

Item No. 6.	Classification: Open	Date: 18 May 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 note the results of the investigation into the four possible options by which the Council could deliver its waste management strategy.
2. Members consider and agree one recommended, “best technical and best value option” to be taken forward for procurement, namely “Maximised recycling and composting with residual waste to Mechanical Biological Treatment (MBT), with the Refuse Derived Fuel (RDF) sent to existing RDF markets (e.g. cement kilns, Energy from Waste, etc)”. Officer’s recommendations are set out in paragraphs 32 and 51.
3. Members task officers to pursue an application to DEFRA for Private Finance Initiative (PFI) Credits for Southwark.
4. Members request officers to report back to Executive on the outcome of the application for PFI credits with a view to commencing a procurement process.
5. Members note the link between the report and a separate report on the agenda from the Strategic Director on Regeneration on the proposed site for a new waste management facility.
6. Members note that a full communications plan has been prepared and following the agreement of this report a significant consultation exercise will commence including the statutory consultation requirements with regard to the Unitary Development Plan, Planning and Site Licensing.

SOUTHWARK’S WASTE MANAGEMENT STRATEGY

7. Southwark’s Waste Strategy, which was agreed by Executive on 3 December 2003, provided a framework for how waste services will be delivered in the short to medium term in Southwark and set clear targets and outcomes for the long term. As previously reported the Strategy cannot be delivered through the existing infrastructure for waste in the borough 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’.
8. 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.

PHASE 1 – OPTIONS APPRAISAL

9. On the 3 December 2003, the Executive received a report, setting out a range of options for delivering Southwark Council's Waste Management Strategy in the medium to long term

10. The report assessed fourteen options ranging from 'do nothing' to the use of high tech facilities and state of the art systems. The options centred on four strands:

- Collection Systems
- Separation Systems
- Treatment Systems
- Disposal Systems.

11. The options were assessed against the following procurement criteria which were set as part of the Council's waste management strategy:

1. Does it meet Southwark's Policies and Targets?
2. Public acceptability? – based on recent precedent and surveys, what are people 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 options in terms of emission, quality of life and resource 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?

12. This first options appraisal of the fourteen options was intended as a scoping exercise to examine the likely performance of combinations of delivery mechanisms and technologies in terms of recycling, recovery and landfill diversion requirements; as well as estimated potential costs.

13. At its meeting of 3 December 2003 the Executive agreed to take forward four shortlisted options for more detailed technical and financial analysis together with a "do nothing option" for comparative purposes.

14. The four shortlisted options were:

- Maximised recycling and composting with residual waste taken to an existing Energy from Waste facility.
- Maximised recycling and composting with residual waste taken to anaerobic digestion, followed by landfill of residuals.

- Maximised recycling and composting with residual waste to Mechanical Biological Treatment (MBT), with the Refuse Derived Fuel (RDF) sent to existing RDF markets (e.g. cement kilns, Energy from Waste, etc).
- Maximised recycling and composting with residual waste to MBT, followed by landfill of both residual and RDF fractions.

15. In all scenarios, recycling is maximised through kerbside box collection from low-rise properties and “survival bag” co-collection from high-rise properties. In addition all scenarios include intensive education and awareness raising in order to maximise recycling take up and commitment.

PHASE 2 – IDENTIFYING A PREFERRED OPTION

Techno-Economic and Environmental Analysis

16. A more detailed analysis of the four options shortlisted and the “do nothing” option has now been undertaken. This more detailed analysis looked at outputs in terms of recycling, recovery rates and cost. All five scenarios were assessed against the same criteria used in the Phase 1 study to ensure consistency throughout the process.

17. Results of the technical evaluation of the four shortlisted options and the “do nothing” option, together with total capital costs and annual revenue costs of each option is summarised in **Table 1**. The evaluation of options against Southwark’s evaluation criteria is contained within **Appendix 1**.

Table 1

Performance Indicator	Waste Disposal Option					Details
	Do Nothing	1 No treatment	2 AD + landfill	3 MBT + existing EfW	4 MBT + Landfill	
<u>Financial Performance</u>						
Capital	£30.7 m	43.9m	£71.7m	£67.3m	£67.3m	Total capital over 25 yr
Operational Costs	£22.6m	£11.3m	£6.9m	£5.4m	£9.2m	Pa -Average 25 yr
<u>Environmental Performance</u>						
Recycling & Recovery Performance						
Recycling & composting (%)	4%	45%	52%	49%	49%	BVPI 82c (max achieved during 25 yr)
Recovery Rate (%)	25%	99%	52%	73%	43%	Based on Municipal Wastes Exclusive of bottom ash recycling (max achieved during 25 yr)

18. This shows that option 3 is the closest to achieving to the Council’s long-term targets for both recycling of household waste and recovery of value from municipal waste.

Best Practical Environmental Option

19. In addition to the techno-economic analysis, a life cycle analysis of the four options and “do nothing” was also carried out to determine the Best Practical Environmental Option

(BPEO).

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

20. The elements of a BPEO are summarised in paragraphs 21 to 26.

Global Warming Impacts

21. The global warming potential of a waste management system is dominated by the generation of carbon dioxide and methane emissions. Methane is a much more potent greenhouse gas compared to carbon dioxide and consequently is a significant consideration in waste management options (in general terms, landfill gas comprises between 40-65% methane). Thus, the global warming potential of each scenario is linked to the methane emissions, which is dependant upon the amount of biodegradable waste disposed of to landfill.

Air Acidification

22. The principal gases that contribute to acidification include: sulphur dioxide, nitrogen oxide, hydrogen chloride and hydrogen fluoride. All recycling and recovery operations have a beneficial impact on the emission of gases that cause air acidification. The 4 options have an increase in emissions caused by the additional vehicles required to collect recyclables; however, these emissions are off-set against the avoided emissions from recycling, composting and energy recovery taking place.

Low Level Ozone Formation

23. Ozone is a pollutant at ground level. Ground-level ozone is a secondary pollutant produced by reactions between nitrogen dioxide, hydrocarbons (e.g. methane) and sunlight. Landfill is a significant source of methane and therefore options that divert more waste from landfill will have a better performance. In all the options, there is a greater impact created by the increased vehicle mileage required for separate collections. However, the benefits from recycling, composting and recovery out-weigh the impacts generated by transport.

Eutrophication

24. Eutrophication is a natural process, occurring where there is an increase of mineral and organic nutrients in a water body (principally nitrogen and phosphorous), potentially causing loss of amenity value, damage to commercial fishing, increased costs for water treatment and additional costs required to manage the systems.

Depletion of non-renewable resources

25. The rate at which non-renewable resources are consumed is important when assessing the sustainability of any activity. Recycling can preserve both the mineralogical value of the item, as well as the energy consumed in production of the material. Energy from

Waste facilities produce electricity and heat that would otherwise be generated from a fossil fuel, thereby conserving that resource. Thus those options that optimise recycling and energy recovery from waste are the most sustainable in terms of resource use.

Dioxins and Furans

26. Dioxins and furans are toxic. As dioxins are so widespread in the environment, they are consequently present in waste as it is collected and so they will be transferred to all downstream operations. Dioxins have been measured in compost, landfill gas and leachate, gases and residues from recycling, as well as the more commonly cited waste combustion gases and ashes.

27. **Table 2** provides a summary of the performance of each option against the impacts. Option 3 has the better overall rating of the options considered.

Table 2

Indicator	No Change	1 No treatment	2 AD + landfill	3 MBT + existing EfW	4 MBT + Landfill
Global Warming	xx	-	✓	✓✓	-
Air Acidification	-	✓	✓	✓✓	✓
Low level Ozone Formation	-	✓	✓✓	✓✓	✓
Eutrophication	xx	-	xx	-	x
Depletion of Non-Renewable Resources	-	✓	✓	✓✓	✓
Dioxins and Furans	-	xx	-	x	-

Value for Money

28. The techno-economic analysis set out in paragraphs 17-26 above also provided the total capital cost and annual revenue cost together with the maximum recycling and recovery outputs for the five scenarios.

29. To further clarify the financial implications of the five scenarios a Value for Money (VFM) analysis has been undertaken. To assess the VFM offered by each option, we have compared all the capital costs and revenues that would be incurred over a 25-year period in today's terms, i.e. the Net Present Value, and compared the results. It should be noted that the capital costs that have been used for the financial model include costs for provision of and end of life vehicle plant, a new car pound, an education centre and ancillary office accommodation.

30. **Appendix 2** provides a value for money analysis for the five options including a breakdown by each category of cost.

31. Appendix 2 demonstrates that Option 3 is the lowest cost option for the Council. Option 3 has the highest overall rating in terms of the Best Practical Environmental Option and

scores most highly against the Council criteria for assessing the various options. It is therefore recommended that Option 3 be taken forward as the Council's preferred waste management solution.

PROCUREMENT OPTIONS

32. As outlined in the Executive report of 3 December 2003, it is necessary to use an investment contract procurement route to deliver the necessary waste infrastructure, as the Council is not in a position to fund the capital and revenue costs.

33. To determine the most appropriate procurement route further work has been undertaken on option 3 to determine the financial impact of alternative procurement routes. There are two possible procurement options available – a Public Private Partnership or a Private Finance Initiative. The relative benefits of these are set out below.

Public Private Partnership (PPP)

34. A PPP contract will allow Southwark to lever in external private sector finance to build a new waste management facility, whilst retaining ownership of targets and strategic direction. In letting a PPP contract, Southwark would be able to transfer much of the responsibility for meeting targets and the performance of the contract to a single contractor. It would also allow Southwark to develop an output specification, allowing the contractor to specify how it will be delivered.

35. To analyse the cost of a PPP option, the capital, operating and lifecycle costs of a less ambitious technical solution (relative to a PFI shadow bid), which delivers a reduced level of performance in terms of recycling and recovery, have been modelled. The statutory performance levels of 33% recycling of household waste and 67% recovery of value from municipal waste have been used for the PPP option.

Private Finance Initiative (PFI)

36. In addition to leveraging in private sector finance as under PPP, a PFI option has the benefit that it can receive substantial credit support from the Government. As a consequence however, this does bring much closer Government scrutiny, and higher performance requirements in terms of stretch recycling and recovery targets.

37. The relative costs of the shadow PFI and PPP options (prior to risk adjustment) are detailed in **Table 3**.

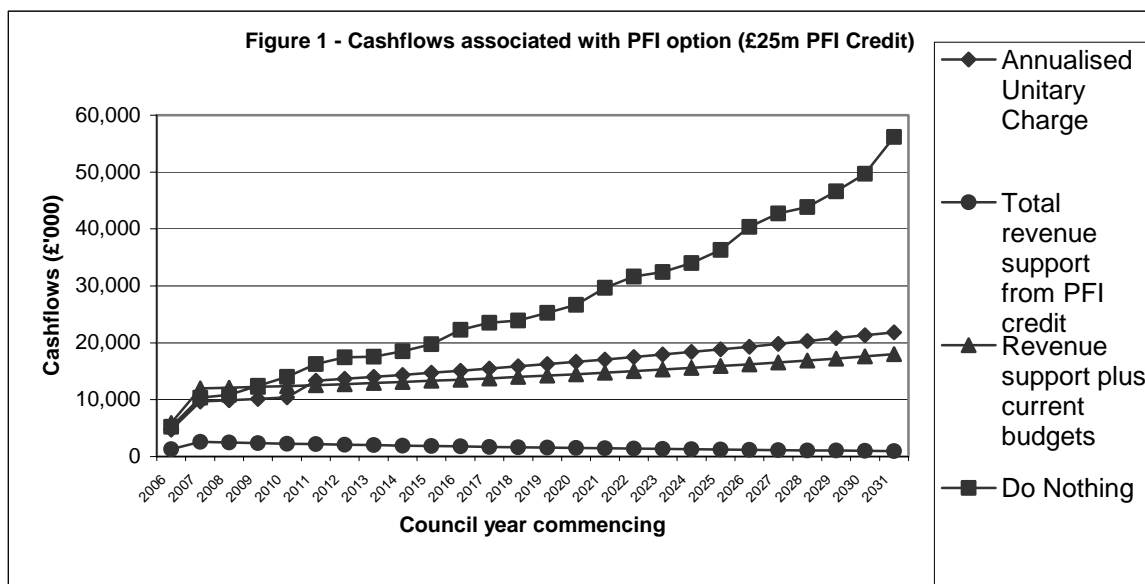
Table 3

	Shadow PFI NPV at 3.5% discount (£'000)	PPP NPV at 3.5% discount (£'000)
Capital Expenditure	26,272	24,774
Operating Costs	138,327	157,236
Lifecycle Costs	15,340	13,465
Third Party Revenues	(43,371)	(42,636)
Total	136,568	152,839

38. Table 3 shows that the cost of the PPP option is actually higher than the shadow PFI option (prior to any risk adjustment). It should be noted that the figures exclude the borrowing costs that are applicable to both the PFI and PPP options. The higher cost of the PPP is because this option still requires a significant degree of landfill, which is a more expensive than other disposal options due to the facts outlined in paragraph 41.
39. The PPP option is more expensive than the PFI option therefore further analysis on a PPP has not been undertaken. In addition, the PPP will not attract any PFI credits thus making it even more expensive.

FINANCIAL IMPLICATIONS

40. The Waste Strategy clearly showed that increased expenditure in relation to waste was necessary because “doing nothing” was even more expensive. The major factor in future increased costs if the Council adopted a “do nothing” approach would be the rising costs for using landfill as a disposal option. This is because of; rising gate fees due to diminishing capacity, increasing landfill tax to encourage other disposal routes and the introduction of permits to limit landfill in accordance with the EU landfill directive. Authorities that exceeded their allocation of permits for landfill would have to purchase additional ones from other authorities.
41. Furthermore it is the case that an investment contract even with PFI credit support needs increased Council revenue. The ‘affordability gap’ can only be fully assessed once the level of PFI credit has been finally agreed with DEFRA.
42. Using the model set within the report the total capital costs (including lifecycle costs) spread over the life of the scheme are £67.3M (at October 2003 prices). This is equivalent to a Net Present Value of £40.6m in 2006, which would be the start of the new contract. The Council will seek to bid for PFI credits of £40.6m, although historically there has been a cap on credits at £25M for waste management projects.
43. The award of any PFI credit is a matter of negotiation with DEFRA and therefore for modelling purposes, a range of PFI Credit level figures from £40.6M to £15M have been used to assess the affordability of this project and any potential funding gap. The revenue support from the PFI Credit has been modelled in accordance with Local Authority Capital Finance regulations.
44. The financial model used to assess the potential “affordability gap” has been based on the waste collection and disposal budget for 2006/2007 of £9,184k. The 2006/07 budget is assumed to increase by the increase in household numbers and by 2.5% over the life of the Contract.
45. The combined available budgets, assuming a PFI credit level of £25M, are shown below in **figure 1** together with the cost for the “do nothing” option for comparison.



46. This illustrates the funding shortfall already described in paragraph 42. It is also the case that the revenue support from the PFI credit reduces over the years. Because of this, if this approach is endorsed the Council will have to set aside revenue in the years 2006/07 to 2031/32 in the form of a “sinking fund”.

47. Figure 1 also shows the costs associated with the ‘Do Nothing’ option. As may be expected the annual costs of the ‘Do Nothing’ option are significantly higher than the annual cost associated with the PFI project even before any consideration of PFI credit support. This demonstrates that ‘doing nothing’ is considerably more expensive than the PFI solution even though the PFI option requires an additional revenue contribution.

48. The level of PFI credit the Council receives is critical to the annual contribution the Council would need to make to a “sinking fund”. **Table 4** sets the potential annual contribution to a “sinking fund” for various levels of PFI credit.

Table 4

Level of PFI Credit awarded by DEFRA (£M)	Annual sinking fund contribution (£'000)
40.6	0
25	763
20	1,035
15	1,308

CONCLUSIONS

49. It is clear from both an achieving targets and a financial perspective doing nothing is not a viable option for the Council.

50. Therefore, following the detailed assessment against technical, financial and environmental considerations, option 3 is recommended as the Council’s preferred waste management solution.

51. In addition, it is recommended that a PFI procurement route is the most economically advantageous for the Council.

52. However, the Council also needs to note that all routes will require increased revenue allocated to this area in future years.

WAY FORWARD

53. Following preliminary discussions with DEFRA and their advisors, the 4P's, it is anticipated that because Southwark is a unitary London Borough, with a considerable proportion of high / medium rise dwellings, coupled with the stretched recycling and recovery targets set out in our Strategy, an application to DEFRA for PFI credits would be successful.

54. It is therefore recommended that members task officers to pursue an application to DEFRA for PFI credits for Southwark.

55. If PFI is adopted as the recommended procurement route, there is a requirement to submit an expression of interest followed by an Outline Business Case (OBC) to DEFRA, setting out our proposals and seeking PFI credits.

56. The OBC will need to contain the following details:

- Background and context, (from Southwark's Waste Strategy)
- Option appraisal
- Meeting recycling, recovery and landfill targets
- Value for money
- Preferred option, including output specification, design quality
- Calculation of the PFI credit
- Affordability
- Market interest
- Risk assessment and allocation
- Site and planning constraints
- Project Management arrangements

57. If Members approve the way forward set out in this report, officers will draw up and submit an Outline Business Case to DEFRA by June 2004. It is expected that if successful, approval will be given within 6 months.

58. If Southwark's Outline Business Case is approved by DEFRA, officers will report back to Executive detailing the level of PFI credit support and seek final authority to progress a PFI procurement process; the scope of the contract and the outputs that the contract will deliver.

59. **Table 5** is an indicative timetable for any proposed PFI procurement process.

Table 5

Expression of Interest to DEFRA	May 2004
Outline Business Case to PRG	June 2004
PRG Approval	October 2004
Report to Executive	November 2004
OJEC	November 2004
Return of Pre Qualifying Questionnaires	December 2004
Selection of Longlist/ Invitation to Submit Outline Proposals	January 2005
Receipt of Outline Proposals	March 2005
Shortlist/ Invitation to Negotiate	April 2005
Receipt of responses	June 2005
Select two bidders for Best and Final Offer	September 2005
Commence CPO process	October 2004
Receipt of Best and Final Offer	November 2005
Appoint preferred bidder	December 2005
Complete negotiations	March 2006
Submit Full Business Case to DEFRA	May 2006
Approval by DEFRA of Full Business Case	June 2006
Contract Sign off and Start Date	October 2006

SITE AND PLANNING ISSUES

60. As outlined earlier in the report underpinning the proposal of providing new infrastructure for waste is the Council's Unitary Development Plan and the identification of a site on the Old Kent Road. A detailed report on the proposed site is contained within a separate report on this Executive's agenda.

CONSULTATION

61. The establishment of a new waste facility within the borough has considerable implications for all stakeholders, particularly residents. To ensure that all levels of stakeholders are fully engaged in the process a comprehensive communication and consultation plan has been prepared. The plan identifies key audiences and links the site and planning issues in terms of statutory consultation processes.

62. A key aspect of the plan is to ensure that all sections of the community have a clear understanding of what the new waste facility includes and the regeneration benefits that will arise from the overall programme.

EQUAL OPPORTUNITY IMPLICATIONS

73. Effective management of waste affects all residents of the Borough. The planned improvements for the future should enhance the quality of life for all.

Appendix 1

SOUTHWARK WASTE MANAGEMENT - STRATEGIC OPTIONS APPRAISAL

PHASE 2

Evaluation Criteria		Unweighted Scoring					
		Weighting	DN	1	2	3	4
a	Does it meet Southwark's Policies and Targets?	20%	0	3	4	6	4
b	Public acceptability?	20%	5	5	8	6	8
c	Financial Performance?	20%	5	7	8	9	6
d	Environmental Impacts?	20%	2	8	9	10	9
e	Does it provide a universal service (i.e. to all Southwark residents)?	20%	0	7	7	7	7
		100%	12	30	36	38	34

- 0 - Fails to meet all criteria
- 1 - Partially meets criteria
- 2 - Partially meets criteria
- 3 - Partially meets criteria
- 4 - Meets criteria (within -5%)
- 5 - Meets criteria
- 6 - Meets criteria (within +5%)
- 7 - Exceeds criteria
- 8 - Exceeds criteria
- 9 - Exceeds criteria
- 10 - Exceeds criteria

Options		Scoring	Ranking
Do Nothing	Do Nothing more than is done now	12.0	5
1	• Maximised recycling, with in-vessel composting of kitchen and garden waste. Survival bags for medium/ high rise properties, with all residual waste being sent for recovery in an existing waste to energy plant.	30.0	4
2	• Maximised recycling, with in-vessel composting of kitchen and garden waste. Survival bags for medium/ high rise properties, with all residual waste being sent to an anaerobic digestion plant to recover additional material with landfill of all residuals.	36.0	2
3	• Maximised recycling, with in-vessel composting of kitchen and garden waste. Survival bags for medium/ high rise properties, with all residual waste being sent to an MBT plant to recover additional material followed by recovery in an existing waste to energy plant.	38.0	1
4	• Maximised recycling, with in-vessel composting of kitchen and garden waste. Survival bags for medium/ high rise properties, with all residual waste being sent to an MBT plant to recover additional material followed by landfill of residual fractions	34.0	3

Appendix 2

Breakdown of costs by category for each of the 5 options (NPV at 3.5% discounted to April 2004 to £'000)

Breakdown of the costs by category for each of the 5 options (NPV at 3.5% discount to £'000)	Option 1 – PFI Inputs with residual waste to existing EFW facility	Option 2 – PFI Inputs with residual waste to Anaerobic Digestion and output to Landfill	Option 3 – PFI Inputs with residual waste to MBT followed by existing EFW	Option 4 – PFI Inputs with residual waste to MBT and then to Landfill	Do Nothing
Capital expenditure	10,291	29,775	26,272	26,272	4,646
Operating costs ¹	160,759	156,106	138,327	181,039	284,765
Lifecycle costs	12,869	17,283	15,340	15,340	9,956
3 rd party revenue	(39,979)	(53,232)	(43,371)	(52,836)	(59,233)
Total PSC costs (not risk adjusted)	143,940	149,932	136,568	169,815	240,134

¹ Land fill tax and gate fee included in operating costs.