Options Appraisal Report

Derbyshire and Derby City Joint Municipal Waste Management Strategy Review

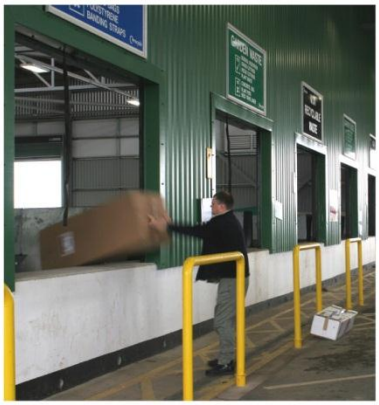
2013-2026

recycle
for Derby
and Derbyshire

DERBYSHIRE WASTE PARTNERSHIP

Options Appraisal Report

TO INFORM DEVELOPMENT OF THE JOINT MUNICIPAL WASTE MANAGEMENT STRATEGY



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Contents

Abbreviations / Acronyms

AD	Anaerobic Digestion
AHP	Absorbent Hygiene Products
ANPR	Automatic Number Plate Recognition
AWC	Alternate Weekly Collection
BATRef	Best Available Techniques Reference Documents
BIS	Department for Business Innovation & Skills
BMW	Biodegradable Municipal Waste
C&DE	Construction & Demolition Excavation
C&I	Commercial & Industrial
CFWR	Committed Food Waste Reducers
CO2	Carbon Dioxide
CRC	Carbon Reduction Commitment
DECC	Department of Energy & Climate Change
DEFRA	Department for Environment, Food and Rural Affairs
DJMWMS	Derbyshire and Derby City Joint Municipal Waste Management Strategy
DPF	Derbyshire Partnership Forum
DWP	Derbyshire Waste Partnership
EA	Environment Agency
EMRA	East Midlands Regional Assembly
EPA	Environment Protection Act
EPE	European Person Equivalent
EU	European Union
FC	Forestry Commissions
FRN	Furniture Reuse Network
GHG	Greenhouse Gas
GOEM	Government Office for the East Midlands
H&S	Health and Safety
HWRC	Household Waste Recycling Centre
IVC	In-Vessel Composting
JMWMS	Joint Municipal Waste Management Strategy
JRC	Joint Research Committee
LA	Local Authority
LAA	Local Area Agreement
LACMW	Local Authority Collected Municipal Waste
LACW	Local Authority Collected Waste
LATS	Landfill Allowance Trading Scheme
LCLIPem	Local Climate Impact Profiles across the East Midlands

LCTP	Low Carbon Transition Plan
LEQ	Local Environmental Quality
LFHW	Love Food Hate Waste
MPS	Mailing Preference Service
MRF	Materials Recovery Facility
MSW	Municipal Solid Waste
Mt	Million Tonnes
NI	National Indicator
RES	the Regional Economic Strategy
RIEP	Regional Improvement and Efficiency Partnerships
RSS	Regional Spatial Strategy
SCP	Sustainable Consumption and Production
SEA	Strategic Environmental Assessment
SMART	Save Money and Reduce Trash
UK	United Kingdom
VFM	Value for Money
WCA	Waste Collection Authority
WDA	Waste Disposal Authority
WDF	WasteDataFlow
WEEE	Waste Electronic and Electrical Equipment
WFD	Waste Framework Directive
WM	Waste Management
WRAP	Waste and Resources Action Programme
WRATE	Waste and Resources Assessment Tool for the Environment

Executive Summary

The Derbyshire Waste Partnership[1] (DWP) has undertaken a review of the Derbyshire and Derby City Joint Municipal Waste Management Strategy (DJMWMS). SKM Enviros was commissioned by Derbyshire County Council in January 2012 to support the DWP with the strategy review process.

The strategy review provides the framework for the management of local authority collected waste from 2013 to 2026 and includes the objectives, policies, actions and targets to be delivered. This report details the options appraisal process that has informed the development of the DJMWMS. Key stages in the options appraisal process included:

- developing the waste strategy outcomes, including identifying key issues/drivers for the strategy by considering the policy and legislative context;
- developing a proposed vision and strategic objectives for the waste strategy based on the strategic outcomes identified;
- identifying a long list of options for delivering the waste strategy outcomes and objectives, through workshop sessions with officers, elected members and stakeholders;
- a shortlisting exercise to refine the long list of delivery options into a short list. This involved a high level assessment of the contribution of each delivery option to the strategic outcomes and practicalities of delivery. Again the assessment incorporated input from officers, elected members and stakeholders through workshop sessions;
- developing weighted evaluation criteria, based on the strategic outcomes and input from stakeholders, to assess the short list of delivery options;
- undertaking a detailed appraisal of the technical and financial performance of each of the short listed delivery options, including consultation with officers, elected members and stakeholders on the outputs of the options appraisal process and implications of the delivery options.

Developing the Waste Strategy Outcomes and Objectives

The development of waste strategy objectives is a systematic process that defines the strategic outcomes, taking account of the current position and policy drivers at a european, national and local level; and allows potential delivery options to be identified.

[11] The Derbyshire Waste Partnership consists of Derbyshire County Council and its eight waste collection authorities (Amber Valley Borough, Bolsover District Council, Chesterfield Borough Council, Derbyshire Dales District Council, Erewash Borough Council, High Peak Borough Council, North East Derbyshire District Council, South Derbyshire District Council) and Derby City Council.

Key policy documents were reviewed to develop a list of common themes. The second stage in the process was to use the list of common themes to agree and define the strategic outcomes, this in turn was used to develop a draft vision and strategic objectives for the Strategy, presented in Figure E1.

Figure E1 - Draft Vision & Strategic Objectives Proposed for the Strategy

The Derbyshire and Derby City Joint Municipal Waste Management Strategy aims to deliver a sustainable waste management service that:

- Achieves:
  - Reduced waste arisings
  - Increased reuse and recycling of waste
  - Reduced waste to landfill and gaining greater value from waste that is left over for disposal
  - Increased understanding and engagement leading to high levels of customer satisfaction
  - An accessible, efficient, effective and value for money service
- And contributes towards:
  - Improved resource efficiency
  - Reduced carbon / climate change impacts
  - Protection of natural resources
  - The management of non-household wastes
  - Local self-sufficiency in wastes management

Identifying a Long List of Delivery Options

The next stage in the process was to identify key options for delivery of the strategy. To ensure that a full range of options were identified, workshops were held with officers, elected members and stakeholders and views on the different options captured. This resulted in a long list of 52 potential delivery options being agreed across the three key areas of waste prevention, reuse and recycling and included:

- a range of different waste collection services that could be provided by the DWP;
- education and communication activity aimed at encouraging householders to change behaviours e.g. Love Food Hate Waste promotional campaign to reduce food waste;
- partnering with and promoting third sector activity e.g. bulky waste reuse.

Shortlisting Delivery Options

The long list of potential delivery options were refined into a short list to be taken forward to the detailed options appraisal stage. Each of the delivery options on the long list was assessed against its likely contribution to the strategic outcomes. A

score was then applied based on the number of outcomes the option contributed to and significance of that contribution. Priorities assigned to each of the strategic outcomes at the first series of workshops, held with officers, elected members and stakeholders, were then used to weight the scores to reflect the key issues for Derbyshire and Derby City.

Each delivery option was then evaluated from a deliverability perspective. The deliverability assessment considered how practical the option would be to deliver, political acceptability and the cost to implement and/or sustain the option. Workshops were again held with officers, elected members and stakeholders to discuss the evaluation and scoring of the options.

The resulting weighted assessment was used to rank the options and produce a short list of options. A total of 27 delivery options were short listed and taken forward to the detailed options appraisal stage. Table E1 summarises the short listed delivery options.

Table E1 Description of Short List of Delivery Options

Area	Ref.	Delivery Option	Option Description
Waste Prevention	1	Reduce residual bin size/capacity	Replace existing wheeled bins with smaller bins in order to encourage both waste prevention and recycling.
	5	Effective side waste policy – to ensure additional waste that cannot fit into the bin provided is not collected	Tighter management of a no side waste policy across all districts/boroughs and Derby City.
	7	Home composting promotional campaign including home digestion	Promote home composting (or anaerobic / aerobic digestion) of vegetable peel, fruit and garden waste. Reduces the demand for transportation and collection of waste.
	9	In-house waste prevention by councils	Commit to lead by example through implementing in-house waste prevention measures, for example sustainable procurement, double sided printing policy etc. As well as including all councils covered by the strategy this can encompass private sector suppliers and partners.
	12	Love Food Hate Waste promotional campaign to reduce food waste	Awareness campaign targeting increased participation in food waste prevention initiatives using the WRAP 'Love Food Hate Waste' branding.
	13	Education, promotion, awareness raising to increase public understanding and engagement of waste prevention (including 'high profile' promotions e.g. celebrities)	Generic campaigns and promotional activities designed to raise awareness and increase participation in waste prevention initiatives at a countywide and local level.
	15	Promotion of SMART (Save Money And Reduce Trash) shopping	Drive to promote smart shopping practices including provision of reusable bags, education on purchasing habits, refill initiatives, good practice to reduce waste etc.
	16	Junk Mail promotional campaign	Awareness campaign targeting a reduction in junk mail quantities. Promote use of services such as the Mailing Preference Service.
	18	Lobby government and relevant organisations on waste prevention issues	Make lobbying of central government / other relevant organisations a higher priority in order to promote, introduce and support waste prevention measures. May include a number of topics such as charging for carrier

Area	Ref.	Delivery Option	Option Description
			bags.
Reuse	20	Partnering with and promoting / incentivising third sector activity on reuse	Seek to work more extensively with third sector organisations on reuse opportunities.
	21	Reuse at HWRCs including WEEE and other items	Install sites at the HWRCs that allow members of the public to leave and collect items such as furniture. This can include promotional campaigns and awareness raising of the service.
	22	Bulky waste reuse	Sort bulky waste collections to extract reusable goods with a view to refurbishment, reuse and resale. This can include promotional campaigns and awareness raising.
	23	Promotion of Freecycle / Freegle	Promote the use of web-based reuse groups including Freecycle and Freegle where members of the public can advertise items, which they no longer want, for free. Enhanced promotion by the councils in Derbyshire could increase participation in this service and help reduce waste arisings.
	28	Promotion of Auction Sites	Awareness campaign targeting increased use of web based auction sites as a means of selling and buying used items.
	30	Lobby government and relevant organisations on reuse issues	Make lobbying of central government a higher priority in order to promote, introduce and support waste reuse measures.
	31	Education, promotion, awareness raising to increase understanding and engagement of reuse (including 'high profile' promotions e.g. celebrities)	Generic campaigns and promotional activities designed to raise awareness and increase participation in waste reuse initiatives at a countywide and local level.
Recycling/Composting	32b	Trade waste recycling by WCAs	Develop trade waste recycling collection schemes provided by the waste collection authorities. Promote the trade waste recycling services available to businesses through awareness campaigns.
	33	Greater range of materials collected from the kerbside / bring sites / HWRCs	Seek to increase the range of materials collected for recycling at the kerbside and bring sites across all districts/boroughs and at HWRCs
	34	Incentive reward schemes	Explore mechanisms to incentivise recycling participation, for example through the allocation of vouchers for high performing households.
	35	Reducing contamination in recycling/composting	Stronger engagement to increase public understanding of the issues associated with contamination of recycling/composting collections to deliver behavioural change to reduce contamination. Combined with tighter management of contamination policy across all the councils in Derbyshire.
	36	Education, promotion, awareness raising to increase understanding and engagement in recycling/composting (including 'high profile' promotions e.g. celebrities)	Generic campaigns and promotional activities designed to raise awareness and increase participation in recycling/composting initiatives at countywide and local level.
	38	Lower frequency of residual waste collection supported by weekly food waste	Reduce the frequency of residual waste collections (e.g. to once every three or four weeks) supported by a weekly food waste collection service. This will increase the incentive to recycle due to the reduced residual waste capacity for households.

Area	Ref.	Delivery Option	Option Description
Recycling/Composting	39	Higher frequency of recycling collection	Seek to increase the frequency of recycling collections from households, in order to increase the amount of material collected.
	40	Increased recycling containment capacity	Seek to increase the capacity of containers provided to householders at the kerbside for recycling in order to increase the amount of material collected.
	41	Separate food waste collection	Implement the separate collection of food waste from households by the waste collection authorities. Encourage and deliver promotional and awareness raising campaigns to encourage uptake of the services provided.
	43	Bulky waste recycling	Sort bulky waste collections to extract recyclable goods in order to improve recycling performance. This can include promotional and awareness raising campaigns of the services provided.
	51	Lobby government and relevant organisations on recycling issues	Make lobbying of central government /relevant organisations a higher priority in order to promote, introduce and support recycling measures.

Assessing the Short List of Delivery Options

The short listed options under went a detailed options appraisal, the purpose of which was not to reduce the short list of options any further, but to allow their performance to be compared (from a technical and cost perspective) so that the ability of each option to deliver the strategic objectives of the Strategy could be understood.

The evaluation criteria for assessing the shortlist of options were developed based on the draft vision in Figure E1. The evaluation criteria were weighted to take account of the priorities assigned by officers, elected members and stakeholders.

A combination of both technical and financial assessment was used to enable the options which consistently performed the highest and the lowest to be identified. The results of the technical assessment ranked the options, based on the degree to which each option contributed to the delivery of the strategic outcomes of the DJMWMS, the higher the score the greater the contribution to the strategic outcomes.

The options appraisal process has highlighted a range of delivery options that should enable delivery of the vision. All options were retained as part of the suite of options available to the partners in the delivery of the Strategy.

Those delivery options which performed well included:

- reduced residual bin size/capacity (option 1);
- lower frequency of residual waste collection supported by a weekly food waste collection (option 38);
- separate food waste collection (option 41); and

- promotional campaigns e.g. Love Food Hate Waste awareness raising campaign to reduce food waste (option 12).

In general, these options scored well against the higher weighted strategic outcomes, such as accessibility[2] and also had the potential to divert larger tonnages from landfill and therefore performed well against reduced carbon and climate change impacts and increased recycling performance. However, it should be noted that although some of the options scored well against a number of the evaluation criterion the lower frequency of residual collection option, scored very low in terms of customer satisfaction. In addition, this option relied on a package of other measures being introduced such as weekly food waste collection, sanitary waste collections and enhanced high performing recycling services.

Delivery options such as the councils lobbying government and in house waste prevention by councils (e.g. paperless office) generally scored lower than the more collection focused options. These options are important to demonstrate that the partnership is 'leading by example' however the impact of these options is more difficult to determine.

It should be noted that in regard to the waste incentive reward scheme option, there is little quantifiable evidence available at present of the impact of rewards on recycling behaviour. Monitoring progress in this area will be important going forward as a number of local authorities are currently trialling different approaches.

When considering the short and longer term options for implementation it is important to consider the individual elements of the technical evaluation, for example customer satisfaction. Certain delivery options may require a large culture change and may lead to low levels of customer satisfaction in the short term making deliverability difficult. Changing behaviour through education and awareness raising may mean that options currently deemed to have low levels of customer satisfaction may in the longer term provide an overall positive benefit/impact on performance.

Once the cost of the options had been taken into account, a number of options which performed well from a technical perspective gained a lower ranking. This was due to taking into account the cost of other factors which would be required to deliver the options. For example costs associated with additional collections e.g. food waste and sanitary waste along with officer time required to implement and/or monitor the

[2] Options which had no or few limitations with regards to householders accessing the option scored high on the accessibility criterion, whereas options with potential access limitations, such as requiring internet access or access to a car score lower.

schemes in place. However, in the case of the reduced residual bin size option, which would reduce waste arisings and encourage the capture of more material for recycling/composting, even when the capital cost of providing new bins had been factored in this option continued to rank the highest. The next highest ranked options, when technical and cost criteria were combined, were also in the waste prevention area and included a Love Food Hate Waste campaign and a general waste prevention campaign.

As the DJMWMS is implemented each council will identify and prioritise the options that they feel best achieve the overall strategic outcomes based on their local circumstance. The individual Waste Action Plans developed will play a key role in this and should enable flexible local delivery of the DJMWMS taking account of local factors, such as contractual constraints and cost of implementing at the local level. The Waste Action Plans will set out which options each council has selected to implement along with a timetable for action.

1 Introduction

The Derbyshire Waste Partnership[3] (DWP) has undertaken a review of the Derbyshire and Derby City Joint Municipal Waste Management Strategy (DJMWMS). SKM Enviros was commissioned by Derbyshire County Council in January 2012 to support the DWP with the strategy review process. The strategy review will provide the objectives, policies, actions and targets to be delivered from 2013 – 2026 with regard to local authority municipal waste management. This report as part of the strategy review study looks at the options appraisal process, to inform the development of the DJMWMS. Key stages in the options appraisal process have included:

- firstly developing the waste strategy outcomes, including identifying key issues/drivers for the strategy by considering the policy and legislative context.
- developing a proposed vision and strategic objectives for the waste strategy based on the strategic outcomes identified.
- identifying a long list of options for delivering the waste strategy outcomes and objectives, through workshop sessions with officers, elected members and stakeholders.
- a shortlisting exercise to refine the long list of options into a short list of options. This involved a high level assessment, of the contribution of each option to the strategic outcomes and practicalities of delivery. Again the assessment incorporated input from officers, elected members and stakeholders through workshop sessions.
- developing weighted evaluation criteria, based on the strategic outcomes, to assess the short list of options.
- undertaking a detailed appraisal of the technical and financial performance of each of the short listed options, including consultation with officers, elected members and stakeholders on the outputs of the options appraisal process and implication of the delivery options.

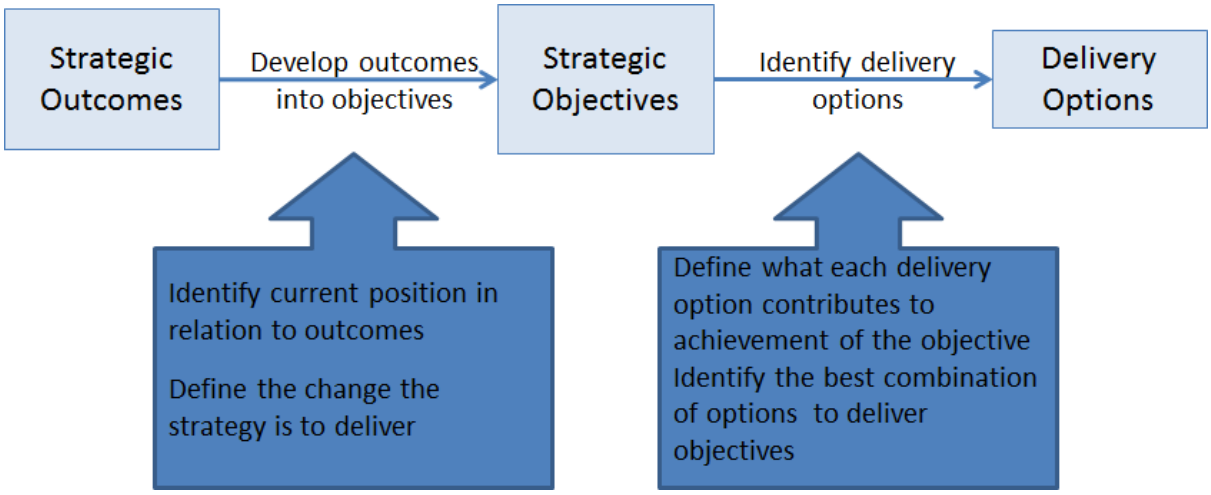
[3] The Derbyshire Waste Partnership consists of Derbyshire County Council and its eight waste collection authorities (Amber Valley Borough, Bolsover District Council, Chesterfield Borough Council, Derbyshire Dales District Council, Erewash Borough Council, High Peak Borough Council, North East Derbyshire District Council, South Derbyshire District Council) and Derby City Council.

2 Waste Strategy Objectives

The development of waste strategy objectives is a systematic process, as illustrated in Figure 1 that:

- specifically defines the strategic outcomes, taking account of the current position and policy drivers; and
- allows potential delivery options to be identified.

Figure 1 Process for Developing Waste Strategy Objectives



The process involved firstly defining the strategic outcomes, converting the outcomes into defined strategic objectives, which in turn allowed a range of potential delivery options to be identified for the options appraisal process.

2.1.1 Key Policy Drivers

The first stage in developing the waste strategy objectives was to identify key policy drivers and related objectives within other relevant strategies and plans (e.g. the revised Waste Framework Directive), as these formed the basis of an initial set of potential strategic outcomes and allowed the potential outcomes to be assessed against the current position. This information was also used as part of the Strategic Environmental Assessment (SEA[4]).

The initial identification of issues involved a desk based assessment and review of current policy and strategy impacting on the way that waste is managed and is likely to be managed in Derbyshire up to 2026. This was carried out at both, a national and local level and covered strategic waste, planning policy and climate change/low

[4] All central and local Government plans and strategies that can have a significant effect on the environment are required to be assessed regarding how they contribute to Sustainable Development. An assessment of how a strategy meets the aims of Sustainable Development can be delivered through an approach known as a Strategic Environmental Assessment.

carbon documents, e.g. Low Carbon Transition Plan, National Strategy for Climate and Energy.

Other key proposals and consultations relating to future policy and legislative change that may impact on waste management policy and decision making were also reviewed. Such documents included the review of Waste Policy in 2011 and the proposed National Waste Plan and National Waste Prevention Plan expected in 2013.

The selected policy documents were reviewed for common themes and a list of forty themes driving policy and strategy related to waste management at the national, regional and local level were identified for consideration, as detailed in Table 1.Details of the documents reviewed are provided in Appendix A along with a cross reference to the themes identified in Table 1.

Table 1 Summary of Key Themes - identified from a review of Key National and Local Level Policy Documents

No.	Theme	No.	Theme
1	Resource efficiency / sustainable consumption and production	21	Reducing transport Impacts
2	Preserving LEQ / reducing fly-tipping	22	Working with third sector for the delivery of sustainable waste management
3	Adaptation for climate change/carbon impacts	23	Importance of partnership working & working together
4	Low carbon economic activity	24	Provision of sufficient capacity for waste management activity
5	Protection of natural resources	25	Promotion of key waste messages & awareness raising
6	Sustainable communities	26	Provision of efficient services
7	Sustainable waste management	27	Promoting behavioural/cultural change
8	De-coupling of economic growth and waste growth/impacts	28	Self-sufficiency and dealing with waste as close to where it is generated as possible, “the proximity principle”
9	Reduce the carbon impacts of waste management	29	Sustainable procurement
10	The waste hierarchy	30	Leading by example
11	Waste prevention	31	Market development
12	Waste reuse	32	Preventing and improving management of hazardous waste
13	Zero waste	33	Value for money
14	High recycling = 60-70%	34	High quality recycling
15	High recycling = 50-55%	35	Support Energy from Waste (where appropriate) for non-recyclable waste
16	Landfill diversion/ recovery of residual waste	36	Increase frequency of waste collection / ease of recycling
17	Consideration of all waste streams (MSW, C&I, C&DE)	37	Apply proportionate enforcement
18	Innovation	38	Apply householder reward schemes
19	Energy efficiency	39	Reduce food waste and extract energy from food waste arisings
20	Renewable energy generation	40	Protect public health

2.1.2 Strategic Outcomes

The second stage in the process was to agree and define the strategic outcomes and then convert them into a set of strategic objectives. This was achieved by a series of facilitated workshops with officers, elected members from the City, County and district and borough councils and stakeholders.

To assist in the development of the draft aim and objectives for the strategy, each of the officer, elected member and stakeholder 'Outcomes and Objectives' workshops discussed the potential outcomes the strategy should seek to deliver. A list of 13 strategic outcomes was derived from the 40 key themes. In order to prioritise the different outcomes, each authority/organisation represented at the workshop was asked to prioritise the outcomes, using the scale below. Each authority/organisation was asked to identify against the outcomes 4 with a 'highest priority', 5 with a 'higher priority' and 4 with a 'priority'.

Highest Priority

Higher Priority

Priority

Applying a score of 3 to the highest priority outcomes, 2 to the higher priorities outcomes and 1 to the priority outcomes enabled the outcomes to be ranked. The strategic outcomes along with the prioritisations from the 'Outcomes and Objectives' workshops are presented in Table 2.

Table 2 Comparison of Workshop Prioritisations for Different Strategic Outcomes

Potential Outcomes	Officer Workshop	Members Workshop	Stakeholder Workshop
Contribute to a more resource efficient Derbyshire	11th	10th	12th
Protect natural resources	12th	9th	4th
Deliver value for money services	3rd	3rd	7th
Deliver effective and efficient services	1st	1st	8th
Reduce the carbon impact of waste management services	4th	6th	2nd
Recover value from residual waste and increase diversion from landfill	10th	8th	3rd
Manage waste in a manner that prevents, reuses, recycles and recovers waste and maximises landfill diversion	5th	11th	1st
Apply self-sufficiency and proximity principles	7th	12th	5th
Facilitate the management of wider wastes	13th	13th	10th
Achieve/maintain high levels of public satisfaction	9th	4th	13th
Achieve/maintain high levels of engagement and accessibility	8th	5th	9th
Deliver a sustainable waste management service	2nd	7th	11th
Maximise public understanding and challenge behaviours to affect behavioural change.	6th	2nd	6th

Based on the prioritisation of strategic outcomes in Table 2, the potential outcomes were refined at the 'Outcomes and Objectives' workshops and a draft vision and strategic objectives for the Strategy developed, as set out in Figure 2.

Figure 2 Draft Vision & Strategic Objectives Proposed for the Strategy

The Derbyshire and Derby City Joint Municipal Waste Management Strategy aims to deliver a sustainable waste management service that:

- Achieves:
  - Reduced waste arisings
  - Increased reuse and recycling of waste
  - Reduced waste to landfill and gaining greater value from waste that is left over for disposal
  - Increased understanding and engagement leading to high levels of customer satisfaction
  - An accessible, efficient, effective and value for money service
- And contributes towards:
  - Improved resource efficiency
  - Reduced carbon / climate change impacts
  - Protection of natural resources
  - The management of non-household wastes
  - Local self-sufficiency in wastes management

2.2 Identification of Key Options for Delivery of Strategy Objectives

The next stage in the process was to identify key options for delivery of the strategy. In order to ensure that a full range of options were identified and views captured a range of delivery options that could be employed to achieve the strategic outcomes and vision for the strategy were considered at the officer, elected members and stakeholder 'Outcomes and Objectives' workshops. The outputs from the workshops were collated by SKM Enviros and a long list of delivery options was drawn up against the higher levels of the waste hierarchy. A summary of the potential delivery options for the three key areas of waste prevention, reuse and recycling is provided below.

2.2.1 Waste Prevention

Waste prevention delivery options are divided up into those relating to the development and management of policies that restrict waste generation or disposal, for example, restricting residual waste capacity, and options relating to the promotion and operation of campaigns that through targeted actions attempt to change householder behaviour, for example promoting "Love Food, Hate Waste" (LFHW) campaigns. Table 3 summarises a long list of options relating to waste prevention.

Table 3 Long List of Waste Prevention Delivery Options

Ref.	Waste Prevention Delivery Options
1	Reduce residual bin size / capacity
2	4 weekly collection of residual waste
3	Charge for garden waste collections
4	Stop kerbside collection of garden waste
5	Effective side waste policy – to ensure additional waste that cannot fit into the bin provided is not collected.
6	Closure of Household Waste Recycling Centres (HWRCs)
7	Home composting promotional campaign including home digestion (e.g. wormeries)
8	Householder incentives for waste reduction
9	In-house waste prevention by councils (e.g. paperless office)
10	Qualitative waste prevention (e.g. hazardous waste prevention such as the use of rechargeable batteries rather than disposable batteries)
11	Reusable nappies promotional campaign
12	Love Food, Hate Waste promotional campaign to reduce food waste
13	Education, promotion, awareness raising to increase public understanding and engagement of waste prevention (including 'high profile' promotions e.g. celebrities)
14	Enforcement at HWRCs e.g. to stop trade waste abuse
15	Promoting SMART (Save Money and Reduce Trash) Shopping
16	Junk mail promotional campaign
17	Encouraging the prevention of other (non-household wastes e.g. commercial or industrial) wastes
18	Lobby government and relevant organisations on waste prevention issues
19	Taxing of carrier bags

2.2.2 Reuse

In common with the waste prevention delivery options, options for delivering reuse include those that support levels of reuse across the DWP, for example partnering with and promoting third sector activity on reuse and those options related to the promotion and operation of campaigns that attempt to change householder behaviour, for example promotion of auction sites and swap shops. Table 4 summarises a long list of delivery options relating to reuse.

Table 4 Long List of Reuse Delivery Options

Ref.	Reuse Delivery Options
20	Partnering with and promoting / incentivising third sector activity on reuse
21	Reuse at HWRCs including Waste Electronic and Electrical Equipment (WEEE) and other items
22	Bulky waste reuse
23	Promotion of Freecycle / Freegle
24	Swap Shops / community events
25	Promotion of reuse of other wastes (e.g. paint)
26	In-house reuse by councils
27	Promotion of remanufacture e.g. furniture refurbishment
28	Promotion of auction sites
29	Promotion of take back schemes / partner with retailers / manufacturers e.g. electrical items
30	Lobby government and relevant organisations on reuse issues
31	Education, promotion, awareness raising to increase understanding and engagement of reuse (including 'high profile' promotions e.g. celebrities)

2.2.3 Recycling/Composting

A long list of delivery options relating to recycling and composting are summarised in Table 5. These options relate to the range and type of services that can be provided by the DWP across all waste collection systems. Also of importance are education and communication activity that encourage participation in the schemes that are being provided. This will help increase recycling/composting performance and the quality of material presented for recycling/composting at the kerbside.

Table 5 Long List of Recycling/Composting Delivery Options

Ref.	Recycling/Composting Delivery Options
32	Trade waste recycling by Waste Collection Authorities (WCAs)
33	Greater range of materials collected from the kerbside / bring sites / HWRCs
34	Incentive / reward schemes
35	Reducing contamination in recycling/composting
36	Education, promotion, awareness raising to increase understanding and engagement in recycling/composting (including 'high profile' promotions e.g. celebrities)
37	Developments in co-mingled and source separated kerbside recycling
38	Lower frequency of residual waste collection supported by weekly food waste
39	Higher frequency of recycling collection
40	Increased recycling containment capacity
41	Separate food waste collections
42	Improved infrastructure (e.g. Mini MRFs/IVC/AD)
43	Bulky waste recycling
44	Recycling of fly tips, litter, street sweeping wastes
45	Recycling on the Go services – making it easier for people to recycle when they are 'on the go' by installing recycling bins in public places
46	In-house recycling at council premises
47	Free garden waste collections
48	Sustainable procurement (in-house) by councils
49	Nappy and 'absorbent hygiene products' recycling
50	Residual waste recycling
51	Lobby government and relevant organisations on recycling/composting issues
52	Recycling / compost / digestion of grounds maintenance waste

3 Short Listing of Strategy Options and Options for Delivery

In order to refine the long list of potential delivery options, which was developed following outputs from the 'Outcomes and Objectives' workshops (officers, elected members and stakeholders), into a short list of delivery options which could be taken forward to the detailed options appraisal stage, three workshops were held. One workshop with officers in September 2012 assessed in detail the 'Outcomes Scoring' and 'Deliverability 'for each of the long list of options. Followed by workshops with elected members and stakeholders in October 2012, to discuss and gain their input into the scores assigned to the long list of options.

3.1 Officers Workshop

In advance of the officer workshop in September 2012, SKM Enviros carried out an initial assessment of the long list of options in terms of deliverability against the strategic outcomes. The shortlisting process is summarised below.

Strategic Outcomes

Each option from the 'long list of options' was assessed against the contribution of the option to the strategic outcomes presented in Table 6. The assessment was based on whether the option would have a Low (L) or Significant (S) contribution or was left blank if there was deemed to be limited/no contribution to the strategic outcome.

Table 6 Draft Strategic Outcomes

1	Contribute to a more resource efficient Derbyshire
2	Protect natural resources
3	Deliver value for money services;
4	Deliver effective and efficient services
5	Reduce the carbon impact of waste management services
6	Recover value from residual waste and increase diversion from landfill
7	Manage waste according to the waste hierarchy
8	Apply self-sufficiency and proximity principles
9	Facilitate the management of non-household wastes
10	Achieve/maintain high levels of public satisfaction
11	Achieve/maintain high levels of engagement and accessibility
12	Deliver a sustainable waste management service
13	Increase public awareness to affect behavioural change[a,b]
a: Added at elected members workshop	
b: Stronger word suggested at Stakeholder workshop - "Maximise public understanding and challenge behaviours to affect change"	

A score was then applied based on the number and significance of outcomes the option contributed, based on the following:

1 = contributes to few outcomes (3 or less) and each with a (likely) low magnitude of beneficial impact

2 = either contributes to 1 - 2 outcomes with a likely significant beneficial impact or 4 or more outcomes each with a (likely) low magnitude of beneficial impact

3 = either contributes to 3 - 4 outcomes with a likely significant beneficial impact or 8 or more outcomes each with a likely low (or significant) magnitude of beneficial impact

4 = contributes to 5 - 6 outcomes with a likely significant beneficial impact

5 = contributes to 7 or more outcomes with a likely significant beneficial impact

Deliverability

Each option was evaluated from a deliverability perspective and assigned a score from 1 - 5, as set out in Table 7. The deliverability assessment considered the practicalities of delivery i.e. how practical the option would be to deliver, political acceptability and the cost to implement and/or sustain the option.

Table 7 Approach to Assessment Criteria for Deliverability

Deliverability - Practicalities of delivery, Political acceptability, costs to implement &/or sustain				
Issues with practicalities of delivery, political acceptability and high costs to implement &/or sustain			2 of reasons below applicable: Relatively easy to deliver, politically acceptable & low costs to implement &/or sustain	All reasons below applicable: Relatively easy to deliver, politically acceptable & low costs to implement &/or sustain
Issues with all 3 of above	Issues with 2 of above	Issues with 1 of above		
1	2	3	4	5

The score for each option from the 'Outcomes scoring' and 'Deliverability' tab was multiplied to arrive at a 'Total Score'. The 'Combined Assessment' score for each option arrived at from multiplying the 'Outcomes scoring' and 'Deliverability' was ranked to provide a means of narrowing the long list of options to a short list.

At the officer workshop the score assigned to each option in terms of the contribution of the options to the strategic outcomes and the deliverability of the option was discussed in detail. Refinements to the initial scores were made following officer feedback. All options with a score of 9 or higher were provisionally shortlisted, subject to consultation at the elected members and stakeholder workshops, to be considered as part of the options appraisal process. Changes made following discussion at the officer workshop included:

- Option 32 Trade Waste Recycling – was split into:
  - 32a - Trade waste recycling at Household Waste Recycling Centres (HWRCs)
  - 32b - Trade waste recycling by Waste Collection Authorities (WCAs)

- Option 47 - Free garden waste collections, was removed as all WCAs likely to have free garden waste collection service from April 2013[5].
- Option 52 - Recycling / compost / digestion of grounds maintenance waste, this is already happening so the option was considered as part of in house recycling, option 46.

3.2 Elected Members' Workshop

At the elected members' workshop, the outputs from the officer workshop were presented. While there were no significant queries around the scoring of the different options, the elected members were concerned that the weighting assigned to each of the strategic outcomes had not been incorporated in to the short listing process. It was explained that the weighting assigned to the strategic outcomes were intended to be applied to the detailed appraisal of the short listed options. Following a detail discussion at the workshop, it was agreed that the weighting assigned to the strategic outcomes would be incorporated into the short listing process.

3.3 Stakeholder Workshop

As the stakeholder workshop directly followed the elected members' workshop, it was not possible to present a revised short list using the weighting assigned to the strategic outcomes. The proposed approach of applying the weighting assigned to the strategic outcomes to the short listing process was discussed with the stakeholders, who agreed with the proposed approach. The initial short list was discussed at the workshop, with recognition that it may change once weightings were applied. There was broad agreement that the likely short list should provide a practical range of options for consideration in the detailed options appraisal.

3.4 Long List of Options Scores

As discussed in Section3.2, following discussion at the elected members' 'Short Listing of Options' workshop, a weighting was assigned to each of the strategic outcomes based on the weightings assigned, by officers, elected members and stakeholders, to the strategic outcomes at the first 'Outcomes and Objectives' workshops. Applying a weighting of:

- 3 to the highest priorities;
- 2 to the higher priorities; and
- 1 to the priorities.

[5] Derby City Council has been reviewing their waste service since autumn 2012. A Cabinet report on the proposals to move to a charged garden waste service is to be considered in June 2013 and at that point the proposals will be finalised.

These weightings were then used to multiply against the scores assigned to each of the options in terms of the contribution, (low, significant or limited or no contribution) of the option to the strategic outcomes. With:

- a low contribution to the outcome being assigned a score of 1;
- a significant contribution to the outcome assigned a score of 2; and
- limited or no contribution to the outcome was assigned a score of 0.

For example as detailed in Table 8, the Strategic Outcome to 'Deliver a sustainable waste management service' was given a 'higher priority' weighting (based on the 'Outcomes and Objectives' workshop) and was therefore assigned a weighting of 2. Option 1 'Reduce residual bin size / capacity' was deemed to have a significant contribution to this strategic outcome and was assigned a score of 2. This significant contribution score of 2 was then multiplied against the weighted score of 2 for 'Deliver a sustainable waste management service', to give a weighted score of 4 for option 1 against this specific strategic outcome.

Table 8 Option 1 'Reduce residual bin size / capacity' weighted score for option against 'Deliver a sustainable waste management service' strategic outcome

Strategic Outcome	**Priority assigned to strategic outcome** (based on weightings agreed at the 'Outcomes and Objectives' workshop)	**Weighting applied to outcome** (based on higher priority)	**Contribution of option against strategic outcomes**	**Score applied for significant contribution**	**Weighted score for option against strategic outcome** (based on multiplying higher priority weighting of 2 against significant contribution score of 2**)**
Deliver a sustainable waste management service	Higher	2	Significant	2	**4**

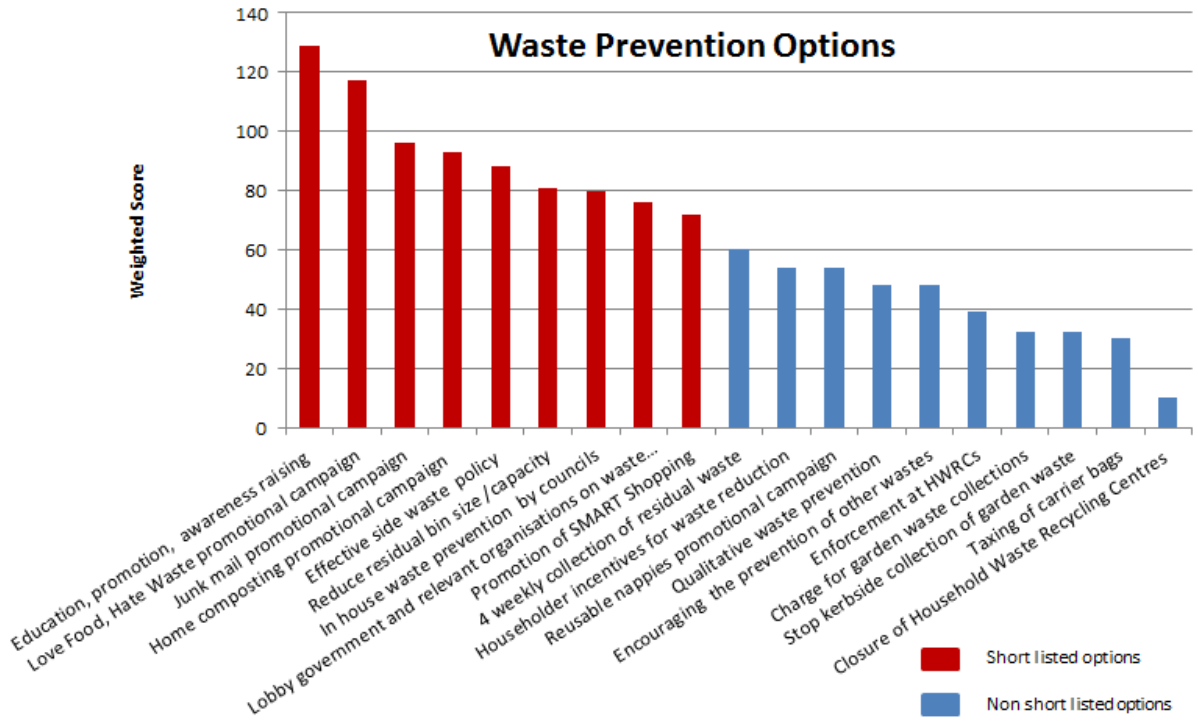
For each individual delivery option, the weighted scores for each strategic outcome were added together to calculate a total weighted score for the strategic outcomes. This weighted strategic outcome score was then multiplied against the score of 1 - 5 assigned against the 'Deliverability' for each option to provide a total score for each option, see example in Table 9. All options with a weighted score of more than 60 were shortlisted for consideration as part of the detailed options appraisal process. A total of 27 delivery options were short listed and taken forward to the detailed options appraisal stage.

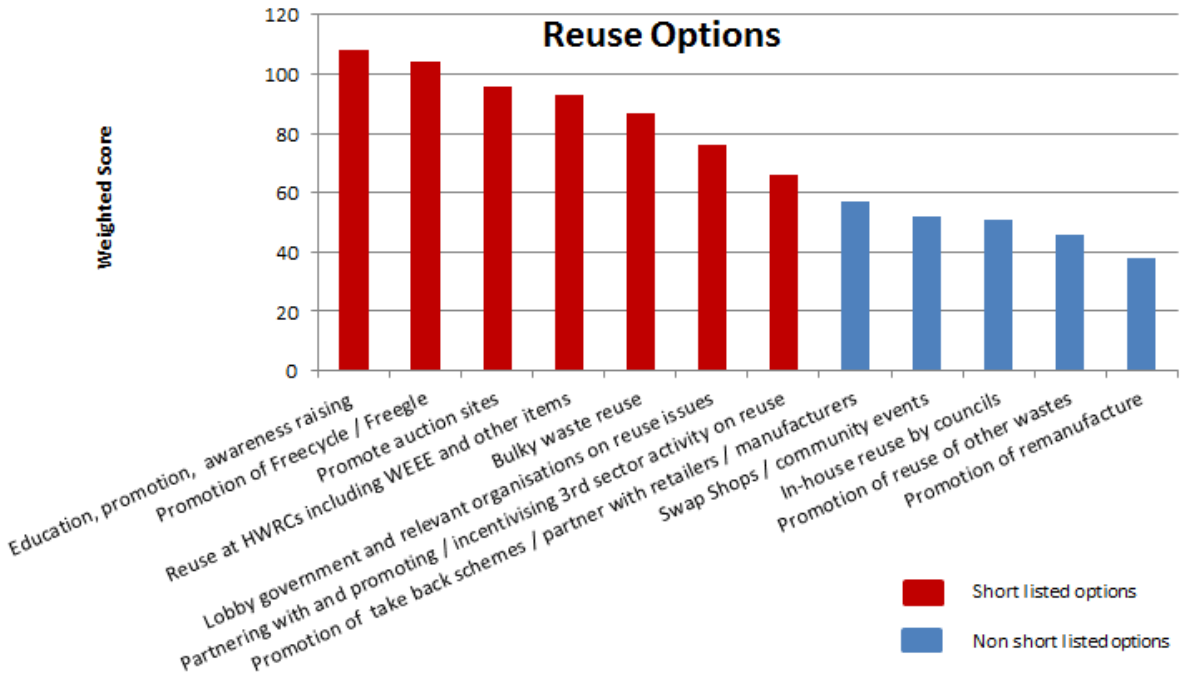
Table 9 **Option 1 'Reduce residual bin size / capacity' weighted score for option against each strategic outcome and deliverability score multiplied to arrive at a combined assessment score of 81 for Option 1**

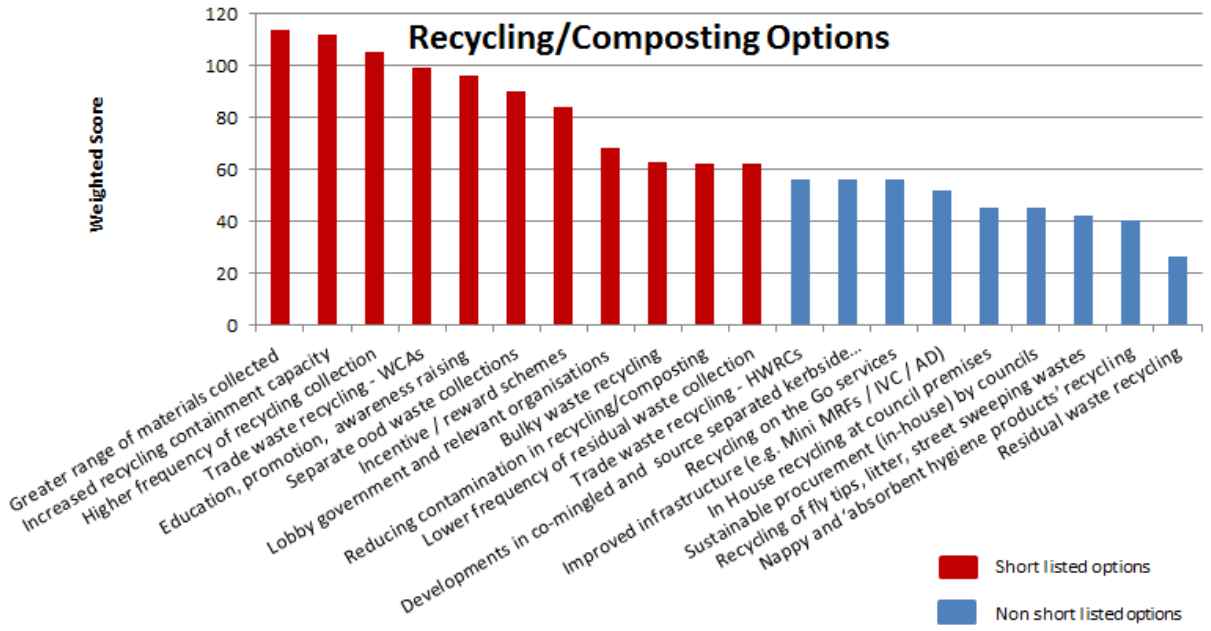
Strategic Outcome	Weighting applied to outcome	Option 1 Reduce residual bin size / capacity weighted score based on contribution of option to strategic outcome
Contribute to a more resource efficient Derbyshire	1	1
Protect natural resources	2	2
Deliver Value for Money (VfM) Services	3	0
Deliver effective & efficient services	3	3
Reduce carbon impact of waste management services	3	3
Recover value from residual waste and increase landfill diversion	2	4
Manage waste according to the waste hierarchy	2	4
Apply self-sufficiency & proximity principles	2	0
Facilitate the management of wider wastes	1	0
Achieve / maintain high levels of public satisfaction	2	0
Achieve / maintain high levels of engagement and accessibility	2	0
Deliver a sustainable waste management service	2	4
Increase public awareness to affect behaviour change	3	6
Weighted contribution score of option to strategic outcome		**27**
Deliverability - Practicalities of delivery, Political acceptability, costs to implement &/or sustain		**3**
'Combined Assessment' score for option 1 arrived at from multiplying the 'Weighted Contribution of option to strategic outcome score' and 'Deliverability' score		**81**

The total weighted results for the long list of delivery options are presented in Figure 3 below for each of the three key areas of waste prevention, reuse and recycling/composting. A more detailed breakdown of the scores for each option against the strategic outcomes and deliverability criteria is provided in Appendix D.

Figure 3 Weighted Scores for the Long List of Waste Prevention, Reuse and Recycling/Composting Delivery Options







3.5 Short List of Delivery Options

The short list of delivery options to be taken forward to the detailed options appraisal stage, with a description of each option, is summarised in Table 10.

Table 10 Description of short list of delivery options

Area	Ref.	Delivery Option	Option Description
Waste Prevention	1	Reduce residual bin size/capacity	Replace existing wheeled bins with smaller bins in order to encourage both waste prevention and recycling.
	5	Effective side waste policy – to ensure additional waste that cannot fit into the bin provided is not collected	Tighter management of a no side waste policy across all districts/boroughs and Derby City.
	7	Home composting promotional campaign including home digestion	Promote home composting (or anaerobic / aerobic digestion) of vegetable peel, fruit and garden waste. Reduces the demand for transportation and collection of waste.
	9	In-house waste prevention by councils	Commit to lead by example through implementing in-house waste prevention measures, for example sustainable procurement, double sided printing policy etc. As well as including all councils covered by the strategy this can encompass private sector suppliers and partners.
	12	Love Food Hate Waste promotional campaign to reduce food waste	Awareness campaign targeting increased participation in food waste prevention initiatives using the WRAP 'Love Food Hate Waste' branding.
	13	Education, promotion, awareness raising to increase public understanding and engagement of waste prevention (including 'high profile' promotions e.g. celebrities)	Generic campaigns and promotional activities designed to raise awareness and increase participation in waste prevention initiatives at a countywide and local level.

Area	Ref.	Delivery Option	Option Description
	15	Promotion of SMART (Save Money And Reduce Trash) shopping	Drive to promote smart shopping practices including provision of reusable bags, education on purchasing habits, refill initiatives, good practice to reduce waste etc.
	16	Junk Mail promotional campaign	Awareness campaign targeting a reduction in junk mail quantities. Promote use of services such as the Mailing Preference Service.
	18	Lobby government and relevant organisations on waste prevention issues	Make lobbying of central government / other relevant organisations a higher priority in order to promote, introduce and support waste prevention measures. May include a number of topics such as charging for carrier bags.
Reuse	20	Partnering with and promoting / incentivising third sector activity on reuse	Seek to work more extensively with third sector organisations on reuse opportunities.
	21	Reuse at HWRCs including WEEE and other items	Install sites at the HWRCs that allow members of the public to leave and collect items such as furniture. This can include promotional campaigns and awareness raising of the service.
	22	Bulky waste reuse	Sort bulky waste collections to extract reusable goods with a view to refurbishment, reuse and resale. This can include promotional campaigns and awareness raising.
	23	Promotion of Freecycle / Freegle	Promote the use of web-based reuse groups including Freecycle and Freegle where members of the public can advertise items, which they no longer want, for free. Enhanced promotion by the councils in Derbyshire could increase participation in this service and help reduce waste arisings.
	28	Promotion of Auction Sites	Awareness campaign targeting increased use of web based auction sites as a means of selling and buying used items.
	30	Lobby government and relevant organisations on reuse issues	Make lobbying of central government a higher priority in order to promote, introduce and support waste reuse measures.
	31	Education, promotion, awareness raising to increase understanding and engagement of reuse (including 'high profile' promotions e.g. celebrities)	Generic campaigns and promotional activities designed to raise awareness and increase participation in waste reuse initiatives at a countywide and local level.
Recycling/Composting	32b	Trade waste recycling by WCAs	Develop trade waste recycling collection schemes provided by the waste collection authorities. Promote the trade waste services available to businesses through awareness campaigns.
	33	Greater range of materials collected from the kerbside / bring sites / HWRCs	Seek to increase the range of materials collected for recycling at the kerbside and bring sites across all districts/boroughs and at HWRCs
	34	Incentive reward schemes	Explore mechanisms to incentivise recycling participation, for example through the allocation of vouchers for high performing households.
	35	Reducing contamination in recycling/composting	Stronger engagement to increase public understanding of the issues associated with contamination of recycling/composting collections to deliver behavioural change to reduce contamination. Combined with tighter management of contamination policy across all the councils in Derbyshire.

Area	Ref.	Delivery Option	Option Description
Recycling/Composting	36	Education, promotion, awareness raising to increase understanding and engagement in recycling/composting (including 'high profile' promotions e.g. celebrities)	Generic campaigns and promotional activities designed to raise awareness and increase participation in recycling/composting initiatives at countywide and local level.
	38	Lower frequency of residual waste collection supported by weekly food waste	Reduce the frequency of residual waste collections (e.g. to once every three or four weeks) supported by a weekly food waste collection service. This will increase the incentive to recycle due to the reduced residual waste capacity for households.
	39	Higher frequency of recycling collection	Seek to increase the frequency of recycling collections from households, in order to increase the amount of material collected.
	40	Increased recycling containment capacity	Seek to increase the capacity of containers provided to householders at the kerbside for recycling in order to increase the amount of material collected.
	41	Separate food waste collection	Implement the separate collection of food waste from households by the waste collection authorities. Encourage and deliver promotional and awareness raising campaigns to encourage uptake of the services provided.
	43	Bulky waste recycling	Sort bulky waste collections to extract recyclable goods in order to improve recycling performance. This can include promotional and awareness raising campaigns of the services provided.
	51	Lobby government and relevant organisations on recycling issues	Make lobbying of central government /relevant organisations a higher priority in order to promote, introduce and support recycling measures.

4 Options Appraisal Methodology

This section sets out the approach to the detailed option appraisal of the short listed delivery options, including the evaluation criteria for assessing the short list of options and the approach to the technical and financial assessment of the options.

4.1 Evaluation Criteria

The evaluation criteria for assessing the shortlist of options were developed based on the draft vision and strategic objectives in Figure 4, which were developed at the 'Outcomes and Objectives' workshops with officers, elected members and stakeholders.

Figure 4 Draft Vision & Strategic Objectives proposed for the Strategy

The Derbyshire and Derby City Joint Municipal Waste Management Strategy aims to deliver a sustainable waste management service that:

- Achieves:
  - Reduced waste arisings
  - Increased reuse and recycling of waste
  - Reduced waste to landfill and gaining greater value from waste that is left over for disposal
  - Increased understanding and engagement leading to high levels of customer satisfaction
  - An accessible, efficient, effective and value for money service
- And contributes towards:
  - Improved resource efficiency
  - Reduced carbon / climate change impacts
  - Protection of natural resources
  - The management of non-household wastes
  - Local self-sufficiency in wastes management

Whilst there are ten draft objectives above, it was decided that 'An accessible, efficient, effective and value for money service' should be split and 'Value for Money' considered as a separate criterion to 'accessible, efficient, effective' resulting in 11 criterion to assess the short list of options against. The method of measurement to assess each criterion against the baseline 'status quo' position is highlighted in red.

1. Reduced waste arisings (change in recycling performance from base position).
2. Increased reuse, recycling and composting of waste that does arise (change in recycling performance from base position).
3. Reduced waste to landfill and gaining greater value from waste that is left over for disposal (change in tonnes diverted from landfill compared to base position).
4. Understanding and engagement leading to high levels of customer satisfaction (qualitative assessment of levels of engagement e.g. promotional/educational activity to encourage behavioural change and/or deemed levels of householder acceptability of the option).

5. An accessible, efficient and effective service (Measurement looked at 'accessible' i.e. how easy it was for householders to use/access the service, 'efficient' - looked at Value for Money and 'effective' – tonnage diversion from landfill).
6. Improved resource efficiency (method of measurement European person - Equivalent).
7. Reduced carbon/climate change impacts (change in tonnes of CO_2 from base position).
8. Protection of natural resources (measure through ecological footprint).
9. The management of non-household wastes by local authorities (e.g. trade waste) (change in tonnage of non-household waste recycled/reused from base position).
10. Local self-sufficiency in wastes management (relative assessment of the proximity of where waste is managed relative to where it arises).
11. Value for Money (to avoid double counting the assessment of this criterion focussed on the cost of the option as criterion 3 - diversion from landfill addressed 'effective' service).

4.1.1 Technical Evaluation Criteria

In order to weight the criteria to take account of the priorities for the DWP, reference was made to the outcomes defined at the 'Outcomes and Objectives' workshops with officers, elected members and stakeholders and associated weightings given to the outcomes. Each of the criterion was assigned a scale to score the options from 0 – 5, with 0 representing the lowest score and 5 the highest score, as illustrated in Table 11.

Table 11 Technical Evaluation Criteria

Criterion	Evaluation Criteria	Score	Higher Priority
Reduced waste arisings	Significant reduction in waste arisings (>2%)	5	2
	High reduction (1.1-2%)	4	2
	Medium reduction (0.26-1%)	3	2
	Minor reduction (<0.25%)	2	2
	No change in waste arising	1	2
	Increase in waste arising	0	2
Increased reuse, recycling and composting of waste that does arise	**Evaluation Criteria**	**Score**	**Higher Priority**
	Significant increase in reuse/recycling/composting rate (>13%)	5	2
	High increase in reuse/recycling/composting rate (10 - 12.9%)	4	2
	Medium increase in reuse/recycling/composting rate (7 - 9.9%)	3	2
	Reasonable increase in reuse/recycling/composting rate (3 - 6.9%)	2	2
	Minor increase in reuse/recycling/composting rate (0.1 -2.9%)	1	2
	No change in reuse/recycling/composting rate (or a fall in performance)	0	2

Reduced waste to landfill and gaining greater value from waste that is left over for disposal	**Evaluation Criteria (focus on diversion by delivery option)**	**Score**	**Higher Priority**
	Significant decrease in waste to landfill (>5%)	5	2
	High decrease in waste to landfill (3 - 4.9%)	4	2
	Medium decrease in waste to landfill (1.1 - 2.9%)	3	2
	Reasonable decrease in waste to landfill (0.5 - 1%)	2	2
	Minor decrease in waste to landfill (<0.5%)	1	2
	No change in landfill diversion	0	2
Understanding and engagement leading to high levels of customer satisfaction	**Evaluation Criteria**	**Score**	**Highest Priority**
	Significant levels of engagement that should lead to increased understanding and high customer satisfaction	5	3
	Moderate levels of engagement that should lead to increased understanding and high customer satisfaction	4	3
	Significant levels of engagement with limited understanding &/or some customer dissatisfaction	3	3
	Moderate levels of engagement with limited understanding &/or some customer dissatisfaction	2	3
	Limited levels of engagement & / or low customer satisfaction	1	3
	No engagement or potentially high levels of customer dissatisfaction	0	3
An accessible, efficient and effective service[a]	**Evaluation Criteria (mechanism dependent this may consider provision of waste services, access to internet)**	**Score**	**Highest Priority**
	Coverage - 100% availability to appropriate audience	5	3
	Coverage - 90 - 99.9% availability to appropriate audience	4	3
	Coverage - 80 - 89.9% availability to appropriate audience	3	3
	Coverage - 70 - 79.9% availability to appropriate audience	2	3
	Coverage - 60 - 69.9% availability to appropriate audience	1	3
	<60% availability to appropriate audience	0	3
Improved resource efficiency	**Evaluation Criteria**	**Score**	**Priority**
	Significant reduction in Resource use (EPE) (>5,001)	5	1
	High reduction in Resource use (EPE) (3,001 - 5000)	4	1
	Medium reduction in Resource use (EPE) (1,001 - 3,000)	3	1
	Minor reduction in Resource use (EPE) (<1,000)	2	1
	No change in resource use (EPE)	1	1
	Increase in resource use (EPE)	0	1
Reduced carbon/climate change impacts	**Evaluation Criteria**	**Score**	**Highest Priority**
	Significant reduction in tonnes of CO_2 (>45,000)	5	3
	High reduction in tonnes of CO_2 (30-45,000)	4	3
	Medium reduction in tonnes of CO_2 (15-30,000)	3	3
	Minor reduction in tonnes of CO_2 (0-15,000)	2	3
	No change in tonnes of CO_2 from baseline	1	3
	Increase in tonnes of CO_2	0	3

	Evaluation Criteria	Score	Higher Priority
Protection of natural resources	Significant reduction in the ecological footprint (>15,000 hectares)	5	2
	High reduction in ecological footprint (10 - 15,000 hectares)	4	2
	Medium reduction in ecological footprint (5 - 10,000 hectares)	3	2
	Minor reduction in ecological footprint (0 - 5,000 hectares)	2	2
	No change in ecological footprint	1	2
	Increases the ecological footprint	0	2
	Evaluation Criteria	**Score**	**Priority**
The management of non-household wastes (e.g. trade waste)	Significant Increase in tonnes of non-household waste recycled/reused (>10,000)	5	1
	High Increase in tonnes of non-household waste recycled/reused (7,501 - 10,000)	4	1
	Medium Increase in tonnes of non-household waste recycled/reused (5,001 - 7,500)	3	1
	Reasonable Increase in tonnes of non-household waste recycled/reused (2,501 -5,000)	2	1
	Small Increase in tonnes of non-household waste recycled/reused (<2,500)	1	1
	No change in reuse/recycling tonnes (or a fall in performance)	0	1
	Evaluation Criteria (focus on diversion by delivery option)	**Score**	**Higher Priority**
Local self-sufficiency in wastes management (proximity of where waste is managed relative to where it arises)	Significant increase in self sufficiency	5	2
	High increase in self sufficiency	4	2
	Medium increase in self sufficiency	3	2
	Minor increase in self sufficiency	2	2
	No change in self sufficiency	1	2
	Reduction in self sufficiency	0	2

[a] - To avoid double counting the assessment of this criterion focussed on 'accessible', as VfM addressed 'efficient' and diversion from landfill addressed' effective'

4.1.2 Financial Evaluation Criteria

In addition to the technical evaluation criteria, the cost of the different options was assessed against the change in cost from the current 'status quo' position, as set out in Table 12.

Table 12 Financial Evaluation Criteria

	Evaluation Criteria	Score	Highest Priority
Value for Money[b]	Savings achieved	5	3
	No change in current cost - £500,000	4	3
	Increase from current cost £500,001 - £1 million	3	3
	Increase from current cost £1 million - £1.5 million	2	3
	Increase from current cost £1.5 million - £2 million	1	3
	Increase from current cost >£2 million	0	3

[b] - To avoid double counting the assessment of this criterion focussed on cost as diversion from landfill addressed 'effective' service

4.2 Technical Assessment

The technical assessment process has used a combination of qualitative and quantitative analysis. The qualitative assessment has been based on information gathered on current industry best practice and knowledge and is derived from technical reports available relating to the options under consideration.

The quantitative assessment of options has involved modelling of waste flows and recycling performance using a waste flow model combined with industry knowledge of likely performance changes for each option. Waste flow modelling assumptions and associated results are provided in Appendix E. Ecological footprint and carbon dioxide (equivalent) emissions have been calculated using the Environment Agency Waste and Resource Assessment Tool for the Environment (WRATE) model. The results of the WRATE assessment are provided in Appendix F.

Each option has been scored against each of the assessment criteria set out in Table 11. The scores for each option are presented in Section 5.

4.3 Financial Assessment

Cost has been assessed by producing a total estimate for each option which enables each option to be compared based on the estimated annual operational cost of implementing the change and incorporating any saving made through waste reduction or avoided landfill disposal.

The cost assessment has drawn on good practice information rather than detailed expenditure for individual councils across the DWP. Literature sources are referenced where appropriate and include various Waste and Resources Action Programme (WRAP) publications, e.g. WRAP Indicative Cost Guide, WRAP Gate Fee Report 2012 etc. The avoided disposal cost of not sending residual waste to landfill has also been included (e.g. non-hazardous waste gate fee plus landfill tax). The headline results of the financial assessment are provided in Table 13 with a more detailed breakdown in Appendix G.

Table 13 Headline Costs of Short Listed Delivery Options

Delivery Options		Total Cost (-figure denotes potential cost saving)
Ref.	**Waste Prevention Delivery Options**	
1	Reduce residual bin size /capacity	£343,355
5	Effective side waste policy – to ensure additional waste that cannot fit into the bin provided is not collected.	£93,250
7	Home composting promotional campaign including home digestion	£6,000
9	In-house waste prevention by councils	£6,160
12	Love Food Hate Waste promotional campaign to reduce food waste	-£161,573
13	Education, promotion, awareness raising to increase public understanding and engagement of waste prevention (including 'high profile' promotions e.g. celebrities)	-£70,955
15	Promotion of SMART (Save Money And Reduce Trash) shopping	-£43,750
16	Junk mail promotional campaign	-£4,010
18	Lobby government and relevant organisations on waste prevention issues	£6,160
	Reuse Delivery Options	
20	Partnering with and promoting / incentivising third sector activity on reuse	£-
21	Reuse at HWRCs including WEEE and other items	£57,330
22	Bulky waste reuse	£-
23	Promotion of Freecycle / Freegle	-£3,500
28	Promotion of Auction Sites	-£3,500
30	Lobby government and relevant organisations on reuse issues	£6,160
31	Education, promotion, awareness raising to increase understanding and engagement of reuse (including 'high profile' promotions e.g. celebrities)	-£22,500
	Recycling/Composting Delivery Options	
32b	Trade waste recycling by WCAs	£-
33	Greater range of materials collected from the kerbside/bring sites/HWRCs	£96,218
34	Incentive reward schemes	-£28,028
35	Reducing contamination in recycling/composting	£13,250
36	Education, promotion, awareness raising to increase understanding and engagement in recycling/composting (including 'high profile' promotions e.g. celebrities)	£57,879
38	Lower frequency of residual waste collection supported by weekly food waste	£4,038,123
39	Higher frequency of recycling collection	£376,170
41	Separate food waste collection	£4,310,530
43	Bulky waste recycling	£-
51	Lobby government and relevant organisations on recycling issues	£6,160

The cost figures should only be considered as indicative as they have been determined using industry estimates for the purposes of the strategic comparison of options. Actual and contractual prices for some of the proposed options will be influenced by a variety of local and market factors determined by circumstances at the time of procuring and/or implementing changes.

5 Assessment Results

The options appraisal process involved evaluating the twenty six[6] delivery options against the technical and financial evaluation criteria set out in Section 4.1. The assumptions and resulting performance of the different short listed options were reviewed and tested at an officer workshop in November 2012. Following the officer workshop, refinements to assumptions and associated modelling were carried out and options re-evaluated against the evaluation criteria prior to consulting stakeholders and elected members at two separate workshops in November 2012.

The intention of the options appraisal process is to present how the different short listed options perform against the evaluation criteria which are based on the strategic outcomes of the DJMWMS. The process does not seek to reduce the list of options any further. A combination of both technical and financial assessment has been used which enables the options which consistently perform the highest and the lowest to be identified. The results of the technical assessment ranks the options, based on the degree to which each option contributes to the delivery of the strategic outcomes of the DJMWMS, the higher the score the greater the contribution to the strategic outcomes. These scores also take account of the weighting assigned to the different evaluation criteria based on the priorities for the DWP identified at the 'Outcomes and Objectives' workshops with officers, elected members and stakeholders, see Section 4.1 for further information. The weighted scores for each of the options against the individual evaluation criteria are presented in Table 14, with unweighted assessment presented in Appendix H.

In terms of selecting priorities for delivery of the DJMWMS there is a need to consider whether options should be selected based on technical performance only and to what extent the financial analysis should be taken into account in the prioritisation process. It will be important for each local authority to take account of local circumstances, for example contractual constraints, compatibility with existing collection systems etc. in determining short and longer term delivery options to take forward. To help these considerations Table 15 ranks the results by the weighted technical score for each of the options and Table 16 ranks the results by the combined cost/technical scores. The individual Waste Action Plans, to be developed for each council as part of the strategy development process, will take into account local factors and determine the practicalities of delivery of the different options at the individual local authority.

[6]The original number of options shortlisted was 27. However, Option 40 – 'Increased Recycling Containment Capacity' was not assessed against the evaluation criteria, as calculations indicated that existing containment capacity across the collection authorities was sufficient for the range of material collected and increasing the capacity of recycling containers is unlikely to have any material impact. Therefore, this option was not taken forward.

Table 14 Weighted Assessment Scores

Delivery Options		Evaluation Criteria										*Total Technical Score*	*Cost Score*	**Combined Technical & Cost Score**
		Reduced waste arisings	Increased reuse, recycling and composting	Reduced waste to landfill	Understanding and engagement leading to high levels of customer satisfaction	An accessible, efficient and effective service	Improved resource efficiency	Reduced carbon/climate change impacts	Protection of natural resources -	The management of non-household wastes	Local self-sufficiency in wastes management			
	Weighting	Higher Priority	Higher Priority	Higher Priority	Highest Priority	Highest Priority	Priority	Highest Priority	Higher Priority	Priority	Higher Priority			
Ref	**Waste Prevention Delivery Options**													
13	Education, promotion, awareness raising to increase public understanding and engagement of waste prevention	6	2	4	12	15	2	6	4	0	4	*55*	*15*	**70**
12	Love Food Hate Waste promotional campaign to reduce food waste	6	2	4	12	15	2	6	4	0	4	*55*	*15*	**70**
16	Junk Mail promotional campaign	6	0	2	9	15	2	6	4	0	4	*48*	*15*	**63**
7	Home composting promotional campaign including home digestion	4	2	2	6	9	2	6	4	0	4	*39*	*12*	**51**
5	Effective side waste policy – to ensure additional waste that cannot fit into the bin provided is not collected	2	2	2	6	15	2	6	4	0	4	*43*	*12*	**55**
1	Reduce residual bin size/capacity	6	4	10	9	12	4	9	6	0	4	*64*	*12*	**76**
9	In-house waste prevention by councils	4	2	2	3	0	2	6	4	1	4	*28*	*12*	**40**
18	Lobby government and relevant organisations on waste prevention issues	4	2	2	3	0	2	6	4	1	4	*28*	*12*	**40**
15	Promotion of SMART shopping	4	2	2	6	15	2	6	4	0	4	*45*	*15*	**60**

	Delivery Options	Evaluation Criteria										*Total Technical Score*	*Cost Score*	**Combined Technical & Cost Score**
		Reduced waste arisings	Increased reuse, recycling and composting	Reduced waste to landfill	Understanding and engagement leading to high levels of customer satisfaction	An accessible, efficient and effective service	Improved resource efficiency	Reduced carbon/climate change impacts	Protection of natural resources -	The management of non-household wastes	Local self-sufficiency in wastes management			
	Weighting	Higher Priority	Higher Priority	Higher Priority	Highest Priority	Highest Priority	Priority	Highest Priority	Higher Priority	Priority	Higher Priority			
	Reuse Delivery Options													
31	Education, promotion, awareness raising to increase understanding and engagement of reuse (including 'high profile' promotions e.g. celebrities)	4	2	2	12	15	2	6	4	0	4	*51*	*15*	**66**
23	Promotion of Freecycle / Freegle	4	2	2	6	6	2	6	4	0	4	*36*	*15*	**51**
28	Promotion of Auction Sites	4	2	2	6	6	2	6	4	0	4	*36*	*15*	**51**
21	Reuse at HWRCs including WEEE and other items	2	2	2	12	3	2	6	4	0	4	*37*	*12*	**49**
22	Bulky waste reuse	2	2	2	6	15	2	6	4	0	4	*43*	*12*	**55**
30	Lobby government and relevant organisations on reuse issues	4	2	2	3	0	2	6	4	1	4	*28*	*12*	**40**
20	Partnering with and promoting / incentivising third sector activity on reuse	2	2	2	12	3	2	6	4	0	4	*37*	*12*	**49**
	Recycling/Composting Options													
33	Greater range of materials collected from the kerbside / bring sites / HWRCs	2	2	6	12	12	3	6	4	0	0	*47*	*12*	**59**
39	Higher frequency of recycling collection	2	2	6	12	0	2	6	4	0	2	*36*	*12*	**48**
32b	Trade waste recycling by WCAs	2	2	4	9	0	3	6	4	2	2	*34*	*12*	**46**

Delivery Options		Evaluation Criteria										*Total Technical Score*	*Cost Score*	**Combined Technical & Cost Score**
		Reduced waste arisings	Increased reuse, recycling and composting	Reduced waste to landfill	Understanding and engagement leading to high levels of customer satisfaction	An accessible, efficient and effective service	Improved resource efficiency	Reduced carbon/climate change impacts	Protection of natural resources -	The management of non-household wastes	Local self-sufficiency in wastes management			
	Weighting	Higher Priority	Higher Priority	Higher Priority	Highest Priority	Highest Priority	Priority	Highest Priority	Higher Priority	Priority	Higher Priority			
36	Education, promotion, awareness raising to increase understanding and engagement in recycling/composting (including 'high profile' promotions e.g. celebrities)	2	2	4	15	15	2	6	4	1	2	*53*	*12*	**65**
41	Separate food waste collection	2	6	10	12	15	0	6	4	0	2	*57*	*0*	**57**
34	Incentive reward schemes	2	2	4	12	12	2	6	4	0	2	*46*	*15*	**61**
51	Lobby government and relevant organisations on recycling issues	2	2	2	3	0	2	6	4	1	2	*24*	*12*	**36**
43	Bulky waste recycling	2	2	2	3	15	2	6	4	0	2	*38*	*12*	**50**
35	Reducing contamination in recycling/composting	2	2	2	3	6	2	6	4	0	2	*29*	*12*	**41**
38a	Lower frequency of residual collection supported by weekly food waste	8	8	10	0	12	5	12	8	0	0	*63*	*0*	**63**
38b	Lower frequency of residual collection with mixed food and garden waste	8	6	10	0	12	5	12	8	0	0	*61*	*0*	**61**

Table 15 **Technical Weighted Assessment Scores, ranked based on comparing scores within each area of waste prevention, reuse, recycling/composting**[7]

Ref.	Delivery Options	Total Technical Score	Rank within each area (waste prevention, reuse, recycling)	Rank across all options (waste prevention, reuse, recycling)
	Waste Prevention Delivery Options			
1	Reduce residual bin size/capacity	64	1	*1*
13	Education, promotion, awareness raising to increase public understanding and engagement of waste prevention (including 'high profile' promotions e.g. celebrities)	55	2	*5*
12	Love Food Hate Waste promotional campaign to reduce food waste	55	2	*5*
16	Junk Mail promotional campaign	48	4	*9*
15	Promotion of SMART (Save Money And Reduce Trash) shopping	45	5	*12*
5	Effective side waste policy – to ensure additional waste that cannot fit into the bin provided is not collected	43	6	*13*
7	Home composting promotional campaign including home digestion	39	7	*15*
9	In-house waste prevention by councils	28	8	*24*
18	Lobby government and relevant organisations on waste prevention issues	28	8	*24*
	Reuse Delivery Options			
31	Education, promotion, awareness raising to increase understanding and engagement of reuse (including 'high profile' promotions e.g. celebrities)	51	1	*8*
22	Bulky waste reuse	43	2	*13*
21	Reuse at HWRCs including WEEE and other items	37	3	*17*
20	Partnering with and promoting / incentivising third sector activity on reuse	37	3	*17*
23	Promotion of Freecycle / Freegle	36	5	*19*
28	Promotion of Auction Sites	36	5	*19*
30	Lobby government and relevant organisations on reuse issues	28	7	*24*
	Recycling/Composting Delivery Options			
38a	Lower frequency of residual waste collection supported by weekly food waste	63	1	*2*
38b	Lower frequency of residual collection with mixed food and garden waste	61	2	*3*
41	Separate food waste collection	57	3	*4*
36	Education, promotion, awareness raising to increase understanding and engagement in recycling/composting (including 'high profile' promotions e.g. celebrities)	53	4	*7*
33	Greater range of materials collected from the kerbside / bring sites / HWRCs	47	5	*10*
34	Incentive reward schemes	46	6	*11*
43	Bulky waste recycling	38	7	*16*
39	Higher frequency of recycling collection	36	8	*19*
32b	Trade waste recycling by WCAs	34	9	*22*
35	Reducing contamination in recycling/composting	29	10	*23*
51	Lobby government and relevant organisations on recycling issues	24	11	*27*

[7] For comparison, grey shaded cells show the rank of each options across all three areas

Table 16 **Combined Technical/Cost Weighted Assessment Scores, ranked based on comparing scores within each area of waste prevention, reuse, recycling**[8]

Ref.	Delivery Options	Combined Cost & Technical Score	Rank within each area (waste prevention, reuse, recycling)	Rank across all options (waste prevention, reuse, recycling)
Ref.	**Waste Prevention Delivery Options**			
1	Reduce residual bin size/capacity	76	1	*1*
13	Education, promotion, awareness raising to increase public understanding and engagement of waste prevention	70	2	*2*
12	Love Food Hate Waste promotional campaign to reduce food waste	70	2	*2*
16	Junk Mail promotional campaign	63	4	*6*
15	Promotion of SMART shopping	60	5	*10*
5	Effective side waste policy – to ensure additional waste that cannot fit into the bin provided is not collected	55	6	*13*
7	Home composting promotional campaign including home digestion	51	7	*15*
18	Lobby government and relevant organisations on waste prevention issues	40	8	*24*
9	In-house waste prevention by councils	40	8	*24*
	Reuse Delivery Options			
31	Education, promotion, awareness raising to increase understanding and engagement of reuse	66	1	*4*
22	Bulky waste reuse	55	2	*13*
23	Promotion of Freecycle / Freegle	51	3	*15*
28	Promotion of Auction Sites	51	3	*15*
21	Reuse at HWRCs including WEEE and other items	49	5	*19*
20	Partnering with and promoting / incentivising third sector activity on reuse	49	5	*19*
30	Lobby government and relevant organisations on reuse issues	40	7	*24*
	Recycling/Composting Delivery Options			
36	Education, promotion, awareness raising to increase understanding and engagement in recycling/composting	65	1	*5*
38a	Lower frequency of residual waste collection supported by weekly food waste	63	2	*6*
34	Incentive reward schemes	61	3	*8*
38b	Lower frequency of residual collection with mixed food and garden waste	61	3	*8*
33	Greater range of materials collected from the kerbside / bring sites / HWRCs	59	5	*11*
41	Separate food waste collection	57	6	*12*
43	Bulky waste recycling	50	7	*18*
39	Higher frequency of recycling collection	48	8	*21*
32b	Trade waste recycling provided by WCAs	46	9	*22*
35	Reducing contamination in recycling/composting	41	10	*23*
51	Lobby government and relevant organisations on recycling issues	36	11	*27*

[8] For comparison, grey shaded cells show the rank of each options across all three areas

6 Discussion

The range of delivery options that could be employed to achieve the strategic outcomes for the DJMWMS were all considered as part of the options assessment process. The initial long list of options were narrowed down to a short list of options, through a rigorous assessment process, based on the extent to which the option contributed to the strategic outcomes of the DJMWMS and the practicalities of delivering the option, taking into account factors such as political acceptability, ease of delivery, cost to implement/sustain.

The short listed options went through a detailed options appraisal, the purpose of which was not to reduce the short list of options any further but to compare their performance from both a technical and cost perspective so that the ability of each option to deliver the strategic objectives of the Strategy can be understood. The options appraisal process has highlighted a range of good practice measures that will enable delivery of the vision through a range of delivery options. All options are retained as part of the suite of options available to the partners in the delivery of the Strategy.

The scores presented in Table 15 show which options ranked higher from a technical perspective against the weighted strategic outcomes of the DJMWMS. Those options which performed well include:

- reduced residual bin size/capacity (option 1);
- lower frequency of residual collection supported by a weekly food waste; collection and sanitary waste collection (option 38);
- separate food waste collection (option 41); and
- education/behaviour campaigns e.g. Love Food Hate Waste promotional campaign to reduce food waste (option 12).

As would be expected, in general this was because these options scored well against the higher weighted strategic outcomes, such as accessibility[9] and also had the potential to divert larger tonnages from landfill and therefore performed well against reduced carbon and climate change impacts and increased recycling performance. However, it should be noted that although some of the options scored well against a number of the evaluation criterion the lower frequency of residual collection option, scored very low in terms of customer satisfaction. In addition, this option relies on other measures such as weekly food waste collection, absorbent

[9] Options which had no or few limitations with regards to householders accessing the option scored high on the accessibility criterion, whereas options with potential access limitations, such as requiring internet access or access to a car score lower.

hygiene product collections and enhanced high performing recycling services to be implemented and could only be introduced with a package of other measures.

Options such as lobbying government and council in-house activities generally scored lower than other more collection focussed options. These options are important to demonstrate that the partnership is 'leading by example' however the impact of these options is more difficult to determine.

It should be noted that with regard to the waste incentive reward option, at present there is little quantifiable evidence of the impact of rewards on recycling behaviour. However, it will be important to monitor progress in this area as a number of local authorities are trialling different approaches.

It is important to also look at the individual elements of the technical evaluation, presented in Table 14, such as customer satisfaction, when considering the short and longer term options for implementation. For example, some options may require a large culture change and may lead to low levels of customer satisfaction in the short term making deliverability difficult. Through education and awareness raising behaviour may change and this may mean that some options which may be deemed to have low levels of customer satisfaction now could be a longer term option with the potential to provide an overall positive benefit/impact on performance.

Once the cost of the options has been taken into account, a number of options which were high ranking from a technical perspective get a lower ranking. This is due to factors such as the cost associated with additional collections e.g. food waste, sanitary waste collections and officer time required to implement and/or monitor the schemes in place, see Table 16. However, even when the capital cost of new bins has been factored in reduced residual bin option continues to rank highest. This option includes reducing the size of the residual bin to reduce waste arisings and encourage the capture of material for recycling/composting. The next highest ranking options when technical and cost criteria are combined are also in the waste prevention area and include a LFHW campaign and a general waste prevention campaign.

As the DJMWMS is implemented it will be for each council to identify and prioritise the options that they feel will best achieve the overall strategic outcomes. The individual Waste Action Plans developed will have a key role to play in this and should enable flexible local delivery of the DJMWMS and take account of local factors, for example contractual constraints and cost of implementing at the local level. The Waste Action Plans will set out which options each council has selected to implement along with process steps and a timetable for action.

Appendix A Key Policy Documents

The plans and programmes considered in the development of strategy objectives for the DJMWMS and considered as part of the SEA process for the Derbyshire and Derby City JMWMS are set out in the following Appendix. The plans and programmes were categorised by their level (national, regional etc.), their status (current, future etc.) and theme (waste strategy, carbon strategy etc.). Key themes were identified from each document (listed in Table 1 in Section 2.1.1).

A list of the reviewed plans and programmes covered in the following pages is included below:

- Table A1 - 1: UK Sustainable Development Strategy
- Table A1 - 2: English Waste Management Strategy
- Table A1 - 3: Review of English Waste Management Strategy
- Table A1 - 4: Welsh Waste Management Strategy
- Table A1 - 5: Scottish Waste Management Strategy
- Table A1 - 6: Revised Waste Framework Directive
- Table A1 - 7: National Planning Policy Framework
- Table A1 - 8: Localism Act
- Table A1 - 9: Community Infrastructure Levy
- Table A1 - 10: Anaerobic Digestion Strategy and Action Plan
- Table A1 - 11: Climate Change Plan
- Table A1 - 12: National Climate and Energy Strategy
- Table A1 - 13: Low Carbon Industrial Strategy
- Table A1 - 14: Low Carbon Transport Strategy
- Table A1 - 15: UK Renewable Energy Strategy
- Table A1 - 16: The Carbon Plan
- Table A1 - 17: Existing Derbyshire Joint Municipal Waste Management Strategy
- Table A1 - 18: Accompanying SEA to the Existing JMWMS
- Table A1 - 19: East Midlands Regional Waste Strategy
- Table A1 - 20: East Midland Regional Plan
- Table A1 - 21: Derbyshire Waste Local Plan
- Table A1 - 22: Revised Nottingham Declaration
- Table A1 - 23: Regional Climate Change Action Programme
- Table A1 - 24: Derbyshire Climate Change Strategy
- Table A1 - 25: Derby Climate Change Strategy
- Table A1 - 26: Bolsover Climate Change Strategy
- Table A1 - 27: Erewash Carbon Management plan
- Table A1 - 28: South Derbyshire Climate Change Strategy
- Table A1 - 29: Derbyshire Sustainable Community Strategy
- Table A1 - 30: Derby Sustainable Community Strategy
- Table A1 - 31: Amber Valley Sustainable Community Strategy
- Table A1 - 32: Bolsover Sustainable Community Strategy
- Table A1 - 33: Erewash Sustainable Community Strategy
- Table A1 - 34: South Derbyshire Sustainable Community Strategy
- Table A1 - 35: Chesterfield and NE Derbyshire Sustainable Community Strategy
- Table A1 - 36: Derbyshire Dales and High Peak Sustainable Community Strategy

A1 National Policy and Legislative Drivers

The documents reviewed at a national level include those relating to waste management specifically and also those that relate to reducing the carbon impacts of activity. This is an area of increasing focus for the economy in general and waste management in particular and it is, therefore important to understand the wider carbon policy drivers. The UK is signed up to statutory carbon targets (to reduce greenhouse gas (GHG) emissions by 34% by 2020 (versus 1990) and by 80% by 2050) at a national level (through the Climate Change Act) which is beginning to impact at a national waste policy level. Strategies for both Wales and Scotland are included as these have been produced more recently than the Waste Strategy for England and are proposing more challenging recycling and composting targets. The revised Waste Framework is a key European driver for future waste management policy and practice in the UK.

A summary of the documents reviewed is provided below along with a more detailed assessment in the following tables:

- Table A1 - 1: UK Sustainable Development Strategy
- Table A1 - 2: English Waste Management Strategy
- Table A1 - 3: Review of English Waste Management Strategy
- Table A1 - 4: Welsh Waste Management Strategy
- Table A1 - 5: Scottish Waste Management Strategy
- Table A1 - 6: Revised Waste Framework Directive
- Table A1 - 7: National Planning Policy Framework
- Table A1 - 8: Localism Act
- Table A1 - 9: Community Infrastructure Levy
- Table A1 - 10: Anaerobic Digestion Strategy and Action Plan
- A2 – Climate Change and Carbon Measures and Policies
- Table A1 - 11: Climate Change Plan
- Table A1 - 12: National Climate and Energy Strategy
- Table A1 - 13: Low Carbon Industrial Strategy
- Table A1 - 14: Low Carbon Transport Strategy
- Table A1 - 15: UK Renewable Energy Strategy
- Table A1 - 16: The Carbon Plan.

A1 National Level Policy Drivers

Table A1 - 1: UK Sustainable Development Strategy

Policy Document	**Securing the Future – UK Government Sustainable Development Strategy, Defra 2005** **Sustainable Development Action Plan 2009-2011, Defra**
Key Policies/ Objectives	The document contains five key principles: • Living Within Environmental Limits; • Ensuring a Strong Healthy and Just Society; • Achieving a Sustainable Economy; • Promoting Good Governance; and • Using Sound Science Responsibly. It has four Priorities: • Sustainable consumption and production - towards a one plane economy; • Climate change and energy; • National resource protection and environmental enhancement; and • Sustainable communities. Promotion of resource efficiency and sustainable consumption and production (SCP) are key. The reduction of resource use and wastage in product manufacture is very important. The overall objective for waste policy is the protection of human health and the environment by producing less waste and by using it as a resource wherever possible. The government aims to break the link between economic growth and the environmental impact of waste through more sustainable waste management. Sustainable waste management is defined as reduction, reuse, recycling, composting and using waste as a source of energy. The waste hierarchy is a good guide to the relative environmental benefits of waste management options, combined with life-cycle analysis and SCP.
Targets	Reference to the UK emission targets: • To reduce carbon dioxide (CO_2) emissions by 60 per cent by about 2050 with real progress by 2020; • The Kyoto Protocol target to reduce UK GHG emissions by 12.5 per cent below base year levels over the period 2008-12; and • The national goal to reduce CO_2 emissions by 20 per cent below 1990 levels by 2010.
Key document themes	1,3,4,5,6,7,8,9,10,40

Table A1 - 2: English Waste Management Strategy

Policy Document	**Waste Strategy for England 2007** (NOTE: The National Waste Management Plan will replace the Waste Strategy 2007 and is expected to be published the end of 2013)
Key Policies/ Objectives	WS2007 sets out five key objectives: • To decouple waste growth (in all sectors) from economic growth and put more emphasis on waste prevention and reuse; • To meet and exceed the Landfill Directive diversion targets for Biodegradable Municipal Waste (BMW) in 2010, 2013 and 2020; • To increase diversion from landfill of non-municipal waste and secure better integration of treatment for municipal and non-municipal waste; • To secure the investment in infrastructure needed to divert waste from landfill and for the management of hazardous waste; and • To get the most environmental benefit from that investment, through increased recycling of resources and recovery of energy from residual waste using a mix of technologies.

	There are a range of other measures proposed, including: • Setting new national targets for the reduction of commercial and industrial waste being sent to landfill; • Providing incentives to encourage activities higher up the waste hierarchy including increasing the landfill tax escalator (see Section 3.4.1) and potentially removing the ban on local authorities introducing household financial incentives for waste reduction and recycling; • Targeting paper, food, glass, aluminium, wood, plastic and textiles as key materials to be diverted from landfill; • Implementing product policies that increase resource efficiency and the ability to reuse materials and reduce the quantities of waste produced; • Encouraging a variety of energy-recovery technologies (including anaerobic digestion) resulting in 25% of municipal waste being managed through energy-from-waste facilities by 2020; • Strengthening the ability of local authorities in two-tier areas to work together and encouraging partnership working between local authorities; • Promoting cultural change in how we deal with our waste through campaigns aimed at individuals and businesses (e.g. promotion of third sector expertise, providing recycling bins in public places); and • Government taking action to reduce its own waste. The challenge of the strategy is 'One Planet Living'- using the planet's resources within the limits of its eco system (current estimates equivalent to 3 planet living in the UK). This can be achieved through reducing use of natural resources, recycling materials and recovering energy from those we do use. The strategy highlights that what we do about waste impacts on: • Climate change; • Resource efficiency; • Sustainable consumption and production; • And has a global environmental impact.
Targets	Annual GHG emissions: • A net reduction of at least 10 million tonnes of CO_2 equivalent per year by 2020 • A reduction in the amount of household waste not reused, recycled or composted to: – 15.8Mt in 2010 (29% reduction compared to the 22.2Mt landfilled in 2000); – 14.3Mt in 2015 (35% reduction compared to 2000); and – 12.2Mt in 2020 (45% reduction compared to 2000). • This is equivalent to a fall of 59% per person (from 450kg per person in 2000 to 225kg in 2020). • Higher national targets for recovery, recycling and composting: – Recycling and composting of household waste – at least 40% by 2010, 45% by 2015 and 50% by 2020; and – Recovery of municipal waste – 53% by 2010, 67% by 2015 and 75% by 2020. • Commercial and industrial waste landfilled: by 2010 an expected 20% reduction from 2004 levels.
Key document themes	1,2,3,4,5,7,8,9,10,11,12,15,16,17,20,21,22,23,24,25,27,31,32,35,39

Table A1 - 3: Review of English Waste Management Strategy

Policy Document	**Government Review of Waste Policy in England 2011**
Key Aims, Objectives and Policies	In 2011, following the formation of a coalition government in 2010, a review of waste policy within the Waste Strategy 2007 was released. A National Waste Management Plan is due to be released in 2013. The review was released alongside guidance on interpretation of the Waste Hierarchy, saying that the hierarchy should be adhered to unless life-cycle analysis can be used to demonstrate otherwise. Key themes include: • There is a clear focus on activities at the top of the waste hierarchy, prevention and reuse with a Waste Prevention Programme to be developed by the end of 2013. • A focus on driving waste prevention through product design and standards. For Local Authorities key implications include: • New Recycling and Waste Services Commitment; • No requirement to provide weekly residual collections The Government will encourage local authorities to sustainably manage their food waste, providing technical support and advice in collection and appropriate treatment options. Development of a MRF code of Practice - ensuring outputs from MRFs meet minimum quality standards. Development of a National Waste Prevention Programme to enable better resource efficiency and waste prevention. Ending the Landfill Allowance Trading Scheme (LATS) at the end of the 2012/13 scheme year. The removal of LATS is designed to allow the development of more comprehensive and cost-effective collection services to cover both households and small businesses.
Targets	Meet the revised waste framework Directive target to recycle 50% of waste from households by 2020.
Key document themes	1,2,3,4,5,6,7,8,9,10,11,12,13,15,16,17,18,19,20,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40

Table A1 - 4: Welsh Waste Management Strategy

Policy Document	**Towards Zero Waste – One Wales One Planet, A Waste Strategy for Wales, June 2010**
Key Policies/ Objectives	Long term aim of zero waste by 2050 – by reducing the ecological footprint of Wales to 'one Wales: one planet' levels by 2050. Waste reduction is the key to achieving this. A medium term aim of a high recycling nation by 2025, which requires a 70% recycling rate across all sectors by 2025 and supported by closed loop recycling. The strategy defines zero waste as *"A concept based on the understanding that all the materials we use are resources and only become waste as a result of poor management, bad design and out-dated attitudes to sorting and disposal. It is therefore a way of thinking - a path to travel that defines waste as something that is not acceptable. It sets a new paradigm with a target of a 100% resource-efficient economy where material flows are cyclical and everything is reused or recycled harmlessly back into society or nature. 'Waste' as we think of it today will cease to exist because everything will be viewed as a resource."* Other key ideas include: • Develop 'closed loop recycling' systems (used directly in Welsh manufacturing processes). 'Joined up' recycling infrastructure and market development for recyclates; • Develop opportunities for social enterprise; • Focus on priority materials - food, paper and card, wood, metals and plastic; • Work closely with the UK and EU Governments on ways to ensure producers take more responsibility for products and their product design; • Make producers more responsible for waste they produce, or cause others to produce; • Generating renewable energy from biowastes; • Phasing out landfill sites and developing high efficiency energy from waste plants; • Municipal waste sector plan will encourage reuse by supporting and promoting existing schemes and improving collection methods for larger reusable items; • Sustainable public sector procurement and working with Green Jobs Strategy; • Grants provided to businesses and other organisations need to include sustainable waste management conditions; and • Voluntary agreements and targets with industry sectors are important to achieve outcomes. Through proposed sector plans targets will be set to reduce growth in waste streams in line with business as usual trends. Also opportunities to promote zero waste strategies and develop sector specific reuse targets.
Targets	• Reduce waste by around 1.5% (of the 2007 baseline) each year across all sectors in order to achieve one planet goal for 2050, with a plan to consult on a waste prevention target for household waste of 1.2% each year. • All sectors in Wales to recycle at least 70% of their waste by 2025, Interim recycling target rate for local authority collected waste: 52% by 2013; 58% by 2016; 64% by 2020; and 70% by 2025. • A minimum of 80% of reuse/recycling and composting must come from source separation from now until 2025. • Maximum level to landfill: 10% by 2020 and 5% by 2025. • Maximum level of energy from waste: 42% by 2016, 36% by 2020 and 30% by 2025. • Ecological footprint reduction targets measured through waste reduction activities. In 2007 waste management in Wales generated an impact of approximately 4,180,000 global hectares (gha). Target to reduce the ecological footprint of waste in Wales by 75% by 2050.
Key document themes	1,3,5,7,8,9,10,11,12,13,14,16,17,18,19,20,22,29,31,32,34,39

Table A1 - 5: Scottish Waste Management Strategy

Policy Document	**Scotland's Zero Waste Plan, 2011**
Key Policies/ Objectives	The vision for Scotland is based around delivering Zero Waste: • The Plan sets out the Scottish Government's vision for a zero waste society. • The vision describes "a *Scotland where resource use is minimised, valuable resources are not disposed of in landfills, and most waste is sorted into separate streams for reprocessing, leaving only limited amounts of waste to go to residual waste treatment, including energy from waste facilities."* To achieve the vision a series of measures are sets out, these include: • Development of a Waste Prevention Programme for all wastes; • Landfill bans for specific waste types; • Separate collections of specific waste types, including food, to avoid contaminating other materials; • Recycling and landfill targets which apply to all wastes (70% recycled and maximum 5% sent to landfill by 2025) • Restrictions on the input to all energy from waste facilities; • Improved information on different waste sources, types and management highlighting further economic and environmental opportunities; • Measurement of the carbon impacts of waste to prioritise the recycling of resources which offer the greatest environmental and climate change outcomes; • Use a carbon metric to sit alongside the use of tonnage as a performance measure and target.
Targets	Households recycling/composting targets: • 50% by 2013 • 60% by 2020 • 70% by 2025 • No more than 5% of waste being landfilled by 2025 Specific targets regarding infrastructure roll out and operational practices in Zero Waste Regulations , 2012 (By December 2013): • Mandatory household collection of paper and card, glass, plastics and metals by local authorities; • Commencement of food waste roll-out by local authorities; • Coverage of household food waste collections to be to: large urban areas (with a population over 125,000); other urban areas (with a population of 10,000 to 125,000); accessible small towns (with a population of 3000 to 10,000); and within 30 minutes drive of a settlement of 10,000 or more; • Obligation on all businesses to segregate and set out paper, card, glass, metals, plastics, textiles and, where relevant, food; • Obligation on relevant large and medium-sized businesses to set out food; • Ban on the mixing of separately collected materials; • Ban on landfilling source-segregated recyclables; • Ban on incinerating source-segregated materials. And by December 2015: • Completion of food waste roll-out by local authorities; • Obligation on relevant small businesses to set out food; • Remove dense plastic and metal from residual waste prior to incineration (existing facilities); • Ban on commercial food macerators; And by December 2020 a ban on landfilling biodegradable material.
Key themes	1, 3,5,7,8,9,10,11,12,13,14,16,17,18,34,35,39

Table A1 - 6: Revised Waste Framework Directive

Policy Document	**EU Revised Waste Framework Directive (2008/98/EC)**
Key Policies/ Objectives	The previous Waste Framework Directive (WFD) set legal requirements across the EU including the need for waste facility permitting and national waste strategies and the need to use the European Waste catalogue to help track wastes. The WFD was revised in 2008 and is far more wide reaching than its predecessor. The amended Directive sets the EU's first waste recycling targets for household and non-hazardous construction and demolition waste. It also enshrines the five-step waste hierarchy into EU law and introduces a definition of by-products that will allow some materials currently defined as waste to become non-wastes. The Directive will require countries to take "necessary measures designed to achieve" a target to recycle 50% of waste from households by 2020. This is in line with the English waste strategy, while Scotland and Wales have recently proposed higher targets for 2020. By 2015 member states must set up separate collections for at least paper, metals, plastics and glass provided they are technically, environmentally and economically feasible. Member states must also "take measures to encourage" the separate collection of biowaste. The revised WFD wording states "Member States shall take measures to promote high quality recycling and, to this end, shall set up separate collections of waste where technically, environmentally and economically practicable and appropriate to meet the necessary quality standards for the relevant recycling sectors." DEFRA has clarified with the European Commission that both kerbside sorted collections and co-mingled collection with subsequent separation at material recycling facilities (MRFs) can qualify as "separated collection" under the revised WFD, provided they result in materials of sufficiently high quality to be recycled. There is also a target for member states to reuse, recycle or recover 70% of non-hazardous construction and demolition waste by 2020. But as with the recycling target, the obligation on member states is "to take necessary measures designed to achieve" the target. No target for commercial and industrial waste was agreed. If these targets are not met by 2020, the Commission can take member states to court for non-compliance. No waste prevention targets were set. Instead, the Directive obliges member states to establish waste prevention programmes within five years of its entry into force. The Commission is required to set "waste prevention and decoupling objectives for 2020" in 2014, but only if these are deemed "appropriate". There is also a requirement for the Commission to draw up eco-design policies by 2014 aimed at promoting recyclable and reusable products and limiting waste. Other measures in the directive include: • Incineration: The Directive will "re-define" incinerators meeting certain efficiency thresholds as methods of recovery rather than disposal. • Definition of waste: The Directive will include a definition of "by-products" that will place some materials outside waste controls if certain criteria are met. There is a provision committing the Commission to develop "end-of-waste" criteria for materials such as aggregates, paper, glass, metal, tyres and textiles. • Producer responsibility: The concept of extended producer responsibility was also introduced into the Directive for the first time, allowing member states to make manufacturers, importers or retailers of products responsible for the costs of their treatment or disposal. Member states were required to put in place the measures necessary to comply with the revised Waste Framework Directive by December 2010. The Waste (England and Wales) Regulations 2011 (SI 2011 No. 988) implement aspects of the Directive. Following discussion with the European Commission, the UK has revised its interpretation of the definition of municipal waste. The new approach to municipal waste is based on the EU list of wastes or 'European Waste Catalogue'. It will include all waste that is coded under Chapter 20 – which is entitled "Municipal Waste (household waste and similar

	commercial, industrial and institutional wastes)". It will also include some waste coded under Chapter 19 which covers waste that has been through some form of treatment process (for example material that has been through an Mechanical Biological Treatment (MBT) plant that ends up in landfill). In practice this will mean that the amount of waste counted as municipal waste will increase significantly and the baseline on which the landfill diversion targets are set will change for 2013/2020. However, this will not affect the current arrangements with local authorities using the Landfill Allowance Trading Scheme (LATS). In February 2011, Defra issued clarification to remove ambiguity, which stated that future references to 'municipal waste' will refer to the new definition and that: • Local Authority Collected Municipal Waste (LACMW) refers to the previous 'municipal' element of the waste collected by local authorities. That is household waste and business waste where collected by the local authority and which is similar in nature and composition as required by the Landfill Directive. This is the definition that will be used for LATS allowances. • Local Authority Collected Waste (LACW) – This is all waste collected by the local authority and is a slightly broader concept than LACMW as it would include both this [LACMW] and non-municipal fractions such as construction and demolition waste. LACW is the definition that will be used in statistical publications, which was previously referred to as municipal waste. In February 2012, Defra commenced a consultation on amendments to the regulations in relation to the separate collection of recycling set out in Regulation 13 and to make sure that the intentions of the WFD have been accurately transposed. This does not alter the Defra position on co-mingled collection and kerbside sorted collections. The Welsh Government published the Collections Blueprint that identifies the Welsh Government's preference for kerbside sort based collection. The regulations were amended in summer 2012, following the publication of "Guidance on the interpretation of key provisions of Directive 2008/98/EC on waste" by the European Commission in June 2012. Following the revision to the regulations further guidance on separate collection is expected to be published by Defra. Other guidance will also be produced on hazardous waste, definitions of waste, guidance for business and registration of waste carriers and collectors.
Targets	• Recycle a minimum of 50% of waste from households by 2020 • Reuse, recycle or recover 70% of non-hazardous construction and demolition waste by 2020 The obligation for both targets is to take the necessary measures designed to achieve these targets. No targets for commercial and industrial waste recycling or waste prevention were agreed.
Key document themes	10,11,15,16,17

Table A1 - 7: National Planning Policy Framework

Policy Document	**National Planning Policy Framework**
Key Policies/ Objectives	The National Planning Policy Framework sets out the Government's planning policies for England and how these are expected to be applied. It provides a framework within which local people and their accountable councils can produce their own distinctive local and neighbourhood plans, which reflect the needs and priorities of their communities. This Framework does not contain specific waste policies, since national waste planning policy will be published as part of the National Waste Management Plan for England. However, the framework suggests local authorities preparing waste plans and taking decisions on waste applications should have regard to policies in this Framework so far as relevant. Waste Planning Policy Statement (Planning Policy Statement 10) will remain in place until the National Waste Management Plan is published.

Table A1 - 8: Localism Act

Policy Document	**The Localism Act 2011**
Key Policies/ Objectives	The Localism Bill was introduced to Parliament on 13 December 2010, and was given Royal Assent on 15 November 2011, becoming an Act. This Bill shifts power from central government back into the hands of individuals, communities and councils. Different parts of the Act will come into effect at different times. The Localism Bill includes five key measures that underpin the Government's approach to decentralisation: • Community rights; • Neighbourhood planning; • Housing; • General power of competence; • Empowering cities and other local areas. Measures in the Act mean: • New freedoms and flexibilities for local government; • New rights and powers for local communities; • Reform to make the planning system clearer, more democratic and more effective; • Reform to ensure that decisions about housing are taken locally.
Key document themes	23,28,37

Table A1 - 9: Community Infrastructure Levy

Policy Document	**Community Infrastructure Levy (Amendment) Regulations 2011**
Key Policies/ Objectives	The Community Infrastructure Levy came into force in April 2010. It allows local authorities in England and Wales to raise funds from developers undertaking new building projects in their area. The money can used to fund a range of infrastructure needed as result of the development e.g. household waste collections, household recycling centres and treatment/disposal facilities in addition to road schemes, schools, hospitals etc. Historically Section 106 agreements under the 1990 Town & Country Planning Act covered provision of infrastructure. The **Community Infrastructure** Levy is now the preferred method for collecting pooled contributions to fund infrastructure. The charging authorities, who have power to charge the levy, in England include district councils, unitary and national park authorities. These authorities have responsibility for preparing development plans in their areas, informed by assessment of the infrastructure needs for which the levy may be collected. Levy rates are to be set in consultation with local communities and developers and provide a more transparent means for developers to know 'up front' how much they will be expected to contribute. Charging authorities who wish to charge the levy must produce a charging schedule setting out the levy's rates in their area. As part of this, charging authorities are expected to identify the total infrastructure funding gap that the levy is intended to support, taking account of other sources of available funding. The levy is charged on a pound per square metre basis and is based on additional increase in floor space for existing developments and new builds only applies for new builds of greater than 100 square metres. An Individual authority's charging schedule will form a document within the folder of documents forming the Local Development Framework. In a consultation published on 15 April 2013, the Department for Communities and Local Government (DCLG) proposed pushing back the deadline from which the use of section 106 agreements will be scaled back from April 2014 to April 2015.

Table A1 - 10: Anaerobic Digestion Strategy and Action Plan

Policy Document	**Anaerobic Digestion Strategy and Action Plan, Defra and DECC, 2011**
Key Aims, Objectives and Policies	The action plan was developed as a consequence of the coalition governments commitment to work towards 'zero waste', with the remaining waste being treated as high up the waste hierarchy as possible, including by Anaerobic Digestion (AD). The document sets out the government's vision for AD.
Targets	The strategy is a vision documents and doesn't set specific targets.
Key Document Themes	1,3,4,7,9,10,11,16,18,20,24,26,31,35,39

A2 – Climate Change and Carbon Measures and Policies

Table A1 - 11: Climate Change Plan

Policy Document	**Climate Change Plan 2010, Defra**
Key Policies/ Objectives	This plan sets out the actions Defra is taking, in the policy areas where it has influence to meet the challenge of climate change. It specifically sets out the actions that Defra is taking to meet its carbon budget as set out in the UK Low Carbon Transition Plan. The document also forms Defra's Carbon Reduction Delivery Plan and explains how the carbon budget is constructed and the indicators that will be used to track progress. Waste forms a 24% of the carbon budget. The target in the UK Low Carbon Transition Plan is to achieve a reduction of 1MtCO_2e by 2020. Defra's plan for the waste sector is centred on: • Reducing the amount of biodegradable waste produced; • Diverting more biodegradable waste from landfill; • Capturing and treating more methane from landfill. Indicators: • Waste management indicator pyramid – the waste sector is made up of three main emission sources – landfill, wastewater, and incineration, with landfill making up of 90% methane emissions. • The headline indicator is the change in GHG emissions for the waste management sector since 1990. This is made up of the change in landfill GHG emissions, GHG emissions from incineration and waste water handling. • Landfill GHG emissions are determined by the amount of biodegradable waste materials landfilled (change in volume of biodegradable waste landfilled) and the methane capture rate (change in methane capture rate) achieved by landfill site operators.
Targets	The key actions and milestones up to 2020 for Waste: • Consultation on landfill bans (2010) • Phase 2 of Courtauld Commitment launched (2010) • Consultation on higher recycling and recovery targets for packaging waste (2010) • Clean Energy Cash-back Feed-In tariffs introduced (2010) • Consultation on implementing revised Waste Framework Directive (2010) • Review of voluntary agreements with paper industry (2010) • Food waste reduced by 250,000 tonnes through Love Food Hate Waste campaign (2011) • Renewable Heat Incentive Introduced (2011) • Phase 2 of Courtauld Commitment reduces food waste by 5% and supply chain food

	and packaging waste by 10% (2012) • Amount of C&D waste going to landfill is halved (2012) • Waste Prevention strategy is published (2013) • Final programmed increase in landfill tax (2013) • Dependant on outcomes of consultation on landfill restrictions, could be introduced as early as 2015 (2015) • Annual emissions reduced by at least 1MtCO2e on projected 2020 levels (2020)

Table A1 - 12: National Climate and Energy Strategy

Policy Document	**Low Carbon Transition Plan (LCTP), National Strategy for Climate and Energy, 2009**
Key Policies/ Objectives	The Climate Change Act 2008 is the principal driver for action on climate change. It introduced the legally binding target for GHG reduction which is to cut emissions by 80% by 2050 and a set of five year carbon budgets to 2022 to keep the UK on track to deliver the target. The Act also introduced a carbon budgeting system which caps GHG emissions from a range of sectors over 5 year periods. The waste sector is included. The LCTP sets out the UK transition plan for becoming a low carbon country; cutting emissions, maintaining secure energy supplies, maximising economic opportunities and protecting the most vulnerable. The LCTP also sets out how the five year carbon budgets will be met. The key areas of focus include power and heavy industry, transport, homes and communities, workplaces and jobs, farming, land and waste. All Government Departments have been allocated their own carbon budget and must produce own plan for meeting the budget. A key way in which the UK will achieve its carbon budgets is though a commitment to get 15% of all energy – for electricity, heat and transport – from renewable sources by 2020. This is set out in an associated Renewable Energy Strategy. In the waste sector activity is primarily around reducing the amount of waste sent to landfills and better capture of landfill emissions. There is also support for anaerobic digestion. The overall goals of the Plan are to: • Drive decarbonisation, by providing a carbon price, supporting the new technologies and infrastructure we need and helping households and businesses overcome barriers to low carbon choices; • Secure energy supplies by ensuring a supportive climate for the substantial new investment needed to bring forward low carbon infrastructure, and maximise the economic production of oil and gas from the North Sea to help secure the continued fossil fuel supplies needed during the transition; • Help UK low carbon and energy businesses to grow; • Protect consumers, in particular the most vulnerable; • Help businesses manage the costs of tackling climate change and help everyone adapt to climate impacts; and • Protect the environment by making the most of measures which bring wider environmental benefits and minimising impacts where they are unavoidable.
Targets	The Act has targets to reduce greenhouse gas emissions by 34% by 2020 and by 80% by 2050. UK will keep track through a set of five-year “carbon budgets” to 2022. The first three budgets cover the period to 2022: • Reduction in GHG emissions below 1990 levels: – 2008-12 – 22% reduction; – 2013-17 – 28% reduction; – 2018-22 – 34% reduction. Other sector specific targets include: • Sourcing 40% of electricity from low carbon sources by 2020, including producing around 30% of our electricity from renewable by 2020

	• Transforming transport by cutting average CO_2 emissions from new cars across the EU by 40% on 2007 levels • The plan to 2020 will cut emissions from farming and waste by 6% on 2008 levels • Cut England's yearly waste emissions by the equivalent of one million tonnes of CO_2 by 2020, on top of reductions already predicted. This will reduce UK waste emissions to 13% below today's levels. • Energy and Transport targets and policies set out in Renewable Energy Strategy and Low Carbon Transport Strategy.
Key document themes	1,3,4,5,9,18,19,20, 21

Table A1 - 13: Low Carbon Industrial Strategy

Policy Document	**Low Carbon Industrial Strategy, BIS and DECC, 2009**
Key Policies/ Objectives	The core strategy objective is to ensure that business and workers in Britain are equipped to maximise the economic opportunities and minimise the costs of moving to a low carbon economy. The programme of government action is set out in the document. There are three principles for low carbon business: • A long term strategic approach which sets a stable framework for business and consumers; • A pragmatic approach to the role of markets and government in making a quick transition at the same time as increasing the costs of carbon, encouraging low carbon innovation, remove market barriers to low carbon technologies; and • Government is responsible for ensuring that companies and people are equipped to compete. The strategy sets out where the opportunities are greatest and the action that will be taken to address market failures and barriers for British firms. The sectors identified are those with greatest potential for Britain to take a leading role. This strategy is based around four key areas of activity: • Energy efficiency to save businesses, consumers and the taxpayer money; • Energy infrastructure, focusing on the trinity of low carbon generation sources, renewables, nuclear power and clean coal, supported by a "smart" grid; • Making Britain a global leader in the development and production of low carbon vehicles; and • Making Britain the best place to locate and develop a low carbon business. Since March the government has invested in the areas of energy efficiency (£375 million), energy infrastructure (£90 million), low carbon vehicles (£400 million), and making Britain the best place to develop low carbon business (£405 million). This strategy brings all these strands together into one document. Britain's waste management infrastructure will also play a critical role in enabling the shift to a more resource efficient society and economy. The Government has made £2 billion in new funding available over the period 2008-11, to support local authority waste infrastructure.
Targets	Britain's climate change target: reduce GHG emissions by at least 80% below 1990 levels by 2050
Key document themes	3,4,7,19,20,31,33

Table A1 - 14: Low Carbon Transport Strategy

Policy Document	**Low Carbon Transport: A Greener Future, Department for Transport, July 2009**
Key Policies/ Objectives	This strategy is a key component in the Low Carbon Transition Plan and sets out how the sector targets will be met. All forms of transport will be considered covering cars, vans, road freight, buses, rail, aviation and shipping. Sustainable biofuels is a key part of the strategy. Activity will focus on: • Providing low carbon public transport; • Promoting the integration of transport modes; • Promoting other sustainable modes of transport, e.g. cycling; • Supporting Local Transport Plan development; • Providing better information to help people make transport choices; • Reduce CO_2 from business travel and the distribution of goods. The strategy aims to achieve an additional saving of 17.7 million tonnes of CO_2 in 2020, equating to 85 million tonnes of CO_2 over the third carbon budget period from 2018-2022. Some specific measures include: • Supporting a shift to new technologies and fuels; • Promoting lower carbon transport choices; • Using market-based measures to encourage a shift to lower carbon transport; • Investing up to £30 million over the next two years to deliver several hundred low carbon buses; • Demonstrating 340 new electric and lower carbon cars; • Putting a cap on emissions from all flights arriving at or leaving from European airports by including them in the EU Emissions Trading System from 2012; and • Providing help worth about £2,000 to £5,000 per vehicle towards reducing the price of ultra-low carbon cars, from 2011, and up to £30 million to support the installation of electric vehicle charging infrastructure in six or so cities across the UK.
Targets	• Central government departments and their agencies to procure new cars that average 130g CO_2/km by 2011. • Targets of 130g CO_2/km from 2012, with full compliance by 2015, and 95g CO_2/km by 2020 have been set. • The plan to 2020 will cut emissions from transport by 14% on 2008 levels and secure the oil supplies needed during the transition to a low carbon country. • Setting targets for government departments and their agencies to procure new cars for administrative purposes that meet the EU standard for 2015 in 2011. • Cutting average carbon dioxide emissions from new cars across the EU to 95g/km by 2020, a 40% reduction from 2007 levels. • Committing to source 10% of UK transport energy from sustainable renewable sources by 2020. • Investing £140 million in promoting cycling in England in 2008-11, and a new £5 million investment in improving cycle storage at rail stations. • Transforming transport by cutting average carbon dioxide emissions from new cars across the EU by 40% on 2007 levels, supporting the largest demonstration project in the world for new electric cars, and sourcing 10% of UK transport energy from sustainable renewable sources by 2020. • Launching a competition for the country's first Sustainable Travel City, building on projects in towns which saw reported car trips fall by 9%, walking increase by 14% and cycling increase by 12%. • Introducing a target to limit UK aviation emissions to below 2005 levels by 2050.
Key document themes	3,4,18,21,23,31

Table A1 - 15: UK Renewable Energy Strategy

Document	**UK Renewable Energy Strategy, 2009**
Key Policies/ Objectives	The strategy sets out how the use of renewable electricity, heat and transport will be achieved in the UK and also how the legally binding target of ensuring that 15% of energy comes from renewable sources by 2020 will be achieved. The strategy is related to the Low Carbon Transition Plan. Mechanisms to achieve this will include: • Expand and extend the Renewables Obligation for large scale renewable generation (current end date 2027, expand to 2037); • Amend or replace the Renewable Transport Fuel Obligation to increase the use of biofuels; • Introduce new Renewable Heat Incentive and Feed in Tariffs to provide payments for renewable heat and small scale electricity; • Increase investment in emerging technologies and pursue new sources of supply; • Put in place the mechanisms to provide financial support for renewable electricity and heat worth around £30 billion between now and 2020; • Create new opportunities for individuals, communities and business to harness renewable energy. Some specific activities include: • Fund up to four demonstrations of capturing and storing emissions from coal power stations; • Facilitate the building of new nuclear power stations; • Piloting "pay as you save" ways to help people make their whole house greener – the savings made on energy bills will be used to repay the upfront costs; • Introducing clean energy cash-back schemes; • Opening a competition for 15 towns, cities and villages to be at the forefront of pioneering green innovation; • Helping the most vulnerable by creating mandated social price support, piloting a community-based approach to delivering green homes in low income areas (90,000 homes), increasing level of Warm Front grants; • Helping make the UK a centre of green industry by supporting the development and use of clean technologies, including up to £120 million investment in offshore wind and an additional £60 million; • Producing a longer term roadmap for the transition to a low carbon UK for the period 2020 to 2050 by spring 2010 and a vision for a smart grid; • Secure energy supplies by ensuring a supportive climate for the substantial new investment needed to bring forward low carbon infrastructure, and maximise the economic production of oil and gas from the North Sea; • Help businesses manage the costs of tackling climate change and help everyone adapt to climate impacts; • Launching a new personal carbon challenge with rewards and incentives for saving energy; • More proactive services from the Energy Savings Trust; • Consultation on requiring energy performance ratings for rented property to be put on property advertisements; • Regional strategies: regions to set targets for renewable energy capacity in line with national targets, or better where possible.
Targets	The key strategy target is to ensure that 15% of energy comes from renewable sources by 2020. This equates to almost a seven fold increase in the share of renewable in a decade, from about 2.25% in 2008. This target will be delivered by a balance of fuels and technologies (e.g. on and offshore wind, hydro, sustainable bioenergy (biomass, biogas, solar and heat pumps), marine sources and small scale technologies)
Key themes	3,4,5,6,18,19,20

Table A1 - 16: The Carbon Plan

Policy Document	**The Carbon Plan: Delivering our low carbon future - December 2011**
Key Policies/ Objectives	This plan sets out how the UK will achieve decarbonisation within the framework of our energy policy: to make the transition to a low carbon economy while maintaining energy security, and minimising costs to consumers, particularly those in poorer households By moving to a more efficient, low carbon and sustainable economy, the UK will become less reliant on imported fossil fuels and less exposed to higher and more volatile energy prices in the future. In the next ten years, we will develop and deploy the technologies that will be needed to halve emissions in the 2020s. This will put the UK on a path towards an 80% reduction by 2050
Targets	• First carbon budget (2008–12) 23% reduction below base year levels • Second carbon budget (2013–17) 29% reduction below base year levels • Third carbon budget (2018–22) 35% reduction below base year levels • Fourth carbon budget (2023–27) 50% reduction below base year levels
Key document themes	1,3,4,8,10,19,20,21,23,35

A3 Regional Policy and Legislative Drivers

The documents reviewed at a Regional and Derbyshire level again include documents relating to waste strategy, community strategies and carbon strategies.

- 'Looking after Derbyshire's Waste' – Derbyshire and Derby City Joint Municipal Waste Management Strategy Document, 2006
- 'Looking after Derbyshire's Waste' Strategic Environmental Assessment of Derbyshire and Derby City Joint Municipal Waste Management Strategy, 2006
- East Midlands Regional Waste Strategy, January 2006
- East Midlands Regional Plan, March 2009[10]
- Derby and Derbyshire Waste Local Plan – March 2005
- The revised Nottingham Declaration on Climate change 2005
- Tackling Climate Change in the East Midlands, Regional Programme of Action, 2009 – 2011
- Derbyshire. A Climate Change Strategy (Draft), The Derbyshire Partnership Forum, 2008
- Derby City Council: Climate Change Strategy 2009-2012
- Derbyshire Sustainable Community Strategy ' Working Together for a Better Derbyshire' 2009-14
- Derby City Partnership Sustainable Community Strategy , 2009-11, 2020 Vision

Regional policies tend to reflect more local concerns such as developing innovation, leading by example (as public sector organisations), reducing transport impacts, self-sufficiency and proximity and ensuring that local communities are sustainable economically and from a waste management perspective.

The review of local plans such as sustainable community and climate change strategies highlights the increasing work being undertaken that joins up the environmental and climate change impacts of social and economic activities and that reducing the impacts of waste management is closely linked into this.

[10] Now revoked. On 20 March 2013 the Secretary of State laid in Parliament a statutory instrument to revoke the Regional Strategy for the East Midlands, which came into force on 12 April 2013.

A3.1 Regional / Derbyshire Wide Waste Policy Documents

Table A1 - 17: Existing Derbyshire Joint Municipal Waste Management Strategy

Policy Document	**'Looking after Derbyshire's Waste' Derbyshire and Derby City Joint Municipal Waste Management Strategy Document – July 2006**
Key Aims, Objectives and Policies	The proposed strategy is based on a number of key elements as follows: • A partnership approach between all councils to achieve the visions of this municipal waste strategy; • Introduction of waste minimisation schemes to reduce the growth in waste arisings; Ultimately, it is intended that zero growth in waste arisings will be achieved; • Continued support to and promotion of the benefits of home composting and other waste minimisation schemes; • Support to local and regional schemes that encourage and develop local recycling, composting and reprocessing capacity; • Continued introduction/expansion of the kerbside collection of dry recyclable and organic (compostable) materials; • Enhancement of the Household Waste and Recycling Centre (HWRC provision); • Provision of Materials Recycling Facilities (MRFs) to deal with recyclable materials as required; • Development of a number of in-vessel composting facilities; • Continued use of open windrow composting for green waste; • Provision of sufficient residual waste handling capacity to treat residual waste; • Provision of sufficient landfill capacity to receive treatment residues and other non-recyclable waste. The following are 'strategic issues' that are fundamental to the development of the strategy and will be carefully considered in developing the preferred approach for the future management of waste within Derbyshire: • Waste awareness and waste minimisation initiatives including encouraging home composting, real nappy campaigns, and education campaigns; • Maximising recycling and composting effort prior to treatment of residual waste. This would include aiming to increase the variety and tonnage of materials separately collected from the kerbside; • Waste should be seen as a resource with final disposal a last resort when all other options have been considered; • The treatment and disposal of 'residual' waste (that proportion remaining after recycling and composting targets have been achieved) will become a primary bias; • Careful selection of potential future development sites for waste handling, treatment and disposal will be required. Consideration must be given to the timescales required for the planning process and public consultation stages to be completed and is of great interest at the planning application stage; • The involvement of voluntary, community and non-profit making organisations is essential in developing a sustainable *JMWMS*.
Targets	National recovery targets and EU Landfill Directive targets have been applied to Derbyshire as an indication of possible future performance standards to be applied by Government over the next 10 to 15 years. Using these targets, medium and long term strategic options have been developed. *The preferred strategy of the JMWMS is as follows:* • Expansion of recycling and composting schemes to achieve up to a 55% recycling level; • All residual waste, in the absence of a suitable regional facility, will be treated at in county treatment facilities; and • The combination of recycling and recovery will ensure that the Landfill Directive targets for each of the key years are met and in fact exceeded.
Key document themes	7,10,11,12,13,15,16,22,23,24,25,34,36,39

Table A1 - 18: Accompanying SEA to the Existing JMWMS

Policy Document	**'Looking after Derbyshire's Waste' Strategic Environmental Assessment of the Derbyshire and Derby City Joint Municipal Waste Management Strategy, July 2006**
Key Aims, Objectives and Policies	The preferred strategy of the draft JMWMS is follows: • Expansion of recycling and composting schemes to achieve up to a 55% recycling level; • All residual waste, in the absence of a suitable regional facility, will be treated at in county treatment facilities; and • The combination of recycling and recovery will ensure that the Landfill Directive targets for each of the key years are met and in fact exceeded. Key issues arising from this assessment are: • The JMWMS objectives of partnership working; waste minimisation; green procurement and the continued introduction and expansion of kerbside collection schemes all score as potentially beneficial when considered against the SEA objectives and are therefore supported. • The JMWMS objectives which are aimed at providing the facilities required to implement the strategy have been scored as having potentially beneficial and negative effects. This is because the provision of these facilities will enable the implementation of an integrated waste management strategy which will achieve the required Landfill Directive targets which is considered beneficial. Whilst locating these facilities has the potential to have negative effects on the environment although this will be dependent on the sites selected.
Targets	In order to mitigate against any potential negative effects of providing facilities to implement the Strategy it is considered that the JMWMS should have an additional objective which will be to provide for the management of Derby's and Derbyshire's municipal waste without having an unacceptable impact on the communities and environment of Derby and Derbyshire.
Key document themes	7,10,11,12,13,15,16,22,23,24,25,34,36,39

Table A1 - 19: East Midlands Regional Waste Strategy

Policy Document	**East Midlands Regional Waste Strategy, January 2006** (NOTE: On 20 March 2013 the Secretary of State laid in Parliament a statutory instrument to revoke the Regional Strategy for the East Midlands, which came into force on 12 April 2013.Can still be used as an evidence base for decisions until such time as new Waste Local Plan is adopted.)
Key Aims, Objectives and Policies	Aims: The Regional Spatial Strategy sets out the principles and priorities for waste Management including: • To work towards zero growth in waste at the Regional level by 2016 • To reduce the amount of waste landfilled in accordance with the EU Landfill Directive • To exceed Government targets for recycling and composting • To take a flexible approach to other forms of waste recovery • The role of the Regional Waste Strategy is therefore to provide the framework for the delivery of these principles Key messages: The Regional Waste Strategy focuses on 10 issues which are considered to be the highest priorities that must be addressed: 1. Planning our future waste management infrastructure 2. Education, behavioural change and promotion of best practice 3. Improving the efficiency of our resource use and reducing commercial and industrial wastes 4. Prevention and improving management of hazardous wastes 5. Prevention and improved management of Municipal Solid Wastes 6. Procurement and market development 7. Reduction and management of construction and demolition waste 8. Managing the impacts of Regional and sub-Regional growth 9. Addressing agricultural and rural waste management 10. Reducing Fly-Tipping
Targets	The Regional Waste Strategy provides the framework for meeting the Regional Spatial Strategy principles and priorities for waste Management including: • To work towards zero growth in waste at the Regional level by 2016 • To reduce the amount of waste landfilled in accordance with the EU Landfill Directive • To exceed Government targets for recycling and composting • To take a flexible approach to other forms of waste recovery
Key document themes	2,7,10,13,16,17, 29,30,32

Table A1 - 20: East Midland Regional Plan

Policy Document	**East Midlands Regional Plan, March 2009** (NOTE: On 20 March 2013 the Secretary of State laid in Parliament a statutory instrument to revoke the Regional Strategy for the East Midlands, which came into force on 12 April 2013.Can still be used as an evidence base for decisions until such time as new Waste Local Plan is adopted.
Key Aims, Objectives and Policies	Aims: The Regional Plan has been developed within the overall vision set by the East Midlands Regional Assembly's Integrated Regional Strategy (IRS). The IRS objectives cover the social, economic, environmental and spatial themes of sustainable development. The spatial objectives of the IRS are: • To ensure that the location of development makes efficient use of existing physical infrastructure and helps to reduce the need to travel; • To promote and ensure high standards of sustainable design and construction, optimising the use of previously developed land and buildings; • To minimise waste and to increase the reuse and recycling of waste materials; • To improve accessibility to jobs and services by increasing the use of public transport, cycling and walking, and reducing traffic growth and congestion. Climate change is now widely recognised to be the most significant issue for the future of the Region cutting across all land use sectors and affecting the East Midlands' environment, economy and quality of life. Many policies in the Regional Spatial Strategy (RSS) specifically deal with climate change adaptation and/or mitigation in some way. These need to be seen as part of an overall, coherent strategy to deal with a major long-term problem that demands an immediate and co-ordinated response. The overall regional context for waste policy is set by the Regional Waste Strategy, which is based on meeting the RSS principles and priorities for waste Management. Section 38 of the RSS identifies the Regional Priorities for Waste Reduction and Waste Management. All relevant public and private sector organisations, including manufacturing, importing and packaging firms, should work together to implement the Regional Waste Strategy and promote policies and proposals that will result in zero growth in all forms of controlled waste by 2016 and waste being treated higher up in the 'waste hierarchy' set out in the National Waste Strategy (Waste Strategy for England 2007). All Waste Collection Authorities and Waste Disposal Authorities should achieve a minimum target for the recycling and composting of Municipal Solid Waste of 30% by 2010 and 50% by 2015. Waste Planning Authorities, with the exception of the Peak District National Park Authority, should make provision in their Waste Development Frameworks for waste management capacity equal to the amount of waste generated and requiring management in their areas, using the apportionment data set out in Appendix 4, subject to further research and analysis as part of the annual monitoring process and recognition of the particular operational and locational requirements of individual waste process technologies. In the Eastern Sub-area, the future pattern of provision should combine larger facilities in and around Lincoln and the Sub-Regional Centres, with a dispersed pattern of smaller facilities in the more rural areas. In the Northern Sub-area, the broad pattern of facilities should combine a centralised strategy of larger facilities on previously used land (including former colliery land) with the expansion of existing facilities. In the Peak Sub-area, especially related to larger settlements outside the Peak District National Park, small-scale facilities serving the Sub-area's needs should be accommodated, where these would not have a significant adverse effect on the environment and local communities or conflict with the National Park's statutory purposes. In the Southern Sub-area, there should be a centralised pattern based around the expanding urban centres. In the Three Cities Sub-area a centralised pattern of large facilities should be developed. All other Development Frameworks should provide for the minimisation of waste in the

	construction of and operation of new development, and encourage on-site waste management facilities. Waste development plan documents should secure high standards of restoration and, where appropriate, the aftercare of waste management facilities to contribute to the objectives of the regional spatial strategy, particularly those relating to biodiversity, recreation and amenity. Waste facilities should also be sited to avoid the pollution or disturbance of designated nature conservation sites of international importance. Increased traffic levels on roads near to sensitive sites should also be avoided.
Targets	The Regional Waste Strategy provides the framework for meeting the RSS principles and priorities for waste Management including: • To work towards zero growth in waste at the Regional level by 2016 • To reduce the amount of waste landfilled in accordance with the EU Landfill Directive • To exceed Government targets for recycling and composting • To take a flexible approach to other forms of waste recovery
Key document themes	3,7,10,11,12,13,15,16,17,21,24,25,26,36

Table A1 - 21: Derbyshire Waste Local Plan

Policy Document	**Derby and Derbyshire waste local plan, March 2005** (NOTE: An new waste plan is currently being developed and due to be adopted in 2012)
Key Aims, Objectives and Policies	Aims: To establish a planning framework which enables the provision of adequate facilities and an integrated system for the management of waste whilst: • Respecting the principles of sustainable development; and • Protecting people and communities, the countryside, natural resources and the built heritage from the adverse effects of waste management. Objectives: The objectives of the waste local plan's policies are derived from that principal aim, as follows: • To permit waste development which is guided by the principles of sustainable waste management, particularly: the concept of waste being a valuable resource; consideration of the Best Practicable Environmental Option for each waste stream; the key considerations: the movement of waste management up the waste hierarchy, the proximity principle and self-sufficiency. • To permit an adequate supply of appropriate sites and facilities to cater for the needs of the plan area and its communities and for the needs of the waste collection and disposal authorities and the waste management industry. • To permit development which contributes to the establishment of an integrated approach to waste management. • To permit development which: makes good use of existing infrastructure or of derelict, despoiled or under-used land and buildings; contributes to the regeneration of the coalfield and deprived areas of Derby; restores rail and water transport routes; contributes to highway safety; brings other physical benefits to the local environment. • To permit development which is in locations which reduce the need to travel and enables the movement of freight by rail and water. • To refuse development which would have material, adverse impacts on people or communities, including impacts on their health and on their enjoyment of the amenities of their locality. • To refuse development which would harm the open character of green belts. • To refuse development which would have other material and adverse impacts, including impacts on greenfield land, the best and most versatile agricultural and, the countryside, valued landscape and landscape character, biodiversity and nature conservation, interests of heritage importance, existing and potential transport routes, water conservation and resources and air quality.

Targets	The three main elements of the aim and the indicators for monitoring their success are the provision of: • Integrated and adequate facilities for waste management • Development that respects the principles of Sustainable Development • Development that protects people places and resources from the adverse effects of waste management developments
Key document themes	5,6,7,10,15,16,17,21,24,28,31

A1 – 3.2 Climate Change Documents

▪ Table A1 - 22: Revised Nottingham Declaration

Policy Document	**The revised Nottingham Declaration on Climate change 2005**
Key Aims, Objectives and Policies	Derbyshire became a signatory of The Nottingham Declaration on Climate Change in 2001 and Derby City Council in 2006. The revised Nottingham Declaration on Climate change commits the council to take action to reduce its carbon emissions and to support Derbyshire communities to address the causes of climate change, and become more resilient to its likely impacts. Main commitment to develop a climate change plan, or incorporate climate change within another key plan, within two years of signing. A formal monitoring process is not currently in place, and as the declaration is non-statutory there are no sanctions if a council has not delivered on a particular aspect of the declaration.
Targets	The council has undertaken a comprehensive risk assessment to ascertain the impact of changes in climate and weather on service delivery. A Climate Change Adaptation Action Plan is being developed to ensure that changes are put in place to lessen the risks.
Key document themes	3,4

Table A1 - 23: Regional Climate Change Action Programme

Policy Document	**Tackling Climate Change in the East Midlands, Regional Programme of Action, 2009 – 2011**
Key Aims, Objectives and Policies	A three year plan that brings together existing regional climate change commitments embodied in statutory documents like the Regional Spatial Strategy (RSS), the Regional Economic Strategy (RES) and non-statutory plans such as the Regional Energy Strategy. This Programme of Action details what the region is doing to meet the long term challenges of achieving cuts in carbon emissions (mitigation) and becoming more resilient to the inevitable impacts of a changing climate (adaptation). The following principles were used to help shape the Programme of Action and frame the priorities: 1. The priority areas and actions are supported by an evidence base (quantitative and qualitative) 2. Each is within the scope and/or mandate of one or more of the regional partners/local authorities to influence 3. Each priority area is concerned with achieving cuts in emissions, undertaking adaptation measures where they are most needed, or a combination of the two 4. The priority areas reflect existing commitments within other regional strategies and plans demonstrating that regional partners are already doing a lot to respond to climate change issues 5. The priority areas will be dependent on partnership approaches to delivering activity – recognising the need for collaborative approaches in addressing the challenges of climate change Aim: Developing, supporting and gearing up the role of the public sector in responding to the mitigation and adaptation challenges of climate change in the East Midlands Leadership, Engagement and Commitment: 1. Publish details of own commitments and achievements on climate change , all regional partners 2. Agree natural environment commitments on climate change, EA, NE, FC, GOEM (Defra family group) 3. Coordinate wider public sector engagement to identify opportunities for action on climate change, GOEM Growing Support 4. Develop and launch Local Authority Climate Change Support Programme, RIEP 5. Develop regional NHS network, to support action on climate change, Department of Health 6. Maximise uptake of support programmes on mitigation (eg. the Carbon Trust's Carbon Management Programme) for public sector bodies across the region, GOEM 7. Continue to support the roll out and development of the Nottingham Declaration on Climate Change, EMRA 8. Continue to support the roll out and development of LCLIPem (Local Climate Impact Profiles across the East Midlands) to help introduce and extend adaptation into the public sector, EMRA, GOEM, EA Building Knowledge 9. Publish and disseminate research findings that help to build the regional evidence base on climate change, all partners.
Targets	Incorporation of a new National Indicator 188'Planning to Adapt to Climate Change' into Local Area Agreements
Key document themes	3,4,5,23,25,30

Table A1 - 24: Derbyshire Climate Change Strategy

Policy Document	**Derbyshire: A Climate Change Strategy** (Draft), The Derbyshire Partnership Forum, 2008
Key Aims, Objectives and Policies	The development of the climate change strategy is a first, pro-active step in working more effectively together to mitigate the effects of climate change. The aim of the strategy is to address climate change in Derbyshire by: • Reducing greenhouse gas emissions in Derbyshire to the levels set out in the Government's climate change bill – a 60% reduction by 2050 against 1990 levels (may rise to 80%); • Prepare Derbyshire for the impacts of climate change; • Raise awareness of climate change and where possible, help all sections of the community to take action on this agenda. Key strategic climate change objectives for Derbyshire: 1. Work together on climate change matters for mutual benefit and support and to add value to existing activity where organisations are acting alone 2. Each commit to taking action on climate change by signing the Nottingham Declaration, including developing a climate change action plan as soon as possible (All Derbyshire local authorities are signatories already) 3. Undertake a climate impact assessment for Derbyshire in the short and medium terms 4. Define a baseline carbon footprint for Derbyshire, and recommend emission reduction targets and measures to reduce both organisational and community emissions of greenhouse gases 5. Undertake an investigation of the potential sites for standalone renewable energy generation installations in Derbyshire 6. Include climate change mitigation and adaptation actions in the future review of the Local Area Agreement, appraise all ensuing plans and programmes for climate change impacts as these are updated 7. Identify where adoption of climate change objectives could help deliver existing Community Strategy/Local Area Agreement targets and any supporting plan and programme targets 8. Reduce greenhouse gas emissions from services delivered jointly through the Local Area Agreement by the Derbyshire Partnership Forum organisations 9. Raise awareness and understanding of climate change throughout the wider Derbyshire community and amongst all staff of organisations within the DPF and throughout the wider Derbyshire community and create agency to promote behavioural change. (mitigation and adaptation) 10. Encourage and influence other Derbyshire organisations, beyond the DPF, to reduce emissions of greenhouse gases and prepare to adapt to a changed climate 11. Take account of regional and national strategies and objectives and in turn influence them to ensure that energy use/carbon emissions are minimised through proposed national and regional programmes and plans 12. Collaborate on action plan development to determine priorities to take forward the objectives in this strategy
Targets	A reduction of greenhouse gas emissions of at least 60% of 1990 levels by 2050 at the latest.
Key document themes	1,3,4,6,20,23,27,29

Table A1 - 25: Derby Climate Change Strategy

Policy Document	**Derby City Council: Climate Change Strategy 2009-2012**
Key Aims, Objectives and Policies	Aims: 1. Clearly set out our medium to long-term aims and aspirations as to how we intend to reduce the carbon footprint of the Council; 2. Acknowledge and identify the main difficulties that we face in meeting our own domestic carbon reduction ambitions but also in developing this agenda with our partners across the city; 3. Identify the top level actions we need to take in order to deliver the progress we need to make. Vision: *To help bring together and articulate where we would like to get to in the long-term with our work on climate change we adopted the following vision statement: 'to work towards ensuring human induced climate change and its effects are limited to a level that will allow every person to prosper within locally and globally sustainable environments'* *The aim of this strategy is to make sure that the Council meets its obligations under this vision by delivering practical actions on the ground for those things it can either directly manage or influence.*
Targets	• To reduce the Council's carbon emissions in line with NI185 by at least 25% by April 2012 • To work closely with our partners to facilitate the reduction of per capita C02 emissions within the city from 6.7 tonnes/capita to 6.11 tonnes/capita by April 2011 • To increase the generation of renewable energy throughout the city through our own direct activities and through our support to others • To help prepare the Council's services for the changes that will come about through more extreme weather events by achieving level 2 of NI188 by December 09 • To continue to measure, record and report on our carbon emissions to help improve our performance and to meet all mandatory requirements • To improve our performance in the CRC league table every year from April 2010 onwards
Key document themes	3,4,5,19,20,21,23,27

Table A1 - 26: Bolsover Climate Change Strategy

Policy Document	**Bolsover Climate Change Strategy 2009 -2011**
Key Aims, Objectives and Policies	Vision: *Bolsover district will seek to tackle climate change across all sectors of the community. Concentrating on issues such as mitigating carbon emissions from Bolsover's operations, including buildings; through purchasing; waste management and travel arrangements.* Some of the actions Bolsover intend to take are detailed below: • Identify where adoption of climate change objectives could help to deliver our existing Sustainable Community Strategy and Corporate Plan objectives and targets and any supporting plans and programme targets. • Undertake an investigation of the potential sites for stand alone renewable energy installations within the District and take steps to realise this potential where appropriate. • Raise awareness and understanding of climate change throughout the community and seek to create the capacity to take action to mitigate and adapt to climate change.
Targets	NIs 186 and 188 have been adopted to form part of the Derbyshire Local Area Agreement (LAA). Under this Agreement targets relating to NI 186 require an overall reduction of 3.02% per year for the next 3 years of CO_2 emissions. A proportion of 0.5% of this target is the responsibility of local authorities and their partners to meet. A project funded by the Regional Improvement and Efficiency Partnership is also anticipated to assist in addressing this target. For NI188 the LAA aims to reach Level 3 of an assessment matrix which judges our preparedness for mitigating the effects of climate change.
Key document themes	3,4,6,19,20,21,27,29

Table A1 - 27: Erewash Carbon Management plan

Policy Document	**Erewash Borough Council Carbon Management Plan 2008-2012**
Key Aims, Objectives and Policies	Vision: To deliver high quality services with the least impact on our environment and to champion carbon reduction through: • work with partners; • the decisions we make; • involvement with our community; and • the actions that we take. We will continuously work towards lowering carbon produced in Erewash.
Targets	Reducing carbon dioxide emissions from 2007/08 by 30% by 2012. Take total emissions to 2,563 tonnes, a saving of 1099 tonnes. NI185 and NI186 will be used.
Key document themes	3,4,23

Table A1 - 28: South Derbyshire Climate Change Strategy

Policy Document	**South Derbyshire District Council Climate Change Strategy, 2008**
Key Aims, Objectives and Policies	South Derbyshire has set Combating Climate Change as a priority in its Corporate Plan for 2008 –2011 and takes a lead role on the Nottinghamshire and Derbyshire Local Authority Energy Partnership. South Derbyshire has offered strong leadership to date and is in a good position to turn planning into concrete achievement and take up a position as a national exemplar to district authorities.
Targets	For the South Derbyshire Community the target is expected to be confirmed as a 9.06% reduction (from 2008) in community wide CO2 emissions per capita by 2011. In negotiation with Government Office for the East Midlands a target has been set to reach level three as defined by the NI 188 definition by March 2011.
Key document themes	3,4

A1 – 3.3 Community Strategies

Table A1 - 29: Derbyshire Sustainable Community Strategy

Policy Document	**Derbyshire Sustainable Community Strategy: ' Working Together for a Better Derbyshire' 2009-14**
Key Aims, Objectives and Policies	The long term vision of the strategy is for 'everyone in Derbyshire to enjoy a good quality of life, both now and in the future'. The strategy is the overarching guiding framework for partnership working in Derbyshire and is delivered by organisations working together through the Derbyshire Partnership Forum (DPF), a collection of over fifty partners, which was established in July 2000 to improve joint working in Derbyshire. Five themes outline how priorities will be achieved: • Safer communities • Children and young people • Health and wellbeing • Culture • Sustainable communities The following partnership principles into action: • Understanding communities and delivering services which are accessible to all partnership principles into action • Looking at the bigger picture • Working Together to achieve more • Being prepared to be flexible and 'do things differently In terms of sustainable communities the following priorities have been identified with relevance to waste management: • Enhance and protect the natural and built environment • Work with organisations and communities to protect, enhance and, where appropriate, create opportunities for biodiversity • Reduce carbon dioxide and other greenhouse gas emissions by reducing the environmental impact of partners' buildings and operations and through the sustainable management of Derbyshire's landscapes and biodiversity • Manage waste in a more sustainable and integrated way (reducing, re-using, recycling, composting, recovering more value from waste and land filling less)

	• Provide advice and support to enable local organisations, schools, communities and individuals to become more energy efficient, embrace renewable energy technologies and in turn reduce carbon dioxide emissions and the impact of climate change • Support communities to be resilient and adaptable to climate change • Reduce fly tipping and litter • Develop appropriate measures to meet the skills and employment needs of the Derbyshire economy, labour market and local businesses
Targets	Success will be monitored through performance management of the Local Area Agreement (LAA) and through the evaluation of partners' own plans and strategies.
Key document themes	1,2,3,5,6,7,19,20,23

Table A1 - 30: Derby Sustainable Community Strategy

Policy Document	**Derby City Partnership Sustainable Community Strategy , 2009 – 11 - 2020 Vision**
Key Aims, Objectives and Policies	Vision for 2020: *Derby will be a place where people of all ages and from all walks of life will feel they belong to Derby and that Derby offers them everything they need – for work, education, housing, leisure and a safe and healthy lifestyle.* Values: • Working together to achieve more • Participation • Creativity and innovation • Openness and integrity • Growth through learning Five key ambitions: • City that builds a brighter future for Children and Young People who enjoy a healthy, safe and happy childhood, with the opportunity to achieve their full potential. • City of Growth, opportunity and innovation, a thriving and attractive city for all, with an environment that we will sustain and protect for future generations. • City with Stronger, Safer and Cleaner Communities where everyone feels safe and confident in their daily lives. • Significant Cultural City that inspires; engages and celebrates diversity. • Healthy City where people enjoy long, healthy and independent lives. Five Key principles: • Ensuring that Derby has a positive reputation, image and profile with those who live, work, visit and invest in the city. • Sustainable development – improving the quality of life for everyone in Derby now in a way that does not compromise the quality of life for future generations. • Making sure that everyone in the city has equal life chances no matter what their background or where they live. • Raising aspirations, ambition and achievement – for individuals, communities and the city. • Involving people in decision making – giving people who live and work in Derby the opportunity to influence decisions that affect them.
Targets	Derby City Partnership has signed a Local Area Agreement with central government which runs until 2011 and sets out targets for many of the priorities in this 2020 Vision.
Key document themes	1,5,6,23

Table A1 - 31: Amber Valley Sustainable Community Strategy

Policy Document	**Amber Valley Sustainable Community Strategy, 2009 - 2014**
Key Aims, Objectives and Policies	Five principles: 1. To be the partnership of partnerships for the area, providing the strategic co-ordination of services within Amber Valley and linking with other plans and bodies established at regional, county-wide and local level. 2. To work to reduce the health inequalities which exist across the area to ensure our poorest communities are able to enjoy the same healthy life expectancies of our most affluent areas. 3. To listen to the views of our people and ensure that they are able to influence the delivery of services and the allocation of resources to meet a diverse range of needs. 4. To work to bring inward investment and jobs for residents in Amber Valley. 5. To secure sustainable development– development which meets the needs of the present without compromising the ability of future generations to meet their own needs. Under the Sustainable Environment theme identified in the strategy, key priorities relevant to waste management activities include: • Preserving historic sites and buildings • Protecting greenfield and Green Belt land from development • Sustainable design for new buildings • Building in the most sustainable locations • Promoting renewable energy • Implementing environmental and biodiversity improvement schemes • Protect and improve the environment, biodiversity wildlife and habitats • Reducing the carbon footprint of new development • Improved recycling facilities to both business and household waste
Targets	Targets based in 5 key areas: • Safer Communities • Children & Young People • Health & Well Being • Culture • Sustainable Communities
Key document themes	1,4,6,20,23,29,36

Table A1 - 32: Bolsover Sustainable Community Strategy

Policy Document	**Bolsover Local Strategic Partnership - A Sustainable Community Strategy 2006-2020**
Key Aims, Objectives and Policies	Vision is for a *'diverse, healthy, fair and prosperous District, building on the strengths of our industrial past to become a vibrant, thriving community capable of meeting the challenges and the opportunities of the future.'* Core Principles: • Equality of access and opportunity – to services and jobs • Sustainable development - that meets the needs of the present without compromising the ability of future generations to meet theirs • Breaking down social, economic and cultural barriers due to discrimination • Improving the quality of - and access to - local services Priorities: • Safer communities – free from the fear of crime • Better health for all – healthier people in a healthier environment • Educated and skilled people – with raised aspirations • A dynamic outward-looking economy - creating and sustaining the jobs of the future and the talents to fill them • Deeper respect for our environment – making our lives better but not at the expense of those who are to come after us • Access for all to the benefits and services of the District – no barriers of age, disability, race, gender, or lack of transport Specific to Waste management: • Encouraging residents to take responsibility for their environment, including recycling and renewable energy initiatives, open and green space development, habitat and biodiversity • Reducing the waste we produce and increase the amount we recycle
Targets	Specific short term targets which feed into the overall 2020 Vision with the priorities highlighted above.
Key document themes	1,5,6,7,19,25,27

Table A1 - 33: Erewash Sustainable Community Strategy

Policy Document	**Erewash Strategic Partnership: Sustainable community Strategy 2009-2014**
Key Aims, Objectives and Policies	Vision: '*Erewash aims to become a vibrant and prosperous borough, where an excellent quality of life is enjoyed by everyone.'* Overall aims: *'To achieve our vision, our key aims are to reduce inequalities and improve the economy, ensuring sustainability throughout.'* Main Priorities: • Health, including obesity, drinking and smoking • Continue to reduce violent crime • Reduce the fear of crime and the perceptions of anti-social behaviour • The economy and worklessness • Tackling 'pockets' of deprivation in an otherwise relatively affluent area • Activities for young people

	• Adults without qualifications • Ageing population • Affordable housing Specific to Waste management: • Improve environmental cleanliness in the Borough • Reduce CO_2 emissions
Targets	Key areas to target: • Reduce crime, anti-social behaviour and the fear of crime • Vibrant towns and village centres • Clean streets • Improved health and well being • Highways, roads and transport
Key Document Themes	2,5,6,26

Table A1 - 34: South Derbyshire Sustainable Community Strategy

Policy Document	**Our Sustainable Community Strategy Action Plan for South Derbyshire 2009-2014**
Key Aims, Objectives and Policies	Vision is '*Of a dynamic South Derbyshire, able to seize opportunities to develop successful communities, whilst respecting and enhancing the varied character and environment of our fast growing District'* Five key themes: • Healthier Communities Vision: A healthier and more active lifestyle across all communities • Safer Communities Vision: Communities that people feel are safer places in which to live, work and visit • Vibrant Communities Vision: Communities that are vibrant and active where there is a strong sense of community • Sustainable Development Vision: Sustainable existing and new communities that meet the population's needs and aspirations • Children and Young People Vision: Communities where all children and young people achieve their full potential and make positive contributions to their communities Key priorities include: • Reduced carbon emissions per person • We will reduce levels of litter and waste going to landfill
Targets	Local specific targets feeding into each of the key themes above.
Key Document Themes	1,2,6,19,25,27

Table A1 - 35: Chesterfield and NE Derbyshire Sustainable Community Strategy

Policy Document	**Sustainable Community Strategy for Chesterfield and North East Derbyshire**
Key Aims, Objectives and Policies	The overall vision of the Sustainable Community Strategy is *"To improve the quality of life for all people in Chesterfield Borough and North East Derbyshire so that residents, workers and visitors can benefit from what the area has to offer."* Strategic priorities identified are: • Accessible Communities • Living Communities • Safer, Healthier and Active Communities • Sustainable Communities • Working and Learning Communities Related to waste management activities: • We will consider how to use our land for future development, to preserve the area's natural and cultural assets • We will work closely with businesses and households so they can contribute individually or collectively to reduce the local impact on the environment • Support the reduction of pollution affecting our land, air and water and minimise local waste • We will promote recycling, energy efficiency, the adoption of renewable energy sources and champion the adoption of a broad range of energy saving techniques and technologies Raised awareness of information and opportunities so that the community and businesses can: • Adapt to Climate Change • Mitigate their impact on the environment • Access advice and support to help save money and protect the environment
Targets	As above
Key Document Themes	3,5,6,11,18,23,28

Table A1 - 36: Derbyshire Dales and High Peak Sustainable Community Strategy

Policy Document	**Derbyshire Dales & High Peak local strategic partnership Sustainable Community Strategy 2009 – 2014**
Key Aims, Objectives and Policies	Vision: *'The Peak District will be a distinctive, high quality rural environment with…* • *People of all ages who are healthy and safe;* • *High-wage, high-skill jobs;* • *Affordable, decent homes for local people;* • *Towns and villages that offer a high quality of life'* Priority Challenges: • Affordable, decent housing - Affordable Housing Theme Group; • Support for future generations – Children & Youth Partnership Group; • The development of a thriving economy that provides high-wage and high-skills jobs – Rural Forum; • Ensuring people's older years are happy and healthy – Health and Wellbeing Group, and will work to embed the cross-cutting themes during delivery.

	Supporting future generation highlights 'Our future generation needs opportunities to grow up active and healthy, treasuring their environment through education to improve understanding and enjoyment, and reduce the impact on our environment and climate.' We will seek to embed issues relating to our environment, climate change, community safety, crime reduction, access to services and equalities throughout the Priority Challenges and Actions.
Targets	As above
Key Document Themes	1,4,6

A1 – 4 Future Legislative and Policy Changes

As the strategy review progresses it will also be important to keep under review a number of proposed changes to legislation and policy at both the European Union (EU) and national level.

A1 – 4.1 EU Level

At an EU level these particularly include:-

- Waste Electrical and Electronic Equipment (WEEE) Directive - Revisions to the WEEE Directive came into force in August 2012 related to clarifying the regulations and making it easier to enforce and are include more ambitious targets for recycling at both a household and non-household level. New collection targets apply from 2016, increasing the amount of WEEE required to be collected by member states from 45 tonnes of WEEE for every 100 tonnes put onto the market in the three preceding years – equivalent to 45% - by 2016. These targets will then rise further in 2019 to a rate of 65 tonnes from every 100 tonnes put onto the market. Greater priority will be given to reuse and medical devices are included in the scope for the first time. The existing EU collection target is 4 kg of WEEE per capita this is likely to increase to 20 kg per capita by 2020. These changes may impact on WEEE collections at HWRCs, bulky waste schemes and impact on reuse and third sector opportunities as more ambitious targets for WEEE recycling are proposed and set.
- End of Waste Criteria for Compost / Digestate – the Joint Research Committee (JRC) of the EC have been seeking to develop criteria for 'End of Waste' status for compost and digestate to apply across the EU. This could create some issues for the existing UK criteria and associated PAS100 & PAS110 specifications. This work is on-going.
- End of Waste Criteria for Glass Cullet - The end-of-waste criteria for glass cullet came into force on 31 December 2012. The regulations state that glass cullet, which is generated from the recovery of waste glass, must be of a high enough standard to be used in the production of glass substances or objects by re-melting in glass manufacturing facilities. The criteria also places limits on the amount of contaminants which can be contained in glass cullet in order for it to be classed as a secondary raw material.
- Other End of Waste Criteria – The JRC is also working on a range of other end of waste criteria including plastics, paper, aggregates and waste derived fuels that are currently in various stages of development / approval.
- Updated Best Available Techniques Reference Documents (BATRef) are under development for Waste Treatment processes. These will be applied to permit applications in the UK for relevant waste treatment infrastructure.

A1 – 4.2 National

National policy and legislation on waste management issues anticipated in the futures include:-

- The New National Waste Plan – anticipated at the end of 2013, this document will represent a new national waste strategy, in replacement of the Waste Strategy for England 2007. It is likely to consider long term targets and policies post 2020. There may also be consideration of wider policy measures such as landfill bans. Defra are also updating their policy on application of the waste hierarchy in line with the revised Waste Framework Directive and life cycle thinking.
- The National Waste Prevention Plan – as required under the EU Waste Framework Directive Member States should develop national waste prevention plans. Defra have initiated this process and aim to publish at the end of 2013. It is possible that some

targets may be set with reference to waste prevention, and national supporting measures may be included.

- The Materials Recovery Facility (MRF) Code of Practice and quality documentation – this policy position will be aimed at meeting the revised Waste Framework Directive requirements for high quality recycling. It may have significant implications for comingled collection systems and MRF sorting plant. (Launched for consultation in February 2013)
- The Energy Bill / Act – this legislation (currently a draft Bill) includes the policy framework for the development of Energy supplies. It has relevance for the reform of the Electricity Market and the transitional arrangements for the replacement of Renewable Energy incentives from 2017.
- Defra Energy from Waste Guidance – a document on Defra policy for Energy from Waste which was due to be released in 2012 but its publication has been delayed. It will aim to clarify the Government position on the range of technologies falling under the topic.

Key issues for the future resulting for future legislative and policy changes also include:

- Greater priority for waste prevention and zero waste;
- Increased requirements to collect waste;
- Landfill bans for certain materials;
- Greater priority for Commercial &Industrial waste;
- Greater role for local authorities in tacking climate change.

Appendix B Summary of Workshop Dates

Development of Strategic Outcomes and Objectives and Deliverables

Workshop 1 - Officers

Tues 24 April, 9.30-17.00, Committee Rm 2, County Hall

Workshop 2 -Elected Members

Wed 11 July, 9.30-13.30, Committee Rm 3, County Hall

Workshop 3 - Stakeholders

Mon 23 July, 9.30-13.30, Committee Rm 2, County Hall

Option Selection (and Short Listing) and Strategic Environmental Assessment Objective/Criteria

Workshop 4 - Officers

Tues 11 Sept, 9.30-17.00, Committee Rm 1, County Hall

Short Listed Options and SEA objectives/criteria

Workshop 5 Elected Members

Friday 5 October, 9.30-13.30 Committee Rm 2, County Hall

Workshop 6 - Stakeholders

Friday 5 October, 14.00-17.00 Committee Rm 2, County Hall

Options Appraisal (Process and Results)

Workshop 7 - Officers

Tues 6 November, 9.30-17.00, Committee Rm 2, County Hall,

Workshop 8 - Stakeholders

Mon 19 November, 9.30-13.30, Committee Rm 2, County Hall

Workshop 9 - Elected Members

Thursday 22 November, 9.30-12.30, Rm 166a, County Hall

Appendix C Assessment Criteria

In order to weight the criteria to take account of the priorities for the DWP, reference was made to the outcomes defined at the 1st workshops with officers, elected members and stakeholders and associated weightings given to the outcomes.

The information on 'Comparison of Prioritisations' below is taken from Page 6 of the 'Outcomes and Objectives Workshops Summary' July 2012[11].

Comparison of Prioritisations

Table 6 compares the prioritisation from the three workshops, with the following colour coding:

- *1st to 4th*
- *5th to 9th*
- *10th to 13th*

Table 6: Comparison of Workshop Prioritisations

Potential Outcomes	*Officer Workshop*	*Member Workshop*	*Stakeholder Workshop*
Contribute to a more resource efficient Derbyshire	*11th*	*10th*	*12th*
Protect natural resources	*12th*	*9th*	*4th*
Deliver value for money services	*3rd*	*3rd*	*7th*
Deliver effective and efficient services	*1st*	*1st*	*8th*
Reduce the carbon impact of waste management services	*4th*	*6th*	*2nd*
Recover value from residual waste and increase diversion from landfill	*10th*	*8th*	*3rd*
Manage waste in a manner that prevents, reuses, recycles and recovers waste and maximises landfill diversion	*5th*	*11th*	*1st*
Apply self-sufficiency and proximity principles	*7th*	*12th*	*5th*
Facilitate the management of wider wastes	*13th*	*13th*	*10th*
Achieve/maintain high levels of public satisfaction	*9th*	*4th*	*13th*
Achieve/maintain high levels of engagement and accessibility	*8th*	*5th*	*9th*
Deliver a sustainable waste management service	*2nd*	*7th*	*11th*
Maximise public understanding and challenge behaviours to affect behavioural change.	*6th*	*2nd*	*6th*

The comparison suggests that the top four priorities outcomes (i.e. those with either 2 red and 1 yellow or 1 red and 2 yellow rankings) are:

- *Deliver value for money services;*
- *Deliver effective and efficient services;*
- *Reduce the carbon impact of waste management services; and*
- *Maximise public understanding and challenge behaviours to affect behavioural change.*

With the least important outcomes (3 green rankings) being:

- *Contribute to a more resource efficient Derbyshire;*
- *Facilitate the management of wider wastes*

[11] (File reference 2012 09 04 Workshop 1-3 Summary)

Combining the weighting of priorities assigned at the officer, elected member and stakeholder workshops resulted in the following weighting against different strategic outcomes, Table i.

Table i – Combined Weightings of Outcomes

Ref	Potential Outcomes	Officer workshop	Member Workshop	Stakeholder Workshop		Weighting for Evaluation Criteria	Evaluation criteria No. reference
1	Contribute to a more resource efficient Derbyshire	11th	10th	12th		Priority	6
2	Protect natural resources	12th	9th	4th		Higher Priority	8
3	Deliver value for money services	3rd	3rd	7th		Highest Priority	11
4	Deliver effective and efficient services	1st	1st	8th		Highest Priority	5 (6 & 11)
5	Reduce the carbon impact of waste management services	4th	6th	2nd		Highest Priority	7
6	Recover value from residual waste and increase diversion from landfill	10th	8th	3rd		Higher Priority	3
7	Manage waste in a manner that prevents, reuses, recycles and recovers waste and maximises landfill diversion	5th	11th	1st		Higher Priority	1 & 2
8	Apply self sufficiency and proximity principles	7th	12th	5th		Higher Priority	10
9	Facilitate the management of wider wastes	13th	13th	10th		Priority	9
10	Achieve/maintain high levels of public satisfaction	9th	4th	13th		Higher Priority	4
11	Achieve/maintain high levels of engagement and accessibility	8th	5th	9th		Higher Priority	5 (& 4)
12	Deliver a sustainable waste management service	2nd	7th	11th		Higher Priority	n/a
13	Maximise public understanding and challenge behaviours to affect behavioural change.	6th	2nd	6th		Highest Priority	4

The combined weightings of outcomes was cross referenced against the evaluation criteria (developed from the draft strategic objectives) and resulted in a weighting of 1 – 3 against each of the evaluation criterion, see table ii. The weighting of 1 – 3 was based on whether the criterion was identified as a priority, higher priority or highest priority and applied based on the following:

- Highest Priority - 3
- Higher Priority - 2
- Priority - 1

Table ii – Evaluation Criteria with Associated Weighting

Criteria Ref No.	Evaluation Criteria (developed based on draft strategy objectives)	Reference to outcomes	Weighting	Weighting applied
1	Reduced waste arisings	7	Higher Priority	2
2	Increased reuse, recycling and composting of waste that does arise	7	Higher Priority	2
3	Reduced waste to landfill and gaining greater value from waste that is left over for disposal	6 (& 4)	Higher Priority	2
4	Understanding and engagement leading to high levels of customer satisfaction	13, 10 & 11	Highest Priority	3
5	An accessible, efficient and effective service	11 (3,4 & 6)	Highest Priority	3
6	Improved resource efficiency	1	Priority	1
7	Reduced carbon/climate change impacts	5	Highest Priority	3
8	Protection of natural resources	2	Higher Priority	2
9	The management of non household wastes (e.g. Commercial waste) - change in tonnage of non household waste recycled/reused	9	Priority	1
10	Local self sufficiency in wastes management (proximity of where waste is managed relative to where it arises)	8	Higher Priority	2
11	Value for Money	3	Highest Priority	3

Appendix D Long List of Options Scores

Weighted Outcome scores (Green shading indicates short listed options)		
Ref.	*Option*	Total Score
	Waste Prevention	
13	Education, promotion, awareness raising to increase public understanding and engagement of waste prevention (including 'high profile' promotions e.g. celebrities)	129
12	Love Food, Hate Waste promotional campaign to reduce food waste	117
16	Junk mail promotional campaign	96
7	Home composting promotional campaign including home digestion (e.g. wormeries)	93
5	Effective side waste policy – to ensure additional waste that cannot fit into the bin provided is not collected.	88
1	Reduce residual bin size /capacity	81
9	In house waste prevention by councils (e.g. paperless office)	80
18	Lobby government and relevant organisations on waste prevention issues	76
15	Promotion of SMART (Save Money and Reducing Trash) Shopping	72
2	4 weekly collection of residual waste	60
8	Householder incentives for waste reduction	54
11	Reusable nappies promotional campaign	54
10	Qualitative waste prevention (e.g. hazardous waste prevention such as the use of rechargeable batteries rather than disposable batteries)	48
17	Promoting the prevention of other (non-household wastes e.g. commercial or industrial) wastes	48
14	Enforcement at HWRCs e.g. to stop trade waste abuse	39
3	Charge for kerbside garden waste collections	32
4	Stop kerbside collection of garden waste	32
19	Taxing of carrier bags	30
6	Closure of Household Waste Recycling Centres (HWRCs)	10

	Reuse	
31	Education, promotion, awareness raising to increase public understanding and engagement in reuse (including 'high profile' promotions e.g. celebrities)	108
23	Promotion of Freecycle / Freegle	104
28	Promotion of auction sites	96
21	Reuse at HWRCs including WEEE and other items	93
22	Bulky waste reuse	87
30	Lobby government and relevant organisations on reuse issues	76
20	Partnering with and promoting / incentivising third sector activity on reuse	66
29	Promote take back schemes / partner with retailers / manufacturers	57
24	Swap Shops / community events	52
26	In-house reuse by councils	51
25	Promoting reuse of other wastes e.g. paint	46
27	Promotion of remanufacture	38

	Recycling/Composting	
33	Greater range of materials collected from the kerbside/bring sites/HWRCs	114
40	Increased recycling containment capacity	112
39	Higher frequency of recycling collection	105
32B	Trade waste recycling - WCAs	99
36	Education, promotion, awareness raising to increase public understanding and engagement in recycling/composting (including 'high profile' promotions e.g. celebrities)	96
41	Separate food waste collections	90
34	Incentive reward schemes	84
51	Lobby government and relevant organisations on recycling issues	68
43	Bulky waste recycling	63
35	Reducing contamination in recycling/composting	62
38	Lower frequency of residual waste collection supported by weekly food waste	62
32A	Trade waste recycling - HWRCs	56
37	Developments in co-mingled and source separated kerbside recycling	56
45	Recycling on the Go services – making it easier for people to recycle when they are 'on the go' by installing recycling bins in public places	56
42	Improved infrastructure (e.g. Mini MRFs / IVC / AD)	52
46	In House recycling by councils	45
48	Sustainable procurement (in-house) by council	45
44	Recycling of fly tips, litter, street sweeping waste	42
49	Nappy and 'absorbent hygiene products' recycling	40
50	Residual waste recycling	26
47	Free garden waste collections. Provided by all so this is not a future development option to be appraised. (NOTE: Derby City Council has been reviewing their waste service since autumn 2012. A Cabinet report on the proposals to move to a charged garden waste service is to be considered in June 2013 and at that point the proposals will be finalised.)	-
52	Recycling / compost / digestion of grounds maintenance waste. Combined with Option 46 so this has not been appraised	-

Long List of Options - Assessment of the Contribution of the Individual Options to the Strategic Outcomes

Each option from the 'long list of options' was assessed against the contribution of the option to the strategic outcomes (see Table iii). The assessment was based on whether the option would have a Low (L) or Significant (S) contribution to the outcome. A score was then applied based on a low contribution to the outcome being assigned a score of 1 and a significant contribution to the outcome assigned a score of 2. Limited or no contribution to the outcome was assigned a score of 0. These scores were then multiplied based on the weightings given to the strategic outcomes from workshop 1 - 3. Applying a score of 3 to the highest priorities, 2 to the higher priorities and 1 to the priorities allows the outcomes to be ranked

Example:
The Strategic Outcome to 'Protect Natural Resources' was given a 'higher priority' weighting (based on workshop 1 - 3) and for the purpose of this exercise was assigned a score of 2 (cell D12). Option 1 'Reduce residual bin size / capacity' was deemed to have a Low contribution to this strategic outcome and on the 'outcomes numbered' tab, a low contribution was assigned a score of 1. This low contribution score of 1 was then multiplied against the weighted score of 2 for 'Protect Natural Resources' to get a weighted score of 2 (cell D13).

The strategic outcome 'Deliver a sustainable Waste Management service' was also given a 'higher priority' weighting (based on workshop 1 - 3) and was therefore assigned a score of 2 (cell O12). However, Option 1 'Reduce residual bin size / capacity' was deemed to have a significant contribution to this strategic outcome and on the 'outcomes numbered' tab, a significant contribution was assigned a score of 2.This significant contribution score of 2 was then multiplied against the weighted score of 2 for 'Deliver a sustainable Waste Management service' to get a weighted score of 4 (cell O13).

For each individual option, the weighted scores for each strategic outcome was added together to come up with a total weighted score, in the case of options 1 'Reduce residual bin size / capacity' the weighted score was 27.

Key: Weightings given to the strategic outcomes from workshop 1 - 3.
(See grey header row 12 below)
3 = Highest Priority
2 = Higher Priority
1 = Priority

Table iii - Assessment of the Contribution of the Individual Options to the Strategic Outcomes

Ref.	Delivery Options	Strategic Outcome													*Comment (provides an indication of how option contributes to outcomes)*	SCORE
		Contribute to a more resource efficient Derbyshire	Protect Natural Resources	Deliver Value for Money Services	Deliver Effective & Efficient services	Reduce carbon impact of WM services	Recover value from residual waste and increase landfill diversion	Manage waste according to the hierarchy	Apply self-sufficiency & proximity principles	Facilitate the management of wider wastes	Achieve / maintain high levels of public satisfaction	Achieve / maintain high levels of engagement and accessibility	Deliver a sustainable WM service	Increase public awareness to affect behaviour change		
Weighting		1	2	3	3	3	2	2	2	1	2	2	2	3		
Waste Prevention																
1	Reduce residual bin size / capacity	1	2	0	3	3	4	4	0	0	0	0	4	6	Assume diversion from residual waste into alternatives (recycling, prevention etc) with consequent carbon benefits. Also impact on behaviour change and protection of natural resources.	27
2	4 weekly collection of residual waste	1	2	0	6	3	4	4	0	0	0	0	4	6	As above, but also would be anticipated to exhibit more savings in collection costs, hence impact on beneficial service efficiency	30
3	Charge for garden waste collections	0	0	3	6	0	0	0	2	0	0	0	2	3	Should deliver an efficient service as charged for and will usually target the larger households therefore delivering an efficient collection, arguable value for money, scored low impact. Carbon benefit very dependent on alternative management of garden waste. Assume neutral position: mostly composted at home / taken to HWRC / use of charged service (limited amount put in residual waste). There are public awareness and proximity impacts from managing garden waste in gardens, this also can improve the sustainability of Waste Management (WM) service.	16
4	Stop kerbside collection of garden waste	0	0	3	6	0	0	0	2	0	0	0	2	3	As above except as the service has been removed it could not be argued as effective but it could make the overall waste management system more efficient.	16
5	Effective side waste policy – to ensure additional waste that cannot fit into the bin provided is not collected.	1	2	0	0	3	4	4	0	0	0	0	2	6	Assume diversion from residual waste into alternatives (recycling, prevention etc) with consequent carbon benefits. Also impacts on behaviour change and protection of natural resources	22
6	Closure of Household Waste Recycling Centres (HWRCs)	0	0	0	3	0	0	0	0	0	0	0	2	0	Value for money is arguable, a case could be made that HWRC provision must remain, therefore any that are closed will be the least efficient, therefore having a minor improvement to the efficiency / effectiveness of service, this may in turn impact on the sustainability of the WM service to a limited regard.	5
7	Home composting promotional campaign including home digestion (e.g. wormeries)	1	2	3	3	3	2	2	4	0	2	4	2	3	Saves resources (peat / fertiliser / soil conditioner) and protects natural resources as a consequence. Minor service efficiencies, value for money and potential carbon savings. Good proximity principle self- sufficiency aspects, high levels of engagement to households with gardens, awareness raising and overall sustainability impacts on WM service. Overall impact mitigated by high levels of home composting promotion in the past / potential for saturation. Focus going forward on on-going support.	31
8	Householder incentives for waste reduction	1	2	0	0	6	2	4	2	0	0	2	2	6	Such initiatives are often targeted or based around chipped bins etc. Experience elsewhere in the UK is of limited impacts in tonnage terms, although a small tonnage prevented can still engender a significant carbon impact. In some instances the measure will determine the outcome as some waste may be diverted rather than true prevention. Could have significant awareness raising behaviour change aspects.	27
9	In-house waste prevention by councils (e.g. paperless office)	1	2	0	3	3	2	2	2	1	0	2	2	0	Wide ranging impacts, but due to the low tonnage prevented these are always low impacts. Can improve levels of engagement and accessibility to waste prevention methods for council workers.	20

Table iii - Assessment of the Contribution of the Individual Options to the Strategic Outcomes

Ref.	Delivery Options	Strategic Outcome													*Comment (provides an indication of how option contributes to outcomes)*	SCORE
		Contribute to a more resource efficient Derbyshire	Protect Natural Resources	Deliver Value for Money Services	Deliver Effective & Efficient services	Reduce carbon impact of WM services	Recover value from residual waste and increase landfill diversion	Manage waste according to the hierarchy	Apply self-sufficiency & proximity principles	Facilitate the management of wider wastes	Achieve / maintain high levels of public satisfaction	Achieve / maintain high levels of engagement and accessibility	Deliver a sustainable WM service	Increase public awareness to affect behaviour change		
Weighting		1	2	3	3	3	2	2	2	1	2	2	2	3		
10	Qualitative waste prevention (e.g. hazardous waste prevention such as the use of rechargeable batteries rather than disposable batteries)	1	4	0	0	3	0	2	2	2	0	0	2	0	Preventing hazardous waste will have an impact on natural resources and resource consumption, it has been assumed these will be low, but could be significant for some materials. Tackling hazardous materials is a contribution to a sustainable waste management service.	16
11	Reusable nappies promotional campaign	1	0	0	0	0	2	2	4	0	2	2	2	3	A successful campaign could have significant impacts on residual waste, moving up the hierarchy and self- sufficiency / proximity. Likely to be lower beneficial impacts on natural resources, resource efficiency public engagement, satisfaction and behaviour change.	18
12	Love Food, Hate Waste promotional campaign to reduce food waste	2	2	3	0	6	2	4	4	0	2	4	4	6	Could have significant impacts on carbon savings, managing waste in accordance with the hierarchy, self- sufficiency / proximity, resource efficiency, delivering a sustainable WM service and increasing engagement and public awareness to affect behaviour change.	39
13	Education, promotion, awareness raising to increase public understanding and engagement of waste prevention (including 'high profile' promotions e.g. celebrities)	2	2	3	0	6	4	4	4	0	4	4	4	6	Could have significant impacts on carbon savings, managing waste in accordance with the hierarchy, self -sufficiency / proximity, resource efficiency, delivering a sustainable WM service and increasing engagement, satisfaction and public awareness to affect behaviour change.	43
14	Enforcement at HWRCs e.g. to stop trade waste abuse	0	0	6	3	0	4	0	0	0	0	0	0	0	Could yield significant landfill diversion and financial savings, potentially making the service more efficient.	13
15	Promoting SMART (Save Money and Reduce Trash) Shopping	1	2	0	0	3	2	2	2	0	2	2	2	6	Could yield notable behaviour change and public awareness impacts and some benefits in the application of the waste hierarchy and self -sufficiency / proximity. Also beneficial impacts in terms of public engagement and accessibility, satisfaction, resource efficiency and delivery of a sustainable WM service.	24
16	Junk mail promotional campaign	1	2	0	0	3	2	2	2	0	2	2	2	6	Could yield notable behaviour change and public awareness impacts and some benefits in the application of the waste hierarchy and self -sufficiency / proximity. Also beneficial impacts in terms of public engagement and accessibility, satisfaction, resource efficiency and delivery of a sustainable WM service.	24
17	Encouraging the prevention of other (non-household wastes e.g. commercial or industrial) wastes	2	2	0	0	3	2	4	4	2	0	0	2	3	The prevention of wider wastes is likely to exhibit a relatively low impact, but across a wide range of areas (carbon, resource use, sustainability). It has the potential for a significant impact on the management of wider wastes.	24
18	Lobby government and relevant organisations on waste prevention issues	1	2	0	0	3	2	2	2	1	2	2	2	0	The Lobbying of Government and other organisations on waste prevention issues is likely to deliver unknown impacts. As such an assumption of a general low impact across a range of general environmental impact measures. Positive public message.	19
19	Taxing of carrier bags	1	2	0	0	0	2	2	0	0	0	0	2	6	Taxing of carrier bags would have the benefit in terms of litter and related environmental impacts. It would have a significant impact on raising awareness / behaviour change.	15

Table iii - Assessment of the Contribution of the Individual Options to the Strategic Outcomes

Ref.	Delivery Options	Strategic Outcome													*Comment (provides an indication of how option contributes to outcomes)*	SCORE
		Contribute to a more resource efficient Derbyshire	Protect Natural Resources	Deliver Value for Money Services	Deliver Effective & Efficient services	Reduce carbon impact of WM services	Recover value from residual waste and increase landfill diversion	Manage waste according to the hierarchy	Apply self-sufficiency & proximity principles	Facilitate the management of wider wastes	Achieve / maintain high levels of public satisfaction	Achieve / maintain high levels of engagement and accessibility	Deliver a sustainable WM service	Increase public awareness to affect behaviour change		
Weighting		1	2	3	3	3	2	2	2	1	2	2	2	3		
Reuse																
20	Partnering with and promoting / incentivising third sector activity on reuse	2	2	3	3	3	2	4	4	1	2	2	2	3	The partnership with the third sector over reuse options exhibits potential benefits across the criteria. These could include significant benefits in terms of delivering value for money services, resource efficiency, the waste hierarchy, self- sufficiency and proximity (third sector organisations often operate locally and distribute / sell goods locally) and a sustainable WM service.	33
21	Reuse at HWRCs including WEEE and other items	2	4	3	0	3	2	4	4	0	2	2	2	3	The reuse of WEEE / other bulky goods from HWRCs may operate via the private sector or the 3rd sector (depending on contractual arrangements). There will be less material available via this route than the ('catch all' Partnering with 3rd sector) option. It may also have a lower value for money return. Significant potential resource use benefits from rare / heavy metals.	31
22	Bulky waste reuse	2	2	3	0	3	2	4	4	0	2	2	2	3	The reuse of bulky goods from the bulky collection service may operate via the private sector or the 3rd sector (depending on contractual arrangements). There will be less material available via this route than the ('catch all' Partnering with 3rd sector) option. It may also have a lower value for money return.	29
23	Promotion of Freecycle / Freegle	2	2	0	0	3	2	4	4	0	2	2	2	3	The reuse of items via enhanced use of local free exchange type sites would have the potential for significant resource use and self -sufficiency benefits, it would also have sustainability and waste hierarchy benefits in addition to a lower impact benefit in a range of public and environmental aspects.	26
24	Swap Shops / community events	2	2	0	0	3	2	4	4	0	2	2	2	3	The reuse of items via enhanced use of local free exchange events would have the potential for significant resource use and self -sufficiency benefits, it would also have sustainability and waste hierarchy benefits in addition to a lower impact benefit in a range of public and environmental aspects.	26
25	Promotion of reuse of other wastes e.g. paint	2	2	0	0	3	2	4	4	2	0	2	2	0	The reuse of 'other waste' items via enhanced use of waste exchange type sites / networks would have the potential for significant resource use and self-sufficiency benefits, it would also have sustainability, wider waste management and waste hierarchy benefits in addition to a lower impact benefit in a range of other environmental aspects.	23
26	In-house reuse by councils	1	2	0	0	3	2	2	2	1	0	2	2	0	Wide ranging impacts, but due to the low tonnage reused these are always low impacts. Can improve levels of engagement and accessibility to reuse methods for council workers.	17
27	Promotion of remanufacture e.g. furniture refurbishment	1	2	0	0	3	2	2	0	2	0	2	2	3	Wide ranging impacts, but due to the potentially low tonnage reused (this is out of the control of the councils) these may be low impacts. Significant benefits in terms of managing waste up the hierarchy, managing wider wastes and contributing to a sustainable WM service.	19

Table iii - Assessment of the Contribution of the Individual Options to the Strategic Outcomes

Ref.	Delivery Options	Strategic Outcome													*Comment (provides an indication of how option contributes to outcomes)*	SCORE
		Contribute to a more resource efficient Derbyshire	Protect Natural Resources	Deliver Value for Money Services	Deliver Effective & Efficient services	Reduce carbon impact of WM services	Recover value from residual waste and increase landfill diversion	Manage waste according to the hierarchy	Apply self-sufficiency & proximity principles	Facilitate the management of wider wastes	Achieve / maintain high levels of public satisfaction	Achieve / maintain high levels of engagement and accessibility	Deliver a sustainable WM service	Increase public awareness to affect behaviour change		
Weighting		1	2	3	3	3	2	2	2	1	2	2	2	3		
28	Promotion of auction sites	2	2	0	0	3	2	4	2	0	0	2	4	3	The reuse of items via enhanced use of auction type sites would have the potential for significant resource use and self-sufficiency benefits, it would also have sustainability and waste hierarchy benefits in addition to a lower impact benefit in a range of public and environmental aspects.	24
29	Promotion of take back schemes / partner with retailers / manufacturers e.g. electrical items	1	2	0	0	3	2	2	0	2	0	2	2	3	Wide ranging impacts, but due to the potentially low tonnage reused (this is out of the control of the councils) these may be low impacts. Significant benefits in terms of managing waste up the hierarchy, managing wider wastes and contributing to a sustainable WM service.	19
30	Lobby government and relevant organisations on reuse issues	1	2	0	0	3	2	2	2	1	2	2	2	0	The Lobbying of Government and other organisations on waste reuse issues is likely to deliver unknown impacts. As such an assumption of a general low impact across a range of general environmental impact measures.	19
31	Education, promotion, awareness raising to increase understanding and engagement of reuse (including 'high profile' promotions e.g. celebrities)	2	2	3	0	3	2	4	2	0	4	4	4	6	Raising awareness and promoting the available reuse outlets and options will have a wide range of benefits. The constraints will be on the amount of persons engaged and the amount of accessible reuse capacity.	36
Recycling/Composting																
32A	Trade Waste Recycling at HWRCs	2	2	0	0	3	4	4	0	2	2	2	4	3	Enhancing recycling performance (and removal of waste from treatment / disposal) has significant carbon and resource use benefits, in addition to a range of wider environmental and sustainability benefits.	28
32B	Trade Waste Recycling provided by WCAs	2	2	0	0	6	4	4	0	2	4	2	4	3	Enhancing recycling performance (and removal of waste from treatment / disposal) has significant carbon and resource use benefits, in addition to a range of wider environmental and sustainability benefits. Good customer satisfaction.	33
33	Greater range of materials collected from the kerbside / bring sites / HWRCs	2	4	0	0	6	4	4	0	0	4	4	4	6	Enhancing recycling performance (and removal of waste from treatment / disposal) has significant carbon and resource use benefits, in addition to a range of wider environmental and sustainability benefits. There is strong public acceptability and accessibility benefits from increasing the range of recyclables separated.	38
34	Incentive / reward schemes	1	2	0	0	3	2	4	0	0	4	4	2	6	Encouraging participation through incentives could have significant behaviour change and engagement aspects.	28
35	Reducing contamination in recycling/composting	1	2	0	3	3	2	4	0	0	2	4	4	6	Tighter management of contamination could have benefits in terms of contamination and recyclate quality, and potentially participation. Behaviour change aspects significant.	31
36	Education, promotion, awareness raising to increase understanding and engagement in recycling/composting (including 'high profile' promotions e.g. celebrities)	1	2	0	0	3	4	4	0	0	4	4	4	6	Raising awareness and promoting the available recycling options will have a wide range of benefits. The constraints will be on the amount of persons engaged and the availability of recycling systems.	32

Table iii - Assessment of the Contribution of the Individual Options to the Strategic Outcomes

Ref.	Delivery Options	Strategic Outcome													*Comment (provides an indication of how option contributes to outcomes)*	SCORE
		Contribute to a more resource efficient Derbyshire	Protect Natural Resources	Deliver Value for Money Services	Deliver Effective & Efficient services	Reduce carbon impact of WM services	Recover value from residual waste and increase landfill diversion	Manage waste according to the hierarchy	Apply self-sufficiency & proximity principles	Facilitate the management of wider wastes	Achieve / maintain high levels of public satisfaction	Achieve / maintain high levels of engagement and accessibility	Deliver a sustainable WM service	Increase public awareness to affect behaviour change		
Weighting		1	2	3	3	3	2	2	2	1	2	2	2	3		
37	Developments in co-mingled and source separated kerbside recycling	1	2	0	0	6	4	4	0	2	2	2	2	3	Either recyclate collection / sorting method can yield positive environmental and social impacts.	28
38	Lower frequency of residual waste collection supported by weekly food waste	2	2	0	3	6	4	4	0	0	0	0	4	6	Assume diversion from residual waste into alternatives (recycling, prevention etc) with consequent carbon benefits. Also impacts on behaviour change, a sustainable WM service and protection of natural resources	31
39	Higher frequency of recycling collection	1	2	0	0	6	4	4	0	0	4	4	4	6	Increasing recycling collection frequency has been shown to deliver higher levels of recycling and therefore a range of social and environmental benefits.	35
40	Increased recycling containment capacity	1	2	0	0	6	4	4	0	0	2	2	4	3	As above except the lower frequency / service level interaction is likely to deliver a lower awareness / behaviour change impact.	28
41	Separate food waste collections	2	2	0	0	6	4	4	0	0	0	2	4	6	Separately collecting food waste enables diversion from landfill and a positive use of the resource (materials or energy use or both). This would also have a significant impact in terms of public awareness, carbon impacts and resource efficiency.	30
42	Improved infrastructure (e.g. Mini MRFs/IVC/AD)	2	2	0	0	6	4	4	4	0	0	0	4	0	Enables self-sufficiency for the services where appropriate infrastructure is developed. Enables diversion from landfill and improved carbon performance.	26
43	Bulky waste recycling	1	2	0	0	3	2	4	0	0	2	2	2	3	The potential recycling of bulky waste could have resource efficiency and carbon benefits (although relatively low), but would divert materials from landfill and represent an example of movement up the waste hierarchy for this stream. There may be some public benefits where the public are informed about the recycling activity	21
44	Recycling of fly tips, litter, street sweeping wastes	1	2	0	0	3	2	4	0	0	0	0	2	0	The potential recycling of specific waste streams (e.g. street sweepings) could have resource efficiency and carbon benefits (although relatively low), but would divert materials from landfill and represent an example of movement up the waste hierarchy for this stream.	14
45	Recycling on the Go services – making it easier for people to recycle when they are 'on the go' by installing recycling bins in public places	1	2	0	0	3	2	4	0	0	2	4	4	6	The availability of street litter recycling bins would have public awareness benefits in addition to diversion from landfill and wider environmental benefits.	28
46	In-house recycling at council premises	1	2	0	0	3	2	2	0	1	0	2	2	0	Wide ranging impacts, but due to the low tonnage recycled these are always low impacts. Can improve levels of engagement and accessibility to recycling methods for council workers.	15
47	Free garden waste collections	1	2	0	0	0	4	0	0	0	4	4	2	3	As all Authorities will have a free garden waste service with effect from April 2013 this option has been removed from shortlisting exercises as it is not a future development option that needs to be appraised	-
48	Sustainable procurement (in-house) by councils	1	2	0	0	3	2	2	0	1	0	2	2	0	Specifying the use / procurement of recycled products will have a positive environmental effect in many cases, although the impact may be low.	15

Table iii - Assessment of the Contribution of the Individual Options to the Strategic Outcomes

Ref.	Delivery Options	Strategic Outcome													*Comment (provides an indication of how option contributes to outcomes)*	SCORE
		Contribute to a more resource efficient Derbyshire	Protect Natural Resources	Deliver Value for Money Services	Deliver Effective & Efficient services	Reduce carbon impact of WM services	Recover value from residual waste and increase landfill diversion	Manage waste according to the hierarchy	Apply self-sufficiency & proximity principles	Facilitate the management of wider wastes	Achieve / maintain high levels of public satisfaction	Achieve / maintain high levels of engagement and accessibility	Deliver a sustainable WM service	Increase public awareness to affect behaviour change		
Weighting		1	2	3	3	3	2	2	2	1	2	2	2	3		
49	Nappy and 'absorbent hygiene products' recycling	1	2	0	0	3	2	2	0	1	2	2	2	3	Nappy and AHP recycling is a specialist and emerging area in the UK. It does have some environmental advantages in particular as regards its potential in landfill diversion, and carbon impact.	20
50	Residual waste recycling	2	2	0	0	3	2	2	0	0	0	0	2	0	Extraction of recyclate from residual waste would add to the overall recycling performance of the service and deliver landfill diversion, resource efficiency and carbon benefits	13
51	Lobby government and relevant organisations on recycling/composting issues	1	2	0	0	3	2	2	0	1	2	2	2	0	The Lobbying of Government and other organisations on waste recycling issues is likely to deliver unknown impacts. As such an assumption of a general low impact across a range of general environmental impact measures. Likely to be some public satisfaction benefit.	17
52	Recycling / compost / digestion of grounds maintenance waste	2	2	0	0	3	4	4	2	1	0	0	2	0	Option combined with option 46 - in-house recycling	-

Long List of Options - Assessment of the Individual Options against Deliverability from the Council Perspective

Each option from the 'long list of options' was assessed against deliverability from the council perspective (see Table iv). The deliverability issues considered practicalities of delivery (e.g. change from existing systems, measuring impact of change) cost and political acceptability. A score of 1 - 5 was applied based on potential issues identified with delivering the different options, with a score of 1 having most issues identified with delivery and a score of 5 the least issues

Table iv - Assessment of the Individual Options against Deliverability from the Council Perspective

Ref.	Options	Deliverability - Practicalities of delivery, Political acceptability, costs to implement &/or sustain					Score	Comments (provides an indication of deliverability issues in relation to option)
		Issues with practicalities of delivery, political acceptability and high costs to implement &/or sustain			2 of reasons below applicable: Relatively easy to deliver, politically acceptable & low costs to implement &/or sustain	All reasons below applicable: Relatively easy to deliver, politically acceptable & low costs to implement &/or sustain		
		Issues with all 3 of above	Issues with 2 of above	Issues with 1 of above				
		1	2	3	4	5		
Waste Prevention								
1	Reduce residual bin size / capacity			3			3	Has potential to impact on customer satisfaction as there will be some level of complaint that there isn't sufficient capacity for residual waste - which may have political acceptability issues. Capital costs associated with new bins (though old bins could potentially be utilised if appropriate for other waste services e.g. green waste/recycling), assume replacement of containers as part of on-going replacement schedule (rather than new roll -out), and new housing developments to be given the smaller containers as standard. May require enforcement time etc. at start to deal with excess waste and potential issues with fly-tipping. Many of these issues are likely to occur in initial transition period and not continue once system is embedded in.
2	4 weekly collection		2				2	This will have cost savings compared to implementing reduced residual bin size, due to reduced frequency of collection and no requirement for new containers. Customer satisfaction and politically acceptability likely to be lower due to people perceiving this as reduction in service delivery. Exacerbation of experience from AWC. May require enforcement time etc. at start to deal with excess waste and potential issues with fly-tipping. Issue with deliverability / sufficient capacity, nuisance / pest and potential health concerns including contractual implications.
3	Charge for garden waste		2				2	Where a non-chargeable service is in operation, introducing charged service (on an “opt in” basis) likely to have customer satisfaction and political acceptability issues. Can also have large amount of time and associated cost with administering scheme. Can reduce costs of delivering garden waste scheme through revenue received from householders subscribing. Where organics comingled, this would prevent the collection of food waste also (food waste cannot be a charged collection, under the EPA 1990).
4	Stop kerbside collection of garden waste		2				2	Where a garden waste service is in operation, stopping kerbside collection likely to meet with opposition from householders and politically. Can help to reduce costs of delivering waste services at kerbside but proportion of costs may transfer to residual waste stream or HWRCs. May require enforcement time etc. at start to deal with potential issues with fly-tipping.
5	Effective side waste policy – to ensure additional waste that cannot fit into the bin provided is not collected.				4		4	Has potential to impact on customer satisfaction as people may complain they don't have sufficient capacity for residual waste - which may have political acceptability issues. May require engagement and enforcement time etc. at start to deal with excess waste and potential issues with fly-tipping. Many of these issues are likely to occur in initial transition period and not continue once system is embedded in. Overall this is a practice that is delivered by all authorities anyway, hence a 4.
6	Closure of Household Waste Recycling Centres (HWRCs)		2				2	Closing HWRCs likely to meet with opposition from householders and politically. Has potential to increase fly tipping and quantity of material collected at kerbside. Not an option available for Derby City which is required to provide a service and only has one HWRC.

Table iv - Assessment of the Individual Options against Deliverability from the Council Perspective

Ref.	Options	Deliverability - Practicalities of delivery, Political acceptability, costs to implement &/or sustain					Score	Comments (provides an indication of deliverability issues in relation to option)
		Issues with practicalities of delivery, political acceptability and high costs to implement &/or sustain			2 of reasons below applicable: Relatively easy to deliver, politically acceptable & low costs to implement &/or sustain	All reasons below applicable: Relatively easy to deliver, politically acceptable & low costs to implement &/or sustain		
		Issues with all 3 of above	Issues with 2 of above	Issues with 1 of above				
		1	2	3	4	5		
7	Home composting including home digestion (e.g. wormeries)			3			3	In line with waste hierarchy and relatively easy to implement/promote. Relatively low cost unless home composters are subsidised by the Councils. Unlikely to see significant impact on waste arisings unless accompanied by other measure such as no garden waste collection as large number of people likely to be already home composting or using garden waste service, additional impact will be more challenging to deliver.
8	Householder incentives for waste reduction		2				2	Difficult & potentially costly to implement and sustain. Difficult to measure without change to infrastructure such as wheelie bin chips/on board weight. May have issues regarding politically acceptable and 'human rights.'
9	In house waste prevention by councils (e.g. paperless office)				4		4	Could help with behaviour change of council officers and raising awareness of preventing waste. Unlikely to have significant impact on LACW across Derbyshire as a whole. May be difficult to monitor/sustain across all council buildings.
10	Qualitative waste prevention (e.g. hazardous waste reduction)			3			3	Promotional aspect e.g. Changing people's buying habits to buy only amount needed so none or minimal hazardous waste materials are left over, identifying and using fewer hazardous products. Costs associated with promotional campaign.
11	Promote reusable nappies			3			3	Promoting reusable nappies will help to reduce arisings and protection of natural resources. Potentially difficult to sustain without on-going investment and promotion, difficult to engage widely, tends to be limited to small minority of parents that will take up the initiative.
12	Love Food, Hate Waste promotional campaign to reduce food waste			3			3	Potential to have waste prevention effect and reduce arisings due to householder benefits. May be difficult to maintain behaviour change without on-going promotion, notable promotion costs with the campaign.
13	Education, promotion, awareness raising to increase public understanding and engagement in waste prevention (including 'high profile' promotions e.g. celebrities)			3			3	Driving behaviour change rather than actual operational changes e.g. frequency of collection/size of bins which will affect performance in a 'sharp hit'. Likely to be politically acceptable but level of engagement and whether activities can be sustained likely to be determined by budget and resources available.
14	Enforcement at HWRCs			3			3	Potential to reduce LACW arisings as will deter abuse by traders etc. Depending on measures implemented could be relatively costly in terms of levels of resource and investment in measures e.g. ANPR. May have issues regarding political acceptability.
15	Promotion of SMART (Save Money and Reduce Trash) Shopping			3			3	Driving behaviour change rather than actual operational changes e.g. frequency of collection/size of bins which will affect performance in a 'sharp hit'. Likely to be politically acceptable but level of engagement and whether activities can be sustained likely to be determined by budget available. Costs in promotion (similar to LFHW etc.)
16	Junk mail promotional campaign				4		4	Driving behaviour change in terms of encouraging people to sign up to stop junk mail. Costs in promotion (similar to LFHW etc.)
17	Promoting the prevention of other (non-household wastes e.g. commercial or industrial) wastes		2				2	Deliverability in terms of target audience i.e. engagement with businesses and potential uptake due to resource constraints and technical knowledge to identify waste prevention activities. Could be some political issues (e.g. at HWRCs)
18	Lobby government and relevant organisations on waste prevention issues				4		4	Potential issues with quantifying impact at LA level. LAs have limited influence.
19	Taxing of carrier bags		2				2	Potential issues with practicalities of delivery and political issues. LAs have no direct influence/control on delivering this. Potentially undeliverable in current legislative framework.

Table iv - Assessment of the Individual Options against Deliverability from the Council Perspective

Ref.	Options	Deliverability - Practicalities of delivery, Political acceptability, costs to implement &/or sustain					Score	Comments (provides an indication of deliverability issues in relation to option)
		Issues with practicalities of delivery, political acceptability and high costs to implement &/or sustain			2 of reasons below applicable: Relatively easy to deliver, politically acceptable & low costs to implement &/or sustain	All reasons below applicable: Relatively easy to deliver, politically acceptable & low costs to implement &/or sustain		
		Issues with all 3 of above	Issues with 2 of above	Issues with 1 of above				
		1	2	3	4	5		
Reuse								
20	Partnering with and promoting / incentivising third sector activity on reuse		2				2	Potential issues with developing partnership for reuse. Helps to meet vision and outcomes in terms of moving waste up hierarchy and managing wider waste. May be limitations in terms of existing contractual obligations, cost or capacity issues.
21	Reuse at HWRCs including WEEE and other items			3			3	Potential issues with developing/finding outlets for reuse. Could link to partnering with 3rd sector. Helps to meet vision and outcomes in terms of moving waste up hierarchy and managing wider waste. Some practical / auditing issues.
22	Bulky waste reuse			3			3	Potential issues with developing/finding outlets for reuse. Could link to partnering with 3rd sector. Helps to meet vision and outcomes in terms of moving waste up hierarchy, some deliverability issues over vehicle compaction and reuse. This could impact on collection costs also. There are potential challenges of partnering with a third party in terms of logistics (i.e. which items are selected for reuse and which rejected and the consequent arrangements in terms of waste management planning).
23	Promotion of Freecycle / Freegle				4		4	Potential issues with practicalities of delivery due to knowledge of websites and universal access to internet, ability to target appropriate audiences with relevant messages, quantifying impact at LA level
24	Swap Shops / community events		2				2	Potential issues with practicalities of delivery (e.g. insurance and disposal aspects of unwanted goods). Would have resource and budget implications in terms of supporting / organising the events.
25	Promoting reuse of other wastes e.g.paint		2				2	Potential issues with developing/finding outlets for reuse, often market driven rather than public sector driven. Could link to partnering with 3rd sector. Helps to meet vision and outcomes in terms of moving waste up hierarchy
26	In-house reuse by councils			3			3	Could help with behaviour change of council officers and raising awareness of preventing waste. Unlikely to have significant impact on LACW across Derbyshire as a whole. May be difficult to monitor/sustain across all council buildings.
27	Promote remanufacture		2				2	Potential issues with practicalities of delivery, quantifying impact at LA level, destination of remanufacture and associated political issues.
28	Promote auction sites				4		4	Potential issues with practicalities of delivery due to knowledge of websites and universal access to internet, ability to target appropriate audiences with relevant messages, quantifying impact at LA level
29	Promote take back schemes / partner with retailers / manufacturers e.g. WEEE			3			3	Potential issues with practicalities of delivery, quantifying impact at LA level
30	Lobby government and relevant organisations on reuse issues				4		4	Potential issues with quantifying impact at LA level
31	Education, promotion, awareness raising to increase understanding and engagement in reuse (including 'high profile' promotions e.g. celebrities)			3			3	Driving behaviour change rather than actual operational changes e.g. frequency of collection/size of bins which will affect performance in a 'sharp hit'. Likely to be politically acceptable but level of engagement and whether activities can be sustained likely to be determined by budget available

Table iv - Assessment of the Individual Options against Deliverability from the Council Perspective

Ref.	Options	Deliverability - Practicalities of delivery, Political acceptability, costs to implement &/or sustain					Score	Comments (provides an indication of deliverability issues in relation to option)
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		Issues with all 3 of above	Issues with 2 of above	Issues with 1 of above				
		1	2	3	4	5		
Recycling/Composting								
32A	Trade waste recycling at HWRCs		2				2	Some concern over H&S with trade waste & household on same site. Some cost and political and technical deliverability issues (e.g. lack of weighbridges).
32B	Trade waste recycling by WCAs			3			3	Potential issue is cost and impact of extra vehicles on road if separate vehicle operate for trade recycling. Delivering a sustained service may be difficult in the light of private sector competition.
33	Greater range of materials collected from the kerbside / bring sites / HWRC			3			3	Potential issues are cost and risk apportionment in terms of recyclate markets, additional material may impact on capacity of existing vehicles and potential need for of extra vehicles on road. May be limitations in terms of existing contractual obligations
34	Incentive / reward schemes			3			3	Difficult & potentially costly to implement and sustain. Difficult to measure without change. May have issues regarding politically acceptable and 'human rights.'
35	Reducing contamination in recycling/composting		2				2	Enforcement may help to support other initiative such as no side waste, contamination issues with recycling etc. Cost with additional resource associated with enforcement. Political issues. Some members of the public will favour greater enforcement.
36	Education, promotion, awareness raising to increase understanding and engagement in recycling/composting (including 'high profile' promotions e.g. celebrities)			3			3	Driving behaviour change rather than actual operational changes e.g. frequency of collection/size of bins which will affect performance in a 'sharp hit'. Likely to be politically acceptable but level of engagement and whether activities can be sustained likely to be determined by budget available (can be costly £1 - £3 / household cited by WRAP).
37	Developments in co-mingled and source separated kerbside recycling		2				2	Existing contractual obligations need to be considered and contractual / capital costs for changing systems. Need to observe Government Policy - Maintain a watching brief.
38	Lower frequency of residual waste collection supported by weekly food waste		2				2	Has potential to impact on customer satisfaction as people may complain they don't have sufficient capacity for residual waste - which may have political acceptability issues. Capital costs associated with new bins (though old bins could potentially be utilised if appropriate for other waste services e.g. green waste/recycling). May require enforcement time etc. at start to deal with excess waste and potential issues with fly-tipping. Many of these issues are likely to occur in initial transition period and not continue once system is embedded in. Issue with deliverability / sufficient capacity health concerns?
39	Higher frequency of recycling collection			3			3	Likely to have increased operational costs associated with increased frequency unlikely to be all offset from cost associated with diversion from landfill and income from sale of material.
40	Increased recycling containment capacity				4		4	Costs associated with new or additional bins. May not have full effect unless supported by reduction in size and/or frequency of residual waste collection.
41	Separate food waste collections			3			3	Likely to have increased operational costs associated with caddies and separate vehicles or adapting existing fleet to accommodate food waste. May have political issues associated with householder perception of 'smelly waste'
42	Improved infrastructure (e.g. Mini MRFs/IVC/AD)		2				2	Potential cost implications and planning requirements for appropriate facilities and associated potential political issues.
43	Bulky waste recycling			3			3	Potential issues with developing/finding outlets for reuse. Could link to partnering with 3rd sector. Helps to meet vision and outcomes in terms of moving waste up hierarchy, potential cost issues.
44	Recycling of fly tips, litter, street sweeping wastes			3			3	Subject to destination for material, should be relatively easy to deliver and meet vision/objectives of moving waste up hierarchy - potential issue with quality of material. Potential regulatory / deliverability issues.

Table iv - Assessment of the Individual Options against Deliverability from the Council Perspective

Ref.	Options	Deliverability - Practicalities of delivery, Political acceptability, costs to implement &/or sustain					Score	Comments (provides an indication of deliverability issues in relation to option)
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		Issues with all 3 of above	Issues with 2 of above	Issues with 1 of above				
		1	2	3	4	5		
45	Recycling on the Go services		2				2	Practicalities of delivery including operational difficulties (e.g. contamination) and cost of collections
46	In-house recycling by councils			3			3	Could help with behaviour change of council officers and raising awareness of preventing waste. Unlikely to have significant impact on LACW across Derbyshire as a whole. May be difficult to monitor/sustain across all council buildings. Grounds maintenance composting already delivered in many cases.
47	Free garden waste collections						-	As all Authorities will have a free garden waste service with effect from April 2013 this option has been removed from shortlisting exercises as it is not a future development option that needs to be appraised. (NOTE: Derby City Council has been reviewing their waste service. A Cabinet report on the proposals to move to a charged garden waste service is to be considered in June 2013 and at that point the proposals will be finalised.)
48	Sustainable procurement (in-house) by councils			3				Could help with behaviour change of council officers and raising awareness of resource efficiency etc. in lines with strategy vision. Unlikely to have significant impact on LACW across Derbyshire as a whole. May be difficult to monitor/sustain across all councils, and could be cost issues that impact on deliverability in the light of austerity measures.
49	Nappy and 'absorbent hygiene products' recycling		2				2	Potential issues with practicality of delivery and costs along with customer acceptability in terms of access to service, ease of use, potential health concerns
50	Residual waste recycling		2				2	Helps to meet vision and strategy objectives. Potentially issues with practicalities associated with delivery and costs of implementing.
51	Lobby government and relevant organisations on recycling issues				4		4	Potential issues quantifying impact at LA level
52	Recycling / compost / digestion of grounds maintenance waste						-	Option combined with option 46 - in-house recycling

Appendix E Waste Flow Modelling Assumptions & Performance

Waste Prevention Options

Option 1 – Reduced residual bin size/capacity

- Derbyshire & Derby City 2010/11 Local Authority (LA) data was taken from WasteDataFlow (WDF), in order to calculate the yield (kg/hh/yr for different waste streams) e.g. residual waste, dry recycling.

2010/11 - data from WDF

	Dwelling Stock Q2 WDF	Q23 WDF - Regular household Collection	Kg/hh/yr residual	Dry Recycling	Kg/hh/yr	Kerbside Organic	Kg/hh/yr	Bring	Kg/hh/yr	TOTAL
Amber Valley	54,640	27,621	505.50	8,267.04	150.56	1,562.49	28.60	1,693.96	31.00	715.66
Bolsover	34,310	23,079	672.67	2,501.92	72.54	6,377.52	185.88	434.61	12.67	943.76
Chesterfield	48,470	22,717	468.68	4,842.48	99.82	9,809.91	224.80	1,790.88	36.95	830.25
Derbyshire Dales	32,830	15,497	472.05	2,943.41	89.28	7,541.45	298.98	2,156.47	65.69	925.99
Erewash	50,170	23,466	467.72	9,878.70	195.93	9,357.46	186.52	462.72	9.22	859.39
High Peak	40,590	16,933	417.18	4,653.54	114.25	7,694.84	187.91	1,682.45	41.45	760.79
North East Derbyshire	44,140	20,849	472.34	4,780.12	108.07	10,927.06	248.64	939.54	21.29	850.34
South Derbyshire	39,560	17,766	449.10	4,340.47	108.70	12,595.26	314.88	1,999.26	50.54	923.22
Derby City	106,500	47,351	444.61	14,558.00	148.67	23,865.00	268.18	1,522.00	14.29	875.75
Average of total households/arisings	451,210	215,279	477.12	56,765.68	125.81	89,730.99	241.84	12,681.89	28.11	872.87
Average of individual WCAs			485.54		120.87		216.04		31.45	853.91
Without Amber Valley (due to charged garden waste)										
Average of total households/arisings			473		122		279		28	902
Average of individual WCAs			483		117		239		32	871

- Derbyshire & Derby City data from WDF was compared with information for LAs using 180 litre wheeled bins for residual waste (reduced residual bin size from 240 litre wheeled bin) on a fortnightly basis from the WRAP LA portal http://laportal.wrap.org.uk/

Fortnightly Residual Wheeled Bin Capacity		Kerbside Residual kg/hh/yr	Kerbside Dry kg/hh/yr	Kerbside Organic kg/hh/yr	Bring kg/hh/yr	Total Kerbside & bring kg/hh/yr	Residual as a % of total kerbside yield
180 litre wheeled bin	Average	371	188	199	17	775	48%
	Min	262	108	72	2	552	36%
	Max	511	294	318	62	968	57%
	25th Percentile	332	149	147	11	689	44%
	50th Percentile	360	171	186	15	788	49%
	75th Percentile	390	226	253	20	869	55%
Derbyshire	240 litre wheeled bin	478	120	259	30	887	54%

- Based on a comparison of Derbyshire average residual yield of 478 kg/household/year with 50th percentile point residual yield of 360 kg/household/year for LAs using 180 litre wheeled bin. There would be a potential additional 118 kg/household/year of residual waste to distribute from the baseline (assuming there was a separate food waste collection).

Brief Description of residual containment	Tonnage to distribute from residual from Baseline	Waste Prevention	Additional Food Waste Tonnage if separate collection	Dry Recycling
180 litre wheeled bin fortnightly	53,456.58	3,767	32,088	17,601
Additional yield to redistribute based on comparison with 50th percentile of 180l (kg/hh/yr)	118	8	71.12	39

- However, the modelling in Option 1 assumed:
  - No change to existing recycling/organic collections
  - LAs provide 180 litre wheeled bin for residual waste
  - Only 68 kg/household/year of residual waste would be distributed from the baseline – i.e. a reduction of 50 kg/household/year from the 118 kg/household/year calculated above, as it cannot be assumed there would be a separate food waste collection

Brief Description of residual containment	Tonnage to distribute from residual from Baseline	Waste Prevention	Additional Food Waste Tonnage	Dry Recycling	Garden/mixed food & garden
180 litre wheeled bin fortnightly	30,896	3,767	-	17,601	9,528
Approximate additional yield to redistribute (kg/hh/yr)	68	8	-	39	26

Option 5 – Effective side waste policy

- Seek to engage to change behaviour to reduce side waste where practicable
- Based on 2.5 waste compliance officers shared across all councils
- Assume 50% of side waste is recycled (250 tonnes), 35% taken to HWRCs (175 tonnes), 15% fly tipped (75 tonnes)

Option 7 – Home composting promotional campaign including home digestion

- Assumptions based on sales figures of home composters for the DWP since 2005
- Assume diversion rate of 150 kg per compost bin

- Assume average 180 tonnes of waste is prevented through increased promotion of home composting, increased sales in 2014 & 2015 to 750 composters/year and lapse rate of 3% instead of 4%.

Option 9 – In-house waste prevention by councils

- Seeking to improve in-house prevention / paperless office practices etc.
- Assumes one officer per district/borough council contributing 4 days / year
- Tonnage diverted insignificant in comparison to other waste prevention initiatives

Option 12 – Love Food, Hate Waste promotional campaign to reduce food waste

- A Committed Food Waste Reducers (CFWR) will divert 78kg per household per year (Source: WRAP).
- By engaging or converting an additional 10% (45,000) of households (estimated through the range of promotional campaigns conducted since 2009) 3,500 tonnes of diversion from landfill per annum have been assumed.

Option 13 – Education, promotion, awareness raising to increase public understanding and engagement of waste prevention

- 3,500 tonnes reduction in residual waste - not as targeted as LFHW

Option 15 – Promotion of SMART (Save Money and Reducing Trash) shopping

- Assume 750 tonnes diverted from landfill, through initiatives such as reusable bags, buying products with less packaging

Option 16 – Junk Mail promotional campaign

- Data obtained on number of Derbyshire households subscribed to Mailing Preference service (MPS)
- Assume that 50% (59,500) of households who had subscribed to MPS but lapsed reinstate MPS, diverting 4 kg/household/year = 2,400 tonnes/year.

Option 18 – Lobby Government & relevant organisations on waste prevention

- To lobby on behalf of the Partnership it has been assumed 1 Officer spends 1 day / week on consultation responses / lobbying activity
- All lobbying options have uncertain outcomes

Reuse Options

Option 20 – Partnering with and promoting/incentivising third sector activity on reuse

- The option of partnering with the third sector is a delivery mechanism rather than an option in its own right, could apply to Bulky Waste Reuse at WCAs or HWRCs
- Any costs covered by landfill diversion savings.

Option 21 – Reuse at HWRCs including Waste Electronic and Electrical Equipment (WEEE) and other items

- MEL 2011 Derbyshire HWRC Composition Residual Report, estimated:
  - Furniture is 17.28% of residual stream at HWRCs
  - WEEE is 1.76% of residual stream at HWRCs
- Derbyshire & Derby City HWRC waste data was taken from WDF in order to look at the current recycling/reuse levels for WEEE and furniture at HWRCs and to calculate the amount of furniture and WEEE in the residual stream
- Based on the waste composition data, data suggests there is around 4,050 tonnes of furniture in the residual stream.

2011/12	WDF – HWRC Data (tonnes)						
	Total HWRC Input	WEEE - recycled	Bric a brac reused	Gas Cylinders	Total WEEE/bric a brac reused/ recycled	Residual	Furniture in residual stream
Derbyshire CC	60,723	3,930	742	32	4,705	18,253	3,154
Derby City	18,132	1,264	104	11	1,380	5,185	896
Total	**78,855**	**5194.96**	**847**	**43**	**6,084**	**23,438**	4,050

- Based on the data in the table below an estimated 1,230 tonnes of furniture currently in the residual stream at HWRCs could be reused.
- Ref. WRAP - Composition and reuse potential of household bulky waste in the UK , MPD006-002, August 2012

2011/12	Furniture Assumptions (tonnes)				
	Furniture in residual stream	Furniture 50% reusable with slight repair	Assume Shop & workshop @ 5 HWRCs, 50% furniture reusable	Off site sales @ 5 HWRC, 14% furniture reusable	Additional material which could be reused
Derbyshire CC	3,154	1,577	789	221	1,009
Derby City	896	448	224		224
Total	4,050	2,025	**1,013**	**221**	**1,233**

- Assume further 100 tonnes of WEEE recovered from residual waste
- Assume an additional 1,333 tonnes of WEEE and furniture that is in residual waste at HWRCs is suitable for reuse

Option 22 – Bulky waste reuse

- Derbyshire LAs & Derby City bulky waste data was taken from WDF in order to calculate the additional tonnage of bulky waste which could be reused.
- Good Practice - assume 40% reusable based on 24% reusable & 16% reusable with slight repair (WRAP - Composition and re-use potential of household bulky waste in the UK, MPD006-002, August 2012)
- Tonnage assumed to be diverted from residual waste for reuse is 1,600 tonnes

	Total Bulky waste, WDF - 2011/12	Currently reused	40 % reusable	Additional bulky material reusable
Amber Valley	795	-	318	318
Bolsover	431	-	172	172
Chesterfield	409	-	164	164
Derbyshire Dales	424	-	170	170
Erewash	201	-	80	80
High Peak	82	-	33	33
North East Derbyshire	275	-	110	110
South Derbyshire	130	40	52	12
Derby City	1,379	-	552	552
Total	**4,126**	**40**	**1,650**	**1,611**

Option 23 – Promotion of Freecycle / Freegle

- 1 week of items advertised on Freecycle/Freegle pages across Derbyshire were reviewed.
- Average weights were assigned to items advertised on Freecycle/Freegle pages over the 1 week period based on Furniture Reuse Network (FRN) 2009 average weights of different items.
- Based upon the weekly data an estimated 150 tonnes of material is assumed to be advertised on Freecycle/Freegle per annum
- Assumed doubling of advertised items and therefore tonnage through active promotion of freecycle/freegle i.e. an additional 150 tonnes of material.
- Assumed 2/3 of additional material reused = 100 tonnes of additional material reused through active promotion of freecycle/freegle

Option 28 – Promotion of auction sites

- The same assumptions of 100 tonnes diverted from landfill as for the Freegle / Freecycle option (Option 23) applied
- This may be a conservative assumption, however data at a local level is not available

Option 30 – Lobby Government and relevant organisations on reuse

- To lobby on behalf of the Partnership it has been assumed 1 Officer spends 1 day / week on consultation responses / lobbying activity
- All lobbying options have uncertain outcomes

Option 31 – Education, promotion, awareness raising to increase understanding and engagement of reuse

- 500 tonne reduction in residual waste through reuse campaign, based on combination of approaches e.g. freecycle, auction sites etc.

Recycling/Composting Options

Option 32b –Trade Waste Recycling by WCAs

- Derbyshire LAs & Derby City trade waste data was taken from WDF in order to calculate the additional tonnage of trade waste which could be recycled
- A 20% recycling rate was assumed across all LAs for trade waste, resulting in an additional 3,000 tonnes/annum of trade waste recycled

2011/12 WDF data	Total Trade Waste	Tonnage assumed recycled based on 20% recycling rate	Currently recycled	Additional material recycled
Amber Valley	2,790	558	120	438
Bolsover	1,621	324	-	324
Chesterfield	3,543	709	-	709
Derbyshire Dales	2,257	451	-	451
Erewash	1,996	399	1,586	-1,187
High Peak	4,860	972	-	972
North East Derbyshire	2,416	483	2	481
South Derbyshire	1,360	272	31	241
Derby City	6,776	1,355	776	579
Total	**27,619**	**5,524**	**2,515**	**3,009**

Option 33 – Greater range of material collected from the kerbside/ bring sites/ HWRCs

- Assumed additional 2,600 tonnes of recycling from kerbside and 5,250 tonnes recycling from HWRCs from collecting a greater range of material from the kerbside/HWRCs
- **HWRC** - Additional diversion tonnes/year from collecting a greater range of material was calculated based on following:
  - Carpet - based on 6.4kg/household/year - 2,888 tonnes
  - Mobile phones - (based on 0.233% of input based on Waterswallows HWRC where mobile phones are already collected) - 171 tonnes
  - Tetrapak - (based on 0.0246% input based on sites already collecting tetrapak) - 13 tonnes
  - Dense plastic non packaging - (10.5% in residual waste at HWRCs - assume 70% capture) - 1,723 tonnes

- Mattress recycling - (2.88% in residual waste at HWRCs - assume 70% capture) -473 tonnes
- **Total additional Tonnes for recycling @ HWRC 5,266**

- **Kerbside -** Additional diversion tonnes/year

Based on comparing with LAs with similar demographics and collecting material in WRAP LA portal http://laportal.wrap.org.uk/

Authority	Mixed Plastic (kg/hh/yr)	Card (kg/hh/yr)	Tetrapak (kg/hh/yr)	Total increase kg/hh/yr	Households with dry recycling	Additional Tonnage of material
Amber Valley	11.6		1.245	12.845	54,910	705
Bolsover			1.245	1.245	34,490	43
Chesterfield			1.245	1.245	48,510	60
Derbyshire Dales				0	32,970	-
Erewash			1.245	1.245	50,420	63
High Peak			1.245	1.245	40,730	51
North East Derbyshire			1.245	1.245	44,230	55
South Derbyshire	11.5	27.2	1.245	39.945	39,930	1,595
Derby City				0	97,920	-
Total						**2,572**

Option 34 – Incentive reward schemes

- Wide range of performance case studies of varying quality, difficult to quantify impact of incentive rewards on recycling performance

Option 35 – Reducing contamination in recycling/composting

- Assume 2% (750 tonnes) drop in MRF reject rates for co-mingled collection through tighter management of contaminated bins

Option 36 – Education, promotion, awareness raising to increase understanding and engagement in recycling/composting

- Assume 1% (5,000 tonne) increase in recycling rate as a result of extensive communications.

Option 38a – Lower frequency of residual waste collection supported by weekly food waste

- See Option 1 - Reduced Residual Bin - for base data
- As no authorities in the UK currently operate three or four weekly collection, in order to look at the impact of these options, the equivalent weekly capacity available in the residual bin was used as a basis for calculating assumptions

Wheeled bin size (litres)	Frequency of collection	Equivalent weekly capacity (litre)	% of weekly capacity compared to baseline 240 litre bin fortnightly	% of weekly capacity compared to 180 litre bin fortnightly
240	Fortnightly	120		
180	Fortnightly	90	75%	
240	3 weekly	80	67%	89%
240	4 weekly	60	50%	67%

- Residual waste reduction of 178 kg/household/year (calculated based on 67% of weekly capacity compared to 180 litre bin fortnightly of 118 kg/household/year – see option 1)
- Assumed Number of Households 451,210
- Additional tonnage of **80,185 tonnes** to distribute from residual waste if 240 litre 4 weekly (calculated based on 178 kg/household/year x 451,210 households)

Brief Description of residual containment	**Tonnage to distribute from residual from Baseline**	**Waste Prevention**	**Additional Food Waste Tonnage**	**Dry Recycling**	**Garden**	**To HWRC residual waste (was in kerbside bin until 4 weekly collection)**
240 litre 4 weekly	80,185	9,024	32,088	23,427	No change	15,645
Additional yield to redistribute (kg/hh/yr)	178	20	71	53		

Option 38b – Lower frequency of residual waste collection with mixed food and garden waste

- Assumptions as per Option 38a but assumed 50 kg/household/year less diversion from residual waste through not having separate food waste collection i.e. 128 kg/household/year with mixed food and garden waste collection as opposed to 178 kg/ household/year with a separate food waste collection

Brief Description of residual containment	**Tonnage to distribute from residual from Baseline**	**Waste Prevention**	**Additional Food Waste Tonnage if separate collection**	**Dry Recycling**	**Garden**	**To HWRC residual waste (was in kerbside bin until 4 weekly collection)**
240 litre 4 weekly	57,624	9,024		23,427	9,528	15,645
Additional yield to redistribute (kg/hh/yr)	128	30		53	37	

Option 39 – Higher frequency of recycling collection

- Fortnightly recycling deemed sufficient frequency for co-mingled recycling. Assume weekly collection of recycling for authorities collecting kerbside sort in 2011/12.
- WRAP analysis of kerbside dry recycling performance in the UK 2008/09 - Regression analysis by WRAP of 2008/09 performance – for each litre of equivalent weekly containment capacity add 0.22 kg/household/yr to the yield of dry recycling.
- **Total additional Tonnes for recycling of 6,123**

	Dry Tonnes	Yield (Kg/hh/yr)	Approximate capacity of existing containment	Additional Yield (kg/hh/yr)	Additional dry tonnage/yr
Amber Valley	8,267.04	150.56	250	55	3,020
Derbyshire Dales	2,943.41	89.28	125	27.5	907
South Derbyshire	4,340.47	108.70	250	55	2,196
				Additional tonnage	**6,123**

Option 41 – Separate food waste collection

- WRAP Food Waste Ready Reckoner was used to calculate the food waste yield by local authority area based on the index of deprivation. Additional food waste estimated at 32,000 tonnes.

	Households	Assumed Food Waste kg/hh/yr per household served	Estimated Food Waste Tonnes/yr	Estimate food Waste already Collected in mixed food and garden	Net additional food waste with separate food waste collection
Amber Valley	54,910	83.89	4,606		4,606
Bolsover	34,490	70.50	2,431		2,431
Chesterfield	48,510	74.46	3,612		3,612
Derbyshire Dales	32,970	90.96	2,999	658	2,341
Erewash	50,420	84.16	4,243		4,243
High Peak	40,730	87.46	3,562	718	2,844
North East Derbyshire	44,230	84.92	3,756		3,756
South Derbyshire	39,930	89.22	3,562	1,059	2,504
Derby City	106,900	73.35	7,841	2,091	5,751
Total	**453,090**		**36,614**	**4,526**	**32,088**

Option 43 – Bulky waste recycling

- Assume 1,550 tonnes of bulky material recycled based on good practice examples - 44% of bulky waste recyclable

2011/12 WDF Data	Total Bulky	Currently recycled	% recyclable	Additional bulky material recycled
Amber Valley	795	25	349.18	324
Bolsover	431	8	189	181
Chesterfield	409	24	180	156
Derbyshire Dales	424	30	186	156
Erewash	201	19	88	69
High Peak	82	15	36	21
North East Derbyshire	275	35	121	86
South Derbyshire	130	6	57	51
Derby City	1,379	109	606	497
Total	**4,126**	**271**	**1,812**	**1,541**

Option 51 – Lobby Government & relevant organisations on recycling/composting

- To lobby on behalf of Partnership it has been assumed 1 Officer spends 1 day / week on consultation responses / lobbying activity
- All lobbying options have uncertain outcomes

Appendix F WRATE Modelling

WRATE results

Percentage change	Recycling	Baseline	0.50%	1%	5%		Sc 1	SC5	SC21	SC22	Sc32b	Sc33	Sc 38a	Sc 38b	SC39	SC 41 IVC	SC 41AD	SC43
Climate change: GWP 100a	kg CO_2-Eq	-32,700,251	-33,295,034	-33,877,535	-38,620,207		-59,233,717	-33,038,723	-33,339,776	-33,209,042	-39,617,444	-41,236,498	-73,598,919	-68,240,392	-35,675,655	-40,230,248	-47,426,233	-33,186,930
Acidification potential: average European	kg SO_2-Eq	-404,507	-406,580	-408,580	-425,030		-504,620	-405,937	-404,533	-404,528	-438,787	-443,031	-538,872	-536,962	-414,200	-407,237	-350,690	-404,527
Eutrophication potential: generic	kg PO4-Eq	54,160	53,738	53,323	49,957		40,544	54,040	53,962	54,003	51,265	49,395	24,462	34,795	51,843	39,619	47,984	54,009
Freshwater aquatic ecotoxicity: FAETP infinite	kg 1,4-DCB-Eq	-18,212,024	-18,298,412	-18,380,245	-19,057,446		-21,635,371	-18,261,608	-18,212,689	-18,212,553	-19,736,109	-19,866,315	-22,579,714	-22,628,683	-18,524,117	-18,142,960	-17,552,243	-18,212,530
Human toxicity: HTP infinite	kg 1,4-DCB-Eq	-214,720,580	-215,706,895	-216,641,429	-224,371,671		-255,629,877	-215,319,696	-214,708,819	-214,711,223	-232,036,709	-233,434,739	-266,623,995	-268,312,521	-218,308,079	-212,345,124	-216,261,571	-214,711,630
Resources: depletion of abiotic resources	kg antimony-Eq	-1,056,862	-1,059,925	-1,062,896	-1,087,339		-1,234,367	-1,059,554	-1,054,731	-1,055,167	-1,112,729	-1,118,214	-1,264,545	-1,283,060	-1,071,854	-1,030,753	-1,108,248	-1,055,240

WRATE results for resource efficiency – European person equivalent

Normalised Results		% change in recycling rate					Scenario											
		Baseline	0.50%	1%	5%		Sc 1	SC5	Sc21	Sc 22	Sc32b	Sc33	Sc 38a	Sc 38b	SC39	SC 41 IVC	SC 41AD	Sc43
Eur.Person.Eq	Resources: depletion of abiotic resources	-27,350	-27,429	-27,506	-28,139		-31,943	-27,420	-27,295	-27,306	-28,796	-28,938	-32,724	-33,204	-27,738	-26,674	-28,680	-27,308
Difference from Baseline							-4,593	-70	55	44	-1,446	-1,588	-5,374	-5,854	-388	676	-1,330	42

Appendix G Financial Assessment

The financial assessment is based on the estimated annual operational cost of implementing the change and incorporating any saving made through waste reduction or avoided landfill disposal.

2014/15	Baseline
Collected Municipal Solid Waste (tonnes)	501,519
Recycling/Composting (tonnes)	214,607
Residual (tonnes)	286,911
Landfill (tonnes)	252,559
Treatment (tonnes)	34,352
Number of Households	453,090

Waste Prevention

Ref	Delivery Option	Cost Figure denotes potential cost saving Key Assumption
13	**Education, promotion, awareness raising to increase understanding and engagement in waste prevention (including 'high profile' promotions e.g. celebrities)**	3,500 tonnes reduction in residual waste- not as targeted as LFHW
	Cost of campaign per household	£0.50
	Number of households targeted	453,090
	Campaign costs	**£226,545**
	Avoided landfill tonnes	3,500
	Landfill cost/tonne	-£85.00
	Avoided landfill disposal cost	**-£297,500**
	Total Cost	**-£70,955**
12	**Development of campaign to promote Love Food, Hate Waste (based on the national campaign for food waste prevention, meal planning, etc.)**	By engaging or converting an additional 10% of households 3,500 tonnes reduction in residual waste
	Cost of campaign per household	£0.30
	Number of households targeted	453,090
	Campaign costs	**£135,927**
	Avoided landfill tonnes	3,500
	Landfill cost/tonne	-£85.00
	Avoided landfill disposal cost	**-£297,500**
	Total Cost	**-£161,573**

16	**Junk Mail promotional campaign**	Assume that 50% (59,500) of households who had subscribed to Mail Preference Service but lapsed reinstate MPS, at 4 kg/household/yr = 2,400 tonnes/yr.
	Cost of campaign/annum	**£5,000**
	Tonnes of junk mail avoided	2,400
	Assume 30% of 2,400 tonnes of avoided junk mail was previously landfilled	720
	Landfill cost/tonne	-£85.00
	Avoided landfill disposal cost	**-£61,200**
	Number of households on co-mingled recycling collection where paper mixed	190,000 (~42% of total households)
	MRF cost/tonne	£9.00
	Tonnes of avoided junk mail previously collected in co-mingled recycling (calculated based on 70% (1,680 tonnes) of avoided junk mail previously being recycled and 42% of this paper from households going through a MRF)	704
	MRF avoided cost	**-£6,340**
	Paper income/tonne (assumed market price)	£60.00
	Tonnes of avoided junk mail previously collected separately for recycling not co-mingled (calculated based on 70% (1,680 tonnes) of avoided junk mail previously being recycled and 58% of this paper from households not collected co-mingled)	976
	Lost revenue	**£58,530.25**
	Total Cost	**-£4,010**
7	**Home composting promotional campaign including home digestion e.g. wormeries**	Assume average 180 tonnes of waste is prevented through increased promotion of home composting, increased sales 2014 & 15 to 750 composters and lapse rate 3% instead of 4%
	Staff cost - 50% of officer time	£15,400.00
	Volunteer expenses (1 per district @ £100)	£900.00
	Promotional material	£5,000.00
		£21,300.00
	Avoided landfill tonnes	180
	Landfill cost/tonne	-£85.00
	Avoided landfill disposal cost	**-£15,300**
	Total Cost	**£6,000**

5	**Effective side waste policy**	Side waste policies already in place, assume 500 tonnes reduction in waste arisings at the kerbside (50% diversion to recycling, 35% residual to HWRC and 15% fly tipped)
	2.5 officers shared across partnership (approx. quarter of an officer per local authority though this will vary across the partnership)	£77,000
	Avoided landfill tonnes	250
	Landfill cost/tonne	-£85.00
	Avoided landfill disposal cost	**-£21,250**
	MRF Processing cost /tonne	£9.00
	66% of material diverted for recycling to go through MRF (based on estimate of kerbside recycling material which went through a MRF in Derbyshire in 2010/11 from WasteDataFlow)	165
	Cost at MRF for processing additional material	**£1,485**
	Increase in fly tipping cost	
	Cost per pick up	£20.00
	Tonnage fly tipped	75
	Number of Incidents based on 40 kg/incident	1,875
	Increased cost of fly tipping	**£37,500**
	Total Cost	**£93,250**
1	**Reduce residual bin size / capacity**	3,800 tonnes - waste prevention, 17,600 tonnes recycling, 9,500 tonnes mixed organics
	Cost of 180 litre bin @ (£18.00/household plus £2.50 delivery, financed at 6% over 10 years)	£4.95
	Number of households targeted	453,090
	Cost of bins	**£2,240,812**
	Cost of promotion to households of change to bin	£1
	Number of households targeted	453,090
	Cost of literature	£453,090
	Avoided landfill tonnes	30,900
	Landfill cost/tonne	-£85.00
	Avoided landfill disposal cost	**-£2,626,500**
	Avoided refuse collection tonnes	30,900
	Refuse collection cost/tonne	-£65.00
	Avoided refuse collection cost	**-£2,008,500**

	Additional kerbside box for households on kerbside sort(South Derbyshire, Amber Valley) - based on £3.50/box financed over 5 years plus £0.50/box delivery	£1.33
	Number of households	94,840
	Cost of box	**£126,221**
	Additional recycling collection tonnes	17,600
	Recycling collection cost/tonne	£75.00
	Additional recycling collection cost	**£1,320,000**
	Additional processing cost/tonne of 50% kerbside sort material (assumes that with a greater range of material being collected for recycling, some material may be co- collected in same compartment on vehicle and separated at a later stage)	£14.00
	Tonnage of material requiring additional processing	10,186
	Additional processing cost	**£142,607**
	Additional MRF processing costs of £5/tonne to process tetrapak (for existing recyclable material collected which will now be mixed with tetrapak)	£5.00
	Estimate of original tonnage of co-mingled material where paper collected separately (2010/11 WDF figures)	23,000
	Additional processing cost	**£115,000**
	Additional MRF processing costs of £5/tonne to MRF price (for additional recyclable material collected which will be mixed with tetrapak)	£14.00
	Additional tonnage of recycling (kerbside sort & co-mingled)	17,600
	Additional tonnage of co-mingled recycling (based on 66% of additional material diverted for recycling to go through MRF (based on estimate of kerbside recycling material which went through a MRF in Derbyshire in 2010/11 from WasteDataFlow)	11,616
	Cost at MRF of additional material	**£162,624**
	Garden Waste	
	Additional tonnage in mixed food and garden	9,500
	Cost of IVC/tonne	£44.00
	Additional cost of IVC	**£418,000**
	Total Cost	**£343,355**
9	**In house waste prevention by councils (e.g. paperless office)**	Officer time

	1 officer (4 days/year per council) = 40 days assume 20% of officer time	£6,160
	Total Cost	**£6,160**
18	**Lobby government and relevant organisations on waste prevention**	
	1 officer, 1 day/week to proactively lobby	£6,160
	Total Cost	**£6,160**
15	**Promoting SMART (Save Money and Reduce Trash) Shopping**	Assume 750 tonnes diverted, through initiatives such as reusable bags, buying products with less packaging
	Campaign cost	**£20,000**
	Avoided landfill tonnes	750
	Landfill cost/tonne	-£85.00
	Avoided landfill disposal cost	**-£63,750**
	Total Cost	**-£43,750**

Reuse

Ref	Option	Key Assumption
31	**Education, promotion, awareness raising to increase understanding and engagement in reuse (including 'high profile' promotions e.g. celebrities)**	500 tonnes reduction in residual - through reuse
	Campaign costs	**£20,000**
	Avoided landfill tonnes	500
	Landfill cost/tonne	-£85.00
	Avoided landfill disposal cost	**-£42,500**
	Total Cost	**-£22,500**
23	**Promotion of Freecycle / Freegle**	Assume doubling of current advertised and 2/3 of additional 150 tonnes available is taken up and reused
	Cost of campaign/annum	**£5,000**
	Tonnes diverted from residual stream based on 2/3 of material advertised taken and reused	100
	Landfill cost/tonne	-£85.00
	Avoided landfill disposal cost	**-£8,500**
	Total Cost	**-£3,500**
28	**Promotion of auction sites**	Assume as per freecycle/freegle
	Cost of campaign/annum	**£5,000**
	Tonnes diverted from residual stream based on 2/3 of material advertised taken and reused	100
	Landfill Cost/tonne	-£85.00

	Avoided landfill disposal cost	**-£8,500**
	Total Cost	**-£3,500**
21	**Reuse at HWRCs including Waste Electronic and Electrical Equipment (WEEE) and other items**	Assume 1,333 tonnes of WEEE and furniture reuse at HWRCS was in residual
	Tonnes of material diverted from residual stream	1,333
	Landfill Cost/tonne	-£85
	Avoided landfill disposal cost	-£178,500
	Reuse income/tonne	-£1,500
	Income from reuse	-£2,000,000
	Cost of reuse (collection costs and off site sales) for 5 sites with containers and no shops on site	£1,050
	Cost of reuse collection/off site sales	£231,830
	Expenditure per HWRCs (shop & workshop)	£283,900
	Number of HWRCs	5
	Expenditure per HWRCs (containers only)	£116,900
	Number of HWRCs	5
	Total cost of reuse at sites	£2,235,830
	Total Cost	**£57,330**
22	**Bulky waste reuse**	
	Assume any savings from landfill will cover cost of delivering reuse service, business case should cost for off-setting any differences to householder	£0
	Total Cost	**£0**
30	**Lobby government and relevant organisations on reuse issues**	
	1 officer, 1 day/week to proactively lobby	£6,160
	Total Cost	**£6,160**
20	**Partnering with and promoting / incentivising third sector activity on reuse**	
	Any costs covered by landfill diversion savings.	£0
	Total Cost	**£0**

Recycling/composting

Ref	Option	Key Assumption
33	**Greater range of materials collected from the kerbside / bring sites / HWRC**	2,600 tonnes of recycling from kerbside and 5,250 tonnes recycling from HWRC
	Avoided landfill tonnes (carpet & mattress excluded due to landfill saving off setting recycling cost of operation)	4,478
	Landfill cost/tonne	-£85.00
	Avoided landfill disposal cost	**-£380,651**

	Avoided refuse collection tonnes	2,600
	Refuse collection cost/tonne	-£65.00
	Avoid refuse collection cost	**-£169,000**
	Additional kerbside box (South Derbyshire, Amber Valley)/household - based on £3.50/box financed over 5 years plus £0.50/box delivery	£1.33
	Number of households	94,840
	Cost of box	**£126,221**
	Additional recycling collection tonnes	2,600
	Recycling collection cost/tonne	£75.00
	Additional recycling collection cost	**£195,000**
	Additional processing cost/tonne of 50% kerbside sort material – assumes with additional material types being collected some material may have to be co collected in same compartment on vehicle and separated at a later stage	£14.00
	Tonnage of kerbside sort material requiring additional processing	10,076
	Additional processing cost	**£141,061**
	Additional MRF processing cost of £5/tonne to process for tetrapak (for existing recyclable material collected which will now be mixed with tetrapak)	£5.00
	Estimate of original tonnage of co-mingled material where paper collected separately	23,000
	Additional processing cost	**£115,000**
	Additional MRF processing cost of £5/tonne to MRF price (for additional recyclable material collected which will be mixed with tetrapak)	£14.00
	Tonnage of tetrapak	272
	Additional cost with tetrapak	**£3,806**
	HWRC - alterations @ £20,000/ site	£200,000
	HWRC - 3 containers (carpet, mattress, dense plastic) @ £15,000/site	£150,000
	Annual costs based on payback over 10 years at 6% annum	**£47,554**
	Cost of dense plastic recycling £10/tonne	**£17,227**
	Total Cost	**£96,218**
39	**Higher frequency of recycling collection**	Additional 6,100 tonnes from Las operating kerbside sort, co-mingled assumed to remain fortnightly
	Increased net cost/household of fortnightly to weekly collections	£7
	Number of households on kerbside sort	127,810
	Increase net cost of collection	**£894,670**

	Avoided landfill tonnes	6,100
	Landfill cost/tonne	-£85.00
	Avoided landfill disposal cost	**-£518,500**
	Total Cost	**£376,170**
32B	**Trade waste recycling by WCAs**	
	Assume any savings from landfill will cover cost of delivering trade waste recycling service, business case should off- set any cost differences of offering recycling service to businesses.	£0
	Total Cost	**£0**
36	**Education, promotion, awareness raising to increase understanding and engagement in recycling/composting (including 'high profile' promotions e.g. celebrities)**	Assume 1% (5,000t) increase in recycling rate as a result of extensive communications
	Cost of campaign per household	£1.00
	Number of households targeted	453,090
	Campaign costs	**£453,090**
	Avoided landfill tonnes	5,000
	Landfill cost/tonne	-£85.00
	Avoided landfill disposal cost	**-£425,000**
	MRF cost/tonne for additional material collected co-mingled	£9
	Tonnes for additional material collected co-mingled (estimated at @ 66% of total kerbside recycling)	3,310
	Additional MRF Cost	**£29,789**
	Total Cost	**£57,879**
41	**Separate food waste collections**	Additional 32,000 tonnes of food waste collected for composting through separate food waste, assume 100% coverage
	Cost of food waste collection/household (Source DWP)	£17.00
	Number of households targeted	
	Cost of collection - food waste	£7,702,530
	Tonnes of food waste	32,000
	Cost of IVC/tonne	£44.00
	Additional cost of IVC processing	**£1,408,000**
	Avoided refuse collection tonnes	32,000
	Refuse collection cost/tonne	-£65.00
	Avoid refuse collection cost	**-£2,080,000**

	OR Savings from residual 1 vehicle saving/LA @ £150k	**-£1,350,000**
	Avoided landfill tonnes	32,000
	Landfill cost/tonne	-£85.00
	Avoided landfill disposal cost	**-£2,720,000**
	Total Cost (no refuse collection cost savings)	**£6,390,530**
	Total Cost with £65/t refuse collection cost saving	**£4,310,530**
34	**Incentive / reward schemes**	
	Assume any costs savings will fund incentive/reward scheme	
	Cost of campaign per household	£0.50
	Number of households targeted	453,090
	Campaign costs	**£226,545**
	Avoided landfill tonnes	3,220
	Landfill cost/tonne	-£85.00
	Avoided landfill disposal cost	**-£273,700**
	MRF cost/tonne of additional material collected co-mingled	£9.00
	Additional tonnes of material through MRF (estimated at @ 66% of total kerbside recycling)	2,125
	Additional MRF cost	**£19,127**
	Incentive/reward scheme	
	Total Cost	**-£28,028**
51	**Lobby government and relevant organisations on recycling/composting issues**	
	1 officer, 1 day/week to proactively lobby	£6,160
	Total Cost	**£6,160**
43	**Bulky waste recycling**	Assume 1,550 tonnes of bulky material recycled
	Assume any savings from landfill will cover cost of delivering bulky waste recycling service, business case should off-set any cost difference in operating bulky waste service to householder.	
	Total Cost	**£ 0**
35	**Reducing contamination in recycling/composting**	Assume 2% (750 tonnes) drop in MRF reject rates for co-mingled collection through increase enforcement of contaminated bins
	50% of waste awareness/education/enforcement officer time - 5 Local Authorities	£77,000

	Avoided landfill tonnes	750
	Landfill cost/tonne	-£85.00
	Avoided landfill disposal cost	**-£63,750**
	Total Cost	**£13,250**
	Lower frequency of residual waste collection supported by weekly food waste collection	Assume 80,000 tonnes diverted from kerbside residual stream of which9,000 tonnes waste prevention, 15,600 tonnes to HWRC residual, 32,000 tonnes to food waste, 23,400 tonnes to dry recycling
	Cost of promotion to households of change to bin. Cost based on WRAP recommended communication cost/household where a service change is introduced	£1.50
	Number of households targeted	453,090
	Cost of literature	**£679,635**
	1 FTE officer to deal with issues in first year/ LA	£554,400
	Additional call centre staff @ 2 FTE in first year/LA	£403,200
	Additional support staff to deal with change	**£957,600**
	Weekly food waste cost (to 453,000 households)	£6,390,530
	Sanitary waste collection from estimated 30% of properties @ £10 per property/year	**£1,359,270**
	Avoided landfill tonnes due to increase in dry recycling/waste prevention	32,400
	Landfill cost/tonne	-£85.00
	Avoided landfill disposal cost	**-£2,754,000**
38a	Cost additional kerbside box/household (based on £3.50/box financed over 5 years plus £0.50/box delivery)	£1.33
	Number of households requiring additional kerbside box (South Derbyshire, Amber Valley)	39,930
	Total cost of additional boxes	**£53,142**
	Additional processing cost of 50% kerbside sort based on a cost of £14 per tonne (due to likelihood some material may need to be collected together and further sorting e.g. plastic and cans)	£14.00
	Tonnage of kerbside sort material requiring additional processing	10,981
	Additional processing cost	**£153,729**
	Additional MRF processing cost/tonne of £5 to process tetrapak (as gate fee assumed to increase with additional sorting of tetrapak and potential quality/contamination/end market issues)	£5.00
	Original tonnage of co-mingled material excluding separately paper	23,000
	Additional processing cost	**£115,000**
	Additional tonnage of recycling (kerbside sort & co-mingled)	23,400

	Additional tonnes of material processed through MRF (estimated at @ 66% of total kerbside recycling)	15,444
	MRF processing cost/tonne (£5 added to MRF gate fee based on additional sorting of tetrapak and potential quality/contamination/end markets issue)	£14
	Additional processing cost	**£216,216**
	Avoided refuse collection tonnes	80,000
	Refuse collection cost/tonne	-£65.00
	Avoid refuse collection cost	**-£5,200,000**
	Additional recycling collection tonnes	23,400
	Recycling collection cost/tonne	£75.00
	Additional recycling collection cost	**£1,755,000**
	HWRC - additional tonnage	15,600
	Cost/tonne handling additional material	£20
	Additional HWRC collection costs	**£312,000**
	Total Cost	**£4,038,123**

Appendix H Unweighted Assessment Scores

Options		Evaluation Criteria										Total Technical Score	Cost Score	Combined Technical & Cost Score
		Reduced waste arisings	Increased reuse, recycling and composting	Reduced waste to landfill	Understanding and engagement leading to high levels of customer satisfaction	An accessible, efficient and effective service (Propose to look at 'accessible')	Improved resource efficiency - (look at European person -Equivalent)	Reduced carbon/climate change impacts	Protection of natural resources - (measured through ecological footprint)	The management of non-household wastes (e.g. trade waste)	Local self-sufficiency in wastes management			
Ref.	**Waste Prevention Delivery Options**													
13	Education, promotion, awareness raising to increase public understanding and engagement of waste prevention (including 'high profile' promotions e.g. celebrities)	3	1	2	4	5	2	2	2	0	2	**23**	5	**28**
12	Love Food Hate Waste (LFHW) promotional campaign to reduce food waste	3	1	2	4	5	2	2	2	0	2	**23**	5	**28**
16	Junk Mail promotional campaign	3	0	1	3	5	2	2	2	0	2	**20**	5	**25**
7	Home composting promotional campaign including home digestion	2	1	1	2	3	2	2	2	0	2	**17**	4	**21**
5	Effective side waste policy – to ensure additional waste that cannot fit into the bin provided is not collected	1	1	1	2	5	2	2	2	0	2	**18**	4	**22**
1	Reduce residual bin size/capacity	3	2	5	3	4	4	3	3	0	2	**29**	4	**33**
9	In-house waste prevention by councils	2	1	1	1	0	2	2	2	1	2	**14**	4	**18**
18	Lobby government and relevant organisations on waste prevention issues	2	1	1	1	0	2	2	2	1	2	**14**	4	**18**
15	Promotion of SMART (Save Money And Reduce Trash) shopping	2	1	1	2	5	2	2	2	0	2	**19**	5	**24**

Options		Evaluation Criteria										Total Technical Score	Cost Score	Combined Technical & Cost Score
		Reduced waste arisings	Increased reuse, recycling and composting	Reduced waste to landfill	Understanding and engagement leading to high levels of customer satisfaction	An accessible, efficient and effective service (Propose to look at 'accessible')	Improved resource efficiency - (look at European person -Equivalent)	Reduced carbon/climate change impacts	Protection of natural resources - (measured through ecological footprint)	The management of non-household wastes (e.g. trade waste)	Local self-sufficiency in wastes management			
	Reuse Delivery Options													
31	Education, promotion, awareness raising to increase understanding and engagement in reuse (including 'high profile' promotions e.g. celebrities)	2	1	1	4	5	2	2	2	0	2	**21**	5	**26**
23	Promotion of Freecycle / Freegle	2	1	1	2	2	2	2	2	0	2	**16**	5	**21**
28	Promotion of Auction Sites	2	1	1	2	2	2	2	2	0	2	**16**	5	**21**
21	Reuse at HWRCs including WEEE and other items	1	1	1	4	1	2	2	2	0	2	**16**	4	**20**
22	Bulky waste reuse	1	1	1	2	5	2	2	2	0	2	**18**	4	**22**
30	Lobby government and relevant organisations on reuse issues	2	1	1	1	0	2	2	2	1	2	**14**	4	**18**
20	Partnering with and promoting / incentivising third sector activity on reuse	1	1	1	4	1	2	2	2	0	2	**16**	4	**20**
	Recycling/Composting Delivery Options													
33	Greater range of materials collected from the kerbside / bring sites / HWRCs	1	1	3	4	4	3	2	2	0	0	**20**	4	**24**
39	Higher frequency of recycling collection	1	1	3	4	0	2	2	2	0	1	**16**	4	**20**
32b	Trade waste recycling by WCAs	1	1	2	3	0	3	2	2	2	1	**17**	4	**21**

Options		Evaluation Criteria										Total Technical Score	Cost Score	Combined Technical & Cost Score
		Reduced waste arisings	Increased reuse, recycling and composting	Reduced waste to landfill	Understanding and engagement leading to high levels of customer satisfaction	An accessible, efficient and effective service (Propose to look at 'accessible')	Improved resource efficiency - (look at European person -Equivalent)	Reduced carbon/climate change impacts	Protection of natural resources - (measured through ecological footprint)	The management of non-household wastes (e.g. trade waste)	Local self-sufficiency in wastes management			
36	Education, promotion, awareness raising to increase understanding and engagement in recycling/composting (including 'high profile' promotions e.g. celebrities)	1	1	2	5	5	2	2	2	1	1	**22**	4	**26**
41	Separate food waste collection	1	3	5	4	5	0	2	2	0	1	**23**	0	**23**
34	Incentive reward schemes	1	1	2	4	4	2	2	2	0	1	**19**	5	**24**
51	Lobby government and relevant organisations on recycling issues	1	1	1	1	0	2	2	2	1	1	**12**	4	**16**
43	Bulky waste recycling	1	1	1	1	5	2	2	2	0	1	**16**	4	**20**
35	Reducing contamination in recycling/composting	1	1	1	1	2	2	2	2	0	1	**13**	4	**17**
38a	Lower frequency of residual waste collection supported by weekly food waste	4	4	5	0	4	5	4	4	0	0	**30**	0	**30**
38b	Lower frequency of residual waste collection with mixed food and garden waste	4	3	5	0	4	5	4	4	0	0	**29**	0	**29**

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