced
- Achieving even higher levels of recycling and composting
- Recovering value from residual waste that isn't recycled or composted
- Minimising the amount that is sent to be buried in the ground at landfill sites

Local people, organisations and groups all had a chance to have their say about a draft of the strategy during an extensive consultation period. Roadshows

and public meetings plus various events and activities were organised to encourage as many people as possible in the county to get involved.

Our waste

How we deal with our waste now and in years to come is still a significant challenge. But it also presents an opportunity for us to get the most value from our waste and reduce the impact on future generations.



Cllr Hilary Cox
Chairman of the Dorset Waste
Management Liaison Panel

This is our
waste, this is
our challenge,
and this is our
opportunity to
shape the future
for the better.



Acronyms

ATT	Advanced Thermal Treatment
BMW	Biodegradable Municipal Waste
BR1	Background Report 1 - Current Provisions
BR2	Background Report 2 - Policy & Legislation
BR3	Background Report 3 - Options
BR4	Background Report 4 - Consultation Report
BR5	Background Report 5 - Justification
BR6	Background Report 6 - Sustainability Appraisal
BVPI	Best Value Performance Indicators
CHP	Combined Heat and Power
CO ₂	Carbon Dioxide
DEFRA	Department for Environment, Food and Rural Affairs
EfW	Energy from Waste
ELV	End of Life Vehicles
EMS	Environment Management System
EU	European Union
HH	Households
HRC	Household Recycling Centre
LATS	Landfill Allowance Trading Scheme
MBT	Mechanical Biological Treatment
MHT	Mechanical Heat Treatment
MRF	Materials Recycling Facility
NPC	Net Present Cost
NRWF	National Resource and Waste Forum

PFI	Private Finance Initiative
PPG	Planning Policy Guidance
PPS	Planning Policy Statement
RDF	Refuse Derived Fuel
R&D	Research & Development
SA	Sustainability Appraisal
SEA	Strategic Environmental Assessment
SME	Small and Medium Enterprises
SRF	Solid Recovered Fuel
SW	South West (England)
SWMP	Site Waste Management Plans
UK	United Kingdom
WCA	Waste Collection Authority
WDA	Waste Disposal Authority
WEEE	Waste Electrical and Electronic Equipment
WRATE	Waste and Resources Assessment Tool for the Environment
WS2007	National Waste Strategy 2007



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Summary

Introduction

This document is a revised Joint Municipal Waste Management Strategy for Dorset. It has been developed through consultation with householders, businesses, council representatives and other interested organisations. It updates the previous strategy adopted in 2003 and covers the period 2008–2033 and beyond.

Where are we now?

Since 2003 Dorset has continued to improve, both in terms of formal performance indicators and also through a wide range of initiatives, to tackle waste growth, increase reuse and encourage community involvement.

- Over the past 10 years the underlying growth rate has reduced to approximately 1.5 per cent. This compares with a growth rate of 3.5 per cent assumed in the previous strategy
- Recycling has increased from 27 per cent in 2002/03 to 45 per cent in 2007/08, exceeding our Government recycling target
- Dorset achieved the 7th highest countywide recycling performance in England in 2007/08
- Since 2002/03, we have achieved an annual reduction in the total amount of household waste sent to landfill

What are the challenges ahead?

The legislation governing waste management is driven by a common framework which applies across the European Union (EU). This is reflected in UK policy and the Government published a new national Waste Strategy for England in May 2007 (WS2007). This summarises the benefits of better waste management as:

- Reducing greenhouse gases, notably methane from landfill sites but also CO₂, through reuse and recycling

- Improving resource efficiency - saving energy and materials through waste prevention, reuse, recycling and renewable energy recovery
- Protecting public health through the safe management of potentially hazardous substances
- Safeguarding social amenity by reducing fly-tipping and limiting local nuisances from waste facilities

In municipal waste terms, a key factor is the EU Landfill Directive. It progressively restricts the amount of untreated waste that can be sent to landfill in member states. It has been transposed into UK law and statutory targets have been set for each waste disposal authority (WDA) to cut down on the amount of waste going to landfill. The county council is the WDA for Dorset. The system includes a Landfill Allowance Trading Scheme (LATS). This means that WDAs who send less waste to landfill than their set target can trade surplus allowances with those WDAs who have not or are not likely to meet their target. The scheme also includes fines and other sanctions. Since fines can be up to £150 for every tonne of biodegradable waste landfilled over the target figure, there is a very strong financial, as well as environmental, imperative for Dorset to ensure it meets its landfill diversion obligations.

Currently all of Dorset's non-recycled and composted waste goes to landfill so complying with the Landfill Directive is a key challenge. This strategy takes into account:

- Waste growth is less than was estimated in the previous strategy (2003)
- We have much more experience of recycling under UK conditions and a better understanding of the potential scope for improvement
- There are new and emerging technologies for managing residual waste and considerably more information is available. The Department for Environment, Food and Rural Affairs (DEFRA) has set up a programme of demonstration



- projects to assess these technologies
- Landfill tax has increased significantly and is set to increase further, affecting the economic viability of landfill as an option
- Council budgets are under increasing pressure, making affordability and value for money key issues
- Recognition that good waste management practice can contribute to wider goals such as mitigating climate change and producing renewable energy
- A new revised National Waste Strategy

Nine high level principles, based on the national, regional and local policy framework, have been identified to guide the development of this strategy:

A collective strategy	A collective strategy has been developed and will be implemented in partnership
The direction for an ongoing process	The strategy sets the direction for an ongoing process
Sustainability	Sustainability is embedded into the strategy
Material resources	Waste is to be viewed as a material resource
The waste hierarchy	To follow the hierarchy for waste management
Meeting the carbon agenda	Waste management is considered not as an end in itself, but as an integral part of the whole lifecycle of products and materials
Changing our behaviour to underpin waste reduction and recycling	The strategy recognises that behavioural change across all sectors (that is, not only in the home) is key in moving forward
Local authority leadership	Local council partners will demonstrate leadership in their own waste management practices
Regional collaboration and regional self sufficiency	The door will be left open to working with others

What are we aiming for?

The strategic option adopted to manage Dorset's waste needs to achieve:

- Reduction of all wastes
- High recycling and composting
- Residual waste treatment and recovery
- Minimal landfill especially of untreated waste

A range of scenarios and options that could be adopted to achieve these objectives have been evaluated in terms of whether or not they are realistic and their impacts on the environmental, economic and social wellbeing of Dorset. This work has involved a Strategic Environmental Assessment (SEA) and Sustainability Appraisal (SA) process. In areas where the formal appraisal process is not directly applicable, it has involved the collective professional judgement of officers from the Dorset councils and their advisors.



Our preferred approach

- Aim to stabilise the growth in municipal waste arisings per head, with a medium to long term aspiration that arisings should fall
- Achieve 60 per cent recycling of household waste by 2015/16
- Flexibility for residual waste treatment options
- Work on the basis of one residual waste treatment facility being the most efficient residual treatment option
- Meet and eventually exceed landfill targets thus avoiding possible fines of up to £150 per tonne for excess biodegradable waste sent to landfill
- Show leadership by taking account of commercial waste management needs

The ten policy objectives are designed to support the implementation and achievement of the preferred approach. Action plans have been developed for each one and these documents are updated annually and available separately (please see p 11). The policy objectives are summarised below:

Towards zero growth

Policy objective 1: To prevent the further growth in municipal waste per head of population by promoting waste reduction and reuse initiatives, with a long term aim towards reducing waste generated per head.

Underpinning awareness and education

Policy objective 2: To promote waste awareness through coordinated public education and awareness campaigns, and effective community engagement.

Recycling and composting

Policy objective 3: Across Dorset, to achieve 60 per cent recycling and composting by 2015/16.

Optimised recycling services

Policy objective 4: To achieve an optimised recycling and composting service across Dorset that is easy to understand and use (although local collection arrangements may be different).

Biodegradable waste

Policy objective 5: To progressively increase the recovery and diversion of biodegradable waste from landfill to meet and eventually exceed the landfill diversion targets under the Landfill Allowance Trading Scheme.

Residual waste

Policy objective 6: To ensure that residual waste treatment complements activities higher up the waste hierarchy and maximises the value recovered from waste in terms of resources and energy.

A full re-evaluation of the potential treatment solutions has been undertaken as part of the strategy review process using the Sustainability Appraisal (SA) and Strategic Environmental Assessment (SEA) process.

The assessment criteria and the provisional weightings given to them are grouped in the following three categories:

- Environmental 47.62%
- Social 9.52%
- Economic 42.86%

Cost efficient services

Policy objective 7: To deliver efficient and cost effective waste management services across Dorset that provide value for money.



Encourage sustainable management of commercial waste

Policy objective 8: To further encourage sustainable management of commercial waste and to optimise integration with the management of municipal waste where this is of benefit.

Sustainability within the local authorities

Policy objective 9: As local councils to set an example by reducing, reusing, recycling, composting and recovering our own waste and using our buying power to positively encourage sustainable resource use.

Working with others: listen, collaborate and influence

Policy objective 10: To listen to, work with and influence others to achieve sustainable waste management and meet the policy objectives, making use of national, regional and local frameworks.

Ongoing review

Waste management is undergoing a period of rapid change and development, and as such, the strategy may need periodic review and refinement. Whilst the 10 policy objectives should remain valid until the next formal review of the strategy, it will be necessary to keep the respective action plans under continuous review in the light of new developments and changing circumstances.



I. Introduction

I.1 What is this document?

This document is a revised Joint Municipal Waste Management Strategy for Dorset. This strategy has been developed through consultation with householders, businesses, council representatives and other interested organisations. It updates the previous strategy adopted in 2003 and covers the period 2008–2033 and beyond.

The Dorset Joint Municipal Waste Management Strategy 2008:

- Sets out the strategic objectives, policies and actions for managing municipal waste in Dorset from 2008 to 2033 and beyond.
- Is for municipal waste, which is primarily waste generated by householders and domestic premises together with some smaller amounts of commercial waste.
- Takes into account other wastes where these may be complementary to the management of municipal waste. It recognises the role and duty that the Dorset councils have to take account of local businesses and the waste they produce.
- Also takes into account community reuse schemes such as furniture reuse and charity shops.
- The strategy does not include the management of industrial waste, agricultural or mining wastes, since these do not come under the control of all the Dorset councils. However, we will continue to offer guidance and advice in this area where appropriate.

What is municipal waste?

This is primarily household waste collected from the doorstep, but also includes waste brought to household recycling centres and council bring sites, as well as commercial waste collected by arrangement with the local council. Municipal waste also includes wastes such as street sweepings, beach cleansing, fly-tipping, and park wastes.

The strategy is structured around **9** high level principles and **10** policy objectives which are based on a combination of:

- National policy drivers
- Our legal obligations and targets
- Our recycling experience and best practice
- Our own aspirations

It takes into account:

- Our current situation
- Sustainability – the balance of economic, social and environmental considerations
- The waste hierarchy and availability of new technology
- Climate change and the carbon agenda

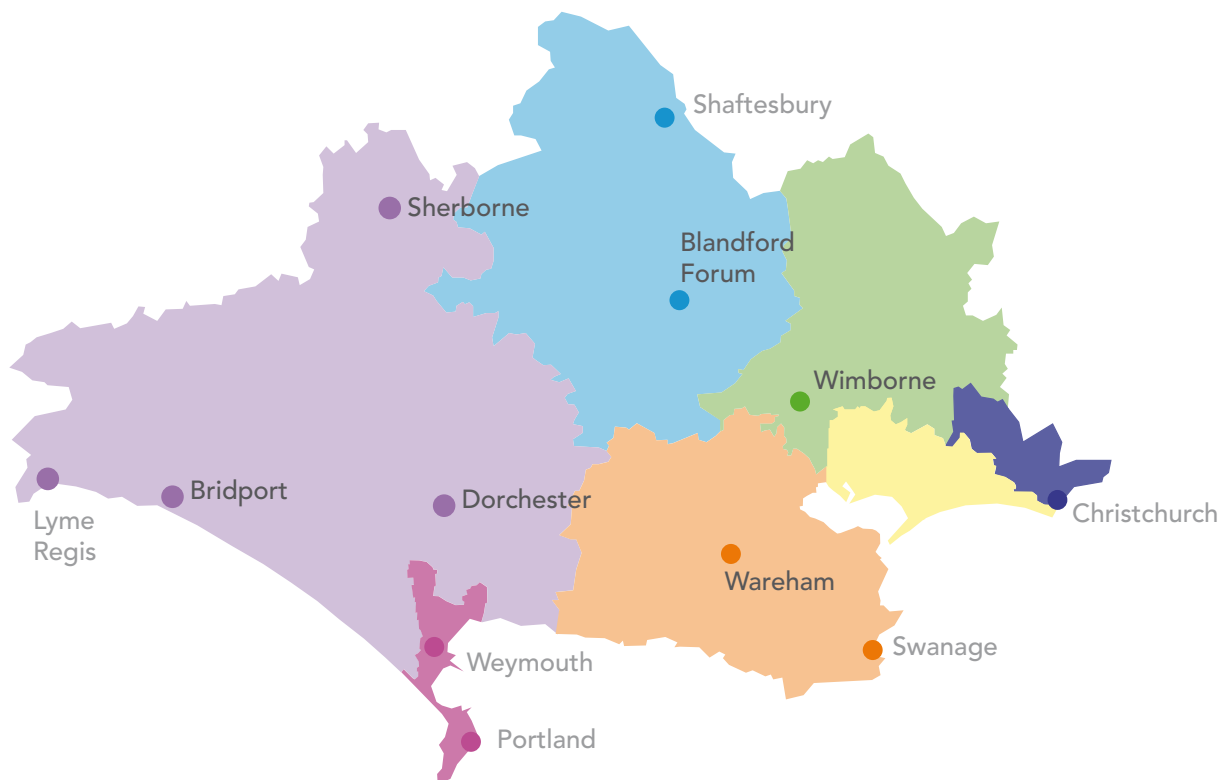
The Dorset councils have a responsibility to invest in the right facilities, on the right scale using the right technology. This strategy has an increased emphasis on waste reduction, recycling and sustainability, taking into account the carbon agenda and climate change. It forms a cornerstone for waste policy and planning in Dorset.



1.2 Who has prepared it?

This strategy has been developed by the seven Dorset waste authorities. This includes the six district and borough councils and the county council as follows:

- Christchurch Borough Council
- East Dorset District Council
- North Dorset District Council
- Purbeck District Council
- West Dorset District Council
- Weymouth and Portland Borough Council
- Dorset County Council - covers whole area (excluding yellow area which is Bournemouth and Poole who are separate unitary authorities)



Collectively all the above Dorset councils have responsibility for the collection and disposal of municipal waste in Dorset. The district and borough councils are Waste Collection Authorities (WCA) with responsibility for collection and

Dorset County Council is the Waste Disposal Authority (WDA) with responsibility for disposal. The county council also operates the household recycling centres (HRCs).



1.3 How has it been developed and how will it be used?

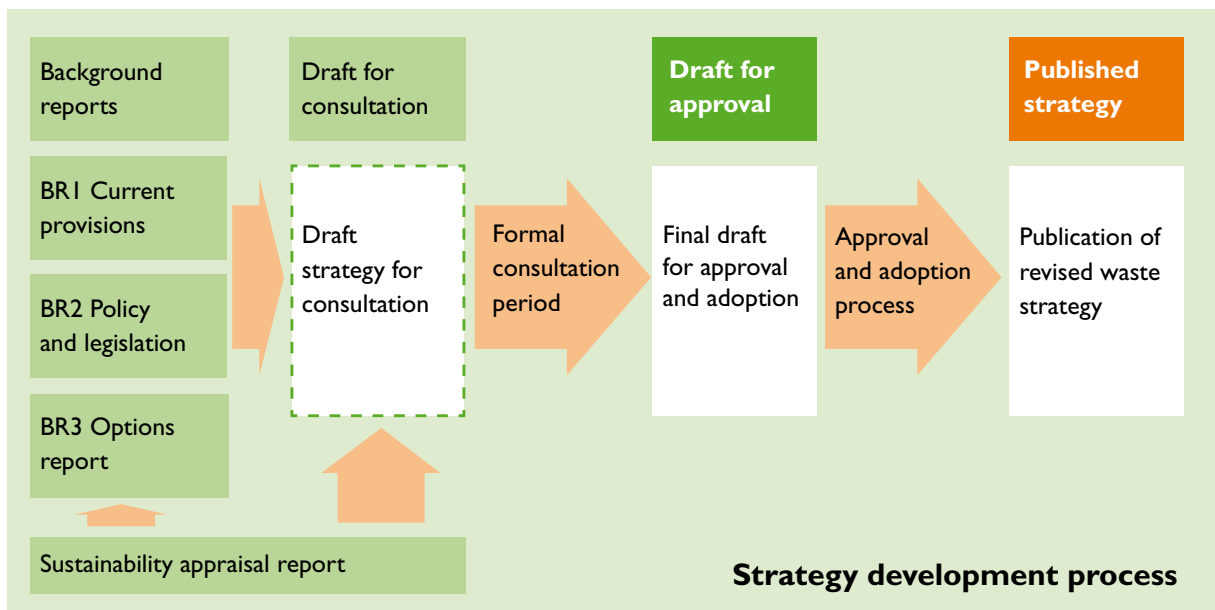
Local councils have a legal obligation to produce a strategy for the management of waste collected within the county. In 2003 all the Dorset councils produced the Joint Municipal Waste Management Strategy for Dorset. The 2003 strategy identified short and mid-term requirements for waste management, pointing the way for development up to 2020 but also taking into account longer term aspirations to 2033.

The 2003 strategy has been reviewed and updated to reflect changes in economic, social and environmental drivers, as well as policy, legislation and technology in line with Government guidance.

Strategy development process

The previous strategy (2003) was reviewed through a process of consultation and feedback in collaboration between all the Dorset councils.

A review was carried out of the current provisions, the policy and legislation, and technology options, and a draft strategy was produced. The draft strategy together with proposed action plans were published for formal consultation. The consultation feedback was reviewed and taken into account and the new strategy was produced and adopted by the Dorset councils.



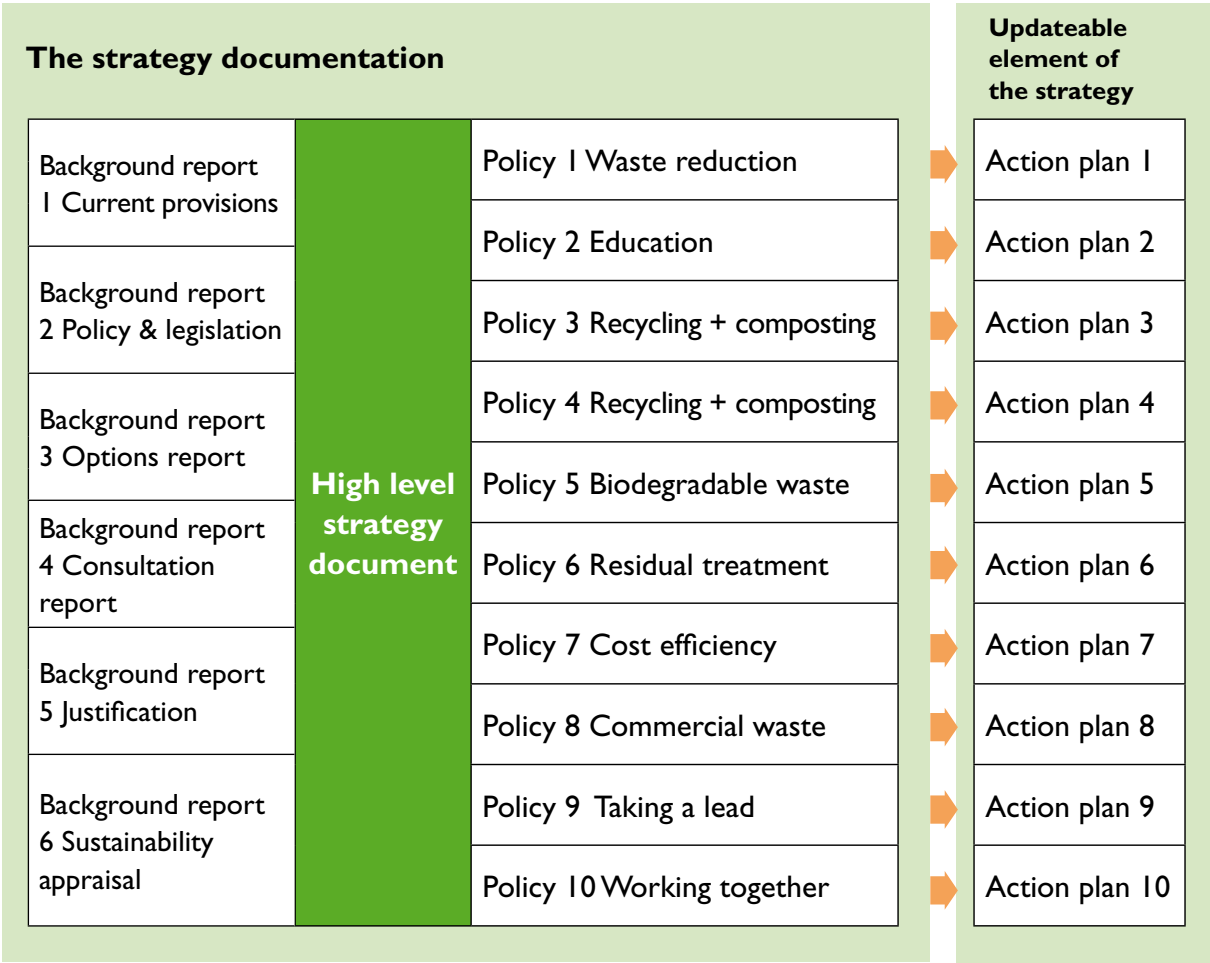
Format of the strategy

- **Headline strategy document** - The strategy is set out in the form of a high-level strategy document (this document), accompanied by five background reports, a sustainability appraisal, and a set of 10 action plans which correspond to the set of 10 policy objectives.

- **10 policy objectives** - The strategy is structured around 10 policy objectives which set out our aims and aspirations for waste management in Dorset. These policy objectives are explained in more detail later in this document.
- **Background reports** - The background reports provide further detail and supporting information for the headline strategy.



- Action plans** - For the purpose of the consultation process the action plans were included in the consultation draft. The action plans are now stand alone documents, separate to the high level strategy document. The action plans are working documents and form the 'updateable' element of the strategy. They will also form the basis of the annual report on the strategy which will be made public and advertised.



1.4 Why are we reviewing the waste strategy now?

Why are we reviewing the waste strategy now?

- There is a Government requirement to carry out a full review every five years
- There is a new revised National Waste Strategy
- The Landfill Allowance Trading Scheme (LATS) target years are approaching and action needs to be taken now to meet these obligations if we are to avoid possible fines of up to £150 per tonne for landfilled biodegradable municipal waste (BMW) in excess of our targets
- Growth in waste arisings has reduced and recycling rates have increased significantly, both of which impact positively on the capacity of residual waste treatment now required
- Recycling and composting performance has increased in the county and we need to see if we can improve further
- The Dorset 2003 waste strategy had a commitment for a review to take place before major investments and every five years as a matter of principle.



1.5 Definitions

Definitions in the context of this document

- Waste - In the context of this document, waste refers to materials legally defined as waste. As a general rule, if a material is no longer required by the original owner, then it is usually legally classified as waste, regardless of whether that material is to be sent for recycling, recovery or disposal, and regardless of whether it poses a risk to human health or the environment or has a value.
- Reduction – Reduction means less waste collected and managed by the local councils. This can include prevention of waste through consumer purchase decisions and recycling of material within the household premises, e.g. home composting.
- Recycling - For the purpose of local council targets, recycling means the collection, sorting and if necessary baling of materials ready for sale and consignment to a recycling contractor. Recycling includes composting.
- Residual waste – This is the waste remaining after reduction, reuse and recycling. Residual waste can undergo treatment by extracting value, either by further materials sorting or energy recovery.
- Biodegradable waste – This is the proportion of the waste stream that biodegrades (organic material). According to Government guidance this is, at present, assumed to be 68 per cent for municipal waste. Biodegradable waste includes garden cuttings, paper and food waste.
- Recovery – This term usually refers to recovery of value from mixed residual waste through reuse, recycling, composting or energy recovery.
- Pathfinder - Pathfinder has a vision to provide a seamless delivery of local services and information built around and influenced by the citizens and communities that use them. Increased efficiency through combined service delivery is a means to deliver that vision.



2. Where are we now?

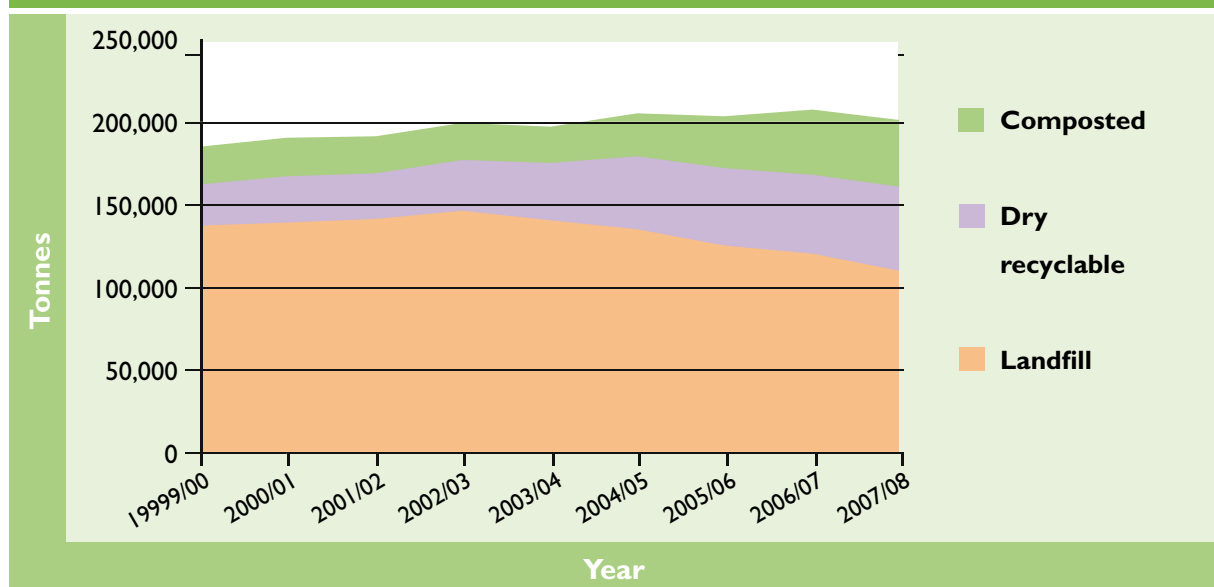
2.1 What are our achievements since 2003?

Since 2003 Dorset has continued to improve both in terms of formal performance indicators and also through a wide range of initiatives to tackle waste growth, increase reuse and develop community involvement.

Progress in Dorset since 2003

- Over the past 10 years the underlying waste growth rate has reduced to approximately 1.5 per cent. This compares with 3.5 per cent assumed in the previous strategy.
- Recycling has increased from 27 per cent in 2002/03 to 45 per cent in 2007/08, exceeding our Government recycling target of 30 per cent
- Dorset achieved the 7th highest countywide recycling performance in England in 2007/08 and is only slightly behind the leading councils.
- Since 2002/03, Dorset has achieved a year-on-year reduction in the total amount of household waste sent to landfill.

Tonnage of household waste handled by treatment/disposal method



2.2 What is the current situation?

How much waste are we dealing with and how is it currently managed?

Dorset is a predominantly rural county, with a lower than average population growth and seasonal

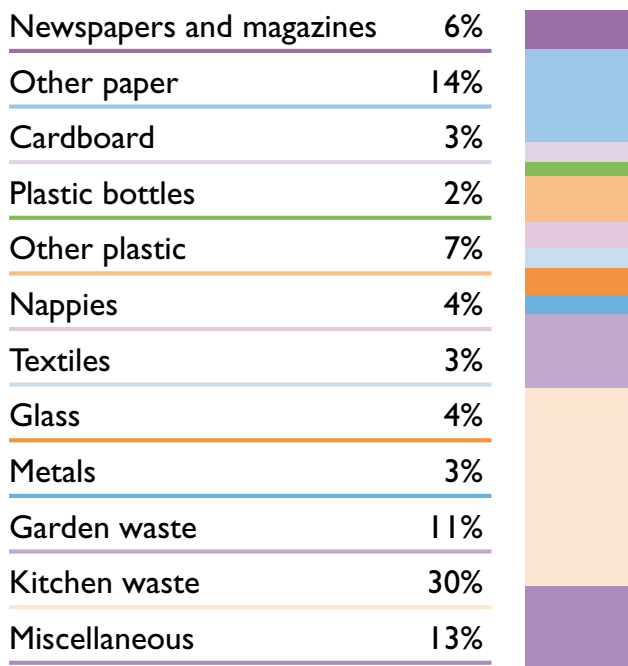
fluctuations in population due to summer tourism. The diagram above demonstrates how waste has been managed over the last nine years. The increase in recycling and composting is evident.



Waste management in Dorset

- All six waste collection authorities (WCAs) currently operate a household kerbside recycling collection covering 97 per cent of Dorset properties
- All six WCAs offer a bulky waste collection service
- All six WCAs provide kerbside collection of household residual waste
- Four WCAs offer a kitchen waste collection service
- Two WCAs directly provide a commercial waste collection service
- 11 household recycling centres are operated by the county council, with 86 per cent of residents living within a five mile radius of a site
- 213 bring sites are available for a range of recyclable materials
- There are two material recycling facilities for bulking up and sorting of household waste for recycling
- Four composting facilities are used
- There are four waste transfer stations where waste is bulked up for onward transport
- Four landfills are used for the disposal of residual household waste

Composition of materials identified in Dorset’s residual waste stream (after recycling)



Waste growth

National waste growth has typically followed the trend for economic growth. However, in recent years municipal waste growth in the UK has grown less quickly than the economy, and according to the national Waste Strategy 2007 municipal waste growth nationally has now slowed to just 0.5 per cent. This figure is averaged over the whole of the UK, and actual growth rates vary from one area to another:

- The 2003 Dorset joint municipal waste management strategy assumed a projected municipal waste growth rate of 3.5 per cent
- The average underlying municipal waste growth rate over the past 10 years is approximately 1.5 per cent
- The average municipal waste growth rate over the five years to 2006/07 was approximately 1.9 per cent
- The average household waste growth rate over the five years to 2006/07 was approximately 1.5 per cent
- The total tonnage of waste collected tends to vary on an individual year by year basis and in 2007/08 a 2.4 per cent reduction in household waste was recorded. However, this may be a natural fluctuation and thus pending confirmation of performance in the next few years it is

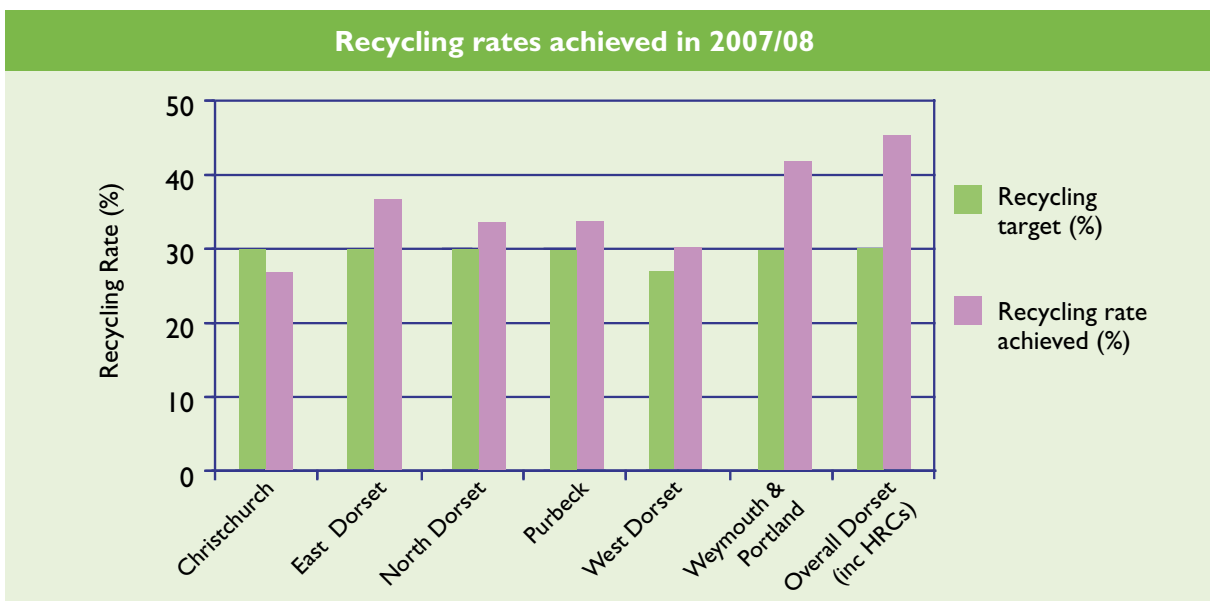
appropriate to plan for the future in the light of the longer term underlying trends above.

Although there has been a gradual reduction in the rate of growth over recent years, there are many factors that can affect annual growth rates outside the control of the local authorities, such as the national economic climate, migration into Dorset, population growth and weather conditions.

The population of Dorset is estimated to have grown by an average of 0.6 per cent per annum in the five years to 2007/08. Municipal waste arisings per head of population show signs of having stabilised over the last five years; although an increase of around 2.5 per cent occurred in 2006/07 this fell back again in 2007/08. Notwithstanding the current economic downturn, further growth in both population and number of households is predicted in Dorset in the medium to longer term and this will accelerate if the proposals in the draft Regional Spatial Strategy (RSS) are adopted. Therefore, despite Dorset's best endeavours to reduce waste growth, an underlying increase in population will inevitably lead to more waste being produced in Dorset.

Recycling performance

The individual recycling rates achieved by the Dorset county, district and borough councils in 2007/08 are



Breakdown of household waste for all Dorset councils based on 2007/08 data					
Authority	Recycled (tonnes)	Composted (tonnes)	Landfilled (tonnes)	Total collected	Recycling rate (%)
Christchurch	3,942	759	12,764	17,465	26.92
East Dorset	7,710	4,398	20,790	32,898	36.81
North Dorset	5,809	1,759	15,171	22,739	33.27
Purbeck	4,229	177	9,067	13,473	33.22
West Dorset	10,801	172	25,434	36,407	30.14
Weymouth & Portland	5,372	2,930	11,050	19,352	42.90
Household Recycling Centre	15,975	30,263	18,263	65,151	70.97
Total for Dorset (including HRCs)	53,838	40,458	112,539	207,485	45.45

shown in the diagram on page 16 and the table above. Five of the waste collection authorities (WCAs) have met their recycling targets for 2007/08. The other important component of recycling is that achieved at the household recycling centres (HRCs) and the performance of Dorset's HRCs is amongst the highest in the country. In 2007/08 the overall recycling rate for the county as a whole was 45 per cent. This is an excellent achievement and sets a good base for Dorset to meet its landfill diversion and recovery targets.

Arrangements for commercial waste

WCAs must collect commercial waste (trade waste) on request at a reasonable charge, however commercial waste producers may choose to make arrangements with a private sector waste contractor. Commercial waste is currently collected directly by two WCAs with a small amount collected by a third. Commercial waste currently makes up less than five per cent of the total municipal waste arising in Dorset.

One WCA operates a paper and cardboard recycling collection for commercial premises, with another currently undertaking a feasibility study

for a similar scheme. The remaining councils are not planning to introduce commercial waste collections in the short-term.

On the whole there is limited provision for the recycling of commercial waste and local businesses rely largely upon disposal contracts with private waste contractors. However, there is significant recycling potential for waste generated from the commercial sector, particularly from small and medium sized enterprises (SMEs). This potential will be explored and addressed in the future.

Waste management facilities

Dorset currently operates four waste transfer stations to bulk-up household waste for transportation to recycling and disposal facilities.

The Dorset councils currently use two Material Recycling Facilities (MRFs) to separate and bulk the collected dry recyclables. There are four composting facilities used for household garden waste, one of which also accepts household kitchen waste. 45 per cent of household waste is recycled and composted, with the remaining 55 per cent disposed of via four landfill sites.

Average waste collection and disposal costs in Dorset			
Collection (2007/08)		Disposal (2007/08)	
Combined annual cost for waste collection (£)	Average collection cost per household (£/HH)	Annual disposal cost (£)	Cost of disposal per household (£HH)
£9,633,673	£50.58	£13,038,000	£68.46



3. What are the challenges ahead?

The legislation governing waste management is driven by a common framework which applies across the European Union (EU). This is reflected in UK policy and the Government published a new national Waste Strategy for England (WS2007) in May 2007. WS2007 sets waste management in the context of sustainable development, including linkages with consumption and production and energy policy. It summarises the benefits of better waste management as:

- Reducing greenhouse gases, notably methane from landfill sites but also CO₂ through reuse and recycling
- Improving resource efficiency - saving energy and materials through waste reduction, reuse, recycling and renewable energy recovery
- Protecting public health through safe management of potentially hazardous substances
- Safeguarding social amenity by reducing fly-tipping and littering

In municipal waste terms, a key driver is the EU Landfill Directive which will progressively restrict the amount of untreated waste that can be sent to landfill. It has been transposed into UK law and statutory diversion targets set for each waste disposal authority (the county council is the WDA for Dorset). The arrangements include the Landfill Allowance Trading Scheme (LATS) whereby WDAs who exceed their targets can trade the surplus with those who have not fully complied, together with fines and other sanctions for non-compliance. Since fines can be up to £150 for every tonne of biodegradable waste landfilled over the target figure, there is a very strong financial, as well as environmental, imperative for Dorset to ensure it meets its landfill diversion obligations.

Currently all of Dorset's non-recycled and composted waste goes to landfill so complying with the Landfill Directive is a key challenge. This strategy has taken into account:

- Waste growth is less than was estimated in the previous strategy (2003).
- We have much more experience of recycling under UK conditions and a better understanding of the potential scope for improvement.
- There are new and emerging technologies for dealing with residual waste. DEFRA has implemented a programme of demonstration projects and capital support to assess and implement these technologies. There is now more information available on waste treatment technologies.
- Landfill tax has increased significantly and is set to increase further, affecting the economic viability of landfill as an option.
- Council budgets are under increasing pressure, making affordability and value for money key issues.
- Recognition that good waste management practice can contribute to wider goals such as mitigating climate change and producing renewable energy.

The Government has set a challenging framework of recycling, recovery and landfill diversion targets for local authorities. These targets increase over time, and we need to prepare now to meet these new challenges and maintain our position as a high performing local council. These challenges create an opportunity for Dorset to improve its waste management performance both now and for future generations.



3.1 Policy drivers

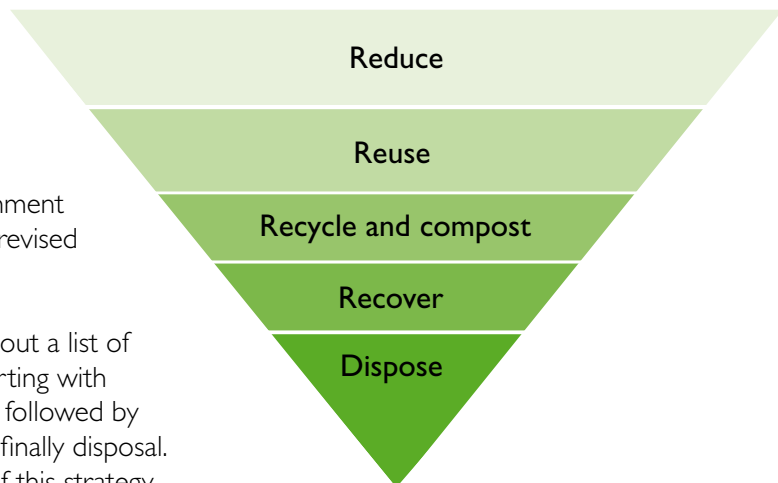
Fundamental policy principles based on EU and national policy

- **The waste hierarchy** - reduce, reuse, recycle, recover and dispose as a last resort
- **Climate change** - contributing to the mitigation of climate change
- **Waste as a resource** - saving fossil fuels and new materials. For example, residual waste after recycling is recognised as a renewable energy source that can contribute to national energy needs
- **The proximity principle** - facilities should be located as close as practicable to the source of waste, taking into account scale, location, economic and environmental effects. Depending on the type of waste, national, regional or local facilities may meet the proximity principle
- **Regional self-sufficiency** - the majority of waste should be managed within the county, and if necessary within the South West region
- **Sustainability** - identifying and balancing economic, social and environmental advantages and disadvantages

The waste hierarchy

The waste hierarchy remains at the heart of European waste policy, the National Waste Strategy and Government planning guidance, being part of the revised EU Waste Framework Directive.

It is now widely recognised and sets out a list of priorities for waste management, starting with waste reduction, reuse and recycling, followed by recovery of materials or energy and finally disposal. The hierarchy forms the backbone of this strategy.



Climate change

Waste management makes a significant contribution to mitigating climate change, by both promoting more prudent use of resources through waste reduction and recycling and recovering as much value from residual waste as possible.

The Bournemouth, Dorset and Poole Renewable Energy Strategy identifies the generation of renewable energy from waste as a priority area and this will be a primary consideration in the identification of the most appropriate form of waste treatment for the county.



Proximity principle

The original principles set out in the 2003 strategy continue to provide a robust starting point for waste management. However, our understanding of the issues has moved on, and these original principles have evolved alongside the challenges of modern society and the development of global markets for materials collected for recycling.

The proximity principle is embraced by the need to address climate change and the carbon agenda. Measures that seek to reduce greenhouse gas emissions will include transportation considerations, and the minimisation of distances to reduce CO₂ emissions will be included as a matter of course in the individual site selection process.

Sustainability

In 1987, the Brundtland Report defined sustainable development as 'development which meets the needs of the present without compromising the ability of future generations to meet their own needs'. This concept has been developed and put into practice over the last 20 years, and it is now recognised that the term sustainable development represents three fundamental dimensions for decision makers - economic, social and environmental.

Sustainability appraisal (SA) refers to the systematic identification and assessment of economic, social and environmental considerations. It is legally required for major local authority policies and plans.

National targets

Councils are responsible for the collection, recycling, recovery and disposal of municipal solid waste, and must meet statutory recycling and landfill diversion targets set by Government. WS2007 sets out targets and indicators for household waste recycling, household residual waste reduction and municipal waste recovery.

National Waste Strategy targets and indicators

Household waste recycling and composting

- 40 per cent by 2010
- 45 per cent by 2015
- 50 per cent by 2020

Residual waste reduction from 2000 levels

- 29 per cent residual reduction by 2010
- 35 per cent residual reduction by 2015
- 45 per cent reduction by 2020

Household waste recovery targets (includes recycling and composting performance)

- 53 per cent by 2010
- 67 per cent by 2015
- 75 per cent by 2020

While the targets stated in the National Waste Strategy are currently non-statutory, it is likely that they will become so in the future.

As part of the regime for implementing the Landfill Directive in England, the Government in 2003 introduced the LATS targets for the reduction of biodegradable municipal waste to landfill. The statutory target years are 2009/10, 2012/13 and 2019/20 and individual landfill allowances have been set for each Waste Disposal Authority.



UK landfill diversion targets under the EU Landfill Directive

To reduce biodegradable waste to landfill to

- 75 per cent of 1995 levels by 2010
- 50 per cent of 1995 levels by 2013
- 35 per cent of 1995 levels by 2020

Note: These dates include a four year extension granted to the UK by the EU

Dorset's allocated landfill allowances for the landfill of biodegradable waste

- 82,565 tonnes in 2009/10
- 54,994 tonnes in 2012/13
- 38,481 tonnes in 2019/20

In 2007/08 Dorset sent 84,959 tonnes of biodegradable waste to landfill.

Regional targets

The SW Regional Waste Strategy 'From Rubbish to Resource' was launched in 2004 by the SW Regional Assembly. The regional aims are to:

- Ensure that by the year 2020 over 45 per cent of waste is recycled and reused
- Less than 20 per cent of waste produced in the region will be landfilled

Dorset has already met the 2020 regional recycling target, and our 60 per cent 2015/16 recycling target, together with provisions to meet our landfill allowance obligations, will underpin our contribution to meeting the 'less than 20 per cent regional landfill' target.

Health effects of waste management

Concern is sometimes raised about the health implications of waste management processes. To answer these issues, the Department of Environment, Food and Rural Affairs (DEFRA) commissioned a comprehensive review of the evidence ('Review of the Environmental and Health Effects of Waste Management', May 2004).

The study concluded that on the evidence of studies carried out so far, the treatment of municipal waste is considered to have, at most, a minor effect on health in the UK, particularly when compared with the other health risks associated with ordinary day to day living.

The review concluded that the overall scale of emissions to air from waste management practices is relatively small compared with emissions from other sectors such as transport.

3.2 Our waste management principles

A list of nine high level principles has been identified. These overarching principles are based on the national, regional and local policy framework, and have been adapted specifically for the Dorset waste strategy. The principles form common themes and provide the underlying basis for the development of the policy objectives set out later in the document.



High level principles for the Dorset joint municipal waste management strategy	
Headline	Policy
A collective strategy	This is a collective strategy that has been developed and will be implemented in partnership with the stakeholder partners in line with the Pathfinder programme. The strategy is owned and branded by all of the Dorset councils.
The direction for an ongoing process	This strategy sets the direction for an ongoing process to equip Dorset with sustainable waste management solutions to meet the challenges of the next 25 years, while providing a flexible and adaptable basis for detailed implementation. In this context, it is important that there is a degree of continuity with stakeholder engagement, particularly key decision makers.
Sustainability	The theme of sustainability is embedded into this strategy, and takes into account the ways in which the three economic, social and environmental factors work together, as well as addressing the potential difficulties in achieving a balance between them.
Material resources	Waste is viewed as a material resource, not a disposal problem.
The waste hierarchy	This strategy follows the hierarchy of priorities for waste management, by first considering waste reduction, followed by reuse and recycling, then materials or energy recovery followed by disposal as a final resort.
Meeting the carbon agenda and the proximity principle	As part of the Dorset councils carbon agenda, this strategy considers waste management not as an end in itself, but as an integral part of the whole lifecycle of products and materials. Sustainable waste management can help conserve natural resources, deliver renewable energy, and reduce CO ₂ emissions and transportation impacts. This principle incorporates the proximity principle, whereby waste should, where practicable, be treated and disposed of within the area in which it is generated.
Changing our behaviour to underpin waste reduction and recycling	This strategy recognises that behavioural change across all sectors (that is, not only in the home) is key in moving forward but that this is a challenging and long term process. The Dorset councils will act as community leaders to promote a further change in the way that we view and manage our waste materials.
Local authority leadership	In line with the above, the local council partners will demonstrate leadership in their own waste management practices and internal policies in line with the National Waste Strategy 2007.
Regional collaboration and regional self sufficiency	The Dorset councils will continue to explore possibilities for joint working with other councils for meeting recycling and recovery objectives where this is beneficial and in line with the principles of sustainability. This policy objective incorporates the principles of regional self-sufficiency, where by each region should aim to take responsibility for its own waste management where feasible.



4. What are we aiming for?

4.1 Context

The strategic option adopted to manage Dorset's waste needs, to address the range of issues set out in the previous chapter, can be summarised as follows:

- Reduction of all wastes
- High recycling and composting
- Residual waste treatment and recovery
- Minimal landfill especially of untreated waste

There are a range of scenarios and options that could be adopted to deliver these objectives and the preferred solution(s) need to be realistic in that they can be successfully implemented and achieved as well as having the least impact on the environmental, economic and social well-being of Dorset. A key part of the review process was to identify and evaluate potential strategic waste management options and assess them against a range of factors including achievability and sustainability criteria. This process involved a Strategic Environmental Assessment (SEA) and Sustainability Appraisal (SA) process supported, and in areas where the formal appraisal process is not directly applicable, by the collective professional judgement of officers from all the Dorset councils and their advisors. Full details of the SEA / SA process and the results are set out in the separate Sustainability Appraisal Report.

4.2 What is the preferred option?

A range of strategic options were identified based on the variables summarised opposite. The format was designed to facilitate a 'mix and match' solution which would enable the overall solution to optimise each level of the waste hierarchy, taking into account:

- Assumptions about waste growth based on historic trends, predicted changes in waste

composition and population growth and the impact of behavioural change campaigns

- Scenarios for future levels of recycling
- Potential options for treating residual waste, including recovering energy (heat and/or power), compost-like material and/or other materials from it
- Assumptions about the type and amount of waste sent to landfill
- Opportunities for handling commercial waste at an economic charge in conjunction with municipal waste

Following a comprehensive review, the preferred option is summarised as follows:

- An intention to stabilise the growth in municipal waste arisings per head, with a medium to long term aspiration that arisings should fall
- Achieve 60 per cent recycling by 2015/16
- Flexibility for residual waste treatment options
- Work on the basis of one single residual waste treatment facility being the most efficient residual treatment option
- Meet and eventually exceed landfill diversion targets thus avoiding possible fines of up to £150 per tonne of excess biodegradable waste sent to landfill
- Show leadership by taking account of commercial waste management needs

Full details of the review and evaluation process are set out in the Options Report and Sustainability Appraisal Report and are summarised in the following chapters.



4.3 The 10 policy objectives

Ten policy objectives have been developed on the basis of the high level principles and the preferred option. The policy objectives are designed to

support the implementation and achievement of the preferred option. The policy objectives are considered one by one in the following chapters and these should be read in conjunction with the annual action plans that underpin them.

Policy objectives	
Headline	Policy
Towards zero growth	Policy objective 1: To prevent the further growth in municipal waste per head of population by promoting waste reduction and reuse initiatives, with a long term aim towards reducing waste generated per head.
Underpinning awareness and education	Policy objective 2: To promote waste awareness through coordinated public education and awareness campaigns, and effective community engagement.
High recycling	Policy objective 3: Across Dorset, to achieve 60 per cent recycling and composting by 2015/16.
Optimised recycling services	Policy objective 4: To achieve an optimised recycling and composting service across Dorset that is easy to understand and use (although local collection arrangements may be different).
Reducing the landfill of biodegradable waste	Policy objective 5: To progressively increase the recovery and diversion of biodegradable waste from landfill to meet and eventually exceed the landfill diversion targets under the Landfill Allowance Trading Scheme.
Minimise residual waste and maximise recovery of value	Policy objective 6: To ensure that residual waste treatment complements activities higher up the waste hierarchy and maximises the value recovered from waste in terms of resources and energy.
Cost efficient services	Policy objective 7: To deliver efficient and cost effective waste management services across Dorset that provide value for money.
Encourage sustainable management of commercial waste	Policy objective 8: To further encourage sustainable management of commercial waste and to optimise integration with the management of municipal waste where this is of benefit.
Sustainability within the local authority	Policy objective 9: As local councils, to set an example by reducing, reusing, recycling, composting and recovering our own waste and using our buying power to positively encourage sustainable resource use.
Working with others: listen, collaborate and influence	Policy objective 10: To listen to, work with and influence others to achieve sustainable waste management and meet the policy objectives, making use of national, regional and local frameworks.



5. Waste reduction and growth rate

Policy objective 1: To prevent the further growth in municipal waste per head of population by promoting waste reduction and reuse initiatives, with a long term aim towards reducing waste generated per head.

The aim of this policy objective is to reduce overall municipal waste arisings by encouraging waste producers (including householders) to minimise the amount of waste they generate. This policy objective is primarily concerned with avoiding waste in the first place.

The target is to stabilise municipal waste arisings at an average of not more than 560kg per head of population per annum from 2009/10 onwards (calculated as the average over the previous three years). This figure assumes commercial waste arisings will remain fairly static, however, it is recognised that these may go up as we promote increased recycling to businesses, in line with other strategy targets, and it will be subject to on-going review. The aspiration is that waste arisings per head of population should begin to fall in the medium to long term.

Total waste arisings are, however, likely to continue to rise for the foreseeable future as a consequence of increasing population. In determining provision of future services and infrastructure appropriate sensitivity analysis embracing the likely range in future waste arisings will be undertaken as part of any business case. In this strategy an indicative overall growth rate of one per cent per annum has been assumed for the purposes of estimating the likely future requirements.

This policy objective will be achieved principally by:

1. Taking a realistic view of historic trends in waste growth and identifying factors that can be influenced by the Dorset councils.
2. Education, awareness and encouragement of community participation in waste reduction initiatives.
3. Sharing and applying both local and national best practice.

> Policy links This objective is underpinned by waste education and awareness and public participation in reduction initiatives and there is thus a strong policy link with policy objective 2. This objective is also supported by policy objective 10 which relates to working with others and, for example, mobilising wider support to influence the primary producers of waste including the producers of packaging.

Municipal waste arisings per head of population have fluctuated in recent years and although they peaked at 575kg per person in 2006/07 they are showing signs of stabilising. The adopted target of 560kg per head of population is based on the average that has been achieved in the five years to 2007/08. It is recognised that waste arisings will tend to fluctuate year on year and it is therefore proposed that this target is based on the rolling average over the previous three years. This is considered reasonably ambitious in the light of the peak that occurred in 2006/07 and in recognition that the key drivers underlying waste growth/reduction are related to national and global socio-economic and market factors which are largely beyond the direct influence of the local authorities.



Underlying growth of population of Dorset has averaged 0.6 per cent to the five years to 2007/08 and notwithstanding the current economic downturn is predicted to continue to rise in the medium to long term. If the proposed draft Regional Spatial Strategy (RSS) is adopted the rate of increase of both the number of homes and population will accelerate over that which has occurred in recent years.

Overall waste arisings are therefore likely to continue to rise for the foreseeable future as a consequence of increasing population and it is important that a realistic allowance is made to accommodate this in planning for future services and infrastructure. Whilst this will be carefully assessed as part of the detailed business case for any new services or infrastructure it is necessary to adopt a figure for broad planning purposes and one per cent per annum is considered a prudent and realistic figure for this purpose. This will be kept under review and sensitivity testing will continue to ensure the most accurate predictions as possible are used.



6. Education and awareness

Policy objective 2: To promote waste awareness through coordinated public education and awareness campaigns, and effective community engagement

Over recent years, Dorset has engaged in effective education and awareness campaigns and the rate of waste growth is already beginning to fall while recycling and composting levels are increasing. This policy objective will build on the existing good work of the local councils and look for opportunities to increase awareness and public participation in waste reduction and recycling.

> Policy links This objective underpins policy objectives 1 and 3 by promoting waste reduction and recycling. It supports the higher levels of the waste hierarchy, providing one of the important elements needed to achieve the policy objectives set out in this strategy.

The high recycling targets achieved so far demonstrate a real enthusiasm for recycling in Dorset. The commitment of our residents together with effective education and awareness campaigns mean that here in Dorset we have already met our 2015 national recycling targets, and we are well placed to achieve our national 50 per cent recycling target by 2020. However, with tougher landfill diversion targets, increasing disposal costs and new targets beyond the horizon, Dorset must continue to seek ways to reduce waste and achieve our recycling potential to avoid unnecessary treatment or disposal of residual waste. Education and awareness will play a fundamental role in meeting and sustaining the objectives set out in this waste strategy, in particular by increasing participation in recycling schemes and local initiatives.



7. Recycling and composting

Policy objective 3: Across Dorset, to achieve 60 per cent recycling and composting by 2015/16

It is envisaged that the target of 60 per cent recycling and composting will be achieved by 2015/16 on the following broad basis:

1. Continued education and raising of public awareness to increase participation in recycling.
2. Extending existing services so that all areas of the county have easily accessible facilities for recycling paper, card, cans, glass and plastic bottles.
3. Extending the collection of other dry recyclables (for example, cardboard and textiles) in so far as is economically and environmentally viable.
4. Extending the kerbside collection and treatment of food waste across the majority of the county while recognising that it may not be economically and environmentally viable in all areas.
5. To consider introducing modest constraints on the collection of residual waste, including consideration of the feasibility of alternate weekly collections of residual waste, where this is complemented by enhanced provisions for recycling and composting.
6. To consider extending an optional service for the kerbside collection of garden waste (potentially at an additional charge) across the majority of the county while recognising that it may not be economically and environmentally viable in all areas.
7. Further improving the already high landfill diversion levels for waste delivered to HRCs
8. Investigating the potential for collection of household batteries.

> Policy links This objective is underpinned by waste education and awareness and public participation in recycling initiatives. There is thus a strong policy link with policy objective 2. It also has significant links with policy objectives 4, 5 and 6.

A high proportion of municipal waste can potentially be recycled, however there is an escalating cost associated with extracting materials, and economic viability rapidly decreases as materials become mixed or contaminated with non-recyclable materials. Separate collection of recyclable materials is therefore key to sustainable recycling and this depends upon public participation - and ultimately our enthusiasm for recycling in the home.

WS2007 recycling target for England is 50 per cent by 2020. Dorset has already achieved 45 per cent recycling in 2007/08 and residents have shown a great commitment to recycling across the county. Taking into account the recycling potential for municipal waste, collection constraints,

participation rates and a range of other factors, we believe that we can achieve more than the statutory minimum. This also helps us meet our landfill diversion targets.

Whilst the existing recycling and composting arrangements are working well and are delivering levels of performance that are currently considered good on a national basis, there is still potential to build on the success to date. Various scenarios for extending and enhancing the existing recycling and composting services and increasing the level of participation have been considered and it has been concluded that it is reasonable to work towards a 60 per cent level of recycling and composting by 2015/16 on the basis set out in the policy above.



The 60 per cent target exceeds the national targets for both 2015 (45 per cent) and 2020 (50 per cent). By the principle of diminishing returns, increased rates of recycling and composting become more difficult to achieve and it is recognised that 60 per cent will be a challenging target to achieve. However, given progress to date and the demonstrable

commitment of Dorset's residents, it has been concluded that it is a realistic ambition.

The need to optimise recycling and collection services across the county to support delivery of our 60 per cent recycling target is recognised, and this is set out in the following policy objective.

Policy objective 4: To achieve an optimised recycling and composting service across Dorset that is easy to understand and use (although local collection arrangements may be different)

This policy objective will be achieved principally by:

1. Where feasible, and as opportunities arise, every effort will be made to align and optimise the arrangements for recycling and composting across the county.
2. An aspirational framework will be agreed which will provide the basis for upgrading/replacement of services as the associated infrastructure becomes due for renewal.

> Policy Links This policy is closely linked with policy objective 3.

There is currently much variation in the arrangements for the collection of recyclables and kitchen waste (for composting) around the county. Whilst the types of materials collected are often similar there are a large number of practical arrangements currently in operation.

It is recognised that there would be significant benefits in aligning and optimising the collection arrangements in so far as possible. In particular:

- It would enable a much simpler and more consistent message to be presented to the public in relation to recycling.
- It would enhance public understanding and make the services easier to use and is likely to lead to improved participation, which will be essential to achieving the ambitious targets now proposed.
- It offers the potential for cost savings in relation to operations.

However, there are significant capital and recurring revenue costs associated with changing collection regimes including, in particular, vehicles, collection receptacles and a need to employ additional staff. Changes can therefore only be introduced gradually and generally only when existing capital infrastructure needs replacement and/or as part of broader changes.



8. Biodegradable waste

Policy objective 5: To progressively increase the recovery and diversion of biodegradable waste from landfill to meet and eventually exceed the landfill diversion targets under the Landfill Allowance Trading Scheme (LATS).

The objective is to meet the LATS targets up to 2020, as a minimum, with an aspiration to exceed the LATS targets in the medium term. Consideration will be given to working towards zero disposal of biodegradable waste to landfill in the longer term.

This policy objective will be achieved principally by:

1. Promoting increased home composting and community composting where feasible.
2. Maximising the collection and recycling of those dry recyclables that are biodegradable (paper, card, cardboard, textiles), in so far as is economically and environmentally viable.
3. Extending the collection and treatment of food waste across the majority of the county while recognising that it may not be economically and environmentally viable in all areas.
4. To consider extending the collection and composting of garden waste (potentially at an additional charge) across the majority of the county while taking into account economic and environmental viability.
5. Treating, at least a proportion, of the residual waste stream that is left to remove/recover its biodegradable content.

> Policy links This objective is linked with policy objective 3, 4 and 6.

Disposal of biodegradable waste to landfill is not a sustainable option as it results, amongst other things, in the emission of methane to the atmosphere, fails to recover value from the waste stream and potentially consumes land that could be better utilised. It is for these reasons that the EU Landfill Directive established challenging targets for the diversion of BMW from landfill which has been transposed into LATS in England. It is also the driver for the rising cost of landfill tax. Under LATS, the statutory target dates for WDAs are 2009/10, 2012/13 and 2019/20. Dorset currently relies on landfill for the disposal of residual waste and must significantly reduce the amount of biodegradable waste it sends to landfill in order to meet its LATS obligations, avoid the risk of fines and also mitigate against the rising cost of landfill.

There are benefits in using anaerobic digestion (AD), a term given to the biological breakdown of organic material in the absence of oxygen, to treat kitchen and other food waste. The AD process allows the capture of methane which can be used to generate electricity or even to run vehicles. The opportunities to utilise AD to treat kitchen waste will be pursued as it is recognised this contributes to meeting other targets, makes the best use of resources, and produces renewable energy. However, this may not be viable in the short to medium term given the alternative forms of treatment currently available (including composting in an enclosed vessel). The potential role of AD in Dorset will be explored and developments kept under review, including evaluating any opportunities should they arise.



9. Residual waste

Policy objective 6: To ensure that residual waste treatment complements activities higher up the waste hierarchy and maximises the value recovered from waste in terms of resources and energy.

Sufficient residual waste treatment capacity will be procured to ensure that the following objectives are achieved after taking into account the targeted levels of recycling and composting;

1. Diversion of biodegradable waste from landfill to meet and exceed Dorset's obligations under LATS in accordance with policy objective 5.
2. Recovery of value from at least 75 per cent of municipal waste by 2020 in accordance with the strategic target in the National Waste Strategy.

The form of residual waste treatment will be evaluated on the basis of the environmental, social, economic and deliverability criteria set out in the section below. A provisional assessment using environmental, social and economic criteria to ensure sustainability is fully addressed, indicates that the following forms of treatment perform reasonably well against the agreed criteria;

- Direct Energy From Waste (EfW)
- Autoclave (or Mechanical Heat Treatment (MHT)) followed by Advanced Thermal Treatment (Gasification or Pyrolysis) of the residue
- Mechanical separation followed by Advanced Thermal Treatment (Gasification or Pyrolysis)
- Mechanical Biological Treatment (MBT) with Anaerobic Digestion (AD) to produce biogas and production of a Refuse Derived Fuel (RDF) for combustion

However, a more rigorous evaluation will be undertaken as part of any future procurement process, taking into account the more detailed information that would then be available.

It is recognised that economies of scale are particularly relevant to the treatment of residual waste and opportunities for both collaboration with other authorities and co-treatment of a proportion of commercial waste will be explored where they can provide better value for money. This would also assist with more sustainable management of commercial waste.

> Policy links This objective is linked to policy objective 3, 4 and 5. It also has significant cost implications and therefore an important link to policy objective 7.

Residual waste is that waste which is not recycled or composted and in Dorset it is currently disposed of to landfill. Recent progress with recycling and composting and the new target to achieve 60 per cent by 2015/16 will help to significantly reduce the quantity of residual waste arising from the municipal waste stream. However,

there will always be a proportion of residual waste that needs to be dealt with.

The current projected tonnages of residual waste arising from the municipal waste stream are shown in the table on page 32.



Projected tonnages of residual waste				
Target year	2007/8	2009/10	2012/13	2019/20
Based on 1 per cent annual growth in total waste arisings and 60 per cent recycling achieved by 2015/16	120,000	112,000	101,000	98,000

The cost of disposal to landfill is rising significantly as a consequence of the escalation of landfill tax in particular that for non hazardous waste, which is currently £32/tonne and set to increase to £48/tonne in 2010/11. The Government have clearly stated that it will increase further thereafter.

In order to meet the county's LATS targets for the diversion of BMW from landfill it will be necessary to treat at least a proportion of the residual waste, as identified in policy objective 5.

It is currently predicted that it will be necessary to divert a minimum of approximately 40,000 tonnes of residual waste from landfill by 2020 in order to meet the WDAs' LATS obligations. Diverting this minimum quantity of waste from landfill would still mean landfilling approximately 58,000 tonnes of municipal waste with consequent emissions of methane and no recovery of value from the waste. In addition, there are economies of scale involved in developing waste treatment facilities and it may not be cost-effective for Dorset to procure a facility of this marginal size.

When considering the procurement of infrastructure it is necessary to plan for the longer term needs of the next 25 -30 years both in terms of potential continued growth in waste and the availability of landfill. It is recognised that increasing restrictions, reduced physical availability and rising costs are likely to prohibit the use of landfill for the disposal of municipal waste in the long run. The possibility of a future ban on all biodegradable waste from landfill (biodegradable hazardous waste has already been banned) is discussed in the national Waste Strategy 2007 (WS2007).

Collaboration between authorities is encouraged by DEFRA in relation to the treatment of residual waste in recognition of the potential to deliver better value for money. The Dorset councils work in partnership with both the Borough of Poole and Bournemouth Borough Council, in particular, and are seeking opportunities for joint working where this is beneficial.

A more holistic approach embracing both municipal and commercial waste is also now encouraged and it is estimated that approximately 400,000 tonnes of commercial waste is generated in Dorset (including the Bournemouth and Poole area) each year. A more integrated approach provides a real opportunity to deliver more cost effective and environmentally sound options for Dorset as a whole, including both the public sector and SMEs in particular.

Therefore, in line with our philosophy and high level principles to minimise waste to landfill, meet and eventually exceed landfill targets, work in collaboration with others and provide good value for money, any treatment facility for residual waste should be of a scale to:

- minimise waste to landfill
- provide some spare capacity for
 - higher levels of waste growth
 - locally produced commercial waste
 - other local authorities waste where there are appropriate synergies
- provide a cost-effective solution for Dorset



On the basis of this information it is currently considered prudent to plan for a residual treatment capacity of approximately 150,000 tonnes per year - this capacity is made up of the following:-

Kerbside residual waste - landfill minimised - variation due to recycling performance and waste growth	80,000 - 110,000 tonnes
HRC residual waste - following pre-treatment	10,000 tonnes
Capacity for commercial waste or other authorities waste	50,000 tonnes
Plant Capacity	140,000 - 170,000 tonnes

This capacity has been assumed in the provisional evaluation of residual treatment options which has been undertaken in relation to this strategy. This is not, however, fixed and will be kept under review. In particular, a more rigorous evaluation will be undertaken before finalising any procurement and this will take into account a full risk assessment, the circumstances at the time and the most optimum solution then available.

In the short term to meet the landfill diversion targets prior to a waste treatment facility being operational, an interim contract has been agreed with New Earth Solutions near Poole to assist with Dorset's requirements for diversion from landfill up to 2012. This involves quite small tonnages and a permanent solution is required to meet the longer term needs. Other interim contracts may also be required depending on waste growth, recycling behaviour and procurement.

The previous strategy (2003) identified a process of Mechanical Biological Treatment (MBT) leading to the production of a Refuse Derived Fuel (RDF) as the preferred form for treatment of residual waste. However, there have been significant developments in available technologies over the last five years and it has also become clear that allowing greater flexibility for industry to respond innovatively to our needs is likely to deliver more cost effective solutions. A full re-evaluation of the

potential solutions was undertaken as part of the review of the strategy.

The assessment process, involving a Sustainability Appraisal (SA) and Strategic Environmental Assessment (SEA), is fully described in the Sustainability Appraisal Report. The approach is based on evaluation of potential options against an agreed list of sustainability criteria and weightings.

The criteria have been developed with reference to European and national laws, the South West Regional Sustainable Development Framework and Dorset's own sustainable development aspirations. Natural England, English Heritage and the Environment Agency were consulted about the criteria during the Scoping Stage of the Sustainability Appraisal.



The list of criteria set out in the table below has been adopted following consultation during the Scoping Stage.

Evaluation criteria	
Assessment criteria	Basis of measurement
Environmental criteria	
Air quality	Emission of potentially acidifying gases to the atmosphere.
Water quality	Emissions of potentially eutrophic and ecotoxic compounds into freshwater aquatic systems.
Land take	Estimated land take for waste treatment facilities, measured in hectares.
Impact on human health	Toxicity levels generated by the waste treatment facility.
Nuisance	Levels of noise, odour and litter nuisances caused by waste activities.
Traffic & transport	Traffic impacts associated with transporting waste and the outputs generated from the facility to their final destination, calculated as tonne miles.
Climate change impacts	Emission levels of potentially global warming gases to the atmosphere through the operation of the facility.
Energy recovered/saved	Maximising the total energy recovered and/or saved by processing the waste stream with added value attributed to that amount deemed "renewable".
Contribution to recycling and recovery targets	Tonnage of waste recycled and recovered.
Minimise biodegradable waste sent to landfill	Amount of Biodegradable Municipal Waste (BMW) diverted from landfill by recycling, composting and treatment.
Minimise residue to landfill	Tonnage of material waste sent to landfill following recycling/treatment. Tonnage of hazardous waste tonnes requiring treatment/disposal.
Dealing with outputs locally	Relative proportions of outputs from treatment of waste that are used/disposed of within the county (excluding that exported from the county for recycling).
Built & historic environment	Potential impacts on the physical environment in terms of visual impact.
Social criteria	
Employment	How many jobs will the facility or new collection systems generate? Will they provide stable, long-term employment?
Participation levels	Ease of participation and the variation of the service across Dorset. Risk of fly tipping.



Evaluation criteria	
Assessment criteria	Basis of measurement
Economic criteria	
Strive to have best value waste management service	Cost of delivering the service based on capital, operational and collection costs across the county.
Reducing risk and commercial & financial robustness	<p>How confident can we be that the technologies will work reliably for the long term?</p> <p>Are there other similar plants operating at a commercial scale?</p> <p>Will the private sector and banks support the project?</p> <p>Will significant risk still reside with councils?</p> <p>Will there be long term markets for the outputs?</p> <p>What is the public perception of the type of technology and how will this affect planning?</p> <p>How certain can we be about costs?</p> <p>What is the risk of delay and how much might this cost?</p>

These criteria were initially weighted on the basis of the professional judgement of officers and advisors and subsequently modified following feedback from the consultation. The adopted weightings are set out in the table on page 36. The criteria are grouped under the three principle sustainability considerations, namely;

- Environmental
- Social
- Economic

These three high level categories have first been weighted by allocating marks out of ten in each case. These high level scores have then been allocated across the detailed criteria within a particular category by awarding each criterion a mark out of ten in the same way. The weightings derived from the process are then expressed as a percentage for ease of overall comparison. These weightings, determined on the above basis, have been used to complete a provisional assessment of the options.



Provisional weighting of the evaluation criteria					
Overarching assessment group	Assessment group weighting		Assessment criteria	Criteria weighting	Aggregated weighting as a percentage
	Relative mark out of 10	As a percentage			
Environmental criteria	10	47.62%	Air quality	7	3.72%
			Water quality	7	3.72%
			Land take	4	2.13%
			Impact on human health	10	5.32%
			Nuisance	3	1.60%
			Traffic & transport	10	5.32%
			Climate change impacts	10	5.32%
			Energy recovered/saved	8	4.26%
			Contribution to recycling and recovery targets	7	3.72%
			Minimise biodegradable waste sent to landfill	8	4.26%
			Minimise residue to landfill	7	3.72%
			Dealing with outputs locally	7	3.72%
			Built & historic environment	1.5	0.81%
			Environment total		
Social criteria	2	9.52%	Employment	6	4.76%
			Participation levels	6	4.76%
			Social total	12	9.52%
Economic criteria	9	42.86%	Strive to have best value waste management service	10	21.43%
			Reducing risk and commercial & financial robustness	10	21.43%
			Economic total	20	42.86%
			Criteria total		100.0%



It is proposed that the criteria and weightings used to let the contract for the final choice of residual waste treatment in the future should be based on those contained in this strategy. However, it is recognised that some amendment may be necessary to select any additional considerations relevant at the time the WDA procures a contract, including for example deliverability, available technologies and funding. A provisional assessment of currently available technologies has been undertaken as part of the review of the strategy to identify those that perform well against the selected sustainability criteria. A more

rigorous evaluation will be undertaken as part of any procurement process, taking into account the more detailed information that would be available and any additional considerations that are relevant.

There are currently a wide range of technologies and permutations of options becoming available for the treatment of residual waste. Nine generic options have been identified for evaluation as listed in the table below. These generic options have been drawn up with the intent of embracing all the potentially feasible forms of solutions available.

Summary of residual treatment options considered		
Scenario		Process description/sub-options
1	Mechanical separation with Advanced Thermal Treatment	Following mechanical separation to recover further recyclable material the remaining waste is placed in gasification or pyrolysis chambers and heated to high-temperatures in low or zero levels of oxygen. The process, which is similar to the production of coal gas in the past, generates gases which are collected and combusted to produce heat.
2	Direct EfW	An Energy from Waste (EfW) plant is essentially a furnace that burns waste at a high temperature. Heat from the combustion process is usually used to generate electricity, and may also be used to supply heat to external users (termed combined heat & power or CHP). The resulting flue gases are subject to rigorous cleaning processes in accordance with the EU Waste Incineration Directive (2000) before emission to the atmosphere. Direct EfW is therefore very different from the old generation of mass burn incinerators that were mainly used to reduce the volume of waste with no recovery of energy and only minimal environmental control measures.
3	Autoclave (or MHT) with Advanced Thermal Treatment	Autoclave or Mechanical Heat treatment (MHT) is a form of waste treatment that utilises heat, steam and pressure to treat the waste. Following the process high quality and clean plastic, ferrous and non-ferrous metals are then separated out. The remaining cellulose material, or biomass, can be used as feed stock for the gasification/ pyrolysis techniques described above.



Summary of residual treatment options considered		
Scenario		Process description/sub-options
4	MBT/MHT with RDF output	<p>Mechanical Biological Treatment (MBT) involves the mechanical separation of waste into those materials that can be recycled, a fraction comprising paper and plastic fragments which has a high calorific value and can be used as a fuel (Refuse Derived Fuel - RDF) and a fibre fraction. The RDF material can be used on or off-site for use as a co-generation fuel.</p> <p>A variant on this option is the use of MHT or autoclaving to assist in the initial separation of the waste.</p> <p>In this scenario the resulting fibre fraction from either process is then composted aerobically with the stabilite material being sent to landfill.</p> <p>This is similar to the preferred option identified in the previous waste strategy, published in 2003.</p>
5	MBT with aerobic composting	<p>Mechanical Biological Treatment (MBT), as described above, but without the separation of an RDF and with all the remaining material being composted aerobically and the stabilised material being sent to landfill or, potentially where it is of better quality, being used as a soil improver (in non-food applications).</p>
6	MBT/MHT with AD	<p>Mechanical Biological Treatment (MBT) or Mechanical Heat treatment (MHT) as described above, followed by anaerobic digestion (AD) of the resulting fibre fraction to generate a biogas for energy production. The stabilised output is sent to landfill.</p>
7	MBT with AD and RDF output	<p>Mechanical Biological Treatment (MBT) as described above including the production of RDF followed by anaerobic digestion (AD) of the resulting fibre fraction to generate a biogas for energy production. The stabilised output is sent to landfill.</p>
8	Landfill	<p>All waste is sent un-sorted to a EU specification landfill with energy recovery from landfill gas.</p>

Key to abbreviations used in above table;

ATT	Advanced Thermal Treatment
MBT	Mechanical Biological Treatment
MHT	Mechanical Heat Treatment
RDF	Refuse Derived Fuel
SRF	Solid Recovered Fuels



As noted in the table above, various forms of residual waste treatment have the potential to generate energy through some form of combustion. Energy can therefore be recovered from the waste, and this can make a valuable contribution to mitigate against climate change by displacing the need for other forms of energy generation using fossil fuels. Depending on the particular choice of residual treatment, if energy is produced, a proportion of this may be classified as renewable. The Bournemouth, Dorset and Poole Renewable Energy Strategy has identified recovery of renewable energy from waste as a priority area. DEFRA have recently put an emphasis on authorities utilising Combine Heat and Power (CHP) technologies.

When energy is being generated the most efficient solution is combined heat and power, where the heat is utilised as well as producing electricity.

For each of the scenarios which include combustion to produce electricity the option to also utilise the heat in a combined heat and power (CHP) scheme has also been considered.

In addition to the scenarios identified above, plasma arc gasification is a new method of treatment that combines a first stage gasification, with a second stage high electrical energy/high temperature stage (created by an electrical arc) to treat the waste. The solid residues are vitrified at the high temperature. It is not yet available on a commercial scale for treatment of residual waste in the UK and there is insufficient data available for it to be have been included in our provisional assessment. It is not currently considered a viable option but it could be included in future evaluations if it becomes a sufficiently proven option by then.

The evaluation process is described in detail in the Sustainability Appraisal report and the conclusions are summarised as follows.

The provisional evaluation, based on the sustainability criteria and weightings as agreed by officers and modified in light of the outcomes of the public consultation process ranks the options in the following order:

1st	Direct EfW
2nd	Autoclave (or MHT) with Advance Thermal Treatment (ATT)
3rd	MBT with AD and RDF output
4th	Mechanical separation with Advanced Thermal Treatment (ATT)
5th	MBT/MHT with RDF output
6th	MBT/MHT with AD
7th	MBT with aerobic composting
8th	Landfill

This has been a desktop exercise and ultimately a procurement process would determine the most suitable option.

All the treatment options considered perform significantly better than continuing to landfill the residual waste.



The options appraisal included a high level comparison of costs. This was based on an estimate of the Net Present Cost (NPC) of each option including the capital cost of building the facility and the cost of operating it over its life (typically 20 – 25 years). These costs are discounted over time

and added together to give a simpler comparison between the options at today's prices. The results (rounded to the nearest million from table 2.17 in Appendix E of the Sustainability Appraisal) are presented in the table below:

Ref	Technology	NPC (£) Low is best	Normalised Score (out of 10, high is best)
1	Mechanical Separation with Advanced Thermal Treatment	110,000,000	10
2	Direct EfW	115,000,000	9.6
3	Autoclave (or MHT) with Advanced Thermal Treatment	112,000,000	9.9
4	MBT/MHT with RDF Output	147,000,000	7.5
5	MBT with Aerobic Composting	176,000,000	6.2
6	MBT/MHT with AD	186,000,000	5.9
7	MBT with AD and RDF Output	155,000,000	7.1
8	Landfill	223,000,000	4.9

It should be noted that determination of detailed cost estimates is beyond the scope of a strategy and these figures are therefore only indicative. Much more detailed cost estimates will be determined as part of the business case for delivering the residual waste treatment solution in due course.

Economies of scale are particularly relevant to the treatment of residual waste. A single plant

is thus likely to be the most economic and the options evaluation, based on the full list of criteria, indicates that a single plant serving the whole county generally performs best. Opportunities for both collaboration with other authorities and co-treatment of a proportion of commercial waste will be explored and, where viable, will be adopted if they can provide better value for money.



10. Cost efficiency

Policy objective 7: To deliver efficient and cost effective waste management services across Dorset that provide value for money.

The cost of waste management is rising in real terms as a consequence of external legal, environmental and financial drivers. The delivery of efficient and cost effective waste management services is a high priority to which all the Dorset councils are collectively committed.

Improved efficiency will be pursued wherever the opportunity exists but in particular through closer partnership working between the councils within the Pathfinder programme.

Value for money and risk will be considered when strategy decisions are taken and benchmarking against 'do nothing' costs will be undertaken.

> Policy links Links to all policies.

This objective underpins the whole of this strategy and without a clear focus on this area the policy objectives may not be fully achieved or indeed, be affordable. In addition to direct economic opportunities, there is scope to pilot and share best practice to improve performance in areas such as waste reduction, awareness and recycling. Other important opportunities to be considered include joint procurement and working and shared facilities. The potential benefits include scope to reduce CO₂ emissions and save natural resources, reduced vehicle movements and cost savings.

The overall costs associated with waste management will continue to rise due to increases in landfill tax and the infrastructure required to meet the LATS targets. Improvements in the way that we manage our waste, in order to avoid landfill taxes and LATS fines, need to be planned for over the medium to long term as new infrastructure cannot be provided immediately. Strategy decisions that are taken will consider both value for money and risk.

The 'do nothing' cost of the waste management service will be determined and used as a benchmark for service improvements to be judged against. The 'do nothing' costs will include all known costs associated with the current service provision.

An example of this is landfill tax. In 2007/08, 112,539 tonnes of household waste were landfilled in Dorset, this cost the WDA £32 per tonne in landfill tax alone, equating to £3,601,248. Landfill tax will rise to £48 in 2010/11, if the 'do nothing' scenario was applied and the same number of tonnes were landfilled it would cost the WDA £5,401,872; this is an increase of £1,800,624.

Beyond 2012 it is probable that landfill tax will continue to rise and increases to £65 -£75 per tonne have been suggested. On top of typical landfill gate fees this means that the cost of disposal could be in the region of £100 per tonne within the lifetime of this strategy. On top of this, LATS fines of £150 could be payable upon an unknown proportion of landfilled waste.

The Dorset councils will only proceed with a scheme if it is affordable for the long term and has benefits over the 'do-nothing' approach. All parties are firmly committed to delivering the best possible value for money for the Dorset Councils and the Dorset ratepayers as a whole whilst delivering high quality services.



11. Commercial waste

Policy objective 8: To further encourage sustainable management of commercial waste and to optimise integration with the management of municipal waste where this is of benefit.

Whilst this strategy is primarily concerned with the management of municipal waste in accordance with the councils statutory obligations it is recognised that the management of commercial waste should not be viewed in isolation. There are significant benefits to be gained from a more holistic approach.

This policy objective will be achieved principally by:

1. Increased communication with the commercial sector to understand their needs. Provide information and guidance on waste reduction and recycling, particularly to SMEs.
2. Investigation of the potential for procuring waste facilities that would treat both municipal and commercial waste together and which are likely to be more cost effective as a consequence of being of a larger scale and provide sustainable outlets for Dorset's commercial waste.
3. Investigation of the potential for the councils to provide some waste management services to the commercial sector where there is a demand and that they can be delivered on a commercially viable basis.

> Policy links This policy objective is underpinned by education and awareness under policy objective 2 with some potential interface with facility requirements stemming from policy objectives 6 and 7.

The Environment Agency estimate there is approximately 400,000 tonnes of commercial waste generated in Dorset annually (including the Bournemouth and Poole area).

Local council provisions for household waste are focussed on their statutory obligations. Facilities for household waste are quite well established, and recycling has been driven by targets and performance indicators. However, commercial waste recycling facilities are yet to become fully established, with a lack of coordination between demand for recycling, commercial drivers and the distribution of provision. WS2007 sets an aspiration to reduce commercial and industrial waste to landfill by 20 per cent from 2004 levels by 2010.

Local council provisions for commercial waste are currently small-scale, and the majority of this sector relies upon private contractors. There is considerable potential to recycle and recover more of the commercial waste stream particularly for small and medium sized enterprises (SMEs) for whom existing

options for recycling and recovery can be limited. While individual businesses have a corporate environmental and social responsibility to address the environmental impacts of their practices, local councils can play an important role in helping these businesses achieve better environmental performance, by using its existing position, well being powers and influence at a local level.

The local council can potentially help the commercial sector to establish recycling services by providing coordination and support using our existing knowledge, administrative systems and influence. This is an opportunity that needs to be explored and if feasible taken forward in the action plan.

Commercial waste often finds its way into the municipal waste stream, either directly or indirectly, for example through fly-tipping. Information, facilities and enforcement are all needed to promote the responsible management of commercial waste and prevent illegal waste activity.



12. Setting an example and working together

Policy objective 9: As local councils to set an example by reducing, reusing, recycling, composting and recovering our own waste and using our buying power to positively encourage sustainable resource use.

All the Dorset councils recognise their ability to lead by example, in demonstrating more sustainable use of resources, as a consequence of the size of their own operations and their buying power.

> Policy Links There are strong links to policy 2 but this also underpins all the other policy objectives.

Achievement of this strategy requires householders, commerce and industry, and the public sector to think and act differently. Whilst the Dorset local councils have an important role to inform and educate to achieve behaviour change across all sectors, this work is unlikely to be fully successful unless they can show that they 'practice what they preach'. This leadership role is important in demonstrating that the required changes are both possible and affordable (and may lead to cost savings in some cases). All local council functions and services need to be involved - from parks and gardens to housing and highways.

All the Dorset councils currently have their own individual procurement strategies, the majority of which refer to green/sustainable policy. Some councils have also set themselves ambitious plans to adopt sustainable waste management and procurement practices through the day-to-day operations of all buildings and employees.

A number of the councils and departments are currently working towards accredited Environmental Management Systems (EMS) – a formal programme to identify environmental impacts, identify opportunities for improvement, implement and report on improvements.



Policy objective 10: To listen to, work with and influence others to achieve sustainable waste management and meet the policy objectives, making use of national, regional and local frameworks.

The Dorset councils will work through national organisations such as the Local Government Association and waste management professional bodies to try and improve the background conditions that will assist in achieving the policy objectives in this strategy. This may require action by government, business and/or other statutory agencies.

Increased recycling depends on sustainable markets for recycled materials. This is an opportunity for local economic development and employment as new businesses may be set up to process and use the recyclable materials. We will seek to influence the Regional Development Agency and businesses in Dorset and beyond to take advantage of such opportunities.

At a local level, we need to embed the culture of sustainable waste management across all sectors – not just householders. This normalisation of good practice, so that the same principles apply at work or at home for example, is essential if we are to achieve our broader goal of a more sustainable future. We will seek to influence organisations locally, including commerce and industry, to achieve this objective.

> Policy links This policy objective supports the implementation of the strategy and links to, in particular, to policy objectives 1, 2, 3, 5, 6, 7 and 8.

Waste management cannot be considered in isolation. It is linked to manufacturing and retailing processes, how people live and what they buy as well a multitude of other factors. For example, to achieve policy objectives such as preventing waste growth and increasing recycling, we need to influence purchasing patterns and try and ensure that sustainable markets are available, and expanded, for recycled materials.

Achieving the above is outside the direct control of the local councils and we need to recognise that the aims of this strategy cannot be achieved by the Dorset local councils working in isolation.

Everyone from individuals to industry and Government have a role to play in creating the background conditions needed for success. The Dorset councils can play a key role in effecting change by working with and influencing external bodies.

All of the policy objectives are underpinned by the need to collaborate, listen to and influence others. Dorset will seek opportunities to work with others to implement the policy objectives.



13. The next steps

This strategy sets out the strategic direction for municipal waste management in Dorset for the period up to 2033. Work has commenced on finalising the action plans and these will be published and updated annually. The first set of action plans will be published in April 2009. In some areas actions are already in hand under current plans.

It is recognised however that waste management is undergoing a period of rapid change and development, and as such, the strategy may need periodic review and refinement. Whilst the ten policy objectives set out in the preceding chapters should remain valid until the next formal review of the strategy, it will be necessary to keep the respective action plans under continuous review in the light of new developments and changing circumstances.

An important component of the action plans is a requirement to monitor and report on progress. Some of the monitoring and reporting, such as landfill diversion and recycling performance, is included under the local council's corporate reporting systems for national and / or local indicators.

The Dorset councils will publish annual action plans and a monitoring report setting out progress on the action plans together with any changes that are needed.

The strategy will be reviewed in the event of any significant changes in circumstances or otherwise at intervals of not more than every five years.



For more information contact:

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www.dorsetforyou.com/futureofwaste

All leaflets can be made available in audio tape, large print and Braille, or alternative languages on request.

A joint strategy by the Dorset councils to guide the way that waste will be dealt with over the next 25 years (published April 2009).

A partnership between

