Milton Keynes Council

Sustainability Appraisal of Waste Development Plan Document

Interim Report – Appraisal of Strategic Options

July 2006

Entec UK Limited

Report for

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1	Draft Report	April 2006
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1. Introduction

1.1 Purpose of this Report

On 27th January 2006 Entec was commissioned by Milton Keynes Council to undertake a Sustainability Appraisal of the emerging Milton Keynes Waste Development Plan Document (WDPD). This report sets out the results of the first stage of this process which involved the appraisal of the strategic options for the WDPD. The report will explain:

- How the methodology for this process was developed from the Scoping Report produced by Atkins, which set the parameters for the SA of the Milton Keynes Waste Strategy, the Waste Development Plan and Local Transport Plan.
- How the key provisions of the government guidance for SA contained in Sustainability Appraisal of Regional Spatial Strategies and Local Development Documents have been taken into account;
- What the strategic options are for the WDPD and how these have been developed; and
- The methodology for and results of the Appraisal Process

1.2 The Emerging WDPD

The existing Waste Local Plan Relating to Milton Keynes is the Adopted Waste Local Plan for Buckinghamshire 1994-2006. The document is being replaced by the emerging Waste Development Plan Document for which an Issues and Options Paper was published in September 2005. The Issues and Options Paper was the first step in the production of the revised WDPD. The document sought to consult on a series of questions relating to the treatment of waste and the siting of waste management facilities in Milton Keynes.

The responses to the Issues and Options Paper have been taken forward to the next stages of the WDPD production process, which has involved the development of a series of strategic options for the broad framework of the WDPD. These Strategic Options have been subject to a first round or iteration of Sustainability Appraisal, the process and results of which are outlined in **Section 4** of this document. The results of the appraisal process will be taken into account in the selection of a preferred option, which will then be developed into a draft strategy document. The policies and provisions of the draft strategy will then be subject to a second round of appraisal.

1.3 Background to the SA Process

Government guidance on Sustainability Appraisal (SA) is contained in Sustainability Appraisal of Regional Spatial Strategies and Local Development Documents – Guidance for Regional Planning Bodies and Local Planning Authorities, produced by ODPM in November 2005 (ODPM SA Guidance). This document incorporates the requirements of the Strategic

Environmental Assessment (SEA) Directive and states that sustainable development is central to the reformed planning system. The purpose of Sustainability Appraisal is to ensure the integration of social, environmental and economic considerations into the preparation of local development documents. This broad objective is reflected in the statutory requirement to undertake sustainability appraisal for new or revised development plan documents.

Entec's approach to undertaking this sustainability appraisal has been developed to reflect the provisions of the Government Guidance as follows:

- Establishing the Baseline and defining the Scope of the SA process – this work has already been undertaken by Atkins Consultants;
- Developing and refining the Strategic Options for the WDPD;
- Development of Appraisal Criteria and appraising the Strategic Options;
- Developing a draft WDPD Document;
- Appraisal of the draft preferred option WDPD; and
- Production of final Sustainability Appraisal Report.

1.4 Key Outputs

The key outputs of the SA process will involve the production of a Sustainability Appraisal Report which covers the requirements of the Environmental Report defined in the SEA Directive. The information to be included in the Environmental Report includes:

- The likely significant effects on the environment, including issues such as bio-diversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the inter-relationship between the above factors. These effects should include secondary, cumulative synergistic, short medium and long term , permanent temporary and negative effects;
- An outline of the reasons for selecting for selecting the alternatives dealt with; and
- The measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan or programmes.

Entec's final report will therefore contain a summary of the key social, economic and environmental issues associated with each option and which performs the best in sustainability terms. A second round of appraisal will be undertaken for the policies contained in the WDPD, which will be based on the preferred option selected by the Council. This process will suggest measures that could be implemented to recommend measures to prevent, reduce of offset any significant environmental affects associated with the plan or programme.

1.5 The Scoping Report

In September 2005 Atkins consultants produced a joint Scoping Report for a Sustainability Appraisal of the Milton Keynes Waste Development Plan and Strategic Environmental Assessment (SEA) of the emerging Local Transport Plan (LTP) and the Municipal Waste Management Strategy. Although SA and SEA are distinct requirements government guidance for SA of Regional Spatial Strategies and Local Development Frameworks incorporates the requirements of the SEA Directive. The Council therefore decided to combine the early stages of the SA/SEA process for all three plans in a Scoping Report which:

- Aimed to identify common cross cutting environmental/sustainability themes and sources of data; and
- Developed an integrated appraisal framework which may be applied to each plan

The Scoping Report contained the following sections which were common to all of the documents to be appraised:

1.5.1 Review of Plans and Programmes

Relevant international, national and local plans and programmes that might influence or be influenced by one or more of the plans to be appraised are identified in the Scoping Report. These other plans were analysed to derive a set of key environmental /sustainability themes relevant to the national, regional and local context. This analysis was presented in a table as the first stage of the draft SA/SEA framework.

1.5.2 Baseline information

The baseline information provides a basis for assessing the impact of the options on the current state of the environment. The baseline information contained within the Scoping Report was gathered from a range of sources, including government agency websites, census data and the South East of England intelligence network. No primary research was conducted and the information for all three plans covered by the Scoping Report was covered in a baseline schedule attached as an appendix to the document.

1.5.3 Key sustainability Issues

The ODPM SA Guidance indicates that identifying sustainability issues (including environmental problems required by the SEA Directive) provides an opportunity to define key issues for the WDPD. These issues were identified in the Scoping Report through a review of existing data and include the social issues of rapid population growth in Milton Keynes, the resulting production of waste, deprivation experienced by those living in disadvantaged areas and recent rises in crime levels. Environmental issues include problems associated with air quality, declining numbers of certain species and flood risk issues. Economic issues relate to a lack of employment diversity in the city and the high reliance on service sector jobs.

2. The Strategic Options

2.1 Developing the Strategic Options

The Strategic Options for the Waste Development Plan Document were developed by the Council and reflect the broad alternatives for the dispersal waste disposal facilities around Milton Keynes. The options have been kept deliberately strategic and are non site specific to reflect the strategic nature of the SA assessment objectives. The key characteristics of the strategic options to be assessed by the SA process are set out in Table 2.1 below:

Table 2.1 Summary of Options

Option	Key Characteristics
Status Quo	Around 70 % of waste to landfill
	Around 30 % recycling (includes composting)
	No final treatment facilities provided
Dispersed location of pre and Final Treatment	Reduced amount of waste sent to landfill to meet LATS targets
	Increased recycling to meet Government targets
	Final treatment facilities located within MKC area
One Site Pre Treatment	Reduced amount of landfill to status quo but does not meet LATS targets
	Maximise recycling at existing MRF
	No final treatment facilities included
One Site Pre and Final Treatment	Reduced amount of waste sent to landfill to meet LATS targets
	Increased recycling to meet government targets
	Final treatment facilities located within MKC area
	Integrated Waste Management Facility to treat waste
Out of MK Final Treatment	Reduce amount of waste sent to landfill to meet LATS targets
	Maximise recycling at existing MRF
	Final treatment provided outside MKC area to neighbouring facility
Dispersed location of pre treatment and one site for final treatment	Reduced amount of waste sent to landfill to meet LATS target
	Increased recycling to meet government target
	Final treatment facility located within MKC area

The nature of the pre treatment facilities could include MRF, recycling or composting and final treatment may include advanced thermal treatment or Mechanical Biological Treatment (MBT). The exact nature of the pre and final treatment facilities has not yet been defined. At this stage the assessment only seeks to determine if these facilities will be provided and whether an integrated or dispersed approach will be adopted for their distribution.

3. The Appraisal Process

3.1 The Appraisal Criteria

The appraisal criteria, which are referred to in the SA process as objectives and indicators were developed by Atkins as part of the Scoping Report. These criteria are generic in that they will be used to assess the Local Transport Plan and the Waste Strategy as well as the WDPD. The SEA Directive does not specifically require the use of objectives but they are a recognised way of analysing and comparing the environmental effects of each option.

A draft framework of 20 broad objectives was initially developed from the review of plans and programmes outlined in Section 1 of this report. A series of sub criteria known as indicators were also developed to support the objectives and ensure that they were interpreted in the same way for the assessment of each strategic option. The objectives and indicators are set out in Table 6.1 of the Scoping Report, which is attached as **Appendix A** of this report.

3.2 The Appraisal Process

The appraisal of the strategic options took place at a workshop session on 30 March 2006. Prior to the workshop Entec assessed each option against the appraisal objectives. The purpose of the workshop session was to discuss the assessments made by Entec and amend them according to the views of the appraisal group. The workshop was facilitated by Entec and attended by the following Council officers and statutory consultees:

- Rebecca Trouse Milton Keynes Council, Waste Planning
- Sue Mason Milton Keynes Council, Waste Management
- Mark Harris Milton Keynes Council, Development Plans
- Diane Taylor Milton Keynes Council, Community and Economic Development
- Adam Ireland The Environment Agency
- Tim Perkins Entec UK Ltd, Principal Consultant
- Kate Proctor Entec UK Ltd, Assistant Consultant
- James Gleave Entec UK Ltd, Principal Consultant

Whilst the Scoping Report contained the appraisal objectives and indicators it did not propose a means of assessing the performance of the strategic options against the appraisal objectives. As such, Entec developed the following criteria for this purpose.

++ Performs very well against the objective

+ Meets the objective

~ No Impact

? Uncertain of the Impact

- Does not meet the objective

-- Performs very badly against the objective

The performance of each option against the appraisal criteria was recorded in a matrix at the workshop session As well as recording the relative score of each option the Matrix contains a section for comments to justify the allocated score.

4. Results of the Appraisal

4.1 Introduction

The matrix assessment of the strategic options is set out in **Appendix B**. This shows how each option performs against the 20 sustainability objectives. This section provides some general comments on the uncertainties associated with the appraisal, a summary of the key findings and recommendations for mitigation measures where appropriate.

4.2 General Comments

4.2.1 Uncertainty

In predicting the effects of the options uncertainty occurs in a number of places for the following reasons.

- Lack of clarity of the meaning of the objective in relation to the options;
- Lack of appropriate indicators to use as a basis for predicting effects; and
- Lack of evidence to predict effects.

These issues are dealt with below with reference to specific objectives where appropriate.

4.2.2 Clarity of Objectives

The appraisal team considered that in the case of three of the objectives there was a lack of clarity as to how they related to the WDPD options. In the case of objective 4, which relates to accessibility from residential areas to key services and employment areas, it was uncertain what aspects of the options should be assessed. The appraisal however agreed that the primary consideration was the accessibility of residents to facilities where they could deposit recyclable waste i.e. household waste recycling centres. The tendency was therefore for more dispersed options to score highly against this objective.

For objective 7 relating to transport, the objective refers to reducing road traffic through a modal shift to sustainable travel methods. Realistically however road is still likely to provide the main means of transport for waste in Milton Keynes. It is therefore more appropriate to consider only the contribution of the options to reduced traffic and road congestion.

In the case of Objective 18 it was not clear how the waste options could affect the vitality of town and local centres and therefore all options were scored as uncertain. A clearer definition of what is meant by vitality in relation to the proposed options is required.

4.2.3 Lack of appropriate indicators

In a number of cases the appraisal team felt that indicators identified in the joint SA/SEA Scoping Report were inappropriate in relation to waste issues. The table below briefly illustrates some suggested alternatives which arose from the workshop and subsequent review by Entec.

Table 4.1 Potential additional indicators

Objective	Additional suggested indicator
1.Health and Well Being	Number of odour, noise complaints to the Local Authority arising from waste management facilities.
2.Crime	Number of Incidents of fly tipping within the Local Authority area.
3. Accessibility	% of population within Xkm of household recycling centre
18. Vitality of town and local centres.	Extent to which facilities meet changing/specialist business needs.
19. Economy	Monetary value of health and environmental impacts
	Disamenity impacts such as house price impacts
	Value to the economy of the recovering resources from waste treatment/recycling.
20. Employment	Employment generated by new waste facilities.

4.2.4 Evidence base for the appraisal

In respect of many of the objectives there is little quantifiable evidence which allows effects to be predicted. In such cases qualitative predictions must be made based on expert knowledge or other existing studies at a regional or national level. The following section is intended to provide a commentary on some of evidence which currently exists. This addresses those objectives where the appraisal team felt able to score the performance of the options. In other cases there was uncertainty over the effects.

4.2.5 Health and Well Being (Objective 1)

The appraisal was undertaken on a subjective basis. The appraisal team felt however there could be differences between the options in two areas. The first relates to general well being and effects associated with noise, odour and visual effects which were considered to be more significant for landfill than other technologies, due to the greater area of land involved and exposure of waste operations. During 2001 there had been a period of odour complaints associated with the Bletchley landfill which had to be addressed by remedial action.

Secondly there are effects associated with pollution and disamenity caused by increased traffic movements. Increased traffic movements are associated with some options more than others.

The health implications of different waste technologies were reviewed as part of the preparation of the municipal waste strategy[1]. The Waste Review Group considered a report by Milton Keynes Council Environmental Protection Team on the Potential Health and Environmental Impacts from Municipal Solid Waste Management July 2005. The Waste Review Group drawing on independent advice, together with a number of previous studies concluded that;

"it is clear that MSW treatment is responsible for only a small fraction of harmful hazardous emissions compared to other activities taken for granted in our lives, like traffic and home cooking."

And that;

"There are no health or environmental reasons to prefer one properly designed and run type of MSW treatment over another. The effects are so small that the figures to compare them with are unreliable."

The report does acknowledge that there is a lack of information on the health effects of certain treatment methods such as anaerobic digestion. In pure health terms this evidence would suggest that there is very little difference between the treatment options and landfill as set out in the strategic options. Provided each facility is well designed, operated and regulated there should be no difference between the various spatial options put forward.

As regards transport the Milton Keynes Waste Review Group does however point out that *"Transport of waste material does have an effect on emissions, but as a proportion of total transport it is quite small and not really significant."*

4.2.6 Other Social issues (Crime (Objective 2), Social Exclusion (Objective 3) and Accessibility (Objective 4)

There is little evidence to indicate how these objectives would be affected by the strategic options and the assessment was based on a qualitative appraisal of the effects. This is assumed that options which provided for a wider spatial distribution of pre-treatment facilities would have a more positive effect as more facilities would enable and encourage people to use the waste facilities and behave more responsibly with their waste.

4.2.7 Air Pollution (Objective 5)

The Potential Health and Environmental Impacts from Municipal Solid Waste Management July 2005 report states that landfill contributes to significant emissions of methane and cadmium in comparison to other types of municipal waste treatment. As regards other emissions these only make up 2.5% of total UK emissions to air. There is however a lack of information regarding emissions from composting, MBT and anaerobic digestion. This evidence supports the conclusion that landfill performs less well against this objective. The other factor which the appraisal team considered would affect how options perform under this criterion was pollution from traffic movements, with some options generating more traffic movements than others.

[1] Waste Review Group Report November 2005 Milton Keynes Council

4.2.8 Transport (Objective 7)

The effects of the options on transport were appraised subjectively based on assumptions about the implications for road traffic from the different options. Options based on delivery to one site generate less traffic than those based on a number of sites. The option based on one site for pre and final treatment will generate less traffic, again as the material does not need to be transported twice. The effect of each option depends upon the location of the proposed sites and the proportion of the material that is reduced during the pre treatment phase (i.e. the less material that has undergone pre treatment the less vehicles will be required to transport it to its final disposal point), The appraisal has assumed that those options based on a more limited number of facilities perform more positively than those based on several sites. Option 5 however is scored negatively, even though it relates to a single facility, on the grounds that it is outside the MKC area.

4.2.9 Water (Objective 10)

In light of the potential for emissions to water from landfill the appraisal team considered that landfill based options had a potentially negative effect on this objective. Emissions are however subject to regulatory control to ensure that they are maintained at appropriate levels. Reducing landfill and related emissions to water would have a beneficial effect on this objective.

The Potential Health and Environmental Impacts from Municipal Solid Waste Management July 2005 concludes that "*Emissions to water are associated with landfilling and, to a lesser extent composting. Some other processes use and discharge water. These emissions make up about 0.25% of total UK emissions to water."* For other treatment methods emissions to water vary according to the type of technology used and as this is not specified in the strategic options.

4.2.10 Climate change (Objective 12)

The Milton Keynes Potential Health and Environmental Impacts from Municipal Solid Waste Management report states that 27 % of UK emissions of methane come from landfill sites. Many modern landfill sites are however designed to capture the landfill gas and recover energy.

The efficiency of landfill gas collection for energy recovery is uncertain. It is dependant on a number of factors including the type of contaminant (efficiency of collecting gas from older and less contaminated landfill is lower than that from new sites) It is estimated that between 60 and 80% of methane produced by a landfill site can be collected and utilised in an energy recovery plant. Uncollected methane may be released into the atmosphere, oxidised in the soil or may migrate from the site. In addition to the energy recovery facility methane will be collected in a series of wells surrounding the site for migration control – This gas will be flared and converted into carbon dioxide. The offset carbon emissions from any landfill gas energy recovery plant should be considered when looking at the impacts of landfilling waste.

All other treatment options contribute less to greenhouse gas emissions than landfill, although the extent of emissions varies according to the technology used. The type of treatment is not specified in the strategic options. This evidence has been used to conclude that landfill based options have a more negative effect on climate change than other strategic options, although this effect is somewhat reduced by landfill gas recovery and flaring.

4.2.11 Energy (Objective 13)

The appraisal was based on the potential contribution of the strategic options towards generating renewable energy. Those options based on landfill were considered to have positive effects on the basis that energy recovery from landfill gas could occur, particularly as such a facility already exists at Bletchley Landfill. Some other treatment technologies can also recover energy, however it is not possible to differentiate any further between the strategic options as no technology is specified.

4.2.12 Soil resources (Objective 16)

The effect of the strategic options on soil resources has been appraised on the basis of the extent of landtake (as a broad parallel for the amount of soil resources lost) and the potential for contamination of soils. It terms of landtake landfill requires substantially more land compared with other waste treatment options. Although measures may be put in place to ensure high quality restoration of landfill sites, soil resources will require storage during the period of landfilling and are not therefore available for use. The appraisal team also considered that there was a potential risk of contamination.

The Potential Health and Environmental Impacts from Municipal Solid Waste Management report states that *"landfill is creating land that is very likely to contain greater amounts of potentially hazardous chemicals than natural land"* which provides support for the appraisal conclusions.

In terms of the other strategic options the effect on this objective is very difficult to assess as it will depend on the type of technology used (which can effect emissions to land), the location of the facilities (whether they are brownfield or greenfield) and their size.

4.2.13 Landscape and Countryside Character (Objective 16)

The appraisal is based on the effect that the option will have on the condition and quality of the landscape and countryside. This is a subjective appraisal. On the basis that landfill occupies a greater area of land and is invariably located within the countryside causing a visual intrusion the appraisal team considered that options based on landfill had a negative effect. The appraisal team also assumed that this objective was only being assessed in relation to the Milton Keynes administrative area and therefore Option 5 involving out of MKC area treatment would have a positive effect. In all other cases effects would be dependent on the scale, nature and location of any built facility.

4.2.14 Local Economy (Objective 19)

Effects on the economy can be measured in a number of ways including calculating the monetary value of health and environmental impacts, disamenity impacts such as house price impacts as well as the value to the economy of the recovering resources from waste treatment/recycling. There is some published research[2] which has examined the economic

[2] *Valuation of the external costs and benefits to health and environment of waste management options* DEFRA 2004

BEYOND THE BIN: THE ECONOMICS OF WASTE MANAGEMENT OPTIONS." A Final Report to Friends of the Earth, UK Waste and Waste Watch by ECOTEC Research and Consulting Limited

effects of different waste management options, although some of this comes from outside the UK. This has however primarily focused on landfill, incineration and recycling and has not addressed the newer technologies.

There is some evidence to indicate the disamenity impacts of landfill from the study by DEFRA: *Valuation of the external costs and benefits to health and environment of waste management options* 2004 and it is also clear that very little potential exists to recover value from waste materials, perhaps with the exception of generating energy from landfill gas. For this reason options based on landfill are scored negatively in this assessment. There is significantly less evidence in respect of the other treatment options although some of the research relating to recycling and incineration may have some relevance.

The studies carried out for the California Integrated Waste Management Board and Friends of the Earth (see footnote) concluded that the economic benefits of diverting waste from landfill were significantly greater than disposing of it. This is due to the additional value that can be generated from recovering resources. The appraisal team concluded that all the other strategic options with the exception of the out of area option would have a positive effect on the local economy, although it was not possible to differentiate between them. The out of area option was scored negatively on the basis that the benefits would not be delivered to the local economy, although this does depend to a degree on how close the facility would be to Milton Keynes.

4.2.15 Employment (Objective 20)

There is relatively little comparable information available on the number and type of jobs of different treatment options. There is evidence that Energy from Waste creates significantly more job opportunities than landfill, both in operation and construction[3] and that recycling creates additional job opportunities[4]. It is likely that other treatment process will also employ greater numbers than landfill although exact numbers will depend very much on the detail of the technology. In terms of the appraisal, the conclusion was that landfill based options would have no effect and those based on other treatment options would be beneficial. The option relying on out of area treatment would have a negative effect as it would not create jobs in Milton Keynes, although its effect may depend to a degree on how close the facility was to Milton Keynes.

4.3 Summary of Key Findings

4.3.1 Option 1: Status Quo

This option is based on continuing current levels of recycling with residual waste being disposed of to landfill.

This option performs poorly against many of the sustainability objectives. It is assessed as having negative effects on 12 of the objectives and records particularly poor performance in

THE ECONOMIC IMPACT OF WASTE DISPOSAL AND DIVERSION IN CALIFORNIA A REPORT TO THE CALIFORNIA INTEGRATED WASTE MANAGEMENT BOARD University of California, Berkeley 2001

[3] Entec – Confidential Waste Tender Data

[4] Jobs from Waste – Employment Opportunities in Recycling Waste Watch 1999

respect of climate change, waste, air quality, transport and crime objectives. Only one positive effect is identified in relation to energy due to the potential to recover energy from landfill gas. Performance against environmental objectives such as heritage and wildlife was seen as uncertain as this was largely location dependent.

4.3.2 Timescale

Short term
In the short term there will be continued reliance on the Bletchley Landfill where most of the waste is currently deposited. Even in the short term there will be negative environmental and economic effects. LATS targets will not be met,

Medium Term
Milton Keynes' divergence from the statutory targets would increase with increased negative economic effects. The negative environmental effects of landfill would continue.

Long term
By 2020 there would be a major failure to meet statutory targets. The Issues and Options document indicates that this could result in fines of £11 million which would have significant economic effects.

4.3.3 Spatial effects

In the short term effects will be concentrated largely within the MKC area where existing facilities are located. In the longer term however there may be a need to rely on landfill facilities outside of the Milton Keynes area or to identify new facilities, so effects may be apparent outside the local area. Some of the effects of option 1 e.g. emission of greenhouse gases have effects which will occur at a national and regional level.

4.3.4 Secondary, cumulative and synergistic effects

The cumulative effects of this option are significant on the economy, environment and society. For example continued reliance on landfill would lead to potential effects in terms of noise, dust, odour and visual impact having a combined negative effect on the well being of those living nearby. Continued emission of methane will also have a cumulative effect.

4.3.5 Likelihood

This option will have to continue within the short term even if another option is selected due to the lead in time for new facilities. The likelihood of many of the key environmental effects will depend to some extent on how the landfill site(s) are managed and operated. Historically, for example there have been issues of odour complaints at the Bletchley landfill, although it was possible to address these with mitigation measures. Other effects such as the negative effects on waste reduction and the consequences leading to fines are almost certain to occur if the status quo is pursued.

4.3.6 Recommendations for mitigation of adverse environmental effects

This option has significant negative effects, which it is difficult to mitigate against. This option should therefore only be considered as a short term option pending the development of options which offer more positive sustainability benefits.

4.3.7 Option 2: Dispersed location of pre and final treatment

This option is based on a reduced level of landfill meeting LATS targets and increasing recycling. Waste facilities would however be dispersed across the MKC area.

This option performs relatively well against many of the sustainability objectives. It is assessed as having positive effects on 10 of the objectives, although none of these were recorded as contributing very well to the objectives. A significant number of the effects were considered to be uncertain, mainly because the effects depended on the exact location and type of facility developed. There were no negative effects identified. Overall the option has a number of sustainability benefits by reducing waste going to landfill, therefore leading to positive economic and environmental benefits and by improving accessibility to facilities.

4.3.8 Timescale

Short term

Establishing a network of facilities under this option may take some time, in terms of securing planning permission and developing facilities, although there may be some potential to enhance existing sites. In the short term there would be continued reliance on landfill with the associated negative effects identified previously.

Medium Term

In the medium term this option should secure compliance with statutory targets and bring associated sustainability benefits.

Long term

In the longer term this option should secure compliance with statutory targets and bring associated sustainability benefits, although there will be a continuing need to review the adequacy of the provision in light of the growth proposals.

4.3.9 Spatial effects

The effects of this option will primarily occur within the MKC area.

4.3.10 Secondary, cumulative and synergistic effects

As a secondary effect this option may increase awareness of sustainable waste management amongst the community as the number of facilities across Milton Keynes will increase. It is possible that this will have a positive synergistic effect in terms improving community awareness of recycling and reducing waste.

The cumulative effects of this option on the local environment and community will very much depend on the location and type of facility. This will however be regulated by planning and environmental controls.

4.3.11 Likelihood

This option is unlikely to be delivered in the short term due to the lead in time for developing new facilities. The likelihood of the positive effects occurring will be dependent on how quickly and effectively a network of smaller facilities can be delivered. This may take some time as each site has to go through a separate development process.

4.3.12 Recommendations for mitigation of adverse environmental effects

Many of the effects are identified as uncertain. A robust site selection process, based on the sustainability objectives, should help identify sites for this option which contribute positively to the environment, local economy and community.

4.3.13 Option 3: One site pre-treatment

This option is based on a reduced amount of landfill compared to the status quo but it does not meet LATS targets. Recycling would be maximised at the existing MRF. No final treatment facilities are included as residual waste would go to landfill.

This option performs negatively against 10 of the sustainability objectives. The most negative performance was recorded against social objectives including health and well being (objective 1), crime (objective 2), social exclusion (objective 3) and accessibility (objective 4). This is on the basis that one centralised facility reduces the accessibility for the community and does not accord with the principle of communities taking responsibility for their own waste. Continued reliance on landfill means that there are associated negative effects on the environment and economy. It is assessed as having positive effects on 3 of the objectives relating to reducing waste (objective 9), water resources (objective 10) and energy (objective 13). Uncertainty occurs for five objectives as the effects are dependent on the type and location of the facility. Overall the option has a number of sustainability benefits by reducing waste going to landfill, therefore leading to positive economic and environmental benefits and by improving accessibility to facilities.

4.3.14 Timescale

Short term

A new centralised pre-treatment facility will have a significant lead in time and it is therefore unlikely this option will have a significant effect. In the short term there will be an even greater reliance on landfill, with the associated negative effects identified previously.

Medium and Long Term

In the medium term this option should reduce landfill but will not meet statutory targets. The negative effects associated with landfill will continue, albeit at a reduced level.

4.3.15 Spatial effects

The effects of this option will primarily occur within the MKC area. The negative effects associated with continued landfill on climate change will however contribute nationally and globally.

4.3.16 Secondary, Cumulative and Synergistic effects

As with Option 1 the cumulative effects of this option are significant on the economy, environment and society, although at a reduced level. For example continued reliance on landfill would lead to potential effects in terms of noise, dust, odour and visual impact having a combined negative effect on the well being of those living nearby. Continued emission of methane could also have a cumulative effect.

The cumulative effects of this option on the local environment and community will very much depend on the location and type of pre-treatment facility. This will however be regulated by planning and environmental controls

4.3.17 Likelihood

This option is unlikely to be delivered in the short term due to the lead in time for developing the new facility. The likelihood of negative effects occurring is high assuming the continued reliance on landfill, although again this may depend on how landfill site(s) are managed. Negative social effects will depend on where any new facility is located and how it is implemented.

4.3.18 Recommendations for mitigation of adverse environmental effects

This option has significant negative effects. Those relating to the continued use of landfill are difficult to mitigate against. The negative social effects could be mitigated against to some degree by marketing and promotional campaigns to raise awareness of any new facility and ensuring such facility is in a location with maximum accessibility to the population. Many of the effects are identified as uncertain. A robust site selection process, based on these sustainability objectives, should help identify sites for this option which contribute positively to the environment, local economy and community.

4.3.19 Option 4: One site pre and final treatment

This option is based on a reduced amount of waste sent to landfill to meet LATS targets, increased recycling to meet government targets, final treatment facilities located within MKC area and an integrated Waste Management Facility combining pre and final treatment.

This option performs positively against seven of the sustainability objectives and performs very well against the reducing waste objective (objective 9).There are three objectives against which this option performed very poorly and these were crime (objective 2), social exclusion (objective 3) and accessibility (objective 4). As with option 3 this is due to the reduced accessibility to pre-treatment facilities which would occur with a single centralised facility. Uncertainty was recorded against eight of the objectives as the effect is dependent on the location and type of facility which is not known at this stage. Overall the option has a number of sustainability benefits particularly in relation to reducing waste going to landfill, which sets it apart from Options 1 and 3. There are however some negative effects in relation to social objectives.

4.3.20 Timescale

Short term
A new centralised pre and final treatment facility will have a significant lead in time and it is therefore unlikely this option will have a significant effect. In the short term there will be an even greater reliance on landfill with the associated negative effects identified previously.

Medium Term
In the medium term this option should reduce reliance on landfill and will meet statutory targets.

Long term
In the longer term this option should secure compliance with statutory targets and bring associated sustainability benefits, although there will be a continuing need to review the adequacy of the provision in light of the growth proposals.

Spatial effects
The effects of this option will primarily occur within the MKC area. The option provides for a good level of self-sufficiency without the wider negative effects of landfill other than in the short term.

4.3.21 Secondary, cumulative and synergistic effects

The cumulative effects of this option on the local environment and community will very much depend on the location and type of pre-treatment facility. This will however be regulated by planning and environmental controls. Such a facility is likely to have a relatively high profile in the community and there may be secondary and cumulative effects on the community which could be both negative and positive.

4.3.22 Likelihood

This option is unlikely to be delivered in the short term due to the lead in time for developing the new facility. The likelihood of positive effects occurring is high given that this option represents a major shift away from landfill and the associated positive benefits this brings. Negative social effects will depend on where any new facility is located and how it is implemented.

4.3.23 Recommendations for mitigation

This option has significant positive effects as well as many uncertain effects. A robust site selection process, based on the sustainability objectives, should help identify a site for this option which can enhance the positive benefits to the environment, local economy and community.

4.3.24 Option 5: Out of Milton Keynes final treatment

This option is based on a reduced amount of waste sent to landfill to meet LATS targets, maximising recycling at existing MRF and final treatment provided outside MKC area to neighbouring facility.

This option performs negatively against 6 of the sustainability objectives and performs very poorly against the crime (objective 2) and the local economy (objective 19) objectives. The effect is uncertain for seven of the objectives as this will depend on the location and type of facility. A positive effect was noted for five of the objectives relating to waste reduction (objective 9), climate change (objective 12) and other wider environmental objectives. Overall the option has a number of negative effects which relate to the reliance being given to an out of area facility, although on the basis that this is treatment facility as opposed to landfill there are also some positive effects.

4.3.25 Timescale

Short term

The short term effects are less certain than for other options as much will depend on how quickly an out of county facility comes on stream. This will depend on whether it is a new facility or an existing one. Even if it is an existing facility there is still likely to be a lead in time associated with securing the contractual arrangements necessary to utilise the facility. Continued reliance on landfill will lead to the associated negative effects identified previously.

Medium Term

In the medium term this option should reduce landfill and will meet statutory targets, although there are negative effects associated with utilising an out of MKC option.

Long term

In the longer term this option should secure compliance with statutory targets and bring associated sustainability benefits, although there will be a continuing need to review the adequacy of the provision in light of the growth proposals.

Spatial effects

The effects of this option will occur both within and outside the MKC area. There would be some positive benefits associated with maximising recycling at the existing MRF. The out of MKC treatment option would lead to an increased number of vehicle movements compared with the options based on the MKC area, which could lead to increased pollution and local environmental effects. In addition there will be negative effects on the local economy, as the investment would be directed elsewhere.

4.3.26 Secondary, cumulative and synergistic effects

This option may have secondary effects outside of the MKC area resulting from the location of the facility within another District. There may for example be knock on economic benefits for the local area where the facility is located, through jobs created. The cumulative effects of this option on environment and community will very much depend on the location and type of pre-treatment facility. This will however be regulated by planning and environmental controls.

4.3.27 Likelihood

Even if the out of area facility used is an existing operation there is likely to be some lead in time before this option is delivered. The likelihood of certain positive effects occurring is high given that this option represents a major shift away from landfill with the associated positive

benefits this brings, however it also highly likely that there will be negative effects in comparison to many of the other options.

4.3.28 Recommendations for mitigation

This option has significant negative effects which relate to the use of a facility outside the MKC area. This could be mitigated to a degree by focusing on locations in relatively close proximity to Milton Keynes. The Issues and Options document refers to waste movements not being more than 30 miles from Central Milton Keynes To make the most of local economic benefits e.g. job creation the facility would need to be as close to Milton Keynes as possible, although it is recognised that there may be other locational criteria which do not allow this. A robust site selection process, based on the sustainability objectives, should help identify a site for this option which can enhance the positive benefits to the environment, local economy and community. Unlike the other options this site selection exercise is likely to be the responsibility of a separate waste planning authority, although clearly MKC as a waste disposal authority seeking to use such a facility would need to be closely involved in its selection.

4.3.29 Option 6: Dispersed location of pre-treatment and one site for final treatment

This option is based on a reduced amount of waste sent to landfill to meet LATS target, increased recycling to meet government target and a final treatment facility located within MKC area.

This option performs positively against 11 of the sustainability objectives and performs very well against the health and well being criteria (objective 1), air pollution (objective 5), waste (objective 9) and employment (objective 20). A positive effect was also noted against a range of other social, environmental and economic objectives. There are no negative effects recorded. The effect is uncertain for seven of the objectives as this will depend on the location and type of facility. Overall the option has many positive effects which relate to the benefits of reduced landfill and also of a dispersed pre-treatment strategy which allows for accessibility to facilities enhancing performance against many of the social objectives.

4.3.30 Timescale

Short term

A network of pre-treatment facilities and a centralised final treatment facility will have a significant lead in time and it is therefore unlikely this option will have a significant effect. In the short term there will be a continued reliance on landfill with the associated negative effects identified previously.

Medium Term

In the medium term this option should reduce landfill and will meet statutory targets and deliver significant sustainability benefits.

Long term

In the longer term this option should secure compliance with statutory targets and bring associated sustainability benefits, although there will be a continuing need to review the adequacy of the provision in light of the growth proposals.

Spatial effects
The effects of this option will occur primarily within the MKC area.

Secondary, cumulative and synergistic effects
The cumulative effects of this option on the local environment and community will very much depend on the location and type of pre and final treatment facilities. This will however be regulated by planning and environmental controls. The final treatment facility is likely to have a relatively high profile in the community and there may be secondary and cumulative effects on the community which could be both negative and positive.

4.3.31 Likelihood

This option is unlikely to be delivered in the short term due to the lead in time for developing the new facilities. The likelihood of positive effects occurring is high given that the option represents a major shift away from landfill with the associated positive benefits this brings.

4.3.32 Recommendations for mitigation

The uncertain effects could be clarified by a robust site selection process, based on the sustainability objectives, which should help identify a preferred location for this option which can enhance the positive benefits to the environment, local economy and community. This will increase the chances of the option delivering positive benefits. The positive effects identified could be enhanced by greater clarity regarding the implementation of the facilities, although this will be a matter outside the scope of the Waste Development Framework.

5. Conclusions

5.1 Overall Performance of Strategic Options

The appraisal considered the six strategic options for waste facilities in Milton Keynes put forward by council officers. The table below summarises their performance against the 20 sustainability objectives.

Table 5.1: Summary of Performance against Assessment Criteria

Assessment Criteria	Status Quo	Dispersed location of pre and final treatment	One site pre treatment	One site pre and final treatment	Out of MK final treatment	Dispersed location of pre treatment and one site for final treatment
--	4	0	4	3	2	0
-	8	0	6	0	4	0
~	4	2	2	2	3	2
?	3	8	5	8	7	7
+	1	9	3	6	4	7
++	0	1	0	1	0	4
Comment	This option performed worst against the appraisal criteria. The only area where positive results were obtained related to energy efficiency.	Represents the second best performing option. Performs slightly less well than option 6 against air quality and employment criteria.	Option performs badly against social criteria relating to human health, crime and social exclusion.	Third best performing option. Performed less well against crime, social exclusion and accessibility criteria.	Option performs badly against economic and crime criteria.	This option performs best against the appraisal criteria. Uncertainty where options relate to site specific issues.

Of the options considered Options 1 and 3 which had a significant reliance on landfill sites performed poorly against the sustainability objectives on the basis of the negative effects of landfill. Both options fail to meet government targets for diversion away from landfill and the range of negative effects associated with greenhouse gases, air pollution, transport and local economy. All other options which are not based around landfill offer positive effects associated with the recycling and/or recovery of waste. The option that performs best is Option 6 based on dispersed pre-treatment and a single site for final treatment. As well as the benefits of reduced reliance on landfill, the option offers social benefits associated with a number of pre-treatment facilities across Milton Keynes enabling better accessibility.

In all cases (other than option 1), the effects of new strategies are considered to only take effect in the medium to long term as there will be a lead in time for the development of new facilities.

5.2 Recommendations

On the basis of the appraisal Entec would make the following recommendations regarding the strategic options.

1. On the basis of its performance against sustainability objectives, Option 1 should be removed from further consideration except as a short term option pending development of more sustainable waste management facilities.
2. Option 3 also performs poorly against the sustainability objectives, and should be removed from further consideration.
3. In all other cases a robust site selection process, based on the sustainability objectives, should be used to help develop the preferred option and hence allow the effects on the environment, local economy and community to be fully appraised.
4. All remaining options should be retained for further consideration, although option 6 and to a lesser extent option 5 perform best against the sustainability objectives.
5. Option 5, based on an out of MKC option has a number of both positive and negative effects. Although this option performs less well than others it is considered that its performance could be enhanced if the facility was located close to Milton Keynes.

Appendix A
Objectives and Indicators as defined by the Atkins Scoping Report

6 Pages

Key to Data Availability for Indicators

Bold = Known data for Milton Keynes Borough

Italic = Known data for SE Region

Underlined = Data for Borough and SE Region currently unknown

No.	Draft SA Objective	Draft Headline Indicator	Potential Detailed Indicators	SEA Topics
Social				
1	To improve the health and well-being of the population and reduce inequalities in health	**Life expectancy**	**Life expectancy**	Human health, population
			Standard mortality ratios	
			% of people who describe their health as not good	
			% of people who describe their health as good	
			Suicide mortality rate	
			BVPI 99 - Road casualty rate (killed or seriously injured - KSI)	
2	To reduce crime and the fear of crime	**Overall Crime Rates**	**Overall Crime Rates**	Human health, population
			Buses fitted with CCTV	
			Violent offences committed in public places per 1,000 pop.	
			Burglary offences per 1,000 households	
			Vehicle Crime per 1000, population	
			Robberies per 1,000 population	
3	To reduce social exclusion and improve equality of opportunity amongst social groups	**Indices of deprivation**	**Indices of Deprivation – overall rank**	Human Health, Population
			Rank of Income Scale	
			Rank of Employment Scale	

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No.	Draft SA Objective	Draft Headline Indicator	Potential Detailed Indicators	SEA Topics
			Disability Living Allowance	
			Attendance Allowance	
4	To improve accessibility and transport links from residential areas to key services and employment areas.	% of population within 1km of public transport links	% of urban and rural residential population within walking distance of key services	Human health, population
			% of people of working age, within 30 minutes of work by public transport	
			% of new development within 1km of main employment areas	
			% of new residential development within 1km of good public transport links	
			% of new commercial development within 1km of good public transport links	
			Access to services for disabled people	
			BVPI 165 - Pedestrian crossings with facilities for disabled people	
			Proportion of low floor vehicles in the bus fleet (%)	
			ha of accessible green space per 1000 people (proposed by English Nature)	
Environmental				
5	To reduce air pollution and ensure air quality continues to improve	Levels of main air pollutants	**Levels of main pollutants for national air quality targets**	Air
			Number of days of air pollution	
			Number of PPC installations	
6	To reduce noise pollution	Noise levels	Noise levels	Noise
			Statistics re: noise complaints	
7	To reduce road traffic and congestion through a modal shift to more sustainable transport modes	**Composition and volume of road traffic**	Road traffic volumes	Population, Human health, Air, Climatic Factors
			Number of car trips (Census)	
			% change in road traffic volume	
			Change in peak period trwffic flows to urban centres (LTP)	
			Annual average flow per 1,000km of principal roads	
			Vehicle kilometres per average weekday	

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No.	Draft SA Objective	Draft Headline Indicator	Potential Detailed Indicators	SEA Topics
			Congestion (vehicle delay)	
		Modal split	**Number of passenger journeys made on local buses**	
			Travel to work, by mode	
			BVPI 102: Number of passenger bus journeys	
			No. of daily work journeys by bus (LTP)	
			Number of passenger rail journeys	
			% households without a car	
8	To improve efficiency in land use through the re-use of previously developed land and existing buildings,	% of new development built on previously developed land	**% of new housing built on previously developed land**	Cultural Heritage, Landscape
9	To reduce waste arisings and increase reuse, recovery and recycling.	**% of municipal waste generated disposed of to landfill**	**Household and amenity waste generated per year (tonnes)**	Soil, Water
			Kg of household waste collected per head	
			% recycled	
			% composted	
			% landfilled	
			Amount of biodegradable municipal waste sent to landfill (tonnes or % of total)	
		% of total waste arisings generated from commercial, construction and demolition waste streams	Commercial and industrial waste generated per year	
			Construction and demolition waste generated per year	
			Mine and quarry waste generated per year	
			Agricultural waste generated per year	
10	To protect local water resources and improve the quality of surface and groundwater	**Biological & chemical water quality**	**% of watercourse classified as good or fair biological quality**	Soil, Water
			% of watercourse classified as good or fair chemical quality	
			Groundwater quality	
			Number of new developments incorporating SUDS	
			BVPI 217 (introduced 2005/06): % of pollution control improvements to existing installations completed on time	
			Number of sites confirmed contaminated	

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No.	Draft SA Objective	Draft Headline Indicator	Potential Detailed Indicators	SEA Topics
			Average domestic water consumption (l/head/day)	
11	To reduce the risk of flooding	Extent of floodplain	No. of planning permissions with sustainable drainage installed	Water, soil
			Extent of floodplain changing due to development	
			No. of development schemes in flood risk areas	
12	To address the causes of climate change through reducing emissions of greenhouse gases (GHG).	Emissions of greenhouse gases	GHG emissions by sector and per capita emissions (tonnes per year)	Climatic factors
			Vehicle miles travelled per year	
13	To increase energy efficiency and use of renewable energy sources	Energy consumption per capita	Domestic gas consumption	Climatic factors
			Industrial gas consumption	
			% of Renewable Energy	
			Energy consumption per capita	
			BVPI 63 – Energy efficiency of council housing stock	
			Energy Conservation	
			Proportion of council and bus fleets using alternative fuel technology	
14	To protect and enhance biodiversity and important wildlife habitats	Number, area and condition of designated sites	**Population of species**	Biodiversity, Flora and fauna
			Type, area and condition of designated sites affected by transport and waste management development proposals	
			Area and condition of local priority habitats affected by transport and waste management development proposals	
			Woodland coverage (%of borough)	
15	To protect, enhance and make accessible heritage assets and their settings	Condition of heritage assets	**Area and condition of Conservation Areas**	Cultural heritage and landscape
			No. of Listed Buildings and proportion at risk.	
			Number of known (and unknown) archaeological sites affected by transport and waste management development proposals.	
			% of buildings in Conservation Areas in poor condition	
			% scheduled ancient monuments in poor condition	
			% area of historic parks and gardens in poor condition	
			Local Environmental Quality: BVPI 199 Cleanliness	

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No.	Draft SA Objective	Draft Headline Indicator	Potential Detailed Indicators	SEA Topics
16	To protect, manage and restore soil resources	Soil quality and condition of geological sites	Proportion of contaminated and cleaned-up land	
			Area of (agricultural) soils lost to development	
			Soil damaged by muddy floods/ loss of soil by water-driven erosion	
			% of new housing on previously developed/clean-up land	
			% of new business development on previously developed land or through conversions of existing buildings	
			Area of grade 1 & 2 agricultural land	
17	To promote the protection and enhancement of the countryside and landscape character	Quality of countryside / landscape	Condition of landscape / countryside area used for recreational purposes	
			Proportion of lost attractive countryside/landscape	
			Number of new rights of access to mountain, moor, heath, down and registered common land	
			Number of new routes (rights of way legislation)	
Economic				
18	To improve the vitality of towns and local centres and encourage urban renaissance	**Town Centre Health Check**	**Town Centre Health Check**	Material Assets
			Proportion of urban open space	
			New firms registrations	
			Number of business applications granted planning consent	
			No. of businesses financially assisted through the Council	
			Vacant industrial/commercial floorspace	
19	To maintain a strong local economy	**Total economic output**	**Productivity**	
			Number of VAT registered businesses	
			Survival rates for VAT-registered businesses	
			The % change in the total number of VAT registered businesses	
			New firms: registrations	
			Number of economic sectors represented in the area	

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No.	Draft SA Objective	Draft Headline Indicator	Potential Detailed Indicators	SEA Topics
20	To maintain high and stable levels of employment	**Unemployment rates**	Employment rate per 1,000 population	Population
			% of population of working age	
			Unemployment (number of claimants)	
			% of unemployed, based on economically active	
			% of population claiming Jobseekers Allowance (JSA)	
			Percentage of population of working age that are economically active	
			Job Density	

Appendix B
Appraisal Matrices

11 Pages

		Status Quo		Dispersed location of pre and final treatment		One site pre-treatment		One site pre- and final treatment		Out of MK final treatment		Dispersed location of pre-treatment and one site for final treatment
Sustainability Objectives	**Performance**	Commentary / Explanation (to include cumulative and synergistic effects as well as the differential spatial effects and effects over time)	**Performance**	Commentary / Explanation (to include cumulative and synergistic effects as well as the differential spatial effects and effects over time)	Performance	Commentary / Explanation (to include cumulative and synergistic effects as well as the differential spatial effects and effects over time)	Performance	Commentary / Explanation (to include cumulative and synergistic effects as well as the differential spatial effects and effects over time)	Performance	Commentary / Explanation (to include cumulative and synergistic effects as well as the differential spatial effects and effects over time)	Performance	Commentary / Explanation (to include cumulative and synergistic effects as well as the differential spatial effects and effects over time)
Social												

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		Status Quo		Dispersed location of pre and final treatment		One site pre-treatment		One site pre- and final treatment		Out of MK final treatment		Dispersed location of pre-treatment and one site for final treatment
Sustainability Objectives	**Performance**	Commentary / Explanation (to include cumulative and synergistic effects as well as the differential spatial effects and effects over time)	**Performance**	Commentary / Explanation (to include cumulative and synergistic effects as well as the differential spatial effects and effects over time)	Performance	Commentary / Explanation (to include cumulative and synergistic effects as well as the differential spatial effects and effects over time)	Performance	Commentary / Explanation (to include cumulative and synergistic effects as well as the differential spatial effects and effects over time)	Performance	Commentary / Explanation (to include cumulative and synergistic effects as well as the differential spatial effects and effects over time)	Performance	Commentary / Explanation (to include cumulative and synergistic effects as well as the differential spatial effects and effects over time)
1. To improve the health and well-being of the population and reduce inequalities in health	-	Status Quo does not contribute to well being of those living near landfill sites. The group considered that vermin associated insufficient food waste facilities /collection systems with current waste practices has health and well being implications.	?	Form of final treatment currently unknown. Benefits could include potential to enclose treatment facilities within buildings. Negative issues could relate to potential concerns regarding the nature of final treatment facilities.	- -	Continued reliance on landfill. Centralised location could encourage HGV movements around MK.	?	Type of treatment facilities unknown	-	Increased number of journeys out of MK area will potentially increase pollution levels Lack of local responsibility for waste could influence well being in MKC area.	++	Increased number of pre treatment collection facilities has potential to minimise amount of litter and un collected waste. This is likely to have a positive impact on human health and well being in MK.

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		Status Quo		Dispersed location of pre and final treatment		One site pre-treatment		One site pre- and final treatment		Out of MK final treatment		Dispersed location of pre-treatment and one site for final treatment
Sustainability Objectives	**Performance**	Commentary / Explanation (to include cumulative and synergistic effects as well as the differential spatial effects and effects over time)	**Performance**	Commentary / Explanation (to include cumulative and synergistic effects as well as the differential spatial effects and effects over time)	Performance	Commentary / Explanation (to include cumulative and synergistic effects as well as the differential spatial effects and effects over time)	Performance	Commentary / Explanation (to include cumulative and synergistic effects as well as the differential spatial effects and effects over time)	Performance	Commentary / Explanation (to include cumulative and synergistic effects as well as the differential spatial effects and effects over time)	Performance	Commentary / Explanation (to include cumulative and synergistic effects as well as the differential spatial effects and effects over time)
2. To reduce crime and the fear of crime	- -	Fly tipping is currently a significant problem associated with Status Quo option.	+	More facilities nearer to people will provide more opportunities to dispose of waste rather than fly tip.	- -	One pre treatment site does not provide sufficient opportunity to dispose of waste and could encourage fly tipping.	- -	One pre treatment site does not provide sufficient opportunity to dispose of waste and could encourage fly tipping.	- -	Out of MK solution will not solve the problem of fly tipping.	+	More facilities nearer to people will provide more opportunities to dispose of waste rather than fly tip.
3. To reduce social exclusions and improve equality of opportunity amongst social groups	~	Current situation will remain unchanged under Status Quo.	+	Additional facilities will encourage job creation in MKC area and increase overall accessibility.	- -	Fewer pre treatment facilities from status quo will reduce overall accessibility.	- -	Fewer pre treatment facilities from status quo will reduce overall accessibility.	~	Pre treatment options will remain unchanged from status quo	+	Additional facilities will encourage job creation in MKC area and increase overall accessibility.

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		Status Quo		Dispersed location of pre and final treatment		One site pre-treatment		One site pre- and final treatment		Out of MK final treatment		Dispersed location of pre-treatment and one site for final treatment
Sustainability Objectives	**Performance**	Commentary / Explanation (to include cumulative and synergistic effects as well as the differential spatial effects and effects over time)	**Performance**	Commentary / Explanation (to include cumulative and synergistic effects as well as the differential spatial effects and effects over time)	Performance	Commentary / Explanation (to include cumulative and synergistic effects as well as the differential spatial effects and effects over time)	Performance	Commentary / Explanation (to include cumulative and synergistic effects as well as the differential spatial effects and effects over time)	Performance	Commentary / Explanation (to include cumulative and synergistic effects as well as the differential spatial effects and effects over time)	Performance	Commentary / Explanation (to include cumulative and synergistic effects as well as the differential spatial effects and effects over time)
4. To improve accessibility and transport links from residential areas to key services and employment areas NOTE MADE DURING WORKSHOP SESSION: LACK OF CLARITY ON HOW OBJECTIVE RELATES TO WASTE	~	Access to waste management facilities will remain unchanged under Status Quo.	+	Dispersed facilities will increase overall accessibility.	- -	One site is likely to be less accessible for majority of MK population.	- -	One site is likely to be less accessible for majority of MK population.	~	Accessibility to pre treatment facilities is likely to remain unchanged from Status Quo.	+	Increased number of pre treatment facilities will increase overall accessibility.

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		Status Quo		Dispersed location of pre and final treatment		One site pre-treatment		One site pre- and final treatment		Out of MK final treatment		Dispersed location of pre-treatment and one site for final treatment
Sustainability Objectives	**Performance**	Commentary / Explanation (to include cumulative and synergistic effects as well as the differential spatial effects and effects over time)	**Performance**	Commentary / Explanation (to include cumulative and synergistic effects as well as the differential spatial effects and effects over time)	Performance	Commentary / Explanation (to include cumulative and synergistic effects as well as the differential spatial effects and effects over time)	Performance	Commentary / Explanation (to include cumulative and synergistic effects as well as the differential spatial effects and effects over time)	Performance	Commentary / Explanation (to include cumulative and synergistic effects as well as the differential spatial effects and effects over time)	Performance	Commentary / Explanation (to include cumulative and synergistic effects as well as the differential spatial effects and effects over time)
5. To reduce air pollution and ensure air quality continues to improve	**- -**	Continued reliance on landfill is likely to have potential adverse impact on air quality.	**+**	Alternative final treatment option to landfill is likely to have a positive impact on air quality. Less travel/distance to pre treatment sites results in reduced congestion.	**-**	Continued reliance on landfill is likely to have potential adverse impact on air quality.	**+**	Alternative final treatment option to landfill is likely to have a positive impact on air quality.	-	This option is likely to encourage increased number of vehicle movements resulting in adverse impact on air quality.	**++**	Good accessibility for HGVs to access final treatment location has potential to reduce air pollution.
6. To reduce noise pollution	**~**	Noise from waste management facilities not considered to be a major impact.	**?**	Treatment options have not been identified – difficult to assess noise impact.	**?**	Treatment options have not been identified – difficult to assess noise impact.	**?**	Treatment options have not been identified – difficult to assess noise impact.	?	Treatment options have not been identified – difficult to assess noise impact	?	Treatment options have not been identified – difficult to assess noise impact.

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		Status Quo		Dispersed location of pre and final treatment		One site pre-treatment		One site pre- and final treatment		Out of MK final treatment		Dispersed location of pre-treatment and one site for final treatment
Sustainability Objectives	**Performance**	Commentary / Explanation (to include cumulative and synergistic effects as well as the differential spatial effects and effects over time)	**Performance**	Commentary / Explanation (to include cumulative and synergistic effects as well as the differential spatial effects and effects over time)	Performance	Commentary / Explanation (to include cumulative and synergistic effects as well as the differential spatial effects and effects over time)	Performance	Commentary / Explanation (to include cumulative and synergistic effects as well as the differential spatial effects and effects over time)	Performance	Commentary / Explanation (to include cumulative and synergistic effects as well as the differential spatial effects and effects over time)	Performance	Commentary / Explanation (to include cumulative and synergistic effects as well as the differential spatial effects and effects over time)
7. To reduce road traffic and congestion through a modal shift to more sustainable transport modes	-	The option would continue current traffic patterns and would have no effect on reducing traffic movements.	-	Delivery of waste to a number of sites will tend to increase road traffic.	-	Waste will continue to be transported by road – therefore no change in congestion levels fro Status Quo.	-	Delivering waste to one site generates less traffic than delivering to several sites.	-	This option is most likely to generate more road transport than options due to vehicle movements out of the county.	-	Waste will continue to be transported by road – therefore no change in congestion levels from Status Quo.
8. To improve efficiency in land use through the re-use of previously developed land and existing buildings	-	Current waste management solution does not make maximum use of PDL and existing buildings.	?	Difficult to assess impact - nature of treatment and land requirements are currently unknown.	?	Difficult to assess impact - nature of treatment and land requirements are currently unknown.	?	Difficult to assess impact - nature of treatment and land requirements are currently unknown.	?	Difficult to assess impact - nature of treatment and land requirements are currently unknown.	?	Difficult to assess impact - nature of treatment and land requirements are currently unknown.
9. To reduce waste arisings and increase reuse, recovery and recycling	--	High degree of waste generated and disposed of in landfill.	+	Significant reduction in waste sent to landfill – includes final treatment facility.	+	Reduction in amount of waste sent to landfill but no final treatment facility provided.	++	Significant reduction in waste sent to landfill – includes final treatment facility.	+	Reduction in amount of waste sent to landfill but no final treatment facility provided.	++	Significant reduction in waste sent to landfill – includes final treatment facility.

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		Status Quo		Dispersed location of pre and final treatment		One site pre-treatment		One site pre- and final treatment		Out of MK final treatment		Dispersed location of pre-treatment and one site for final treatment
Sustainability Objectives	**Performance**	Commentary / Explanation (to include cumulative and synergistic effects as well as the differential spatial effects and effects over time)	**Performance**	Commentary / Explanation (to include cumulative and synergistic effects as well as the differential spatial effects and effects over time)	Performance	Commentary / Explanation (to include cumulative and synergistic effects as well as the differential spatial effects and effects over time)	Performance	Commentary / Explanation (to include cumulative and synergistic effects as well as the differential spatial effects and effects over time)	Performance	Commentary / Explanation (to include cumulative and synergistic effects as well as the differential spatial effects and effects over time)	Performance	Commentary / Explanation (to include cumulative and synergistic effects as well as the differential spatial effects and effects over time)
10. To protect local water resources and improve the quality of surface and groundwater	-	Use of landfill has potential to be detrimental to water quality.	+	Increased number of pre treatment facilities – final treatment facility reduces reliance on landfill and associated impact on water quality.	-	No final treatment facilities will result in continued reliance on landfill and potential associated impacts on water resources.	+	Increased number of pre treatment facilities – final treatment facility reduces reliance on landfill and associated impact on water quality.	+	External treatment of waste will reduce need to landfill and potential impact on MK's water resources.	+	Increased number of pre treatment facilities – final treatment facility reduces reliance on landfill and associated impact on water quality.
11. To reduce the risk of flooding	~	Status Quo does not have a significant impact on flood risk in MKC area.	~	Waste management does not have a significant impact on flood risk in MKC area.	~	Waste management does not have a significant impact on flood risk in MKC area.	~	Waste management does not have a significant impact on flood risk in MKC area.	~	Waste management does not have a significant impact on flood risk in MKC area.	~	Waste management does not have a significant impact on flood risk in MKC area.

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12. To address the causes of climate change through reducing emissions of greenhouse gases (GHG)	-	Current landfill practices generate greenhouse gases., although this can be recovered.	+	Final treatment facility will reduce reliance on landfill and potential generation of greenhouse gases.	-	Option still results in some reliance on landfill leading to generation of greenhouse gases.	+	Final treatment facility will reduce reliance on landfill and potential generation of greenhouse gases.	+	Out of MK facility will reduce need to landfill in MK and generation of greenhouses gases.	+	Final treatment facility will reduce reliance on landfill and potential generation of greenhouse gases.
13. To increase energy efficiency and use of renewable energy sources	+	Option still relies on use of landfill facilities. Potential for energy recovery from landfill gas.	?	Nature of final treatment and potential energy efficiency is currently unknown.	+	Option still relies on use of landfill facilities. Potential for energy recovery from landfill gas.	?	Nature of final treatment and potential energy efficiency is currently unknown.	?	Nature of final treatment and potential energy efficiency is currently unknown.	?	Nature of final treatment and potential energy efficiency is currently unknown.
14. To protect and enhance biodiversity and important wildlife habits	?	Impact on bio-diversity will depend on location of facilities	?	Impact on bio-diversity will depend on location of facilities	?	Impact on bio-diversity will depend on location of facilities	?	Impact on bio-diversity will depend on location of facilities	?	Impact on bio-diversity will depend on location of facilities	?	Impact on bio-diversity will depend on location of facilities

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15. To protect, enhance and make accessible heritage assets and their settings	?	Not considered that Status Quo has a significant adverse impact on cultural heritage in MK.	?	Impact on cultural heritage will depend on location of proposed facilities	?	Impact on cultural heritage will depend on location of proposed facilities.	?	Impact on cultural heritage will depend on location of proposed facilities.	?	Impact on cultural heritage will depend on location of proposed facilities.	?	Impact on cultural heritage will depend on location of proposed facilities.
16. To protect, manage and restore soil resources	--	High proportion of waste sent to landfill has an overall negative impact on soil quality in MK.	+	Reduction in amount of waste sent to landfill has potential to improve soil resources in MK.	-	Proportion of waste sent to landfill has a negative impact on soil quality in MK.	+	Reduction in amount of waste sent to landfill has potential to improve soil resources in MK.	+	Reduction in amount of waste sent to landfill has potential to improve soil resources in MK.	+	Reduction in amount of waste sent to landfill has potential to improve soil resources in MK.
17. To promote the protection and enhancement of the countryside and landscape character	-	Status Quo has a negative impact on landscape.	?	Nature of final treatment facilities unknown. Difficult to predict impact of these facilities on landscape character.	-	Continued reliance on landfill considered to have a negative impact on landscape.	?	Reduction in amount of waste sent to landfill has potential to improve soil resources in MK.	+	External final treatment considered to have positive impact on landscape in MK.	?	Nature of final treatment facilities unknown. Difficult to predict impact of these facilities on landscape character.

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18. To improve the vitality of towns and local centres and encourage urban renaissance ADDITIONAL INDICATOR REQUIRED EXTENT TO WHICH FACILITIES MEET CHANGING/SPECIALIST BUSINESS NEEDS	?	Group was unclear on what impact waste management facilities had on the vitality of town centres.	?	Nature of final treatment currently unknown. Impact on town centre vitality will depend on location and design of facility.	?	Nature of final treatment currently unknown. Impact on town centre vitality will depend on location and design of facility.	?	Nature of final treatment currently unknown. Impact on town centre vitality will depend on location and design of facility.	?	Nature of final treatment currently unknown. Impact on town centre vitality will depend on location and design of facility.	?	Nature of final treatment currently unknown. Impact on town centre vitality will depend on location and design of facility.
19. To maintain a strong local economy INDICATOR NOT PARTICULARLY HELPFUL AND IT ONLY RELATES TO ONE ASPECT OF THE LOCAL ECONOMY	-	Status Quo will not meet MKs LATS targets. Associated fines are considered to have an overall negative impact on local economy.	+	Alternative treatment facilities have potential to generate additional jobs and have a positive impact on local economy.	-	Continued reliance on landfill is unlikely to benefit economy in the long term.	+	Alternative treatment facilities have potential to generate additional jobs and have a positive impact on local economy.	- -?	Removing waste management facilities from MK is likely to have an overall negative impact on local economy.	+	Alternative treatment facilities have potential to generate additional jobs and have a positive impact on local economy.

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20. To maintain high and stable levels of employment	~	Level of employment is likely to remain unchanged under Status Quo.	+	Use of new technologies likely to result in creation of additional jobs	~	Continued reliance on landfill likely to result in no significant change from Status Quo.	+	Use of new technologies likely to result in creation of additional jobs.	-	Potential for job losses as a result of taking waste management services outside MK.	++	Introduction of pre and final treatment facilities likely to have an overall positive effect on employment in MK.