Meeting:	Cabinet
Date:	4 October 2006
Subject:	West London Waste Authority - Joint Waste Strategy
Responsible Officer:	Executive Director – Urban Living - Andrew Trehern
Contact Officer:	Waste Management Policy Officer - Andrew Baker
Portfolio Holder:	Urban Living – Public Realm – Eileen Kinnear
Key Decision:	Yes
Status:	Part 1

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Recommendation

1. That Cabinet approve the joint strategy.

2. That Cabinet determine that environmental assessment of the joint strategy under the Environmental Assessment of Plans and Programmes Regulations 2004 is not feasible and that this determination be notified to the public on the Council's web-site.

Reason for Report

WLWA and the six constituent authorities have developed their joint waste strategy over the last eighteen months and has involved a significant element of public consultation with the establishment of a Waste Forum and a Community Forum (across the WLWA area) and local consultation carried out by the six boroughs.

The first draft of the strategy was published in June 2005 and discussed at a joint meeting in August 2005. A revised draft was issued by WLWA in September for wider consultation.

In November 2005,Cabinet approved the draft strategy and ask WLWA and the other collection authorities to consider:

1. Establishing a WLWA-wide campaign to promote reusable nappies within the health service and baby-care professions.
2. An investigation into the possibility (and costs) of the inclusion of kitchen waste (as one of five materials collected from every household by 2010).

WLWA have now completed the consultation and formally adopted a revised strategy. The only changes of note are those that have been added to address comments from the Mayor of London.

The agreement of Harrow and the other five constituent authorities will allow WLWA to proceed with procuring alternative disposal and treatment facilities for the West London area.

Benefits

The agreement of a joint waste strategy will allow WLWA and the six constituent authorities to make progress on procuring new waste disposal processes; meet their obligations under the Landfill Directive; reduce their reliance on landfill; and, reduce their financial liabilities under the Landfill Allowance Trading Scheme.

Cost of Proposals

Potential liabilities under LATS would be substantial if the joint waste strategy is not adopted and implemented. There are no immediate costs associated with the approval of the joint strategy. In the medium to long term the higher recycling targets will mean that the council would have to make further improvements to the recycling schemes it offers. Additional collection costs should be offset by reduced disposal costs and avoidance of LATS liabilities. Decisions would need to be made on a case-by-case basis.

Risks

Failure to meet the Landfill Directive targets, for the diversion of biodegradable waste from landfill, would expose the council to significant financial liabilities under the Landfill Allowance Trading Scheme and the prospect of fines if the UK does not meet the EU targets.

Implications if recommendations rejected

The risks identified above would be more likely to occur.

Section 1: Background

1.1 Landfill Directive

The EU Landfill Directive has set member states the following targets for reducing the amount of biodegradable municipal waste being sent to landfill

	% diversion
2010	35
2013	50
2020	75

This reduction is expressed in absolute terms compared to the amount of biodegradable waste deposited in the base year – 1995. Historically municipal waste has grown in the UK by 3% per year. These targets therefore represent a substantial reduction in absolute terms.

One of the primary aims of reducing the landfilling of biodegradable waste is to reduce the production of methane in landfill sites. Methane is a powerful greenhouse gas – approx. 30 times more powerful than carbon dioxide.

1.2 Landfill Allowance Trading Scheme (LATS)

The LATS scheme commenced in April 2005. The government has published landfill allowances for each disposal authority. WLWA's allocation in 2005/6 was 505,370 tonnes. The allocation for 2009/10, the first target year, is 329,450. This represents a reduction of 175,920 tonnes. The potential cost of purchasing landfill credits in 2009/10 is up to £26.388m. This would have a significant financial impact on the constituent authorities. Harrow's share of this cost is difficult to determine precisely but could be approx. £4m per year

1.3 National Audit Office

The National Audit Office published a review "Reducing the reliance on landfill in England" on 26 July 2006. It concluded that there was a significant risk that England will not meet the targets set by the Landfill directive, and that a failure to do so could result in the UK incurring fines for non-compliance. It is difficult to determine the extent of any fine at this stage but thee Prime Ministers Strategy Unit has suggested that the UK could be fined up to £180m per year. The government has indicated that these fines will be passed on to local authorities who do not meet their targets. This would be in addition to any costs incurred under LATS.

WLWA is the third largest waste disposal authority in England. The NAO looked in detail at the 25 largest WDAs and concluded that: -

- Only 6 were likely to meet their targets;
- 14 have scope to considerably increase recycling and composting rates, but still face a challenging timetable to achieve the required reductions in landfill; and
- 5 are very unlikely to achieve the target.

WLWA is in the second category.

The NAO also concluded that to meet EU targets, approx. 40% of household waste should be recycled by 2010 – and that this is likely to be difficult to achieve. This compares with levels of 41% in Germany and 60% in Austria in 2001.

1.4 Joint Strategy

The joint strategy sets a medium term target of recycling/composting 40% of waste by 2010 and 50% by 2020. Achieving these higher levels will require further changes to the council's waste collection systems but, at this stage, it is too early to say precisely what these will be. The joint strategy will allow for future discussion within WLWA and the six authorities to monitor progress before making final decisions. The government has recently consulted on revisions to the national waste strategy. The higher levels proposed in the joint strategy are expected to be broadly consistent with any revised national targets.

The strategy sets out a number of aims. Over the next eighteen months to two years these are broadly in line with the service developments on waste management, set out to Cabinet in April 2005. E.g.:

- Complete the roll-out of the Brown Bin scheme
- Introduce the recycling of plastic bottles
- Introduce a scheme for recycling from flats
- Increase participation in the Green Box scheme
- Change the collection frequency of the Brown Bin and the Waste Bin.

These changes have either been implemented or are in the process of being implemented

Cabinet approved the draft strategy in November 2005 and asked WLWA and the other collection authorities to consider:

1. Establishing a WLWA-wide campaign to promote reusable nappies within the health service and baby-care professions.
2. An investigation into the possibility (and costs) of the inclusion of kitchen waste (as one of five materials collected from every household by 2010).

In both instances the revised draft leaves the above options open to individual constituent authorities to decide.

The November 2005 report identified that there was a major risk that the Mayor of London would not approve the draft strategy as it runs counter to his own municipal waste management strategy, which expresses a preference for emerging technologies over mass incineration. The changes agreed by WLWA address this issue to the Mayor's satisfaction. The Mayor 's Direction was in place on the basis that WLWA could not seek tenders because it did not have a joint waste strategy. Approval of the strategy will mean that WLWA can now proceed.

WLWA have raised three issues with the GLA:

- Procuring alternative facilities for the treatment of up to 150,000 tonnes of waste. This would allow capacity to be freed up at the existing waste transfer stations, that would allow their redevelopment.
- Procuring additional composting facilities for food/kitchen waste
- Procuring/re-letting the landfill contract for waste delivered to Victoria Road, which is due for renewal from 1st Jan 2007

The WLWA board will receive a report at their next meeting on these options and the way forward.

The Mayor retains the power under the GLA Act to issue directions to WLWA in pursuit of his Municipal Waste Management Strategy.

An important consideration will be the location of new facilities so that collection authorities can optimise their collection/transport costs.

1.5 Implications of changes for Harrow

Most of the changes requested by the Mayor will have little direct impact on Harrow as they relate to differentiating between different waste recovery techniques – and will therefore be of primary concern to WLWA.

Appendix B addresses the issue of collecting recyclable materials weekly in Harrow. Weekly collections are the preferred frequency within the Mayor's Strategy. Harrow has always argued that fortnightly collections are a cost-effective system.

WLWA's response (Appendix C1) notes that we currently have weekly borough-wide collections of compostables (garden, food, & cardboard) - since 3 July; and, that we are committed to a full review of the Green Box and Waste Bin services, which will include reviewing the frequency of collections. This is considered elsewhere on the Agenda.

1.6 Planning implications

The 6 West London Boroughs have agreed to prepare a joint Development Plan Document (DPD) for waste for the West London Sub-Region. This recognises that waste planning, as waste management, transcends borough boundaries and needs to be dealt with on a much wider basis. Arrangements to procure, manage and fund this work are being discussed with a view to formalising the project, which will take up to 3 years to complete. When finished it will form a part of each Boroughs Planning Framework. Planning and waste officers are collaborating to ensure that the Waste Strategy and the planning work are consistent and that the Mayor's waste policies are taken into account.

There is a risk that the delivery of the joint waste strategy would be adversely affected where Development Plan Documents have not identified sites.

Section 2:Financial Implications

There are no immediate costs associated with the approval of the joint strategy. In the medium to long term, the higher recycling targets will mean that the council would have to make further improvements to the recycling schemes it offers. Additional collection costs should be offset by reduced disposal costs and avoidance of LATS liabilities. Decisions would need to be made on a case-by-case basis.

The EU Landfill Directive has set very stringent targets for member states for reducing the amount of biodegradable municipal waste. Failure to meet the targets could result in substantial fines for non-compliance. Additional disposal/treatment costs are likely to be lower than the costs of continuing with landfill.

Section 3:Legal Implications

3.1 It is a requirement of section 32 of the Waste and Emissions Trading Act 2003 that the West London Waste Authority and constituent authorities consult before formulating the strategy and, when formulating the strategy, should have regard to: (a) any guidance given by the Secretary of State; and (b) the Mayor of London's municipal waste management strategy. These matters appear to have been attended to. However, failure to comply may render the strategy invalid in part or in whole.

3.2 The Environmental Assessment of Plans and Programmes Regulations 2004 arguably apply to the Council's adoption of the strategy so as to require the carrying out of an environmental assessment of the strategy under those regulations (an EA). If so, then failure to carry out such an assessment may render the Council' adoption of the strategy invalid. That said, the following matters need to be noted: (a) if the Council had adopted the strategy before 22 July 2006, then no EA would have been required; (b) the WLWA has clearly taken the lead on development of the strategy; (c) the WLWA adopted the strategy before 22 July 2006 and did not need to carry out an EA; (d) significant environmental assessment was carried out in development of the strategy; and (e) it would significantly delay adoption of the strategy to now carry out an EA. The Regulations allow the Council to determine that EA is not feasible, provided that it informs the public of its decision. This seems the safest course to ensure that the Council's adoption of the strategy is valid.

Section 4:Equalities Impact

There are no adverse impacts on equality issues.

Section 5: Section 17 Crime and Disorder Act 1998 Considerations

There are no considerations under the Crime and Disorder Act

Appendix A

WEST LONDON WASTE AUTHORITY

Report of the Director and Chief Technical Adviser 28 June 2006

JOINT MUNICIPAL WASTE STRATEGY

SUMMARY

The Authority and its constituent boroughs during the past two years have been working towards producing a statutorily required joint municipal waste strategy (JMWS). Last Autumn a draft JMWS was agreed and put out to consultation. Some delay in reporting back arose whilst views were obtained from the Mayor of London who has a statutory power of direction over the JMWS. Some amendments (that do not affect the main thrust of the strategy) are proposed in this report to accommodate points made by the Mayor's Office. The other responses to the consultation are also reported. The EU Strategic Environmental Assessment Directive imposes a deadline of 21 July for the adoption of the strategy. The Authority is recommended to adopt the JMWS as amended. The constituent boroughs are being invited to do likewise.

RECOMMENDATION

(a) That note be taken of the consultation responses and other matters contained in this report

(b) That approval be given to the adoption of the West London Waste Authority area Joint Municipal Waste Management Strategy with the amendments shown at Appendix C2 and C3.

(c) That, with the concurrence of the Chair, officers be authorised to make minor amendments to the JMWS approved under (b) in the event they be required to meet any further representations from the Mayor's Office.

DETAILS

Background

1. In two tier areas[1], the Waste and Emissions Trading Act 2003 s.32 (WET Act) places a statutory duty on waste collection and disposal authorities to produce a joint municipal waste strategy (JMWS) for their area. The Authority has received a series of reports from December 2003 onwards about the development of a JMWS for West London. The seven authorities involved (i.e. the Authority and the six constituent boroughs) have been working closely together on the JMWS assisted by the appointed specialist consultants, Environmental Resources Management Ltd (ERM).

[1] i.e. where there is a separate waste disposal authority serving a number of waste collection authorities

2. A key stage in the process was the joint seminar held in August last year where the draft JMWS[2] was received by the Authority's Members and boroughs' lead Members/portfolio holders and senior officers. The joint seminar proposed that the draft JMWS be put forward to the seven authorities for approval and then released for a final round of public consultation. There had already been a considerable amount of consultation and community engagement as part of the strategy development process.

3. It was agreed that boroughs should undertake the consultation within their respective areas whilst the Authority should undertake consultation on behalf of the area as a whole with public authorities and other relevant bodies. In particular, the Authority would lead on the consultation with the most significant consultee, the Mayor of London. The Mayor's views are of particular significance because of the power he is given by the Greater London Authority Act 1999 s.356 to direct the seven authorities on the way they discharge their waste functions, which would include the function of producing a JMWS.

4. The Mayor's Office had indicated its wish to be consulted in two stages. First, they would express initial views on the draft JMWS that was put out for public consultation. Second, they would formally receive the JMWS for consideration once the seven authorities had jointly agreed the final version of the Strategy.

5. The joint seminar's proposals were agreed by the Authority's meeting last October and in parallel similarly agreed in the constituent boroughs. The consultation periods in all seven authorities had concluded by January. At that time the hope was that the collated responses received by all seven authorities would be reported to the Authority's last meeting in April for consideration, with a view to the Authority moving the draft JMWS forward for final adoption by all seven authorities.

Consultation with the Mayor of London

6. However, as was reported to the Authority's last meeting, the key response – that of the Mayor – was still awaited and the Mayor's Office had requested a meeting with Authority officers. Accordingly, consideration was put over to this meeting. It was thought essential to know if there were any significant points of difference that needed to be resolved as there would be little point in adopting a JMWS if it did not reasonably fit with the Mayor's expectations.

7. A meeting on 13 April 2006 between Authority officers accompanied by ERM and the Mayor's Policy Director – Environment identified a number of matters in the draft JMWS where the Mayor's Office sought clarification and/or amplification. The matters raised included the desirability in Volume 1 of the draft JMWS to make it clearer that any future procurement will be technology neutral; to show that the residual waste options appraisal had resulted in

[2] The draft JMWS has been produced in accordance with statutory guidance that inescapably makes the full document very substantial because of the range of issues that have to be addressed. The draft JMWS is in two volumes: Volume 1 is the main strategy document; Volume 2 provides a number of detailed supporting technical reports. Both volumes are available on www.westlondonwaste.gov.uk and on the constituent borough websites. Printed copies of the full draft strategy are available for Members. However, attached at Appendix A is the Introduction section of Volume 1 that gives some insight into the issues and explains the main thrust of the strategy and, in particular, contains the 'Objectives' and 'Policies'.

gasification being a very close runner-up as a disposal treatment method to Mechanical Biological Treatment and Energy from Waste; and to include a reference to waste transport systems. In Volume 2 the focus was on the Technical Report 3 'Assessment of Options for Residual Waste Management' where the principle change sought was the inclusion of a sensitivity analysis on compliance with policy in the Mayor's strategy to supplement the original analysis on compliance with national waste policy.

8. The view of Authority officers was that the matters raised could be accommodated within the draft JMWS without its import changing in any way and, indeed, some clarifications would be an improvement. Accordingly, it was agreed that the Mayor's Office would be sent amendments for consideration. In a subsequent letter of 26 May (at Appendix B) the Mayor's Office raised some further minor matters that seemed not to require amendment to the JMWS.

9. With ERM's assistance, the requisite amendments were made to the draft JMWS and, after consultation with constituent borough officers, sent to the Mayor's Office under cover of the Director's 7 June letter (at Appendix C1) that also responded to the further matters in the 26 May letter from the Mayor's Office. The proposed amendments to Volume 1 of the JMWS are shown at Appendix C2 and to Volume 2 at Appendix C3. It is hoped that the Mayor's Office will shortly notify its satisfaction with the proposed amendments. At the time of writing no reply had been received; an oral update will be given to the meeting.

General consultation

10. Other responses to the consultation are summarized at Appendix D. The responses have been collated and grouped into relevant subject areas and, where appropriate, a comment in response has been made in relation to each. Not unexpectedly, many of the contributions focus on individual borough activities in the collection of waste that go somewhat beyond the remit of the JMWS – though they are nonetheless useful and have been given consideration in the boroughs concerned. Representations made regarding technical work undertaken in development of the strategy have been considered and appropriate amendments made.

Strategic Environmental Assessment (or SEA) Directive

11. Members may be aware of the European Directive 2001/42/EC3 "on the assessment of the effects of certain plans and programmes on the environment". This is commonly referred to as the Strategic Environmental Assessment (or SEA) Directive that requires public bodies to carry out an "environmental assessment" where they are involved in producing a plan or programme in relation to any of a range of specified areas, which includes waste management. In broadest outline, an "environmental assessment" is described as a procedure comprising:

    - preparing an Environmental Report on the likely significant effects of the draft plan or programme;
    - carrying out consultation on the draft plan or programme and the accompanying Environmental Report;

[3] Transposed into English law by the Environmental Assessment of Plans and Programmes Regulations 2004 (Statutory Instrument 2004 No.1633)

- taking into account the Environmental Report and the results of consultation in decision making; and
- providing information when the plan or programme is adopted and showing how the results of the environmental assessment have been taken into account.

12. The draft JMWS does contain significant content on environmental matters and, as is noted in paragraph 2.2 of the Introduction to the draft strategy at Appendix A, the appraisal of options is largely consistent with the requirements of the Directive. However, the strategy has not been subject to the SEA Directive because the JMWS development process started before 21 July 2004 and because the adoption date has been expected to be before 21 July 2006. If the JMWS were not to be adopted by 21 July, the full requirements of the SEA Directive would need to be met. No detailed assessment has been carried out of this eventuality but, aside from the additional expense, it would seem likely to result in significant delay in the order of, perhaps, twelve months or so.

Mayoral Direction

13. Members may be aware that the adoption of the JMWS is closely concerned with the removal of the Direction[4] made in November 2004 by the Mayor of London. The effect of the Direction is to prevent the Authority from procuring any new waste treatment services until the JMWS has been produced. The pressures of landfill allowances and the landfill tax escalator are making it of increasing urgency that the Mayor is persuaded to remove the Direction.

Conclusion

14. The Authority is asked to note the consultation responses and other matters in this report and to agree to adopt the JMWS with the amendments shown at Appendix C2 and C3. Once the JMWS has been adopted by the Authority, it will be considered for adoption in all the constituent boroughs.

15. As noted in paragraph 9 above, it is hoped the Mayor's Office will be satisfied with the proposed amendments. Were any further minor amendments to be requested, however, it would be helpful for the Authority to agree that these may be made with the concurrence of the Chair.

Background Papers	Nil
Contact Officers	David Streeter, Chief Technical Adviser Mike Nicholls, Director (020 8847 5555)

[4] Made under the Mayor's powers under the Greater London Authority Act 1999 s.356

Appendix B

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Mike Nicholls
General Manager
West London Waste Authority
Mogden Works,
Mogden Lane,
Isleworth
TW7 7LP.

Our ref: AR
Your ref:
Date: 26 May 2006

Dear Mike

Re: West London Waste Authority area Joint Municipal Waste Strategy.

Further to our meeting of 13 April 2006 at which I agreed to send further comments on the areas that we did not discuss in the meeting, please find those comments and questions below;

- The Mayor's Municipal Waste Management Strategy has a number of Proposals that relate to Reuse and Recycling Centres (RRC). It would appear from your strategy that the West London Waste Authority (WLWA) constituent boroughs do not have a single approach to such things as hazardous waste acceptance at the sites. Will WLWA encourage consistency in RRC facilities across the area.
- Proposal 4 in the Mayor's strategy refers to waste data and the provision of it to the Mayor. The Mayor now gathers data from Waste Data Flow, can I take your comment that WLWA and the constituent boroughs will continue to provide data to the Mayor as a commitment to complete Waste Data Flow?
- Will WLWA be encouraging Harrow and Hillingdon to move to a weekly collection of recyclables?
- The constituent authority's policies on vehicle emissions and fuel type and usage are not consistent. Will WLWA encourage good practice and uniformity with regards to waste vehicles?

I look forward to receiving your comments on the above and to receiving your response to our discussions at the meeting of 13 April 2006.

Yours sincerely,

Andrew Richmond
Senior Policy Officer (Waste)
Greater London Authority

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West London Waste Authority

M. J. Nicholls
The Director

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Date 7 June 2006

Mr. Andrew Richmond
Senior Policy Officer (Waste)
Greater London Authority
City Hall
The Queens Walk
London SE1 2AA

Dear Andrew,

West London Waste Authority area draft Joint Municipal Waste Strategy

Thank you for your letter of 26 May 2006.

Attached are the extracts from our draft JMWS documents that relate to the matters that were raised at our meeting on 13 April 2006. Reflecting our discussions at the meeting, amendments have been made that I hope you will find satisfactory. The amended paragraphs/sections are highlighted in yellow. The revisions have been canvassed with all the constituent boroughs and have their assent.

In brief, the extract from Volume 1 has been amended to make it clearer that any future procurement will be technology neutral, and to show that the residual waste options appraisal in Volume 2 resulted in gasification being a very close runner-up to MBT & EfW. A reference to waste transport systems is also included. The extract from Volume 2 is the whole of the Technical Report 3 'Assessment of Options for Residual Waste Management' barring the Annexes. The amendments here address several points but the principal changes arise from the inclusion of a sensitivity analysis on compliance with policy in the Mayor's strategy to supplement the original analysis on compliance with national waste policy.

Returning to the additional points in your 26 May letter:

- **RRCs.** I believe the draft JMWS does show a good degree of consistency of approach at RRCs across the area, including the acceptance of a fair range of hazardous wastes and an area-wide provision for cement-bonded asbestos, and also a very substantial regard to the other Proposals relating to RRCs in the Mayor's strategy – very notably in acceptance of green waste for composting (Proposal 24) and in continuing to accept cross-boundary waste free of charge (Proposal 45). Moreover, in the last three years, the

area overall has made first class progress with its RRCs - with one brand new major RRC opened and four existing RRCs substantially re-modelled and upgraded.

In terms of consistency in approach for future policy developments, the different sizes and configurations of sites unavoidably will present a practical constraint on what can be done everywhere, of course. And future planning is to some extent currently blighted by the delay in information about the way that the WEEE Directive will impact on RRCs. However, it has long been the aim of the seven authorities to keep RRC policy in step so far as possible, and discussion of RRC issues with a view to establishing a common approach is a regular feature at meetings of our monthly Constituent Engineers' Group.

- **Waste Data.** We are wholly at one with the Mayor on this since the UK has long suffered from poor and incomplete waste data. We were pleased when the Mayor first took the initiative in collecting the data for London. Notwithstanding WasteDataFlow's very considerable initial deficiencies, the Authority and the six constituent boroughs are completing it (not least because of the need for LATS reporting) and the data consequently will be available to the Mayor.

- **Weekly collections of recyclables.** The passage of time has resulted in this issue having been mostly overtaken by events. LB Hillingdon now does collect recyclables weekly borough-wide, and LB Harrow's borough-wide collections of compostables (garden, food, & cardboard) are to increase from fortnightly to weekly as from 3 July. Additionally, LB Harrow has just started a full review of its green box and waste bin collections, which will include reviewing the frequency of collections, and WLWA clearly will be in support of any change that will increase recycling levels.

- **Vehicle emissions etc.** Though policies across the seven authorities cannot be shown to be exactly the same at the moment, it nonetheless is the case that all do have this issue under consideration since all are aware of their individual statutory duties to have regard to Proposals 89, 90, and 91 in the Mayor's strategy and of the Mayor's expectations and powers in this regard in relation to any new waste contracts that may be let. Adding weight to this, of course, also is the very powerful incentive from Mayor's and TfL's proposal for a LEZ for London. Against this background, WLWA will be pleased to lend support to the need for all authorities to follow good practice in these matters.

As I say above, I hope you will find this response satisfactory. Please do not hesitate to contact me if you need anything further.

Yours sincerely,

Mike Nicholls Director

West London Waste Authority area
Draft Joint Municipal Waste Management Strategy

Brent Ealing Harrow

Hillingdon Hounslow Richmond

West London Waste Authority

Volume 1: Core Report
Extract showing amendments proposed in June 2006 in response to matters raised by the Mayor's Office

Note: New text insertions are shown in bold and **underlined**. Deleted text is shown in ~~strikethrough~~.

Making it Happen

How to Achieve Our Aims

The authorities recognise that major changes will need to be made in order to implement the objectives of the Strategy. A range of options for waste reduction and reuse, recycling and composting and residual waste treatment have been considered during the development of the Strategy. *Technical Reports 2-4* provide further detail on these analyses.

Changes to waste management in West London will be significant. In the short term, there will need to be a clear focus on tackling waste reduction and reuse and improving levels of recycling and composting. The Strategy encapsulates the waste management hierarchy and is underpinned by the desire to decouple economic growth from waste generation. Reduction and reuse initiatives that make a useful impact on reducing waste generated have been assessed and are already being explored and implemented by the Boroughs.

The Strategy includes an ambitious timeline for the roll-out of new collections for recycling and composting material in order to meet obligations under LATS. It sets a target of 40% recycling and composting for 2010 that represents a significant challenge for the Boroughs. This demands substantial progress to be made towards this target year on year from 2005/06. The Action Plans in *Annex D* present the way forward for the implementation of collections across the Boroughs in the short-term, with decision points regarding further fundamental improvements such as the introduction of kitchen waste collections and a shift to fortnightly collections of residual waste. *Table 5.2* summarises the key elements of these plans.

Beyond 2010, and as LATS allowances reduce dramatically, a recycling and composting based Strategy will prove insufficient for WLWA to meet its obligations. Whilst the Strategy requires continued progress on raising recycling and composting rates towards a 2020 target of 50%, achievable rates will not be enough to prevent a LATS shortfall without a new residual treatment facilities becoming operational. The shortfall is likely to amount to approximately 150 000 tonnes of residual waste.

The appraisal of residual waste options (5) shows that the options that offer the best performance and fit with the circumstances of WLWA are mechanical biological treatment (MBT) and energy from waste (EfW), **with gasification offering a similar level of benefits. One of these technologies would be likely to be the basis of a reference case for procurement. In practice, the financial costs and technical details of bids would be expected to vary from the results of the appraisal. Consequently, the procurement of residual waste management capacity would be 'technology-neutral'. This would allow bidders to bring forward any technology that could be demonstrated to offer a similar level of benefits to the reference case.**

New MBT, EfW **or gasification** facilities will take many years to implement, EfW **and gasification** longer so than MBT. It is extremely unlikely that any new plant, of a significant size, could be operational

(5) *Technical Report 4*

before 2010, and it could well be 2013 or later before capacity to divert residual waste from landfill comes on stream. This delay beyond the date at which the new contracts are let has significant implications for WLWA's LATS strategy.

A two-stage procurement represents the best opportunity for bridging the gap between service provision and WLWA's LATS allowances. The first stage procurement would be technology-neutral, but its requirements would be likely to be fulfilled through either: an interim, small-scale facility that could become operational quickly; securing capacity at existing facilities able to serve the West London area; or paying LATS penalties/trading permits.

~~Options for bridging the gap include: the procurement of an interim small-scale MBT plant; procuring EfW capacity from outside the West London area; or paying LATS penalties/trading permits.~~

Waste Transport
Residual waste is currently transported from West London to landfill in Buckinghamshire and Oxfordshire by rail. The appraisal of residual waste options examined the transport impacts of more proximate, but hypothetical, sites, served by road, in order to demonstrate the benefits of a larger number of small facilities. In procurement, WLWA will encourage bids that, where practicable, preserve the rail transfer of wastes and that employ water transfer.

Table 0.1 provides a summary of the main costs, benefits and risks associated with the key options for residual waste management. Costs are indicative and are presented as aggregated figures over the Strategy time period.

Table 0.1 Indicative Costs, Benefits and Risks of Waste Management Options (6)

Long Term Option	Indicative Potential Cost (aggregated 2006-2020)	Indicative Avoided Cost (aggregated 2006-2020)	Principal Risks
Baseline scenario – 'do nothing' (7)	• c £770 million baseline waste collection costs • c £480 million LATS fines • c £730 million landfill tax and gate fees		• LATS penalties • Unknown market price for LATS permits
High recycling, MBT long term treatment technology	• c £750 000 promotion of reduction/reuse* • c £172 million rec/comp collection additional to baseline • c £170 million MBT gate fees (inc RDF disposal) • c £370 million landfill tax and gate fees	• c £14 million avoided collection/disposal through reduction/reuse • c £480 million avoided LATS fines	• Market for RDF • Large capacity requirement (approx 400ktpa)

(6) All cost assumptions can be found in *Technical Reports* 2-4.
(7) Based on 2003/04 figures for recycling and composting

Long Term Option	Indicative Potential Cost (aggregated 2006-2020)	Indicative Avoided Cost (aggregated 2006-2020)	Principal Risks
High recycling, EfW long term treatment technology	• £750 000 promotion of reduction/reuse* • c £172 million rec/comp collection additional to baseline • c £75 million EfW gate fees • c £400 million landfill tax and gate fees (inc hazardous)	• c £14 million avoided collection/disposal through reduction/reuse • c £480 million avoided LATS fines	• Delivery of facility • Large capacity requirement (approx 240ktpa)
Interim Option	**Indicative Cost (aggregated 2006-2013)**	**Indicative Avoided Cost (aggregated 2006-2013)**	**Principal Risks**
Procurement of small MBT plant	• c £20 million MBT gate fees (inc RDF disposal)	• c £15 million avoided LATS fines	• Market for RDF
Procurement of EfW capacity outside West London	• c £6 million EfW gate fees	• c £15 million avoided LATS fines	• Availability of capacity on appropriate timescale
LATS payment/ trading in interim period	• c £15 million LATS fines		• LATS penalties • Unknown market price for LATS permits

*Based on the four options for reduction and reuse assessed (Technical Report 2). **It should be noted that the benefits of gasification were shown in the appraisal of residual waste options to be only slightly less than those of EfW. In procurement both of long term and of interim options, gasification might substitute for EfW.**

The Strategy will therefore require an initial procurement of residual waste treatment and/or disposal capacity to bridge the LATS gap expected from 2010 – 2013 or thereabouts. The cushion that this will provide places WLWA in a position of strength with regard to the trading of LATS allowances, and creates a safety net in terms of diversion from landfill should one or more of the Boroughs be unable to match the demands of the recycling and composting based approach through until 2010. The initial procurement should use the same basis as a reference case as recommended for the main procurement for new contracts in 2008: MBT, EfW **or gasification**. *Annex D* and *Table 5.2* also provide information on the Strategy and decision points for residual waste management.

West London Waste Authority area
Draft Joint Municipal Waste Management Strategy

Brent Ealing Harrow
Hillingdon Hounslow Richmond
West London Waste Authority

Volume 2: Technical Reports

Extract from Technical Report 3: Assessment of Options for Residual Waste Management showing amendments proposed in June 2006 in response to matters raised by the Mayor's Office

Note: No text has been deleted. New sections at 2.8 and 3.7 have been inserted. Other new text insertions are shown in bold and **underlined**.

1.3.2. Objectives and Performance Criteria

The assessment procedure requires that the performance of alternative options is assessed against key objectives, reflected through a range of criteria, in order to identify the option/s, that perform best overall. As well as environmental criteria, regard was also given to technology and financial costs, in order to ensure that proposals are practicable.

The Office of the Deputy Prime Minister's (ODPM) guidance on *Strategic Planning for Sustainable Waste Management* (8) was used as the basis for criteria selection, with some modifications resulting from feedback gained at the first WLWA and Constituent Boroughs Waste Forum, held on 18th January 2005. As a result of consultation at the Waste Forum, it was considered that the following criteria were of less importance for a strategic appraisal and so were not used in the assessment:

- employment;
- visual impact; and
- local amenity.

Employment was not seen as a significant criterion because of the number of jobs likely to be secured through new residual waste facilities and because of the high rate of employment in West London. Visual impact was considered to be impracticable to assess at the strategic level for hypothetical facilities and without a site-specific context and a project design. Local amenity was also judged impracticable to assess without design details and a site-specific context. These criteria will be of importance in evaluating bids, when actual sites are known, and visual impact and local amenity will be significant issues in the determination of site-specific planning applications.

The selected criteria also reflect the Sustainability Criteria developed by the Mayor in the London Plan(9) and that are likely to be used in drafting Sub-Regional Development Frameworks, local development plan documents, and when considering planning applications.

(8) Strategic Planning for Sustainable Waste Management '*Guidance on Option Development and Appraisal*'. ODPM October 2002. Section 2, Page 20.
(9) London Plan (2004), Policy 2A.1 Sustainability criteria

Table 0.2 Brief Description of Waste Treatment Technologies

Technology	Description
Anaerobic Digestion (AD)	Anaerobic digestion is undertaken in conditions that encourage the natural breakdown of organic matter by bacteria in the absence of air. The process generates a biogas that is rich in methane and carbon dioxide, and that can be used as a source of renewable energy to meet on-site power and process heat requirements. Depending on the feedstock used, a digestate can also be produced, which may contain valuable nutrients. After a process of aeration and maturation it can often be used as compost. However, if it is not of a suitable standard, this will require disposal to landfill.
Mechanical Biological Treatment (MBT)	MBT systems involve a combination of the mechanical sorting of materials for recycling and the biological treatment of biodegradable material in residual waste. It is a treatment technology rather than disposal, producing residues that must be managed at other facilities. Systems can be configured in a number of ways to deliver different outcomes. The aim will be to maximise the diversion of recyclable materials and to stabilise compostable materials or to separate a refuse derived fuel (RDF). The majority of material entering an MBT facility will leave either as a 'stabilised' residue that requires landfill, or as an RDF that will require combustion in a power station, cement kiln, incinerator or other suitable facility in order to recover energy.
Autoclaving	Autoclaving sterilises residual waste through the application of high temperature steam and 'cooks' biodegradable material to produce a biomass fibre. This is a treatment technology rather than disposal, producing residues that must be managed at other facilities. The process cleans metals and aids separation of plastics and heavy fractions to assist recycling. The fibre material may find use as a secondary material, particularly in building products and packaging, or may be used as a fuel for co-firing. The fibre could also be composted to use in remediation applications.
Gasification	Waste is shredded to give an appropriate surface-to-volume ratio and metals are removed. The process is divided into a primary chamber, where the gasification of the solid fuel takes place, and a secondary gas combustion chamber. The primary chamber is fed with waste and primary air, and is heated by an oil-heated grate. The slag discharged from the end of the grate is cooled in a water-basin. After the combustible gases have left the primary chamber, secondary air and re-circulated flue gas are added to obtain the desired combustion profile. Exhaust gases are cleaned prior to their release to atmosphere.
Energy from Waste (EfW)	There are a number of EfW technologies available. These methods include moving grate incineration, fluidised bed and rotary kiln incineration, pyrolysis and gasification. There are many operating conventional moving grate incinerators in the UK and Europe. There are a smaller number of fluidised bed facilities, including the Dundee & Allington plant (under construction), and a rotary kiln facility in Grimsby. All of these technologies are designed to generate power, and often heat, through the combustion of waste or a synthetic fuel. **For this assessment of residual waste management options, EfW was taken to be moving grate incineration.**

2.0.1 *Resource Depletion*

Methods and Assumptions Used

WISARD (10) determines non-renewable resource depletion as the 'Abiotic Depletion Factor' (ADF) for the extraction of individual minerals and fossil fuels. This is based on concentration reserves and rate of de-accumulation, and expresses the results in 'kg antimony equivalents/kg extraction'.

For this study, we have simplified the process by assessing the depletion of coal, natural gas and crude oil as proxies for the ADF. Since these are the major resources affected by the options assessed, it is assumed that this represents a valid means of performing the analysis. **Many previous assessments of resource depletion impacts associated with waste management have looked at a wider range of issues, but indicate that these contribute most significantly to the ADF.**

2. 0.2 *Air Pollution (Acidification)*

Method and Assumptions Used

Extensive experience by ERM and others in assessing the acidification impact of integrated waste management processes has found SO_2 emissions to be the greatest contributor to the acidification impact, with NO_x emissions the second largest contributor (11). Both NO_x and SO_2 emissions are the result of combustion processes and the emission of one is considered an indicator for the presence of the other (12). When determining the contribution to acidification impact, 1kg of SO_2 has a greater acidifying impact than 1kg of NO_x (13).

Hence for this study, we have focused solely on SO_2 emissions as a proxy for all the acidifying gases. It is assumed that SO_2 emissions alone are satisfactorily indicative of the overall acidification potential of the options. **The importance of emissions of other acidifying gases, particularly NO_x, is not intended to be dismissed by virtue of this assumption. These gases will be strictly regulated as part of any PPC application.**

2.2.4 *Emissions which are Injurious to Public Health*

Box 0.3 *Health Impact Technology Assumptions*

Autoclaving:	Autoclaving is a sterilisation process, neither biological (MBT) nor combustion (incineration). It has been assumed that the health effects of autoclaving are similar to those of anaerobic digestion, and those figures have been used.[1]

(10) ***WISARD*** is the Environment Agency's life cycle assessment software for waste management. Details of the ***WISARD*** software can be found in *Annex F*.

(11) Enviros Aspinwall (January 2002) arc21 - Consultation Waste Management Plan

(12) http://www.aeat.co.uk/netcen/airqual/naei/annreport/annrep99/index.htm [05Jan05 @ 11:44]

(13) CML 2 Baseline 2000, Institute of Environmental Sciences (CML), University of Leiden, the Netherlands, 2000.

Composting:	Given that the release of bioaerosols from composting plants can be an issue, it has been decided to assign to composting the higher of the impacts in each category from the most similar processes, MBT and anaerobic digestion.[1]
Landfill:	Data is given on six different landfill types, using flares or engines at small, medium and large sites. A typical value has been deduced by averaging the impacts from medium-sized flare and medium-sized engine landfill sites.
Cement Kiln:	A number of the options send RDF from MBT or autoclaving processes to a cement kiln. This is outside the remit of the Defra study, so we have assumed that impacts from a cement kiln are similar to those from an EfW facility.[1]

[1] Please note that, where, due to missing data, impacts have been assumed to be the same as those of another technology, the transfer is made on the basis of the number of tonnes of waste treated. Tonnages treated may vary between technologies.

2.2.7 Total Road Kilometres

Currently, residual wastes from West London are transferred to rail for transport to landfill in Buckinghamshire and Oxfordshire. This appraisal examines a hypothetical set of options assumed to be located in West London, and, as a result, road transport distances are used as a means of discriminating between the impacts of larger numbers of small facilities and small numbers of larger ones. In a procurement, WLWA will seek, if practicable, to preserve rail transfer, and to encourage transfer by water where this is appropriate.

The total expected road distance travelled in each option has been calculated. These figures can give an indication of the local transport impacts associated with each option, for example, road traffic congestion and accidents.

2.2.8 Financial Costs

A problem commonly associated with data on the financial costs of waste management activities is the acquisition of detailed, reliable and up-to-date information, and the necessity of relying on small and dated data sets in forecasting future costs. In addition, some technologies are not as well established as others, resulting in additional difficulties in making accurate cost predictions. Another significant barrier is that this information is often commercially sensitive and so not readily available. Assumptions underpinning the estimation of financial costs in this assessment can be found in *Annex E*.

This analysis of financial costs is intended to be an indicative snapshot for the purposes of informing the Strategy, and is unlikely to be entirely characteristic of the costs that are put forward in tenders. A large number of factors will influence prices tendered in due course, including competitiveness, experience with new technologies and the development of markets for secondary products and fuels.

2.2.10 Compliance with Waste Policy

This criterion assesses the ability of each of the options to manage waste in accordance with UK waste policy. Nevertheless, key constraints were established during the initial development of options to ensure that each of the options complies with the statutory LATS targets and meets, or exceeds, statutory BVPI targets. As such, these requirements have been excluded from the assessment of this criterion.

In *Waste Strategy 2000*, the government suggests that the principle of the waste hierarchy should be embraced. The waste hierarchy seeks to promote an integrated approach to waste management. It reflects the fact that the best option for dealing with waste is to reduce the amount created, followed by re-use and then recovery, which includes recycling, composting and EfW. Only when these options have been exhausted should waste be disposed of to landfill. The aim is to move up the hierarchy to ensure better environmental protection and meet statutory targets.

The policy in the Mayor's *Municipal Waste Management Strategy (MMWMS)* promotes other forms of recovery above EfW. The effect of using this interpretation of the waste hierarchy has been examined in a sensitivity analysis which is reported in *Section 2.8*.

2.5 Step 6 – Evaluate and Rank the Options

The weight set shown in ***Error! Reference source not found.*** has been applied to the valued performance data presented in ***Error! Reference source not found.***. In doing so, the relative importance of the assessment criteria is accounted for, and the weighted valued performance can be totalled to yield a total weighted value for each option.

A set of results from this process is presented in ***Error! Reference source not found.***. This employs the weights derived from the combined Community Panel and Officer weight set. In the final row, the total weighted valued performance is shown. The higher the number, the higher the overall performance of an option.

The table indicates that, for this set of weights, MBT (option 5) is identified as the highest scoring technology option, followed by EfW (option 4). It should be noted that there is very little difference between the weighted scores for these two options, however. Gasification (option 2) also performs well in the assessment, **with little difference between this option and the other two front-runners. The other options perform much less well.**

The assessment has also concluded that a larger facility may be beneficial to a number of small/ medium sized facilities, as option 7, with multiple MBT plants, performs the least well of the three MBT options. Criteria covering issues of economies of scale, reliability of delivery and environmental performance influenced this conclusion.

2.8 *Sensitivity Analysis – Compliance with Policy in the Mayor's Municipal Waste Management Strategy*

(Note: the whole of this 2.8 section that follows is new. The original 2.8 in consequence has been renumbered 2.9)

2.8.1 *Introduction*

In *Section 2.2.10*, each of the options was assessed in terms of compliance with waste policy. Performance against this criterion was assessed in terms of the extent to which waste was managed in accordance with national waste policy as set out in *Waste Strategy 2000*, through adherence to the principle of the waste hierarchy.

The *Mayor's Municipal Waste Management Strategy (MMWMS)* [(14)] also suggests that the waste hierarchy should be embraced. However, it places a slightly different emphasis on EfW, which is less favoured than other forms of recovery, *viz*. gasification and anaerobic digestion. Accordingly, the results of assessing compliance with policy in the M*MWMS* will vary from those in *Section 2.2.10*.

This section describes a sensitivity analysis conducted to determine the impact of variation in policy on the results of the appraisal. An alternative scoring of management route to that shown in *Error! Reference source not found.*, **consistent with the M*MWMS*, has been developed, as shown in *Table 2.42*. These scores have been used to determine the performance of each option. The only difference is the score accorded EfW.**

Table 2.42 *Ranking System for Waste Policy Criterion – MMWMS Sensitivity*

Waste treatment/disposal facility	*Waste Strategy 2000* hierarchy score (as used in *Table 2.20*)	The Mayor's *MWMS* hierarchy score
Waste reduction & minimisation	5	5
Recycling & composting	4	4
Anaerobic digestion	3	3
Recovery	3	3
Gasification	3	3
Energy from waste	3	2
Landfill	1	1

2.8.2 *Method and Assumptions Used*

The method and assumptions used are as previously reported in *Section 2.2.10*.

The total quantities of waste managed by each technology for each option are as previously shown in *Table 2.21*.

(14) Mayor of London (2003) Rethinking Rubbish in London. The Mayor's Municipal Waste Management Strategy. Greater London Authority.

Table 2.43 **presents the performance scores for each option against compliance with waste policy in the M*MWMS*. The table can be compared with *Table 2.22*, where compliance was judged against the hierarchy in *Waste Strategy 2000*. The score for option 4, led by EfW, is the only one that changes.**

The MBT options (5 and 6) employ treatment facilities that manage waste at the top of the waste hierarchy and have low volumes to landfill. As a result, these gain the highest overall rank (1). EfW and multi-plant MBT (options 4 and 7 respectively) score least well, with EfW dropping significantly from its rank of fourth when using compliance with policy in *Waste Strategy 2000*.

Table 2.43 *Compliance with Waste Policy to Determine Performance Score for MSW Options – MMWMS Sensitivity*

Waste technology	Option 1	2	3	4	5	6	7
Recycling/composting	242	195	214	195	210	210	208
Recovery	19	0	56	0	65	65	56
Gasification	0	76	0	0	0	0	0
Energy from waste	0	0	0	51	0	0	0
Landfill	33	26	28	26	26	26	29
Total	294	297	298	271	301	301	293
Rank	5	4	3	7	1	1	6

2.8.3 *Step 4 - Value Performance*

The reasons for assessing performance in terms of value, and the method by which this is achieved, are described in *Section 2.2*. *Table 2.44* shows the results of converting performance to value for the compliance with waste policy criterion for performance based both on *Waste Strategy 2000* and the M*MWMS*. The remainder of the performance of the options against the criteria is unchanged, and is reported in summary in *Table 2.26* and as value in *Table 2.27*. Under this sensitivity analysis, EfW offers a value of zero against this criterion.

Table 2.44 *Alternative Technology Options - Value – MMWMS Sensitivity*

Criterion	Option 1	2	3	4	5	6	7
Compliance with policy (Waste Strategy 2000)	0.13	0.47	0.60	0.47	1.00	1.00	0.00
Compliance with policy (Mayor's MWMS)	0.77	0.87	0.90	0.00	1.00	1.00	0.73

The process of valuing, evaluating and ranking the results of the appraisal was described in *Section 2.4* and *Section 2.5*. *Table 2.45*

shows the weighted valued performance of the options under the sensitivity analysis. The weighted values in the table are the same as in *Table 2.29*, previously, with the exception of the values for compliance with waste policy.

Table 2.45 *Weighted Valued Performance for Alternative Technology Options Using Combined Officer and Community Weight Set – MMWMS Sensitivity*

Criterion	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6	Option 7
Depletion of resources	0.000	0.026	0.066	0.028	0.057	0.057	0.048
Air pollution (acidification)	0.000	0.062	0.068	0.019	0.083	0.083	0.071
Greenhouse gas emissions	0.000	0.021	0.082	0.023	0.057	0.057	0.045
Emissions which are injurious to public health	0.093	0.063	0.015	0.000	0.017	0.017	0.029
Landtake	0.000	0.032	0.044	0.047	0.044	0.038	0.012
Extent of water pollution	0.048	0.063	0.052	0.049	0.052	0.040	0.000
Total road kilometres	0.038	0.054	0.000	0.053	0.024	0.032	0.037
Financial cost	0.046	0.112	0.000	0.161	0.087	0.047	0.021
Reliability of delivery	0.113	0.075	0.075	0.151	0.113	0.057	0.000
Compliance with policy	0.087	0.098	0.102	0.000	0.113	0.113	0.083
Liability of end product	0.071	0.088	0.000	0.083	0.021	0.021	0.032
TOTAL							
Weighted Scores	0.50	0.69	0.50	0.61	0.67	0.56	0.38
Rank	6	1	5	3	2	4	7
Value	0.37	1.00	0.40	0.74	0.92	0.59	0.00

With this weight set, option 2, led by gasification, is demonstrated to offer the best mix of benefits to WLWA. MBT-led option 5 drops from first to second place, whilst option4, led by EfW, drops to third. Option 2 overtakes option 5 because, by comparison with the poor performance of option 4 in the sensitivity analysis on compliance with waste policy, it gains significantly in terms of 'value', whilst option 5 remains the best performer against this criterion, and does not make any gain.

2.8.4 *Step 7 - Analyse the Sensitivity of the Results*

Previously, a number of different weight sets were applied to with the results of the sensitivity analysis shown in *Section 2.6*. *Table 2.46* shows the effects of applying these weight sets to the valued results with the compliance with waste policy criterion based on the M*MWMS*. For ease of comparison, the results with this criterion based on *Waste Strategy 2000* are also included in the table.

Table 2.46 Total Weighted Performance of Alternative Technology Options Using Different Weight Sets – MMWMS Sensitivity

	Option						
Weight Set/Method	**1**	**2**	**3**	**4**	**5**	**6**	**7**
WLWA Constituent Borough Officers							
Waste Strategy 2000							
Total Weighted Scores	**0.44**	**0.64**	**0.39**	**0.74**	**0.66**	**0.53**	**0.23**
Rank	**5**	**3**	**6**	**1**	**2**	**4**	**7**
Value	**0.42**	**0.81**	**0.31**	**1.00**	**0.84**	**0.59**	**0.00**
The Mayor's MWMS							
Total Weighted Scores	**0.55**	**0.71**	**0.44**	**0.66**	**0.66**	**0.53**	**0.36**
Rank	**4**	**1**	**6**	**2**	**3**	**5**	**7**
Value	**0.55**	**1.00**	**0.24**	**0.85**	**0.85**	**0.50**	**0.00**
WLWA Community Panel							
Waste Strategy 2000							
Total Weighted Scores	**0.40**	**0.66**	**0.55**	**0.59**	**0.68**	**0.59**	**0.36**
Rank	**6**	**2**	**5**	**4**	**1**	**3**	**7**
Value	**0.14**	**0.93**	**0.59**	**0.73**	**1.00**	**0.74**	**0.00**
The Mayor's MWMS							
Total Weighted Scores	**0.44**	**0.68**	**0.56**	**0.57**	**0.68**	**0.59**	**0.40**
Rank	**6**	**2**	**5**	**4**	**1**	**3**	**7**
Value	**0.15**	**1.00**	**0.59**	**0.60**	**1.00**	**0.70**	**0.00**
North Yorkshire Members & Officers							
Waste Strategy 2000							
Total Weighted Scores	**0.43**	**0.62**	**0.46**	**0.67**	**0.62**	**0.51**	**0.33**
Rank	**6**	**2**	**5**	**1**	**3**	**4**	**7**
Value	**0.30**	**0.86**	**0.38**	**1.00**	**0.85**	**0.53**	**0.00**
The Mayor's MWMS							
Total Weighted Scores	**0.46**	**0.64**	**0.46**	**0.66**	**0.61**	**0.50**	**0.36**
Rank	**6**	**2**	**5**	**1**	**3**	**4**	**7**
Value	**0.34**	**0.95**	**0.35**	**1.00**	**0.85**	**0.49**	**0.00**
City of York Members & Officers							
Waste Strategy 2000							
Total Weighted Scores	**0.41**	**0.62**	**0.41**	**0.67**	**0.64**	**0.54**	**0.29**
Rank	**6**	**3**	**5**	**1**	**2**	**4**	**7**
Value	**0.31**	**0.87**	**0.31**	**1.00**	**0.92**	**0.66**	**0.00**
The Mayor's MWMS							
Total Weighted Scores	**0.50**	**0.67**	**0.45**	**0.60**	**0.63**	**0.54**	**0.40**
Rank	**5**	**1**	**6**	**3**	**2**	**4**	**7**
Value	**0.37**	**1.00**	**0.18**	**0.75**	**0.85**	**0.51**	**0.00**

Applying the different weight sets with compliance with waste policy altered to be consistent with the Mayor's *MWMS* results in some changes to the highest scoring options. With the WLWA Constituent Borough Officers' weight set, option 2 moves from third to first, with option 4 and option 5 each dropping a place. There is no change in positions with the WLWA Community Panel weight set, although the 'value' offered by the options does

change. With the North Yorkshire Members' & Officers' weight set, the ranking remains the same, although the performance of option 2 in terms of value improves. With the City of York Members & Officers weight set, option 2 moves from third to first, swapping places with option 4.

Options 2, 4 and 5 remain the best three performers, with the exception of the WLWA Community Panel weight set, where the results remain unchanged, and option 6 displaces option 4 in third place.

2.8.5 *Assessment of Options S1 and S2*

Table 2.46 **presents the performance of options S1 and S2 with the sensitivity analysis on compliance with MWMWS waste policy, with the Waste Strategy 2000 results included for comparison. Option S1 performed best when using the ranking system derived from *Waste Strategy 2000*, but slips to third place when compliance with policy in the MMWMS is considered. In this case, option 3 moves from. Option S2 performed worst for both criteria due to its dependence on landfill.**

Table 2.46 *Compliance with Waste Policy Criteria (including S1 and S2) - Summary of Results – MMWMS Sensitivity*

Criterion	Option 1	Option 2	Option 3	Option 4	Option S1	Option S2
Compliance with policy (Waste Strategy 2000)	294	297	298	297	301	258
	(5)	(4)	(2)	(3)	(1)	(6)
Compliance with policy (Mayor's MWMS)	294	297	298	271	287	258
	(3)	(2)	(1)	(5)	(4)	(6)

2.8.6 *Value Performance*

The valued performance data for the compliance with waste policy criterion is presented in *Table 2.47*, with the line from the assessment in T*able 2.36* included for the purposes of comparison.

Table 2.47 *Alternative Technology Options (including S1 and S2) - Value – MMWMS Sensitivity*

Criterion	Option 1	Option 2	Option 3	Option 4	Option S1	Option S2
Compliance with policy (Waste Strategy 2000)	0.84	0.90	0.93	0.90	1.00	0.00
Compliance with policy (Mayor's MWMS)	0.90	0.98	1	0.33	0.73	0

Table 2.48 **shows the weighted valued performance of the options in the sensitivity analysis. The weighted values in the table are the same as in *Table 2.37*, previously, with the exception of the values for compliance with waste policy. Option 4 remains the highest scoring option, but is only marginally better than option 2. Options 1 and S1 swap places in third and fourth position.**

Table 0.48 *Weighted Valued Performance for Alternative Technology Options (including S1 and S2) Using Combined Officer and Community Weight Set – MMWMS Sensitivity*

Criterion	Option 1	Option 2	Option 3	Option 4	Option S1	Option S2
Depletion of resources	0.000	0.026	0.066	0.028	0.026	0.002
Air pollution (acidification)	0.000	0.077	0.083	0.023	0.029	0.010
Greenhouse gas emissions	0.012	0.030	0.082	0.032	0.017	0.000
Emissions which are injurious to public health	0.093	0.063	0.015	0.000	0.017	0.068
Landtake	0.000	0.023	0.039	0.046	0.045	0.000
Extent of water pollution	0.032	0.063	0.039	0.033	0.009	0.000
Total road kilometres	0.038	0.054	0.000	0.053	0.044	0.021
Financial cost	0.046	0.112	0.000	0.161	0.087	0.011
Reliability of delivery	0.075	0.000	0.000	0.151	0.075	0.075
Compliance with policy	0.102	0.111	0.113	0.037	0.082	0.000
Liability of end product	0.071	0.088	0.000	0.083	0.021	0.074
TOTAL						
Weighted Scores	0.47	0.65	0.44	0.65	0.45	0.26
Rank	3	2	5	1	4	6
Value	0.54	1.00	0.46	1.00	0.50	0.00

NB Value numbers are rounded to 2 decimal places. Option 4 scores higher than option 2 for value.

2.8.7 *Sensitivity Analysis of Weighting Results (including S1 and S2)*

The results of applying the different weight sets employed to the results are shown in *Table 2.48*.

Table 2.48 Total Weighted Performance of Alternative Technology Options Using Different Weight Sets – MMWMS Sensitivity

	Option					
	1	2	3	4	S1	S2
WLWA Constituent Borough Officers						
Waste Strategy 2000						
Total Weighted Scores	**0.51**	**0.63**	**0.35**	**0.81**	**0.52**	**0.28**
Rank	**4**	**2**	**5**	**1**	**3**	**6**
Value	**0.44**	**0.65**	**0.12**	**1.00**	**0.45**	**0.00**
The Mayor's MWMS						
Total Weighted Scores	**0.53**	**0.53**	**0.36**	**0.71**	**0.48**	**0.28**
Rank	**3**	**2**	**5**	**1**	**4**	**6**
Value	**0.56**	**0.57**	**0.18**	**1.00**	**0.45**	**0.00**
WLWA Community Panel						
Waste Strategy 2000						
Total Weighted Scores	**0.41**	**0.64**	**0.51**	**0.61**	**0.45**	**0.24**
Rank	**5**	**1**	**3**	**2**	**4**	**6**
Value	**0.43**	**1.00**	**0.67**	**0.91**	**0.51**	**0.00**
The Mayor's MWMS						
Total Weighted Scores	**0.41**	**0.61**	**0.51**	**0.58**	**0.43**	**0.24**
Rank	**5**	**1**	**3**	**2**	**4**	**6**
Value	**0.47**	**1.00**	**0.74**	**0.91**	**0.52**	**0.00**
North Yorkshire Members & Officers						
Waste Strategy 2000						
Total Weighted Scores	**0.43**	**0.59**	**0.38**	**0.70**	**0.41**	**0.29**
Rank	**3**	**2**	**5**	**1**	**4**	**6**
Value	**0.36**	**0.73**	**0.23**	**1.00**	**0.30**	**0.00**
The Mayor's MWMS						
Total Weighted Scores	**0.44**	**0.56**	**0.38**	**0.68**	**0.40**	**0.29**
Rank	**3**	**2**	**5**	**1**	**4**	**6**
Value	**0.38**	**0.71**	**0.25**	**1.00**	**0.29**	**0.00**
City of York Members & Officers						
Waste Strategy 2000						
Total Weighted Scores	**0.49**	**0.64**	**0.39**	**0.74**	**0.50**	**0.25**
Rank	**4**	**2**	**5**	**1**	**3**	**6**
Value	**0.49**	**0.79**	**0.28**	**1.00**	**0.51**	**0.00**
The Mayor's MWMS						
Total Weighted Scores	**0.50**	**0.55**	**0.40**	**0.66**	**0.46**	**0.25**
Rank	**3**	**2**	**5**	**1**	**4**	**6**
Value	**0.61**	**0.74**	**0.36**	**1.00**	**0.52**	**0.00**

When the sensitivity weight sets are applied to the M*MWMS* results the figures differ very slightly to the *Waste Strategy 2000* results. Option 4 is still the highest scoring option when the City of York, North Yorkshire and Officer weight sets are applied, but option 2 remains the preferred option when the Community Panel weight set is employed. The results of the sensitivity analysis are not as marked as when the original options 1 – 6 were examined, because option S2, with the products of MBT sent to landfill, performs much less well against the compliance with waste policy criterion than EfW.

Implications for Stage Two: Integrated Options Assessment

(Note: this section was numbered 2.8 in the original document)

Results of the alternative technology assessment identify MBT as the highest scoring technology option for WLWA's residual waste. However, sensitivity analyses have shown that these results are sensitive to a number of key assumptions made during the modelling procedure.

If alternative weight sets are used to balance the relative importance of the assessment criteria, EfW becomes the highest scoring technology on the majority of occasions. Similarly, if it is assumed that the cement kiln market for RDF from MBT fails, EfW again becomes the highest scoring technology when the majority of alternative weight sets are applied.

Where a sensitivity analysis on the method used for compliance with waste policy is conducted, using policy drawn from the Mayor's MWMS, the performance of the option led by gasification improves, becoming the highest scoring option with the WLWA Combined Officer and Community Panel weight. The relative positions of the options led by gasification, EfW and MBT vary with the other weight sets employed, all three being placed first in one or more instances. When this sensitivity analysis is repeated in examining the impact of sending RDF from MBT to EfW or to landfill, the performance of the gasification-led option once again improves, and scores a close second to EfW, and, with some weight sets, scores more highly.

In light of this, and with regard to the general uncertainties and ongoing consultation surrounding MBT (15), it is considered that the residual waste management options comprising the second stage of assessment should encompass both the lead technologies **in the original analysis**: MBT and EfW. **Gasification offers a similar balance of benefits to EfW, with the exception of the sensitivity analysis to compliance with waste policy.**

In order to reduce the number of options considered, EfW has been used in the assessment of integrated waste management options for WLWA. However, it should be noted that the results of this stage of the appraisal demonstrate that gasification would continue to offer a similar level of benefits to the option with an EfW lead, and would overtake it in terms of performance were the compliance with waste policy criterion to be based on the Mayor's *MWMS*.

The Environment Agency is currently carrying out a consultation process, focusing on how bio-treated outputs from MBT will contribute to LATS diversion targets (16). Until this has been clarified, it is difficult to determine, with certainty, how this will impact on performance.

(15) Assessing the diversion of biodegradable municipal waste from landfill by mechanical biological treatment and other options, Environment Agency, 2004.

(16) Assessing the diversion of biodegradable municipal waste from landfill by mechanical biological treatment and other options, Environment Agency, November 2004.

Stage 2 - Assessment of Integrated Waste Management Options for WLWA

Step 2: Identify Residual Waste Management Options

A series of six integrated options for residual waste management were developed, based on the highest scoring technologies identified during stage one of the assessment, MBT and EfW (17). The options encompass all reasonable means of meeting WLWA's LATS targets over the Strategy period, 2005-2020, and can be broadly split into two categories, according to the lead technology:

- MBT-based options. Two possible options were identified for the use of MBT as lead technology. The first was to introduce a small MBT plant prior to 2013, and the second was to introduce the larger MBT facility earlier on in the Strategy period, in order to meet LATS requirements in 2010; and

- EfW-based options. Four possible options were identified for the use of EfW as lead technology. It was not considered possible to introduce an EfW plant earlier than 2013 and, as such, each option considers the introduction of an EfW plant in 2013, together with an alternative method of diverting wastes from landfill between 2010 and 2013, in order to meet LATS requirements. These include exporting wastes to an existing EfW plant, or introducing a small MBT plant and scaling down the size of EfW required from 2013. An option that investigates the implications of taking no action until 2013, and facing LATS penalties, was also considered.

The six options are intended to be illustrative rather than precise. They reflect the total forecast arisings of MSW across WLWA between 2005 and 2020 and so take into consideration:

- predicted recycling and composting rates as discussed in *Section* ***Error! Reference source not found.***;

- the yearly throughput of residual waste to treatment facilities required to meet LATS targets over the period (taking into consideration the fate of all residues from the treatment process); and

- the remaining quantity of waste that the Authority is permitted to landfill.

The finalised options are summarised in ***Error! Reference source not found.*** and shown graphically in ***Error! Reference source not found.*** to ***Error! Reference source not found.*** below. The recycling and composting rates given in ***Error! Reference source not found.*** illustrate the amount of material collected separately for reprocessing. Some of the treatment technologies also produce material suitable for recycling and composting. This material is included as part of the

(17) Stage 1 of the residual waste management options appraisal showed gasification to be a close third in terms of the mix of benefits offered by a lead technology. Gasification has not been taken forward to Stage 2 because Stage 1 demonstrated that its assessment would closely mirror EfW-led options, and unnecessarily complicate the analysis. Nevertheless, it is important to recognise that gasification would offer a similar mix of benefits if substituted into those options led by EfW.

assessment and is in addition to the recycling and composting rates shown [18].

Full lists of all technology assumptions made are provided in *Annex A*.

3.2.10 Compliance with Waste Policy

The methods and assumptions used in calculating the compliance with waste policy criterion are detailed in *Section 0*. **As previously observed, the method is based on the extent to which options are consistent with the waste hierarchy as set out in *Waste Strategy 2000*. The policy in the Mayor's *Municipal Waste Management Strategy (MMWMS)* varies slightly, in promoting other forms of recovery above EfW. The effect of using this interpretation of the waste hierarchy is examined in a sensitivity analysis which is reported in *Section 3.7*.**

5.7 Sensitivity Analysis – Compliance with Waste Policy in the Mayor's Municipal Waste Management Strategy

(Note: the whole of this 3.7 section that follows is new. The original 3.7 in consequence has been renumbered 3.8)

5.7.1 Method and Assumptions Used

The method and assumptions used in the sensitivity analysis are as indicated in *Section 2.8*.

Results

Table 3.11 presented the total quantities of waste as a percentage managed by each technology for each option. These percentages were multiplied by the waste hierarchy rank for each technology over the whole 16-year period, based on the scoring of technologies as set out for compliance with the M*MWMS* in *Table 2.42*.

Table 3.24 presents the performance scores for each option.

(18) Recycling and composting rates are based on the optimal scenario for recycling and composting, as determined during recycling and composting options appraisal.

Table 0.1 *Compliance with Waste Policy to Determine Performance Score for MSW Options – MMWMS Sensitivity*

Waste technology	Option					
	A	B	C	D	E	F
Recycling/composting	174	176	165	165	169	169
Recovery	38	46	0	0	16	16
Gasification	0	0	0	0	0	0
Energy from waste	0	0	28	26	17	17
Landfill	44	41	45	46	44	44
Total	**256**	**263**	**238**	**237**	**246**	**246**
Rank	2	1	5	6	3	3

Option B employed treatment facilities that manage waste at the top of the waste hierarchy and had low volumes to landfill, and as a result is the highest ranked option. Options D and C scored least well because they involve the greatest proportion of waste managed via EfW of any of the options.

The ranking of the options is the same in this sensitivity analysis as when the compliance with waste policy criterion was based on *Waste Strategy 2000*, and as shown in *Table 3.12*. However, the actual scores differ.

Evaluate and Rank the Options

The valued performance data for the residual waste management options against the compliance with waste policy criterion is shown in *Table 3.27*. The line for compliance with waste policy in *Table 3.16* is reproduced here for the purposes of comparison: Option A offers better 'value', options C and D offer less, and options B, E and F are unchanged.

Table 0.2 *Integrated Residual Waste Management Options – Value – MMWMS Sensitivity*

Criterion	Option					
	A	B	C	D	E	F
Compliance with policy (Waste Strategy 2000)	0.46	1.00	0.17	0.00	0.35	0.35
Compliance with policy (Mayor's MWMS)	0.73	1.00	0.04	0.00	0.35	0.35

The overall results are shown in *Table 3.28*. Only the compliance with waste policy line, and the overall scores and values have changed from *Table 3.18*.

Table 0.3 *Weighted Valued Performance for Residual Waste Options Using Combined Officer and Community Weight Set – MMWMS Sensitivity*

Criterion	Option A	Option B	Option C	Option D	Option E	Option F
Depletion of resources	0.047	0.066	0.003	0.000	0.023	0.004
Air pollution (acidification)	0.065	0.083	0.001	0.000	0.029	0.004
Greenhouse gas emissions	0.057	0.082	0.007	0.002	0.030	0.000
Emissions which are injurious to public health	0.093	0.000	0.019	0.058	0.035	0.035
Landtake	0.008	0.047	0.008	0.000	0.009	0.003
Extent of water pollution	0.026	0.063	0.039	0.047	0.000	0.012
Total road kilometres	0.002	0.000	0.031	0.027	0.024	0.054
Financial cost	0.000	0.025	0.161	0.114	0.061	0.046
Reliability of delivery	0.000	0.090	0.151	0.151	0.030	0.030
Compliance with policy	0.083	0.113	0.005	0.000	0.039	0.039
Liability of end product	0.018	0.000	0.088	0.088	0.057	0.076
TOTAL Weighted Scores	**0.40**	**0.57**	**0.51**	**0.49**	**0.34**	**0.30**
Rank	**4**	**1**	**2**	**3**	**5**	**6**
Value	**0.35**	**1.00**	**0.79**	**0.69**	**0.13**	**0.00**

The ranking of the options remains the same as with the assessment of compliance with waste policy in *Table 3.18*. Option B remains the option that is highest scoring overall, with option C and option D in second and third place respectively. The other options score considerably less well. Nevertheless, options C performs slightly less well than previously, and option A performs better than before.

Sensitivity analysis to the weights used was conducted using the same sets as described previously. The results remain the same, apart from options A and E swapping fourth and fifth places when the North Yorkshire Officers & Members and the City of York Officers & Members weight sets were employed. The results are not presented here for reasons of space.

Results Summary

(Note: this section was numbered 3.7 in the original document)

Results of the assessment of integrated waste management options identify option B – the introduction of one large MBT facility in 2010 – to be the option that may best meet WLWA's residual waste needs. However, it has been shown that this result is sensitive to a number of key assumptions made during the modelling procedure. In particular:

- if alternative weight sets are used to balance the relative importance of the assessment criteria, option C scores the higher value on the majority of occasions. This option models the outcome of commissioning one EfW facility in 2013 and exporting waste to an external EfW facility prior to 2013, to meet LATS requirements;

- EfW is likely to again become the better fitting waste treatment technology if it is assumed that the cement kiln market for RDF from MBT fails, as detailed analyses from the first stage of assessment have shown;

- if it assumed that the reliability of delivering an option is not significantly affected by the number of treatment plants required, the introduction of a small MBT facility to address LATS requirements from 2010 performs well. Based on the combined weight set provided by WLWA Constituent Borough Officers and the Community Panel, option A becomes the highest scoring option. This option models the outcome of introducing one small MBT facility in 2010 and one large.

The appraisal of residual waste management options shows that gasification offers a similar level of benefits to EfW, and, with one weight set, it out-performs EfW.

Sensitivity analyses carried out to examine the effect of employing the Mayor's *MWMS* in the compliance with policy criterion show that gasification becomes the highest scoring option under some weight sets, with MBT and EfW the highest scoring with others.

Consultation Responses to draft Joint Municipal Waste Management Strategy

A good response has been received to publication of the draft municipal waste management strategy, prepared jointly by the West London Waste Authority and the London Boroughs of Brent, Ealing, Harrow, Hillingdon, Hounslow and Richmond-upon-Thames.

These representations have been grouped into relevant topics:

1.1 Recycling and Waste Reduction;
1.2 Composting and Garden Waste;
1.3 Awareness Raising/Education;
1.4 Thermal Treatment/Recovery;
1.5 Kerbside/Household Collections;
1.6 Hazardous Waste;
1.7 Planning/Enforcement;
1.8 Producer Responsibility;
1.9 Residual Waste Management Options Assessment;
1.10 Other – More Policy Related Comments; and
1.11 Typing Errors/Suggestions.

Many of the representations focus on specific actions relevant to the collection of household waste. All of these comments will be reviewed by the relevant London Borough, but are largely beyond the remit of the joint municipal waste management strategy. The strategy is concerned with the waste management infrastructure in the round, it is a strategic document and therefore does not itself refer to specific actions to be implemented by each Borough. Action Plans provide some further detail, but how the objectives of the strategy are implemented in each Borough is primarily a decision for each authority, notwithstanding the policy commitment to work together.

Representations made regarding technical work undertaken in development of the strategy have been considered and appropriate amendments made.

In conclusion, the representations provide a useful input in two ways. First, in developing the strategy to a document to be adopted, but also (and perhaps more importantly) in implementing the policies of the strategy, for example through suggestions for raising awareness of waste management issues and ideas for waste minimisation initiatives.

Recycling and Waste Reduction

Respondent	Comment on draft Strategy	Response
Hounslow resident/Harrow Waste Management Topic Group/West London FoE	Council should set up a waste exchange website like Freecycle and introduce an Ecostore for the reuse of unwanted items which residents could pick up for free. These should be promoted widely. Could the special collection service supply good quality furniture and white goods to the community sector for reuse? Is there scope to liaise with social services to help people furnish homes? Continue with 'give and take' days – these are an effective method for reuse of goods. Support and partnerships with reuse/repair organisations to help improve markets	Specific actions beyond remit of the Strategy, but which can be taken up by each borough as appropriate. Policy 2 identifies that waste reduction and reuse will be a priority.
Hounslow resident	Have a free collection day for heavy/bulky items. Keep CA sites for bulkier items	Specific actions beyond remit of the Strategy, but which can be taken up by each borough as appropriate. Policy 2 identifies that waste reduction and reuse will be a priority.
Hounslow resident	Minimise packaging – eg bottle returns, ban sandwich containers. Can crushers should be available in all schools.	Specific actions beyond remit of the Strategy, but which can be taken up by each borough as appropriate. Policy 2 identifies that waste reduction and reuse will be a priority.
Hounslow resident/ Harrow Waste Management Topic Group/ Richmond upon Thames resident	LBH to reduce the amount of paper it sends out to residents and uses generally. The council should lead by example and ensure that local businesses do the same. All efforts should be made by the Council to encourage retail outlets participation	Specific actions beyond remit of the Strategy, but which can be taken up by each borough as appropriate. Policy 2 identifies that waste reduction and reuse will be a priority.
Hounslow resident Harrow resident West London FoE Hillingdon Alliance of Residents Associations	**Nappies:** • Continue with support for real nappies to minimise waste. • All councils can give a free sample pack of a choice of three post effective washable nappies systems to new mothers. A free voucher towards the cost of the parents buying more washable nappies should be included • Targets set for nappy diversion and other composting/reuse measures seem conservative for the 14 year period. Should they be higher? • Problem of nappies (reusable or disposable) needs to be examined further. Issues with reusable nappies and water treatment and the added costs involved. Disposable nappies make up a large proportion of the black bag system.	Specific actions beyond remit of the Strategy, but which can be taken up by each borough as appropriate. EA nappy report concluded that environmental benefits of reusable nappies are not clear cut. Policy 2 identifies that waste reduction and reuse will be a priority.
Hounslow resident/ Chiswick area/Heston & Cranford/ Harrow Waste Management Topic Group/Harrow resident	Fully support waste reduction and reuse, but more recycling should be encouraged and potentially made compulsory. Waste reduction and reuse is higher up the waste hierarchy and this should be reflected by the amount of investment in reusable nappies, home composting, and furniture reuse.	Policy 2 states that waste reduction and reuse will be a priority. Policy 3 has targets for recycling and composting. Intermediate targets are available in individual borough action plans
Central Hounslow	Instigate specific initiatives to assist individuals, households and communities in preventing waste. Members suggested providing information that additional green recycling bins were available on request. They wished to stem the increase in waste arising per household	Specific actions beyond remit of the Strategy, but which can be taken up by each borough as appropriate. Policy 2 identifies that waste reduction and reuse will be a priority.
Heston and Cranford	Concerns over hygiene aspects around the recycling of kitchen waste – provision of solid containers for the waste?	Health and safety and hygiene matters are covered by legislation. All Boroughs and the West London Waste Authority will comply with relevant legislation.

Respondent	Comment on draft Strategy	Response
Harrow resident/Richmond upon Thames resident	More recyclable/re use collections for the elderly. More difficult to get to a recycling centre or bring sites. Suggestion that skips full of domestic waste from house clearances should be the council's responsibility, in order that items can be reused. All residents, notwithstanding practical difficulties where space is limited, in flats or houses should have access to the same facilities	Specific actions beyond remit of the Strategy, but which can be taken up by each borough as appropriate. Policy 2 identifies that waste reduction and reuse will be a priority.
Harrow resident/Richmond upon Thames resident	All supermarkets in West London should sell reusable plastic or canvas bags. www.netto.co.uk already does this. No reason why other supermarkets can not follow by example.	Policy 2 states that waste reduction and reuse will be a priority.
Harrow resident	Extend services in libraries to offer more reference magazines and newspapers	Noted. Beyond remit of Strategy.
Harrow resident Hounslow resident Hounslow resident	**Bins/Containers** • Better bins – could the council design and provide effective bins with 2 or more compartments for more easy sorting of rubbish and recyclables? • Council to provide an external container to store recyclables for small flats. • Only one rubbish sack per household per week with further ones paid for. Charge for refuse collection by the number of bags put out. Introduce a refuse quota for each household and charge for anything above it.	Specific actions beyond remit of the Strategy, but which can be taken up by each borough as appropriate. Policy 2 identifies that waste reduction and reuse will be a priority. Policy 7 seeks to provide waste management services that offer good value.
Harrow Waste Management Topic Group/ West London FoE/ Central Hounslow	**Targets:** • The group supports the target of four materials from each household by 2008 and believes that the council should increase this to five by 2010 – one of which should be kitchen waste • Far more ambitious targets are needed for waste reduction, and they need to be made more visible. Establishing more effective local waste reduction, recycling and recovery schemes to meet the governments targets	Policy's 3 and 4 are based on statutory targets, and the Strategy has already set challenging targets which are higher than the statutory targets. Targets need also to be realistic and achievable as well as challenging. Individual boroughs can choose to also collect kitchen waste.
Brent residents/Hounslow residents	Offer incentives to those who recycle (prizes or Council Tax discounts) and fine those who don't. Make it easier to recycle in high streets and public places	Policy 2 states that waste reduction and reuse will be a priority.
Hillingdon Alliance of Residents Associations	Partnerships - agree that the borough should be involved with neighbouring authorities to achieve greater efficiency, more sustainable use of resources and diminishing landfill sites.	Policy 8 - authorities will work together to achieve the aims of the strategy.
West London FoE	How seriously does the strategy take waste reduction and reuse? Policy 2 mentions prioritising waste reduction and reuse, but total effect of all the planned measures is 0.3% per year of reductions.	The Strategy takes waste reduction and reuse seriously, it was included as part of the modelling work and is included in policy. Waste minimisation initiatives were also assumed to be effective in considering future waste growth rates – ie the amount of residual waste assumed to require treatment is lower than it could be.

Composting and Garden Waste

Respondent	Comment on draft Strategy	Response

Hounslow resident	Organics collected weekly at the kerbside from small bins.	Specific actions beyond remit of the Strategy, but which can be taken up by each borough as appropriate. Policy 2 identifies that waste reduction and reuse will be a priority.
Chiswick/West London FoE/Richmond upon Thames resident	Free garden waste service with free sacks for residents. However, free collection of garden waste adds to total amount of waste collected and should not be used solely to take advantage of a weakness in the government's choice of performance indicators. £1 a sack may be a high price for those on fixed or low incomes and it is suggested that the group be exempt from charges. A reduction could be offered for the £30 a year wheelie bin.	Specific actions beyond remit of the Strategy, but which can be taken up by each borough as appropriate. Policy 2 identifies that waste reduction and reuse will be a priority Policy 4 commits to all households being served with recycling collections of 4 materials by 2008.
Chiswick/ Hounslow resident, Harrow resident/ Harrow Waste Management Topic Group/West London FoE	A compost collection service as well as a cooked food/meat/fish waste collection service should be provided for those without a garden. Home composting should be compulsory. Wormeries should be encouraged and should be offered by councils at low cost or free of charge. Green cones offered as an alternative to home composters. Special offers on different composters for use for people without gardens. Promotion of other pet waste digesters (www.armitages.co.uk/dogs3.htm)	Specific actions beyond remit of the Strategy, but which can be taken up by each borough as appropriate. Policy 2 identifies that waste reduction and reuse will be a priority Policy 4 commits to all households being served with recycling collections of 4 materials by 2008.
Hounslow resident	Maintain kerbside garden waste collection in paid for biodegradable bags.	Specific actions beyond remit of the Strategy, but which can be taken up by each borough as appropriate. Policy 2 identifies that waste reduction and reuse will be a priority.
Hounslow resident	Excess foodstuffs should go to charitable organisations rather than landfill from supermarkets.	A specific action beyond the remit of the Strategy. There are health and safety implications of this proposal.
Hillingdon Alliance of Residents Association	The suggestion to collect green waste for 6 months of the year is totally against the ethos that is currently established in Hillingdon. Whilst the collection of kitchen waste is desirable and could be a positive method, we feel that a lot of work would have to be done to explain the system.	This is a borough specific action and does not apply to the Strategy. Policy 2 states that waste reduction and reuse will be a priority. Policy 4 commits to all households being served with recycling collections of 4 materials by 2008.

Awareness Raising/Education

Respondent	Comment on draft Strategy	Response
Chiswick/ Hounslow & Harrow resident/ Isleworth and Brentford/ West London FoE	Improved publicity, education and information needed. Regular monitoring and further information needed for areas not using the service to promote recycling. Teach recycling in schools and have leaflets explaining what can be recycled	Noted. Awareness raising and improved publicity and education will form part of the Strategy policy aims to provide a flexible and value for money waste management service.
Central Hounslow	Officers from LBH should work to design and implement a high profile waste minimisation campaign and build on the door-to-door promotional work. Work in conjunction with public, private and professional training and educational bodies to assess needs and initiate the necessary training programmes for residents. Promote best practice in waste management.	This is a borough specific action. The WLWA and constituent Boroughs all seek to deliver best practice in delivery of waste management services.
Harrow Waste Management Topic Group	Develop schemes in collaboration with the Health Service, nurseries, childminders, carers etc to promote reusable nappies. Providing information via the birth registry service should also be considered.	This is a specific action that is beyond the remit of the Strategy. However, such initiatives will be considered as appropriate, particularly under the remit of Policy 2.

Harrow Waste Management Topic Group/ West London FoE	Advertise more widely the availability of subsidised home composters and the option of having a composter instead of a Brown bin. Are compost bin promotions followed up? How many people are successfully using them, or having problems?	Specific questions and actions beyond the remit of the Strategy. However, such initiatives will be considered as appropriate, particularly under the remit of Policy 2.
West London FoE	Waste metering should be introduced – valuable in terms of information and education for those who dispose of the most waste.	This is beyond the remit of the Strategy, the WLWA and its constituent Boroughs.
Richmond upon Thames resident	Additional publicity may be required for the newly introduced organic waste collection scheme to assist residents in making the transition from mixed waste to source separation. Widespread information should be available in order to ensure success.	Noted. Awareness raising and improved publicity and education will form part of the Strategy policy aims to provide a flexible and value for money waste management service.
Richmond upon Thames resident	Businesses through the Borough should be encouraged to use the ink toner and plastics recycling facilities.	Specific questions and actions beyond the remit of the Strategy. However, such initiatives will be considered as appropriate, particularly under the remit of Policy 2.
Richmond upon Thames resident	Non-participation in recycling must be seen as an anti-social practice in the way that littering and smoking currently is.	Noted
Harrow resident	Have a junk mail campaign that includes mailing preference. Give out free front door stickers that say 'No Junk Mail'. Mail preference services should work in the opposite way – should automatically expect people to not want the mail, and to have to sign up to the company to receive it.	Specific questions and actions beyond the remit of the Strategy. However, such initiatives will be considered as appropriate, particularly under the remit of Policy 2.

Thermal Treatment/Recovery

Respondent	**Comment on draft Strategy**	**Response**
Hounslow resident / Isleworth and Brentford/West Area/ Richmond upon Thames resident	MBT seen as expensive in capital expenditure terms but the preferred option due to extraction of useful materials and low emissions. Concerns about the cost hence charging for refuse collection. Suggests paying for refuse collection after the first bag free. Any consideration of MBT should stipulate that the end product be rendered inert for composting. Much of RDF from MBT is currently used as a fuel in cement kilns and is unpopular in many communities.	Policy 6 states that the authorities will keep the waste hierarchy in mind and will find an option that provides value for money and long term reliability. The Strategy does not seek to be technology specific.
Hounslow resident /Central Hounslow/Harrow Resident/West Area/ Richmond upon Thames resident	Some residents support incineration, whereas others are not in favour of incineration and there are concerns from a public health perspective.	Policy 6 states that the authorities will keep the waste hierarchy in mind and will find an option that provides value for money and long term reliability.
Hounslow resident	Conduct thorough research before deciding on final treatment.	The Strategy has been developed following detailed modelling. Policy 6 states that the authorities will keep the waste hierarchy in mind and will find an option that provides value for money and long term reliability.

Richmond upon Thames resident	Premature to include energy from waste when the government is shortly to consult on the review of Waste Strategy 2000. With various EU Directives becoming statutory there is a need to prioritise reduction, recycling and composting	Policy 6 states that the authorities will keep the waste hierarchy in mind and will find an option that provides value for money and long term reliability. Policy 1 states that current and future policy development will have regard to the National and Mayor of London's Municipal Waste Management Strategies and other relevant national, regional and local guidance.

Kerbside/Household Collections

Respondent	Comment on draft Strategy	Response
Hounslow resident	Support for current kerbside recycling, although some felt service could be improved. Suggest monitoring kerbside recycling and leaflet residents not using the service.	Noted.
Hounslow resident/Harrow Resident	Assistance for elderly residents for collection of bulky recyclables.	This is a borough specific action and beyond the remit of the Strategy. Policy 7 states that bulky waste management will be managed in line with best value and provide customer satisfaction and meet legislative requirements.
Brent resident/Hounslow resident	Bring sites for plastics should be kept, however a number of residents felt that more materials should be collected including cardboard, plastics and kitchen waste. Dry recyclables should be collected weekly at the kerbside in clear sacks for MRF.	This is a borough specific action and beyond the remit of the Strategy. Policy 4 commits to serving all households with recycling collections of at least four materials by 2008.
Central Hounslow	Introduce different coloured bags for different types of waste, and introducing a levy per bag was considered.	This is a borough specific action and beyond the remit of the Strategy.
Chiswick/Brent resident	More regular collections from the plastic recycling bins in Sainsburys and community sites as they tended to fill quickly. They also suggested the option of an alternative site as the parking arrangements at Sainsburys were not convenient.	This is a borough specific action and beyond the remit of the Strategy. However, Policy 2 states that waste reduction and reuse will be a priority.
Hounslow resident	Street cleansing waste to go to an MRF and there should be split litter bins for paper and can recycling.	Noted. This is a specific action and beyond the remit of the Strategy. Policy 7 states that street cleaning will be managed in line with best value and provide customer satisfaction and meet legislative requirements.
West Area	Problems of trade waste - as taxpayers are paying the high cost of disposal.	Policy 7 states that trade waste collections will be managed in line with best value and provide customer satisfaction and meet legislative requirements.
Harrow resident/Hounslow resident	Rubbish (green bin rubbish) should be collected every 3 weeks and all the main recycled rubbish to be collected more regularly. Other residents felt that the black bag refuse collections should cease.	This is a borough specific action and beyond the remit of the Strategy. Development of the Strategy considered different kerbside collection schemes.

Hillingdon Alliance of Residents Association/ Hounslow resident	Having 3 bins to collect the different sorts of waste at different times is excessive. There are many households that do not have the space for these bins. What will happen in the case of flats and elderly or supported housing? Need to take into account disabled and elderly residents when introducing new collection systems	This is a borough specific action and beyond the remit of the Strategy. Policy 4 commits to serving all households with recycling collections of at least four materials by 2008
Richmond upon Thames resident	Separation of recyclables and compostables at source, with local baling, to secure high percentage reclaim for recycling and composting. This is environmentally beneficial.	This is a specific action proposal and beyond the remit of the Strategy.
West London FoE	Once kitchen waste collection in place, should move residuals to a fortnightly collection to reduce costs, encourage waste reduction and recycling.	This is a specific action proposal and beyond the remit of the Strategy.

Hazardous Waste

Respondent	Comment on draft Strategy	Response
Harrow Waste Management Topic Group	The free service for the collection of hazardous waste should be more widely advertised.	Noted.
West London FoE/ Richmond upon Thames resident/ Hounslow resident	Must be some means provided for residents to dispose of hazardous wastes, such as batteries, pesticides etc, in order to reduce the environmental impact of whichever residual waste management option chosen. No facility in Harrow to dispose of batteries	This is a borough specific action and beyond the remit of the Strategy. Policy 7 seeks to provide waste management services that offer good value and that provide customer satisfaction. Separate action plans have been provided for hazardous waste.

Planning/Enforcement

Respondent	Comment on draft Strategy	Response
Isleworth and Brentford/ Central Hounslow/ Hounslow Resident/Brent resident	New treatment facilities are needed to help meet the EU Directive targets for diversion of packaging materials and biodegradable municipal waste from landfill. These facilities should be developed as part of the integrated network of regional facilities. Another CA site is needed for the central/eastern part of the borough and facilities required in the north – inconvenient since the facilities at Wembley Stadium have gone.	Policy 7 seeks to provide waste management services that offer good value, that provide customer satisfaction and that meet and exceed legislative requirements.
Isleworth and Brentford	Attention drawn to the Barnet method of collection and enforcement.	Noted. This is a specific action proposal and beyond the remit of the Strategy.
Isleworth and Brentford/ Hounslow Resident	Introduce a clear refuse sack to ease enforcement, and introduce more strict enforcement of dumping. Inspect properties where rubbish is left out for long periods	Noted. This is a specific action proposal and beyond the remit of the Strategy. Policy 2 states that waste reduction and reuse will be a priority.
Central Hounslow	The use of economic instruments and the wider application of the 'polluter pays' principle should be used to ensure progress towards the targets in the Strategy.	Policy 1 states that current and future policy development will have regard to the National and Mayor of London's Municipal Waste Management Strategies and other relevant national, regional and local guidance.

Central Hounslow	Transport policy - householders should be able to participate in reduce, reuse and recycle initiatives without the need for additional car journeys and site facilities to minimise the impact of connections from major transport corridors.	Householders can contribute to reduce and reuse initiatives by making small lifestyle changes that do not require any additional vehicle movements. Policy 4 commits to all households being served with recycling collections of 4 materials by 2008. Policy 7 seeks to provide waste management services that offer good value, that provide customer satisfaction and that meet and exceed legislative requirements.
Hounslow resident	Stronger legislation to require the use of recycled products into new buildings.	This action would need primary legislation from central government. Policy 1 states that current and future policy development will have regard to the National and Mayor of London's Municipal Waste Management Strategies and other relevant national, regional and local guidance.
Harrow resident	What are the risks of government imposed fines being passed on to the council tax payer?	Policy 8 states that the WLWA and constituent Boroughs will work together to achieve the aims of this strategy and are committed to share equitably the costs and rewards of achieving its aims. LATS payments will be distributed amongst the constituent Boroughs and are likely to charged through Council Tax.
Harrow resident/Isleworth and Brentford/Hounslow	Residents should be charged for the amount of waste they put in their rubbish bin.	This is a specific action proposal and is beyond the remit of the Strategy. Policy 2 commits to making waste reduction and reuse a priority.
Harrow Waste Management Topic Group	The council should provide facilities for the collection of household batteries at the civic amenity site.	This is a specific action proposal beyond the remit of the Strategy. Policy 7 seeks to provide waste management services that offer good value, that provide customer satisfaction and that meet and exceed legislative requirements.
West London FoE	Minister for the Environment Eliot Morley has stated that he is in favour of enabling variable charging and would like to encourage LAs to trial this scheme (www.pswg.org.uk/newsb.asp?id=4) Suggests that WLWA should take up this invitation.	The WMA 1998 does not enable variable charging for household waste, or charging for any household waste except for the household waste prescribed in the Controlled Waste Regs 1992 for which a charge for collection (but not disposal) can be made.

Producer Responsibility

Respondent	Comment on draft Strategy	Response

Chiswick/Central Hounslow/Hounslow Resident	Pressure should be applied to manufacturers to both reduce packaging and use single materials able to be separated for recycling, (eg juice packs with plastic tops were unhelpful). The authority should work with traders, particularly supermarkets and fast food outlets to reduce packaging and meet government requirements of producer responsibility. Traders should be made responsible for packaging, for example in the USA packaging could be dumped in the car park for the supermarket to remove. Shops and supermarkets should be responsible for recycling consumer's packaging. Tax on plastic bags?	Noted. Awareness raising and improved publicity and education will form part of the Strategy policy aims to provide a flexible and value for money waste management service. Policy 2 states that waste reduction and reuse will be a priority.

Residual Waste Management Options Assessment

Respondent	Comment on draft Strategy	Response
West London FoE	Why is anaerobic digestion score so low on compliance with waste policy, as it involves the most recycling?	Anaerobic Digestion was modelled for residual waste management treatment, not to take a separated stream of kitchen and garden wastes. As such, it does contribute to 'recycling' targets.
West London FoE	Not clear where incinerator bottom ash comes in the End Product Liability Score	There is no real issue with the practicability of sending bottom ash to landfill. In certain circumstances, incinerator bottom ash might be recycled but the modelling undertaken did not include the benefits gained from this management route.
West London FoE	When combining the 7 environmental criteria, incineration comes out worst. Its main benefit is low cost, but how reliable are cost estimates?	They are a reasonably good indication of the costs likely to result from a tendering exercise, coming as they do fro a survey of real plant data.
West London FoE	Not much information is provided about the source of the cost estimates for the different technologies.	Much of the information came from the Environment Agency's website information on new technologies. Other sources are noted as appropriate.
West London FoE	Two significant cost risks associated with incineration should be modelled: • Waste Strategy 2000: 'around 30% of the capital costs of a conventional incineration is attributable to the flue gas clean-up system. This is likely to increase significantly as tighter discharge limits require the installation of additional treatments.' • Current tax anomaly is likely to be corrected. There is growing support for an incineration tax, to ensure UK doesn't rely on incineration to meet targets	There are no plans to increase the emission limits on incineration following the WID. There are no plans for Government to introduce an incineration tax.
West London FoE	Table 5.1 (v1, p20) is confusing and may be misleading. Can costs and revenues be separately listed for clarity?	Table 5.1 identifies indicative potential costs and indicative potential cost savings. It is included to provide an indicative overview of the aggregated costs and benefits over the Strategy period. It is not intended to be specific about costs and revenues.
West London FoE	A series of costs are provided on the 'indicative costs and benefits' tables 5.1-5.14 (vol 1, p99-113). These figures are haphazard, inconsistent and misleading. They are superseded by figures in volume 2 so should be removed.	The figures presented in volume 1 are relevant to providing an overview of each of the technologies. The figures presented in volume 2 are those used in the modelling.

Other – More Policy Related Comments

Respondent	Comment on draft Strategy	Response
Harrow Waste Management Topic Group	Supports targets set out in the strategy but urges the council to exceed them where possible. Concerned about levels of participation by the public and urges the council to review options (such as compulsory recycling and charging) if the targets are not being achieved after 2-3 years	Borough specific action proposal.
Harrow Waste Management Topic Group	Supports policies 5,6,7 and 8	Noted.
West London FoE	Recycling targets of Policy 3 could be more ambitious.	Policy 3 is based on statutory targets, and the strategy has already set challenging targets which are higher than the statutory ones. Targets need to be achievable and realistic as well as challenging.
West London FoE	Vol 1, p192 – the Mayor's strategy is referring to pre-treatment of residual waste after normal recycling and composting has been performed – the response (1) does not clearly address this. Response (3) implies that minimum legislative requirements will be met. The response that CHP will be used 'where appropriate' implies that it will not be a fundamental consideration in design of system.	Unable to locate comment. There is likely to be a requirement to examine the feasibility of CHP as part of any tendering exercise.
West London FoE	Objectives 6 and 8 (vol 1, p15) are somewhat in conflict: 6 says 'not necessarily the cheapest', 8 says 'minimise the costs'	It is possible to seek to minimise the costs of waste management without committing to the cheapest service delivery. They are not considered to be inconsistent.
West London FoE	Report should indicate which future government policies would help in meeting strategy objectives	Not sure of meaning of comment. Policy 1 provides a commitment to have regard to appropriate Strategies and policy documents. Future government policies are not currently known.
West London FoE	Policy 6: the wording plays down environmental impact.	Implementation of the waste hierarchy is considered to be fundamental in delivery of a sustainable waste management infrastructure. Strategy was developed using a number of environmental criteria.
Richmond upon Thames resident	Main Doc: Why is there no tie in with sustainability policies? Is waste management considered a separate issue to sustainability?	Delivery of a sustainable waste management infrastructure is key to delivery of sustainable communities. Implementation of the waste hierarchy (policy 6) is considered to be fundamental in delivery of a sustainable waste management infrastructure.

Richmond upon Thames resident	Objectives: Why is there no strategy for trade wastes?	The Strategy remit is for municipal waste.
	Objectives: Why only the highest in London – why not benchmark against the best of the rest of the world?	Not sure of meaning of comment – objectives do not refer to highest in London.
	Objectives: What fundamental research work is being done/encouraged to reduce costs of recycling?	Not sure of meaning of comment - objectives do not refer to research work to reduce costs of recycling.
	Objectives: How are technological developments being encouraged? How will the council keep abreast of them?	A specific question beyond the remit of the Strategy. Production of the Strategy has been underpinned with modelling of various developing technologies, including variation of collection methods.
	Objectives: How could performance in this area be measured? What support would businesses receive?	Not sure of meaning of comment – what area is performance measurement being sought? Business support is a specific action proposal beyond the remit of the Strategy. It is something that could be developed within each area action plan.
	Objectives: Will the council adopt a sustainable procurement policy?	Obective 1 and Policy 6 includes commitment to the waste hierarchy. Implementation of the waste hierarchy is considered to be fundamental in delivery of a sustainable waste management infrastructure.
Richmond upon Thames resident	Establish an environmental research park – this would be akin to pharmaceutical research parks. The prestige and revenue for the Borough would increase. It could provide research to help local factories/firms to design for recyclability/sustainability. Annex D (p15) states that recycling and composting facilities are in short supply in West London. This park could incorporate these facilities and ease the implementation of the Boroughs targets	A specific action proposal beyond remit of the Strategy. More likely to be pursued through the planning process, but could also be supported through Strategy policy.

Typing Errors/Suggestions

Respondent	Typing Errors	Response
West London FoE	Vol 2, p 10 para 2 (composting) 1.6% of current household waste – should it be 16%	Unable to locate comment.
West London FoE	Vol 2, p 164 – on road transport 'The anaerobic digestion option (3) performs worst' – anaerobic digestion is option 1, autoclaving is option 3. Which one performs worst?	Option 3 performs worst and should be referenced as autoclaving.
West London FoE	The term 'energy from waste' is used inconsistently. Occasionally it is used correctly referring to several technologies. More commonly it is used to apply only to incineration.	Noted. Any incineration, gasification or pyrolysis technology used should be expected to generate energy from waste.
Hillingdon resident	Annex C – fine but short and missing West London Composting and possibly others. Worth checking/extending	Meaning of comment unclear. Annex C refers to Landtake Requirements.

Hillingdon resident	Annex D – action plans. How likely is it that the Boroughs will want to do their own thing and how would alignment be possible?	Boroughs may well do their own thing but proposals will be discussed with WLWA and constituent Boroughs to ensure experience can be shared across the authorities and benefits of alignment taken wherever possible. Policy 8 commits to joint working and sharing costs and benefits.
Hillingdon resident	Spatial location of facilities: interested in development of new infrastructure and locations. Landfill/disposal is not often considered by many West London residents.	Noted.
Hillingdon Alliance of Residents Association	The technical reports are haphazard and badly coordinated. Concerned that ERM has made lots of assumptions on the assessments as there is no data available. These assumptions could be the reason that causes us, as a paying authority, to miss targets or have to pay high fines and still be left with wastes that need to be taken to landfill	Assumptions have to be made in all modelling work. They have been prepared on the most relevant and robust data available and have been challenged through sensitivity analysis.
Hillingdon Alliance of Residents Association	Concerns about clarity of MBT and RDF results in the report – they are not clearly stated	
Richmond upon Thames resident	Annex D: there is no mention of MBT facilities in this annex. The residual waste collected still has plenty of recyclables in it which can be extracted at an MBT facility. If the plant were located in the Borough, then the recycling tonnages could count towards the Borough's targets	Meaning of comment unclear. Annex D refers to Transport Assumptions. .