

Item No.	Classification: Open	Date: 2 nd December 2003	MEETING NAME Executive
Report title:		Integrated Waste Management Contract	
Ward(s) or groups affected:		All	
From:		Strategic Director of Environment and Leisure	

RECOMMENDATIONS

1. Members consider a range of possible options for delivering Southwark Council's Waste Management Strategy in the medium to long term.
2. Members agree a shortlist of 4 options to be taken forward for further investigation and as set out at paragraph 22 and note the building a new incinerator is not recommended.
3. Members consider a timetable for the next steps in a process, which will lead in due course to a procurement exercise for the Council's waste management services. See paragraphs 24 – 26.
4. Members note that a further report on the results of this more detailed assessment of options will be reported to the Executive before proceeding with the procurement process.

SOUTHWARK'S WASTE MANAGEMENT STRATEGY

5. The Council's Waste Strategy provides a framework for how waste services will be delivered in the future and sets clear targets to help Southwark meet not only Government and European targets but exceed them. The Strategy cannot however be delivered through the existing infrastructure in the medium or long term. The Strategy therefore aims to provide a sustainable solution within the Borough boundaries in accordance with the nationally recognised 'proximity principle'.
6. Underpinning the proposal of providing new infrastructure for waste is the Council's recently produced Unitary Development Plan, which clearly makes the link between planning and waste through the designation of a possible site within the Borough for waste purposes. The site designated is on the Old Kent Road and is at the heart of the strategic industrial sector of the Borough.
7. As set out within the Council's Waste Strategy, maximising recycling and recovery of value from materials is a key aim, which accords to both national and regional policies. The options available to the Council have been considered based on this premise and are detailed within this report.

8. The Waste Strategy sets out the principles and policies that will need to be addressed to deliver the aspirations of the Council. Whilst it is possible to deliver in the short term (2003/4 – 2005/6) with the existing collection systems and infrastructure, future targets can only be achieved through the creation of both a different way of working and a different approach to handling the waste produced in the Borough.
9. The options open to the Council to deliver recycling and recovery targets are numerous and varied and centre around four strands:
 - Collection systems
 - Separation systems
 - Treatment systems
 - Disposal systems

Collection Systems

10. The way in which Southwark collects waste is a major determinant of the separation and treatment options that can be chosen. If Southwark consisted of street properties with individual waste receptacles, then a full range of separation and treatment options would be available to be chosen. However, a large number of properties in the Borough are medium or high-rise and collection is via chutes, which do not allow for any separation of waste. Where it has been possible, Southwark is already encouraging residents to separate waste (blue box, bring sites and the recent green waste pilot). However, scope for separation at source, prior to collection is limited by the nature of the housing stock. In attempting to reach recycling and recovery targets, Southwark will need to maximise the amount of recyclates collected at source and the options outlined below are legitimate choices for achieving this.

Co-mingled Door to Door Collection of Recyclables (Street Properties)

Door to door collection of co-mingled recyclables from street properties, transported to a clean MRF for separation and onwards for sale. Unlike the current practice whereby materials are separated at the kerbside, all recyclables would be collected together thereby reducing the number of vehicles needed.

Door to Door Collection of Recyclables (High and medium Rise Blocks)

Door to door collection of recyclables from high rise blocks, transported to a clean MRF and onwards for sale. Due to the nature of the stock with limited storage space within flats, this option would not be viable for a number of residents. Collection would also prove problematic – in terms of cost, time and health and safety considerations.

Survival Bags

A collection system allowing single or co-mingled dry recyclables to be collected, transported and compacted along with residual waste. The 'survival bags' are then separated from the refuse sacks at a dirty MRF, with good quality recyclates being transported to a clean MRF. This affords the best option for medium and high rise, both in terms of ease of use for residents and cost and time for collection.

Green/Garden waste

The door to door collection of green / garden waste which is then sent for composting. This can be supplemented by individual residents undertaking home composting.

Green and Kitchen waste

The collection of organic waste, including kitchen scraps. This waste is then sent for composting. However, recent legislation (Animal By-Products Regulations 2003) provides restrictions on the treatment of waste that contains meat.

Separation Systems

11. In order to recover and recycle waste following collection it needs to be separated into the different materials e.g. paper, glass etc to enable recycling or reprocessing. The methods of collection of household waste go some way to determining the number of separation systems required. Those outlined below are the ones likely to be required by Southwark due to the collection difficulties as outlined above.

Clean Materials Reclamation Facility (MRF)

A facility where recyclable materials, collected together but separately from residual waste, can be sorted into individual material streams and bulked, ready for reprocessing.

Dirty MRF

All household is collected together and taken to a dirty MRF where recyclable materials are separated from residual waste and sorted, into individual material streams and bulked, ready for reprocessing.

Separation Plant

A facility where recyclable materials, in survival bags, are separated from residual waste and transferred to a clean MRF to be separated into individual material streams and bulked, ready for reprocessing.

Treatment Systems

12. After collection and separation, some residual waste will remain. The EU Landfill Directive provides the following diversion targets for the UK:

- by 2010 to reduce biodegradable waste landfilled to 75% of that produced in 1995
- by 2013 to reduce biodegradable waste landfilled to 50% of that produced in 1995
- by 2020 to reduce biodegradable waste landfilled to 35% of that produced in 1995.

13. To ensure delivery of the targets two financial drivers have been introduced:
- Landfill Tax which commenced in 1996 at £7 per tonne, is currently £14 per tonne and is due to rise in the medium term to £35 per tonne, and
 - The Waste and Emissions Trading Bill which provides the framework for a Landfill Allowance Trading Scheme, limiting the amount of waste Authorities are allowed to landfill. The level of cost at which tradable landfill permits will be set is uncertain at this time.
14. Therefore, Local Authorities are being forced to look for alternative treatment options from landfill and any landfill undertaken should be of inactive, treated waste only, as this attracts a Landfill Tax rate of only £2 per tonne.
15. There are a limited number of treatment options available, which are tried and tested in the UK. In addition there are concerns about the maturity of the market for some of the products resulting from treatment options. However the nature of Southwark's housing stock, the lack of recycling infrastructure and culture mean that Southwark will never reach 50% recycling unless residual waste is treated.
16. Treatment options available to the Council are set out below:

Anaerobic Digestion (AD)

Anaerobic digestion reduces the bulk of organic waste by converting it into a residue similar to compost. The process produces a flammable gas consisting mainly of methane and carbon dioxide (biogas), which can be used to produce electricity, although up to one third of it may be needed to heat the digester itself. This is a tried and tested treatment option; however there is some concern about end markets for the final product.

Mechanical/Biological Treatment (MBT)

MBT systems consist of a mechanical sorting system with an adjacent biological treatment facility. Most systems can remove recyclable products at the front or back end of the process and convert the residual wastes to soil conditioner or refuse derived fuel. This treatment option is however, largely untested in the UK. The majority of operational MBT plants are located in Europe and North America.

Gasification/Pyrolysis

Gasification converts the bulk of the waste's carbon-containing material into gases by heating. The resulting products form low to medium heating value fuel gases together with tars, char and ash. Pyrolysis involves heating waste at temperatures of 400-800°C; resultant gases are then passed into a combustion chamber where they are heated to produce a liquid oil which is used as a fuel.

In-vessel composting

Enclosed composting systems, which prevent contamination of the compost and allow higher temperatures to be reached during the process. This is a tried and tested treatment option; however there is some concern about end markets for the final product.

Energy from Waste (Incineration)

The burning of waste at high temperatures to achieve complete combustion, to reduce volume and recover heat and/or power. However, waste to energy is not a sustainable option in London as existing plants reach capacity. The Mayor's Strategy is anti new waste to energy plants and there is large-scale public concern about the implications of it.

Disposal Options

17. Even after collection, separation and treatment, a small amount of waste will remain. Members should note that there is only one final disposal option available.

Landfill

There is diminishing landfill space available and legislation, outlined above, is forcing Authorities to consider alternatives due to rising costs and environmental concerns.

OPTIONS AND OUTCOMES

18. The various options set out above can be combined in a number of ways to produce an overall waste management system for the Borough. Fourteen of the most appropriate combinations are outlined in Appendix A, ranging from 'do-nothing' further and fail to meet statutory targets to the use of high-tech facilities and state of the art systems. Appendix A also includes recycling, recovery and landfill outputs and approximate capital and ongoing revenue costs for each option. It is important that Southwark chooses a solution, which meets targets, is flexible and robust and is affordable.
19. The options have been selected from reviewing what other Councils have procured, what the market is offering and what is considered to be innovative ways of solving Southwark's waste problem. The 14 options have been assessed using the procurement criteria set out in the waste strategy; namely:-

1. Does it meet Southwark's Policies and Targets?
2. Public acceptability? – based on recent precedent and surveys, what are people more likely to accept (for example, residents are known to often reject the idea of building new incinerators near them).
3. Financial Performance? – in terms of outline capital and operating costs, how do the options compare with one another.
4. Environmental Impacts? – what are the environmental impacts of each option in terms of emission, quality of life and resources use. With all waste management options the hierarchical approach was taken with landfill scoring worst.
5. Does it provide a universal service? – simply, does the option offer a service to all residents of the Council.

20. The initial options appraisal was intended as a scoping exercise to examine the likely performance of combinations of services and technologies in terms of recycling, recovery and landfill diversion requirements, but also estimating potential costs. These performance and financial estimates were based on either prevailing industry standards or indicative information gathered by our Technical advisors from service and technology suppliers and relevant research where available.

21. The results of the assessment are shown in Table A below.

Evaluation Matrix of the 14 Options for Southwark

SOUTHWARK WASTE MANAGEMENT - STRATEGIC OPTIONS

Evaluation		Weightin	Unweighted													
			1	2	3	4	5	6	7	8	9	9a	10	10a	11	12
a	Does it meet Southwark's Policies and	20%	1	2	2	2	2	3	3	4	7	8	8	7	8	7
b	Public	20%	5	7	7	7	6	7	8	8	8	6	4	5	8	6
c	Financial	20%	5	3	3	4	3	4	1	2	1	2	5	8	1	1
d	Environmental	20%	2	3	4	5	5	5	5	6	9	9	7	8	9	8
e	Does it provide a universal service (i.e. to all Southwark	20%	0	2	2	4	4	5	5	7	7	7	7	7	7	7
		100	13	17	18	22	20	24	22	27	32	32	31	35	33	29

0 - Fails to meet all

1 - Partially meets

2 - Partially meets

3 - Partially meets

4 - Meets criteria (within

5 - Meets

6 - Meets criteria (within

7 - Exceeds

8 - Exceeds

9 - Exceeds

10 - Exceeds

Shortlisted Options

22. The assessment process has resulted in the following four options scoring most highly. Not all meet all of the targets Southwark has been set for recycling, landfill and recovery. However, they provide a broad range of the available technologies for waste treatment and are recommended therefore to be taken forward for more detailed analysis as follows:

Option 10 a – this option consists of Southwark maximising recycling through continuation and expansion of the blue box scheme, additional provision of bring sites and the collection of recyclates via survival bags from medium and high rise properties. Kitchen and garden waste will be collected and treated via an in-vessel composter. Residual waste will be sent to an existing energy from waste plant. All of the above will be supported by a comprehensive education and awareness programme. This option will result in Southwark meeting long term Strategy targets for landfill and recovery of value; however recycling targets will not be met. It is a less costly option as it results in the need to build a clean MRF, a separation plant and in-vessel composting plant.

Option 11 – this option consists of Southwark maximising recycling through continuation and expansion of the blue box scheme, additional provision of bring sites and the collection of recyclates via survival bags from medium and high rise properties. Kitchen and garden waste will be collected and treated via an in-vessel composter. Residual waste will be sent to an AD plant for recovery where possible. All materials unable to be recycled or recovered will be landfilled. All of the above will be supported by a comprehensive education and awareness programme. This option will result in Southwark meeting long term Strategy targets for recycling; however, targets for landfill and recovery of value will not be met. It is also a costly option as it results in the need to build a clean MRF, a separation plant, AD plant and in-vessel composting plant.

Option 9a – this option consists of Southwark maximising recycling through continuation and expansion of the blue box scheme, additional provision of bring sites and the collection of recyclates via survival bags from medium and high rise properties. Kitchen and garden waste will be collected and treated via an in-vessel composter. Residual waste will be sent to an MBT plant for recovery where possible. All materials unable to be recycled or recovered will be incinerated at an existing plant. All of the above will be supported by a comprehensive education and awareness programme. This option will result in Southwark meeting long term Strategy targets for recycling, landfill and recovery of value. However, it is a costly option as it results in the need to build a clean MRF, a separation plant, MBT plant and in-vessel composting plant.

Option 9 – this option consists of Southwark maximising recycling through continuation and expansion of the blue box scheme, additional provision of bring sites and the collection of recyclates via survival bags from medium and high rise properties. Kitchen and garden waste will be collected and treated via an in-vessel composter. Residual waste will be sent to an MBT plant for recovery where possible. All materials unable to be recycled or recovered will be landfilled. All of the above will be supported by a comprehensive education and awareness programme. This option will result in Southwark meeting long term Strategy targets for recycling; however,

targets for landfill and recovery of value will not be met. It is also a costly option as it results in the need to build a clean MRF, a separation plant, MBT plant and in-vessel composting plant.

23. The purpose of this stage was to look at a full range of solutions and seek to narrow this list down to those most likely to meet the specific needs of Southwark before a further and more in depth evaluation is undertaken.

NEXT STEPS

24. Following endorsement by Members that the shortlisted options are acceptable, it is proposed that officers undertake a more detailed annualised financial analysis of these four choices, including more detailed mass flow modelling and a Best Practicable Environmental Option analysis, as outlined in the Waste Strategy. In addition, a 'do nothing' option will also be developed for benchmarking purposes. The results of this analysis will then be brought back to Members in the form of an outline business case in early 2004 for a decision on the chosen option to be taken forward as a procurement.
25. The business case will include diversion rates setting out the impact on the waste and recycling stream of using the particular options, examination of procurement options and the scope and length of contract. It will provide a cost benefit analysis and be the basis of any future submission to DeFRA, should a PFI procurement route be the one chosen.

TIMETABLE

- | | |
|--------------------------------------------|----------------|
| 26. Report to Members on option appraisal | March 2004 |
| OBC submission to DEFRA (if required) | May 2004 |
| Result of submission from DEFRA | September 2004 |
| OJEC advert | October 2004 |
| ISOP/ ITN | January 2005 |
| Issue of invitation to submit BAFO's | September 2005 |
| Preferred bidder chosen | January 2006 |
| Negotiations to contract closure | February 2006 |
| Approval of final business case from DeFRA | September 2006 |
| Contract Commencement | 1 October 2006 |

RESOURCE IMPLICATIONS

27. The purpose of identifying some preferred options is in order that a full financial assessment and business case can be conducted prior to the initiation of a procurement exercise. This will enable the Council to assess fully the cost of proceeding and seeking to achieve, in practical terms, the objectives of the Waste Strategy. The outcome of this analysis will be reported to the Executive as part of the 'gateway' process for procurement prior to the initiation of any tendering exercise.
28. The cost of the detailed financial analysis of the options up to the preparation of the business case will be contained within the existing budget. However, revenue costs for undertaking the procurement exercise are estimated at £250,000 for 2004/05 and the subject of a growth bid.

SUPPLEMENTARY ADVICE FROM OTHER OFFICERS

The borough Solicitor and Secretary

29. The Executive is referred to earlier legal comments given in paragraphs 36 - 38 of the Waste Management Strategy report regarding issues of Best Value and requirements for consultation.
30. Officers from Legal Services have been involved in consideration of the procurement process to date and will continue to provide advice on the examination of procurement options and the scope and length of the contract as the business case is prepared.
31. The timetable for award of the Integrated Waste Management Contract shows an award in mid 2005. The Council has secured from the Department for Environment, Food and Rural Affairs an exemption under the Environmental Protection Act 1990 to enable the Council to extend its existing waste disposal contract until 1st April 2005. If award of the Integrated Waste Management Contract is to occur after 1st April 2005 a further exemption will need to be obtained to cover this additional period.

Chief Finance Officer

32. As the report, elsewhere on this agenda, on the waste management strategy states the cost of waste management is set to rise significantly over the medium to long term. This report identifies a number of options for the Council, from which a shortlist of options for more detailed evaluation has been recommended. Aside from the possibility of PFI credits it is difficult to see any additional government support being made available to the Council to minimise the projected cost increases.
33. Current revenue costs are £10 million per annum for collection and disposal. The costs presented to Members in the appendix are intended to be rough indicative figures and are of limited use. The capital costs do not include any allowance for land acquisition or decontamination. The revenue costs do not include the capital financing costs of the capital investment. The detailed appraisal of the shortlisted options will need to take the relevant financial implications fully into account.

EQUAL OPPORTUNITY IMPLICATIONS

34. Basic environmental cleanliness is a universal service that affects all residents of the Borough. The proposed improvements to contracting arrangements contained in this report should enhance the quality of life for all.

BACKGROUND DOCUMENTS

Background Papers	Held At	Contact
Contract Files	Waste Division, Manor Place Depot	Mike Green 020 7525 2426

Lead Officer	Gill Davies	
Report Author	Mike Green / Mary Morrissey	
Version	Draft 3	
Dated	18 November 2003	
Key Decision?	Yes	
CONSULTATION WITH OTHER OFFICERS / DIRECTORATES / EXECUTIVE MEMBER		
Officer Title	Comments Sought	Comments included
Borough Solicitor & Secretary	Yes	Yes
Chief Finance Officer	Yes	Yes
<i>List other Officers here</i>		
Executive Member		
Date final report sent to Constitutional Support Services	19/11/ 2003	

APPENDIX A

Introduction

The information provided below, against each of the 14 options, details the collection, separation, treatment and final disposal regimes suggested. In addition, information is provided on the outputs against statutory and local targets that will be achieved if the option is chosen.

Targets for waste management are:

- The % of household waste that must be recycled or composted (Southwark Strategy target)
- The % of biodegradable municipal solid waste that is allowed to be landfilled (EU Directive)
- The % of waste from which value must be recovered (Southwark Strategy target)

Outputs are shown for each of the short, medium and long-term phases of the Strategy.

Finally, indicative capital and revenue costs of implementing the options are shown. Costs at this stage are the one off capital costs required to build the plant needed (e.g. MRF, separation plant) and the average annual revenue cost of running the service.

OPTION 1 - 'Do-Nothing' i.e. continuation of existing situation

- Continuation of existing kerbside scheme
- Continuation of existing bring bank scheme
- All residual waste sent to landfill or waste to energy plant

Targets	2005/06	2010 / 11	2015/16	2020/21
Recycling/ composting target	18%	30%	40%	50%
Estimated output of option	10%	10%	10%	10%
Landfill target		75%	50%	35%
Estimated output of option		111%	111%	111%
Recovery target	40%	45%	67%	75%
Estimated output of option	8%	8%	8%	8%

Capital Cost - £3.8m.

Annual Average revenue cost - £12m

OPTION 2

- Continuation of existing kerbside paper collection
- Increase number of bring sites to 350
- All residual waste sent to landfill
- Garden waste collected from street properties composted in a windrow
- Intensive education and waste minimisation programme introduced and education facility built.

Targets	2005/06	2010 / 11	2015/16	2020/21
Recycling/ composting target	18%	30%	40%	50%
Estimated output of option	23%	23%	23%	23%
Landfill target		75%	50%	35%
Estimated output of option		134%	134%	134%
Recovery target	40%	45%	67%	75%
Estimated output of option	19%	19%	19%	19%

Capital Cost - £4.1m.

Annual Average revenue cost - £14.1m

OPTION 3

- Continuation of existing kerbside paper collection
- Increase number of bring sites to 350
- All residual waste sent to landfill
- Putrescible kitchen and garden waste collected from street properties composted in an in-vessel composter
- Intensive education and waste minimisation programme introduced and education facility built.

Targets	2005/06	2010 / 11	2015/16	2020/21
Recycling/ composting target	18%	30%	40%	50%
Estimated output of option	28%	28%	28%	28%
Landfill target		75%	50%	35%
Estimated output of option		129%	129%	129%
Recovery target	40%	45%	67%	75%
Estimated output of option	23%	23%	23%	23%

Capital Cost - £4.1m

Annual Average revenue cost - £13.8m.

OPTION 4

- Kerbside collection expanded to include all dry recyclables
- Increase number of bring sites to 350
- Material collected at kerbside sent to clean MRF
- All residual waste sent to landfill
- Putrescible kitchen and garden waste collected from street properties composted in an in-vessel composter.
- Intensive education and waste minimisation programme introduced and education facility built.

Targets	2005/06	2010 / 11	2015/16	2020/21
Recycling/ composting target	18%	30%	40%	50%
Estimated output of option	28%	28%	28%	28%
Landfill target		75%	50%	35%
Estimated output of option		122%	122%	122%
Recovery target	40%	45%	67%	75%
Estimated output of option	23%	23%	23%	23%

Capital Cost - £8m.

Annual Average revenue cost - £12.6m.

OPTION 5

- Kerbside collection expanded to include all dry recyclables
- Increase number of bring sites to 350
- Material collected at kerbside sent to clean MRF
- All residual waste sent to dirty MRF and the residuals to landfill Intensive education and waste minimisation programme introduced and education facility built.
- Putrescible kitchen and garden waste collected from street properties composted in an in-vessel composter.
- Intensive education and waste minimisation programme introduced and education facility built.

Targets	2005/06	2010 / 11	2015/16	2020/21
Recycling/ composting target	18%	30%	40%	50%
Estimated output of option	30%	30%	30%	30%
Landfill target		75%	50%	35%
Estimated output of option		119%	119%	119%
Recovery target	40%	45%	67%	75%
Estimated output of option	25%	25%	25%	25%

Capital Cost - £10.2m.

Annual Average revenue cost - £14.1m

OPTION 6

- Kerbside collection expanded to include all dry recyclables from street and medium/high rise properties.
- Increase number of bring sites to 350
- Material collected at kerbside sent to clean MRF
- All residual waste sent to landfill
- Putrescible kitchen and garden waste collected from street properties composted in an in-vessel composter.
- Intensive education and waste minimisation programme introduced and education facility built.

Targets	2005/06	2010 / 11	2015/16	2020/21
Recycling/ composting target	18%	30%	40%	50%
Estimated output of option	32%	32%	32%	32%
Landfill target		75%	50%	35%
Estimated output of option		117%	117%	117%
Recovery target	40%	45%	67%	75%
Estimated output of option	26%	26%	26%	26%

Capital Cost - £8.4m.

Annual Average revenue cost - £13.6m

OPTION 7

- Kerbside collection expanded to include all recyclables from street properties.
- Increase number of bring sites to 350
- Material collected at kerbside sent to clean MRF
- Medium/high rise properties issued with survival bags
- All residual waste sent to Separation Plant.
- Putrescible kitchen and garden waste collected from street properties composted in an in-vessel composter.
- Waste from medium/high rise properties sent to separation plant
- Intensive education and waste minimisation programme introduced and education facility built.

Targets	2005/06	2010 / 11	2015/16	2020/21
Recycling/ composting target	18%	30%	40%	50%
Estimated output of option	32%	32%	32%	32%
Landfill target		75%	50%	35%
Estimated output of option		117%	117%	117%
Recovery target	40%	45%	67%	75%
Estimated output of option	26%	26%	26%	26%

Capital Cost - £11m.

Annual Average revenue cost - £15m

OPTION 8

- Kerbside collection expanded to include all recyclables from street properties.
- Increase number of bring sites to 350
- Material collected at kerbside sent to clean MRF
- Medium/high rise properties issued with survival bags
- All residual waste sent to the separation plant
- Recovery and recycling of bulky and fly-tipped waste maximised
- Putrescible kitchen and garden waste collected from street properties composted in an in-vessel composter.
- Waste from medium/high rise properties sent to separation plant
- Intensive education and waste minimisation programme introduced and education facility built.

Targets	2005/06	2010 / 11	2015/16	2020/21
Recycling/ composting target	18%	30%	40%	50%
Estimated output of option	39%	39%	39%	39%
Landfill target		75%	50%	35%
Estimated output of option		107%	107%	107%
Recovery target	40%	45%	67%	75%
Estimated output of option	32%	32%	32%	32%

Capital Cost - £11m.

Annual Average revenue cost - £11,9m.

OPTION 9

- Kerbside collection expanded to include all recyclables from street properties.
- Increase number of bring sites to 350
- Material collected at kerbside sent to clean MRF
- Medium/high rise properties issued with survival bags
- Recovery and recycling of bulky and fly-tipped waste maximised.
- All residual waste sent to a Mechanical Biological Treatment plant
- Putrescible kitchen and garden waste collected from street properties composted in an in-vessel composter.
- Waste from medium/high rise properties sent to separation plant
- Intensive education and waste minimisation programme introduced and education facility built.

Targets	2005/06	2010 / 11	2015/16	2020/21
Recycling/ composting target	18%	30%	40%	50%
Estimated output of option	51%	51%	51%	51%
Landfill target		75%	50%	35%
Estimated output of option		49%	49%	49%
Recovery target	40%	45%	67%	75%
Estimated output of option	59%	59%	59%	59%

Capital Cost - £31m.

Annual Average revenue cost - £12.6m.

OPTION 9(a)

- Kerbside collection expanded to include all recyclables from street properties.
- Increase number of bring sites to 350
- Material collected at kerbside sent to clean MRF
- Medium/high rise properties issued with survival bags
- Recovery and recycling of bulky and fly-tipped waste maximised
- All residual waste sent to a Mechanical Biological Treatment plant with outputs to Existing Energy from Waste plant
- Putrescible kitchen and garden waste collected from street properties composted in an in-vessel composter.
- Waste from medium/high rise properties sent to separation plant
- Intensive education and waste minimisation programme introduced and education facility built.

Targets	2005/06	2010 / 11	2015/16	2020/21
Recycling/ composting target	18%	30%	40%	50%
Estimated output of option	52%	52%	52%	52%
Landfill target		75%	50%	35%
Estimated output of option		0%	0%	0%
Recovery target	40%	45%	67%	75%
Estimated output of option	83%	83%	83%	83%

Capital Cost - £31m.

Annual Average revenue cost - £12m.

OPTION 10

- Kerbside collection expanded to include all recyclables from street properties.
- Increase number of bring sites to 350
- Material collected at kerbside sent to clean MRF
- Medium/high rise properties issued with survival bags
- Recovery and recycling of bulky and fly-tipped waste maximised.
- All residual waste sent to an Energy from Waste plant
- Putrescible kitchen and garden waste collected from street properties composted in an in-vessel composter.
- Waste from medium/high rise properties sent to separation plant
- Intensive education and waste minimisation programme introduced and education facility built.

Targets	2005/06	2010 / 11	2015/16	2020/21
Recycling/ composting target	18%	30%	40%	50%
Estimated output of option	48%	48%	48%	48%
Landfill target		75%	50%	35%
Estimated output of option		0%	0%	0%
Recovery target	40%	45%	67%	75%
Estimated output of option	86%	86%	86%	86%

Capital Cost - £46m.

Annual Average revenue cost - £8.2m.

OPTION 10(a)

- Kerbside collection expanded to include all recyclables from street properties.
- Increase number of bring sites to 350
- Material collected at kerbside sent to clean MRF
- Medium/high rise properties issued with survival bags
- Recovery and recycling of bulky and fly-tipped waste maximised.
- All residual waste sent to Existing Energy from Waste plant.
- Putrescible kitchen and garden waste collected from street properties composted in an in-vessel composter.
- Waste from medium/high rise properties sent to separation plant
- Intensive education and waste minimisation programme introduced and education facility built.

Targets	2005/06	2010 / 11	2015/16	2020/21
Recycling/ composting target	18%	30%	40%	50%
Estimated output of option	48%	48%	48%	48%
Landfill target		75%	50%	35%
Estimated output of option		0%	0%	0%
Recovery target	40%	45%	67%	75%
Estimated output of option	86%	86%	86%	86%

Capital Cost - £11m.

Annual Average revenue cost - £8m.

OPTION 11

- Kerbside collection expanded to include all recyclables from street properties.
- Increase number of bring sites to 350
- Material collected at kerbside sent to clean MRF
- Medium/high rise properties issued with survival bags
- Recovery and recycling of bulky and fly-tipped waste maximised.
- All residual waste sent to an Anaerobic Digestion plant
- Putrescible kitchen and garden waste collected from street properties composted in an in-vessel composter.
- Waste from medium/high rise properties sent to separation plant
- Intensive education and waste minimisation programme introduced and education facility built.

Targets	2005/06	2010 / 11	2015/16	2020/21
Recycling/ composting target	18%	30%	40%	50%
Estimated output of option	50%	50%	50%	50%
Landfill target		75%	50%	35%
Estimated output of option		45%	45%	45%
Recovery target	40%	45%	67%	75%
Estimated output of option	64%	64%	64%	64%

Capital Cost - £31m.

Annual Average revenue cost - £12.5m.

OPTION 12

- Kerbside collection expanded to include all recyclables from street properties.
- Increase number of bring sites to 350.
- Material collected at kerbside sent to clean MRF.
- Medium/high rise properties issued with survival bags.
- Recovery and recycling of bulky and fly-tipped waste maximised.
- All residual waste sent to a Gasification / Pyrolysis plant.
- Putrescible kitchen and garden waste collected from street properties composted in an in-vessel composter.
- Waste from medium/high rise properties sent to separation plant.
- Intensive education and waste minimisation programme introduced and education facility built.

Targets	2005/06	2010 / 11	2015/16	2020/21
Recycling/ composting target	18%	30%	40%	50%
Estimated output of option	49%	49%	49%	49%
Landfill target		75%	50%	35%
Estimated output of option		1%	1%	1%
Recovery target	40%	45%	67%	75%
Estimated output of option	59%	59%	59%	59%

Capital Cost - £71m.

Annual Average revenue cost - £9.8m.