



Initial Sustainability Appraisal of Issues and Options for Waste Core Strategy for Worcestershire

Final Report

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Initial Sustainability Appraisal of Issues and Options for Waste Core Strategy for Worcestershire

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For and on behalf of
Environmental Resources Management

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Date: 24 April 2009

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EXECUTIVE SUMMARY

This report presents an Initial Appraisal of issues and options being proposed for the development of the Waste Core Strategy (WCS) for Worcestershire. The issues and options are set out in the Refreshed Issues and Options Consultation document¹. The Initial Appraisal represents a first stage in the process of a Sustainability Appraisal (SA) of the WCS.

The following issues and options have been assessed for the WCS, and the principal sustainability impacts identified as a result of the appraisal.

Geographic or locational issues to be considered in the spatial portrait

A number of gaps were identified in the spatial portrait, and recommendations made for several factors of locational significance which should be included when drawing up preferred options.

The draft Vision statement

The vision has a good coverage of sustainability issues but there are a small number of omissions which detract from the sustainability of the vision. In particular, more emphasis should be given to achieving high recycling and composting performance and greater water and energy efficiency.

Guiding principles for the WCS

The guiding principles give support either implicitly or explicitly to a wide range of sustainability objectives. However, clearer support should be given to locating facilities to serve the main settlements in the county, and to ensuring good public access to services to support higher recycling and composting.

Draft local objectives for the WCS

The WCS will aim to support the achievement of other relevant plans and strategies, and in doing so will comply with a range of sustainable development policy objectives contained in those other plans. Recommendations are made for a number of other key strategies which should be referenced to ensure comprehensive coverage of relevant policy objectives. Particular recommendations are made for giving greater support to the Worcestershire Climate Change Strategy.

Monitoring implementation of the WCS

A number of monitoring recommendations are made at this early stage as a result of initial findings of the SA. These include monitoring tonnages of waste managed at each level of the waste hierarchy, and the amount of energy generated by waste facilities.

¹ Waste Core Strategy for Worcestershire: Refreshed Issues and Options: Consultation – ‘How Should We Proceed?’, Worcestershire County Council, September 2008

Allocating C&I and C&D capacity requirements to lower tier authorities

By allocating the capacities required for C&I and C&D waste management facilities to the districts, boroughs and city, it is possible that there will be a shortage of good sites in some lower tier authorities. This may result either in insufficient facilities being delivered to move both C&I and C&D waste up the waste hierarchy, or in facilities being located on sites with more environmental risks and constraints. However, such an allocation will help spread both the economic benefits and responsibility for waste management more equitably across the county. The basis on which allocations could be made between the different lower tier authorities is open to doubt and may not provide a good match to sources of arisings. It is recommended that, from a sustainability perspective, a more optimal outcome could be achieved by not allocating capacities for C&I and C&D waste between lower tier authorities but to identify sites suitable to deal with the waste arising from the main sources of these wastes.

Factors to consider in protecting the environment, health, employment and amenity

A number of additional factors should be considered alongside those identified in the Issues and Options document, to ensure sufficient protection of the environment. These include: waste transport distances, the potential for use of CHP, climate change adaptation, protection of local character and the role of good design, land and soil quality and existing land use.

Future plans and strategies of spatial relevance in Worcestershire

Plans and strategies which will shape the broad location of development and scale of change in Worcestershire should include the RSS Phase 2 Revision, the Wyre Forest Core Strategy and Catchment Flood Management Plans.

Options for the approach to green belt

By relaxing the restrictions on development in the green belt, the WCS would make it more likely that development could be delivered close to some of the larger settlements, particularly Redditch, Kidderminster and Bromsgrove. This could help to reduce waste transport distances and associated emissions including greenhouse gas emissions. Although regarding waste development as appropriate in the green belt will result in a reduction in the area of land of green belt value, all the options will ensure that green belt objectives are supported, including protection of landscapes, securing nature conservation interest, protection of accessible open spaces and land of recreational and amenity value, and retaining land in agricultural use. This will require green belt developments to either avoid land with these uses or values, or protect them within developed sites.

Options for focusing development in urban or rural locations

Focusing waste development in urban areas will help to locate facilities closer to the source of arisings than the more rurally-focused options. This will support the minimisation of waste transport distances in comparison to the other options, thereby helping to reduce emissions of greenhouse gases. It will also avoid development pressure on natural and land-based assets and

open spaces in rural areas and is more likely to focus development on previously developed land.

Options for the approach to commissioning small or large facilities

Larger facilities will provide greater energy generation efficiency thus providing a greater reduction in greenhouse gas emissions than would be possible with small facilities or a mix of large and small, however they will spread responsibility for the county's waste less widely than a larger number of smaller facilities. Smaller facilities could minimise the transport of waste and associated effects, although emissions from transport are likely to be much smaller than emissions from facilities therefore the benefit will be relatively small. A mix of large and small facilities would deliver a more balanced approach to waste management, by reducing waste transport distances, but still providing the generation benefits from economies of scale.

Options for whether to prioritise centralised or dispersed facilities

By centralising facilities on a single site, the WCS could encourage industrial symbiosis between waste management activities, thereby giving more support to innovation, promoting the economic contribution of the waste sector and encouraging the management of waste at higher levels of the waste hierarchy. Centralised facilities can also increase opportunities for use of CHP which can help to reduce greenhouse gas emissions, and help to reduce waste transport by co-locating facilities. However, dispersed facilities could also reduce waste transport by locating facilities close to the source of arisings and would spread responsibility for the county's waste more widely among communities.

Options for quantities of waste to be managed at different levels of the waste hierarchy

Meeting the BPEO targets instead of national and regional targets will increase the diversion of waste from landfill, reducing the climate change effects of waste management and creating more opportunity for energy generation and use. This will also give more encouragement to the introduction of innovative technologies and greater economic benefits. However, it is likely to require more waste transport due to the need for multiple handling of process outputs instead of, for example, a single trip to landfill. However, achieving the BPEO targets would not meet national recycling targets for MSW.

Whether to specify waste management methods or to identify broad locations or sites and broad types of suitable uses.

By specifying particular technologies which should be developed, the WCS will provide greater certainty about the amounts of waste which will be managed at different levels of the waste hierarchy, and will provide WCC with greater control over the achievement of the hierarchy. It will also provide greater control over effects on greenhouse gas emissions, energy generation and waste transport, but will allow less flexibility to support innovation.

1.1

BACKGROUND

Worcestershire County Council (WCC) has re-started the process of producing the Waste Core Strategy (WCS) for Worcestershire. The WCS will provide the framework for how all the waste streams in the County will be managed between now and 2027. Having undertaken earlier work on the WCS between 2005 and 2007, WCC is now recommencing the process and refreshing that preparatory work.

The first stage in the process has been to redraft an Issues and Options document and to publish it for consultation. The consultation on the Issues and Options document took place between September and December 2008. Responses to the consultation will be considered by WCC in developing the Preferred Options for the WCS.

WCC has commissioned Environmental Resources Management to support it in the process of developing the WCS by undertaking a Sustainability Appraisal (SA) of the WCS as it emerges and develops.

The *Planning and Compulsory Purchase Act 2004* requires an SA of local Development Plan Documents (DPD) to be carried out, including Waste DPDs such as the WCS. Under the *Environmental Assessment of Plans and Programmes Regulations 2004*, the WCS must also be subject to a Strategic Environmental Assessment (SEA) before it is adopted. Government guidance indicates that an SA can and should be undertaken which also meets the requirements of SEA. Therefore, as part of the process of developing the WCS, it will be subject to an SA incorporating SEA.

SA is to be used as a tool for integrating environmental and sustainability considerations into the preparation of the WCS, by considering the effects of implementing the WCS during its preparation and before its adoption. The SA is required systematically to assess the WCS against a framework of environmental, economic and social objectives. It should identify, describe and evaluate the likely significant effects of implementing the plan or strategy, and reasonable alternatives taking into account the objectives and the geographical scope. These issues must be taken into account in the preparation of the WCS.

As part of the SA process, an initial appraisal has been undertaken of the issues and options which are set out for consultation in the Issues and Options document. The initial appraisal has identified the key sustainability implications of those issues and options, with the aim of informing WCC about the likely effects and enabling it to understand the implications. This document sets out the results of the initial appraisal and highlights the main implications of the emerging issues and options. The results, conclusions and

recommendations of the SA will be taken into account by WCC in the development of the Preferred Options for the WCS.

1.2 PROCESS

1.2.1 Scoping

The first step in the SA work was a scoping stage, to identify the sustainability context for waste management and planning in Worcestershire.

The scoping stage involved the collection of a wide range of baseline data covering economic, social and environmental issues in order to provide a picture of the current sustainability conditions in Worcestershire and to identify emerging trends where possible. The baseline data was analysed to identify the key sustainability issues for the county, within the particular context of waste management and planning.

In tandem with the baseline data collection and analysis, all relevant policies, plans and programmes were identified with a view to helping to establish the key sustainability issues for Worcestershire that could be affected by the WCS. The policy documents identified were reviewed to extract information to inform the issues, and to identify sustainable development policy objectives with which waste management and planning in the county must or should conform.

A framework of policy objectives was then developed for the appraisal. The objectives are supported by decision-making criteria in the form of questions under each objective. The WCS will be appraised against this framework to assess the extent to which it supports sustainable development policy objectives for Worcestershire, taking into account the specific questions which are posed. The framework was based on the existing Worcestershire Joint SA Framework, and also informed by:

- Review of the issues of relevance to Worcestershire as described within key policy documents, with particular regard being given to the Community Strategy and Regional Sustainable Development Framework;
- Review of the sustainability characteristics and issues; and
- Analysis of the opportunities arising from the baseline data.

The results of the scoping stage were set out in a Scoping Report which was issued to the three statutory agencies for consultation from 29 September to 7 November 2008.

Three responses were received, from the Environment Agency, English Heritage and Natural England. The main comments related principally to additional data to be included in the baseline, and additional documents for the policy review. These particularly covered issues of flood risk, water quality, biodiversity, heritage and landscape. However, there was also a request to note water as a significant issue for waste management in

Worcestershire, and requests to amend the wording of the objectives on historic environment and biodiversity to expand their scope. The Environment Agency also identified a need to undertake a Strategic Flood Risk Assessment for Worcestershire as a whole in the particular context of the WCS. Consultation comments have been taken on board and further scoping work has been undertaken to ensure that the relevant key issues and policies are reflected in the framework. Further work on SFRA is yet to be taken forward.

The objectives and decision-making criteria, as amended following the Scoping Report consultation, are as follows. This is the appraisal framework which has been used to appraise the Issues and Options document and will be used to appraise the WCS going forward.

Table 1.1 SA Objectives and Decision-Making Criteria

Theme	Objective	Decision-Making Criteria
1. Waste	Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.	1a. Are opportunities to increase recycling encouraged in your plan? 1b. Will your plan reduce the production of waste and manage waste in accordance with the waste hierarchy?
2. Climate Change	Reduce causes of and adapt to the impacts of climate change.	2a. Will your plan reduce emissions of greenhouse gases? 2b. Does your plan promote patterns of spatial development that are adaptable to and suitable for predicted changes in climate? 2c. Does your plan promote measures to mitigate causes of climate change?
3. Flooding	Ensure inappropriate development does not occur in high-risk flood-prone areas and does not adversely contribute to fluvial flood risks or contribute to surface water flooding in all other areas.	3a. Does your plan protect the floodplain from inappropriate development? 3b. Does your plan reduce the risk of flooding in existing developed areas? 3c. Does your plan promote Sustainable Drainage Systems (SUDs)? 3d. Does your plan promote patterns of spatial development that are adaptable to and suitable for predicted changes in climate?
4. Traffic and transport	Reduce the need to travel and move towards more sustainable travel patterns.	4a. Will your plan reduce the need to travel? 4b. Will your plan provide opportunities to increase sustainable modes of travel? 4c. Does your plan focus development in existing centres, and make use of existing infrastructure to reduce the need to travel?
5. Growth with prosperity for all	Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.	5a. Will your plan contribute towards urban and rural regeneration? 5b. Will your plan provide opportunities for businesses to develop and enhance their competitiveness? 5c. Will your plan support the shopping hierarchy? 5d. Will it help to improve skills levels in the workforce?
6. Participation by all	Provide opportunities for communities to participate in and contribute to the decisions that affect their neighbourhood and quality of life, encouraging pride and social responsibility in the local community.	6a. Does your plan proposals incorporate consultation with the local communities? 6b. Does your plan promote wider community engagement and civic responsibility?
7. Technology, innovation and inward investment	Promote and support the development of new technologies, of high value and low impact, especially resource efficient technologies and environmental technology initiatives.	7a. Does your plan encourage innovative and environmentally-friendly technologies? 7b. Does your plan promote and support the development of new technologies, of high value and low impact?
8. Energy generation and use	Promote energy efficiency and energy generated from renewable energy and low carbon sources.	8a. Will your plan encourage opportunities for the production of renewable and low-carbon energy?

		8b. Will your plan promote greater energy efficiency?
9. Natural resources	Protect and enhance the quality of water, soil and air.	9a. Will your plan improve or maintain air quality? 9b. Will your plan provide opportunities to improve or maintain water quality? 9c. Will your plan encourage measures to improve water efficiency in new development, refurbishment and redevelopment? 9d. Will your plan provide opportunities to improve or maintain soil quality?
10. Access to services	Improve the quality of, and equitable access to, local services and facilities, regardless of age, gender, ethnicity, disability, socio-economic status or educational attainment.	10a. Will your plan enhance the provision of local services and facilities? 10b. Will your plan contribute to rural service provision across the County? 10c. Will your plan enhance accessibility to services by public transport?
11. Landscape	Safeguard and strengthen landscape character and quality.	11a. Will your plan safeguard and strengthen landscape character and quality?
12. Biodiversity, geodiversity, flora and fauna	Conserve and enhance Worcestershire's biodiversity and geodiversity and ensure networks of habitats are conserved and enhanced.	12a. Will your plan help to safeguard the County's biodiversity and geodiversity? 12b. Will your plan provide opportunities to enhance local biodiversity/ geodiversity in both urban and rural areas? 12c. Will your plan protect sites and habitats designated for nature conservation? 12d. Will your plan help to achieve targets set out in the Biodiversity and Geodiversity Action Plans?
13. Health	Improve the health and well being of the population and reduce inequalities in health.	13a. Will your plan improve access to health facilities across the County? 13b. Will your plan help to improve quality of life for local residents? 13c. Will your plan promote healthier lifestyles? 13d. Does your plan mitigate against noise pollution? 13e. Does your plan mitigate against light pollution?
14. Provision of housing	Provide decent affordable housing for all, of the right quality and tenure and for local needs, in clean, safe and pleasant local environments.	14a. Will your plan provide opportunities to increase affordable housing levels within urban and rural areas of the County? 14b. Will your plan provide affordable access to a range of housing tenures and sizes? 14c. Does your plan seek to provide high quality, well-designed residential environments? 14d. Does your plan provide opportunities for the construction of sustainable homes?
15. Population (learning and skills)	Raise the skills level and qualifications of the workforce.	15a. Will your plan provide opportunities to further develop educational and attainment facilities within the County?
16. Cultural heritage, built design and archaeology	Conserve and enhance the historic and built environment and seek well-designed, resource efficient, high quality built environment in new development proposals which respects local character and distinctiveness.	16a. Does your plan provide opportunities for sustainable construction? 16b. Will your plan preserve, protect and enhance conservation areas, listed buildings, archaeological remains, historic parks and gardens and their settings, and other features and areas of historic and cultural value? 16c. Will your plan help to safeguard the County's listed, locally-listed and other historic

		buildings? 16d. Does your plan improve the quality of the built environment?
17. Population (antisocial behaviour, crime, litter and graffiti)	Reduce crime, fear of crime and antisocial behaviour.	17a. Does your plan seek to provide high quality well-designed environments? 17b. Does your plan promote wider community engagement and civic responsibility? 17c. Does your plan promote mixed development that encourages natural surveillance?
18. Material assets	Ensure efficient use of land through safeguarding of mineral reserves, the best and most versatile agricultural lands, land of green belt value, maximising use of previously developed land and reuse of vacant buildings, where this is not detrimental to open space and biodiversity interest.	18a. Will your plan safeguard the County's mineral resources? 18b. Will your plan help to protect the County's agricultural land from adverse developments? 18c. Will your plan preserve the openness of the green belt? 18d. Will your plan protect and enhance the County's open spaces of recreational and amenity value? 18e. Does your plan provide opportunities for sustainable construction? 18f. Will your plan maximise the use of previously developed land?

The Issues and Options document was reviewed to identify the emerging options to be assessed in the initial appraisal.

The document poses a number of questions asking for comments on a range of issues, and in some cases identifies possible options in response to the issues. For some of the issues and options which are raised, it was not considered useful to appraise them for sustainability implications, as there are no clear sustainability issues involved. Examples of this are the issue of how to measure required waste management capacity, and assumptions about land requirements for different types of waste management facility.

However, for other issues and options, it is clear that there are sustainability implications around the choice of preferred option, and therefore the Initial Appraisal has assessed each of the relevant options to identify the likely sustainability effects arising from them.

The issues and options which have been assessed in the Initial Appraisal are as follows.

- Geographic or locational issues to be considered in the spatial portrait for Worcestershire;
- The draft Vision statement;
- Guiding principles for the WCS;
- Draft local objectives for the WCS;
- Monitoring implementation of the WCS;
- Whether and how to allocate C&I and C&D capacity requirements to the individual lower tier authorities;
- Factors to consider in protecting the environment, health, employment and amenity;
- Future plans and strategies of spatial relevance in Worcestershire;
- Options for the approach to green belt
- Options for focusing development in urban or rural locations;
- Options for the approach to commissioning small or large facilities;
- Options for whether to prioritise centralised or dispersed facilities;
- Options for quantities of waste to be managed at different levels of the waste hierarchy;
- Whether to specify waste management technologies, or to identify broad locations or sites and broad types of suitable uses.

The coverage of the Issues and Options document by the Initial Appraisal is set out in *Table 1.2*.

Table 1.2 Appraisal of Sections of Issues and Options Document

Issues and options and proposed approach in WCS	Consultation questions	How Initial SA has appraised
Scope Coverage of different waste streams	Q1: Any other waste streams to be covered? Q2: Should policies to deal with organic agricultural waste be omitted? Q3: Should policies for mineral waste be excluded? See also Q7	No assessment – not relevant to sustainability objectives
Spatial portrait List of matters that have specific locational or geographical relevance	Q4: Does portrait include all main local issues that should inform the WCS?	Section 2.2.1, Table A.1
Draft Vision Statement	Q5: Is it a good vision?	Section 2.2.2, Table A.2
Revised objectives Lists of guiding principles and draft local objectives	Q6: Do you agree with draft local objectives?	Guiding principles – Section 2.2.3, Table A.3 Local objectives – Section 2.2.4, Table A.4
Types of waste covered Coverage of different waste streams	Q7: Do you agree with waste streams to be covered? See also Q1	No assessment – not relevant to sustainability objectives
Quantities of waste to deal with Provide facilities to meet tonnage targets in national and regional policy	Q8: Do you agree that sufficient facilities should be provided to meet targets set out in policy?	See also Q20 option E. Appraised tonnages from RSS for landfill and landfill diversion for MSW and C&I, and compared with option of achieving BPEO tonnages (Section 2.2.13, Table A.12).
Monitoring success of WCS Recognises need for monitoring	Q9: What should be monitored? See also Q12	Section 2.2.5. Table A.5
Broad distribution of waste management facilities Allocate capacities for C&I and C&D waste to each borough/district according to RSS employment land requirements	Q10: Should capacities for C&I and C&D waste be allocated for each borough/district? Q11: Do you agree with the proposed distribution of capacities for C&I and C&D waste?	Section 2.2.6, Table A.6
Monitoring Proposals to monitor waste arisings, waste movements, performance against targets and provision of facilities.	Q12: What should be monitored? See also Q9	Section 2.2.5, Table A.5
Measuring capacity Options are notional capacity, theoretical capacity and actual capacity. Compare actual capacity with RSS targets for landfill diversion to estimate treatment gap.	Q13: We intend to use actual capacity. Do you agree? Q14: Use actual capacity to estimate treatment gap. Do you agree?	Technical questions. Not useful for SA to comment.
Land requirements Use ratios of land to capacity to identify land for different waste management purposes.	Q15: Do you agree with the approach of using ratios?	Technical question. Not useful for SA to comment.

Issues and options and proposed approach in WCS	Consultation questions	How Initial SA has appraised
Timeframe for WCS Planning up to 2027, monitor annually and review every 5 years. Proposal for planning for beyond 2027.	Q16: Do you agree with 2027 timeframe? Q16A: Do you agree with proposal to monitor annually and review every 5 years? Q17: Do you agree with proposal for beyond 2027?	No assessment - not relevant to sustainability objectives.
Protecting the environment, health, employment and amenity List of factors to consider in testing suitability of sites and areas.	Q18: Are there any other matters which should be taken into account?	Section 2.2.7, Table A.7
Possible future issues List of emerging plans and strategies which will be relevant to WCS	Q19: Do you agree that these will be important? Q19A: What else should be included?	Section 2.2.8
Developing options Green belt: A1, A2, A3 Urban/rural: B1, B2, B3 Small/large facility: C1, C2, C3 Centralised/dispersed: D1, D2, D3 BPEO: E1 (BPEO)	Q20: Do you agree that A3, B1, C1, D1, E1 should be the preferred options?	Green belt – section 2.2.9, Table A.8 Urban/rural – section 2.2.10, Table A.9 Small/large – section 2.2.11, Table A.10 Centralised/dispersed – section 2.2.12, Table A.11 BPEO – section 2.2.13, Table A.12. BPEO option compared with allocating capacity according to RSS (see Q8)
Specifying waste management methods Specifying types of technologies or combinations, or grouping activities into types and identifying broad locations and development control policies to assess applications.	Q21: Do you agree that WCS should not specify technologies to be developed? Q22: Would it be useful to identify the kind of sites that would be appropriate for types of facilities?	Section 2.2.14, Table A.13

The appraisal determined the likely effects arising from each of the options. This was done by assessing each option against the appraisal objectives in turn, using the decision-making criteria identified, and making a largely qualitative assessment, with reference also to the baseline data from the Scoping Report. However, in the case of options for managing waste at different levels of the hierarchy, data is available for quantities to be managed and therefore the appraisal was able to make some limited quantification of effects.

The detailed results of this appraisal are set out in *Annex A*. The following symbols have been used to indicate the broad nature of the predicted effect:

- + effect likely to be positive
- effect likely to be negative
- 0 no significant effect
- ? effect unknown

Multiple symbols have been used (e.g. ++) to indicate a different scale of impact relative to the other options, in other words where the impacts of an option are *substantially* better or worse than others.

The effects were also rated for their significance in terms of the importance for achieving each appraisal question within the context of the SA objective. Effects were rated as high, medium or low, taking account of a number of factors. The factors were:

- the expected scale of the effects or the degree to which the effects are likely to contribute to the achievement of the SA objective in the county overall;
- the certainty or probability that the effect is likely to occur as a consequence of the options;
- whether the effects would be permanent or reversible;
- whether the effect will occur as a direct result of the option or not, in other words whether the options are key for achieving or controlling effects;
- whether the effect is more strongly dependent on other interventions or other factors;
- how important the objective is in differentiating between the options.

The assessment of significance is indicated in the tables in *Annex A* by colour in the comments column:

	Not relevant
	No significance
	Medium significance
	High significance

The main conclusions of the appraisal are set out in *Section 2*.

2.1 *INTRODUCTION*

This section sets out the results of the initial appraisal, showing the assessment of the effects of each of the options, according to the objectives of the appraisal framework. It summarises the key issues which have emerged from the appraisal. Detailed information showing the results of the appraisal against the appraisal objectives are set out in *Annex*.

2.2 *APPRAISAL RESULTS*

The main advantages and disadvantages of each of the issues and options are summarised below.

2.2.1 *Spatial Portrait*

The spatial portrait lists those matters which have a specific geographical or locational relevance in Worcestershire and need to be considered when drawing up alternative scenarios and preferred options. These matters were assessed against the appraisal framework to ensure an appropriate coverage of all relevant sustainability issues for the county. A number of gaps were identified which have relevance to the location of facilities or their spatial distribution:

- Climate change mitigation and adaptation;
- Potential for generation and use of CHP;
- Air quality;
- Access to services (recycling sites and HWRCs);
- Quality of landscape;
- Habitats and species important for nature conservation;
- Residential amenity;
- Quality of the built environment;
- Historic assets;
- Valued open spaces;
- Existing land use, particularly greenfield or previously developed land.

All of the above matters have locational relevance and should be included in the list of factors to be considered in drawing up preferred options.

2.2.2 *Vision*

The Vision confirms that waste will be used as a resource although the waste hierarchy is not explicitly promoted. In order to encourage movement of waste further up the hierarchy, the vision should include a statement that reuse and recycling levels in the county will be high. Greater resource

efficiency in Worcestershire as a whole will be promoted through more recovery of resources from waste. However, the Vision should also aim for greater resource efficiency from waste management activities themselves, particularly water and energy efficiency.

The Vision aims to ensure no pollution from waste management activities and the protection of natural and cultural assets, therefore natural and cultural resources should be protected, greenfield land avoided and previously developed land prioritised.

Climate change is taken into account in the Vision, implicitly through the recovery of resources and explicitly through the recognition of the need to avoid flood risk. Good design should help to promote adaptation.

Locating facilities in and around Worcester, Kidderminster and Redditch will help to reduce the need for waste transport, and alternatives to road will be promoted. However, facilities are unlikely to be located in Malvern, a significant settlement, which could otherwise contribute to reducing waste transport.

2.2.3 Principles

The list of principles was assessed against the appraisal framework to identify any sustainable development objectives which would not be supported by the WCS principles. In general all sustainability objectives will be supported either explicitly through the principles listed or implicitly in the commitment to follow national policy as applicable to waste management. However, the following potential gaps were identified which could be included within the principles of the WCS:

- Net self-sufficiency is promoted and a reduction in the transport of waste by road. However, a principle could be included to locate waste facilities primarily in or close to the main settlements in Worcestershire. This would demonstrate how reduced road transport will be achieved and will help to promote development in or close to urban areas, and deliver the development envisaged in the Vision.
- Access to services is not addressed in the principles. A principle could be included to ensure good access to waste services, which is particularly relevant for recycling facilities, including HWRCs, to support higher recycling and composting performance.

2.2.4 Objectives

The Issues and Options document indicates that the WCS will support or comply with a range of other plans and strategies that make Worcestershire distinctive. These plans and strategies are listed. This list of strategies was assessed against the appraisal framework to ensure that all relevant sustainability objectives are covered by the identified plans and strategies and

should therefore be supported by the WCS. A number of gaps were identified, either where a sustainability objective is not currently supported or where additional strategies should be mentioned as being important to sustainability objectives relevant to the WCS. The following plans and strategies could be referenced for a fuller list:

- The Worcestershire County Structure Plan, which includes objectives on promoting: the waste hierarchy; reduction in travel and alternatives to road; urban and rural regeneration; greater energy efficiency; renewable energy generation; improvement in the quality of air, water and land; enhancing landscapes and townscapes; enhancing important historic features and characteristics.
- Forthcoming Catchment Flood Management Plans which set objectives for dealing with flood risk.
- The Local Transport Plan which promotes reduction in the need to travel and moving towards more sustainable transport patterns.
- The Air Quality Strategy for Herefordshire and Worcestershire.
- Catchment Abstraction Management Strategies (Severn Corridor, Severn Vale, Teme, Worcestershire Middle Severn, Warwickshire Avon).
- AONB Management Plans for landscape protection.
- Worcestershire Biodiversity Action Plan for protection and enhancement of biodiversity.

In addition, the following table identifies aims, objectives and actions contained in the Worcestershire Climate Change Strategy which have relevance for the WCS and which could or should be emphasised to help deliver on Worcestershire's climate change aspirations. Those in italics could be given greater emphasis than is currently the case.

Table 2.1 *Aims, Objectives and Actions from Climate Change Strategy Relevant to WCS*

CCS Theme	Aims of CCS which could be supported by WCS
Waste hierarchy	Minimising waste production Increased recycling Resource recovery (including C&D recycling) Generation of energy Minimising landfill
Energy efficiency	<i>Promote energy efficiency</i>
Transport	Reducing the need to travel Promoting alternatives to road
Local goods and	<i>Promoting locally produced goods and services, particularly for reuse and</i>

CCS Theme	Aims of CCS which could be supported by WCS
services	<i>recycling</i> <i>More accessible local services, including recycling sites</i> Supporting localised energy supply from waste, specifically wood waste, biodigestion/biogas
Renewables	<i>Generation and use of CHP</i> Methane capture from landfill Potential of organic waste to generate renewable energy Consider the development of a high profile 'renewables demonstration park' as part of an environmental technologies cluster
Adaptation	Avoiding/reducing flood risk Promoting resilient infrastructure Avoiding risks of subsidence, fire Promoting sustainable drainage techniques

Reference is made in the CCS to a research paper, Planning for Climate Change in Worcestershire. This specifically identifies a number of recommendations on climate change for the WCS which could be considered in the further development of the WCS going forward. These are as follows:

- Promote positive energy from waste policies including the capture of methane and separation of food waste for anaerobic digestion, pyrolysis or gasification;
- Utilise heat from such processes for community heating schemes or for heat intensive industries via heat mapping;
- Allocate sites for the separation and recycling of waste materials i.e. Norton CMRF;
- Consider emissions from infrastructure and identify potential to reduce by exploring the potential of energy from waste, efficiency measures and improving resilience;
- As a minimum standard in developments, a site waste management plan should be in place and provision should be made for adequate space for storage of containers for relevant Local Authority refuse collection/recycling schemes.

WCC should give consideration to the potential for giving greater emphasis to these matters in the WCS going forward to the Preferred Options.

2.2.5 *Monitoring Proposals*

The Issues and Options document proposes to monitor waste generation and performance against targets, as well as the provision of new facilities by lower tier authority area and waste movements in and out of the County. It is recommended that, in addition, the following aspects are monitored in order

to be able to report on the impact of the strategy in sustainability terms as identified by the initial appraisal of issues and options:

- Tonnages of waste managed at each level of the waste hierarchy;
- Amount of energy generated by waste facilities, including renewable energy;
- % of population living within 5km/10km of recycling site/HWRC;
- Waste transport distances (tonne-km travelled by waste);
- Compliance/non-compliance with development consent conditions (air, water, soil, biodiversity, geodiversity, historic and built environment; and
- Former land use lost to development (hectares by type of use/value).

2.2.6 *Allocating C&I and C&D Capacity*

By allocating the capacities required for C&I and C&D waste management facilities to the districts, boroughs and city, it is possible that there will be a shortage of good sites in some lower tier authorities. This may have a number of consequences for sustainability issues, which could result either in insufficient facilities of the required type being delivered to move both C&I and C&D waste up the waste hierarchy, or in facilities being located on sites with more environmental risks and constraints. These could include, for example, sites being within or close to areas of poor air quality, particularly in Worcester, Bromsgrove and Redditch, or being located on greenfield land or valued open spaces instead of on previously developed land. The risk of these negative impacts could be avoided or reduced if the capacity is allowed to be delivered wherever suitable sites arise regardless of the authority in which it is located.

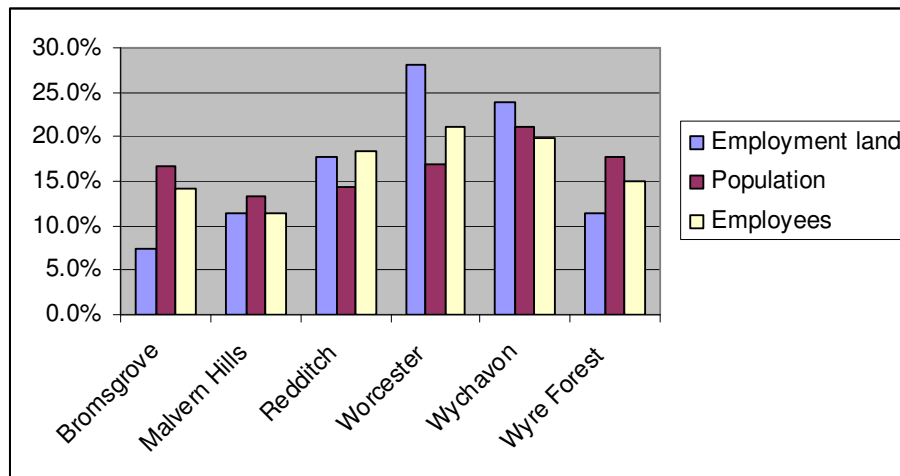
However, allocating capacities to each lower tier authority will help to ensure that the economic benefits from waste related development will be spread throughout the county, and will spread the responsibility for waste management more equitably among communities across the county.

It is unclear what effect allocation of capacity to district/boroughs will have on waste transport distances and emissions from transport. Allocation should, in principle, mean waste is managed close to the sources of arising but could result in waste being transported greater distances from the source of arising than if a convenient site were available in a neighbouring district. The significance of effects depends on where suitable sites can be found.

The basis on which allocations could be made between the different lower tier authorities is open to doubt. Allocating on the basis of long term employment land allocations in the RSS does not take into account figures in the RSS for new housing development allocations, housing demolitions, allocations for office space or for comparison retail floorspace, all of which will affect C&I and C&D waste arisings. It also does not take account of the acknowledgement in the RSS that the figures for new housing and new employment land allocations imply some cross-boundary issues between individual lower tier authorities which will need to be resolved.

Allocation on the basis of resident population or number of employees could also give an approximation to C&D waste arisings or C&I arisings. The following chart shows how these compare with the allocation according to new employment land allocations. This indicates that allocations on the basis of new employment land could be too high for Worcester and Wychavon and too low for Bromsgrove and Wyre Forest. However, the population and employee figures do not take account of future growth which may change the distribution between lower tier authorities.

Figure 2.1 *Distribution of Employment Land, Population and Employees by District, Borough and City*



It is recommended that, from a sustainability perspective, a more optimal outcome could be achieved by not allocating capacities for C&I and C&D waste between lower tier authorities but to identify sites suitable to deal with the waste arising from the main sources of Worcester, Redditch and Kidderminster, as indicated in the Vision, while also catering for waste arising from the lesser sources of Bromsgrove, Malvern, Droitwich, Evesham and Stourport.

2.2.7 *Protecting Environment, Health, Employment and Amenity*

The Issues and Options document lists a number of factors which should be taken into account in testing the suitability of sites. This list was assessed against the appraisal framework in order to ensure sufficient coverage of all relevant sustainability objectives. A number of gaps were identified where objectives are either not covered or it is not sufficiently clear that they will be considered under the factors listed. The following are recommended as additions:

- The consideration of waste transport should be explicitly considered. Traffic and access is mentioned as a factor in site selection and development control, but it is not clear whether this includes waste

transport distances. This will also support the objective of climate change mitigation.

- The potential for use of CHP could be an important factor in the attractiveness of certain sites, and would contribute to supporting objectives on climate change mitigation, energy efficiency and renewable energy generation.
- Climate change adaptation should be a factor in site selection and development control, including flood risk and resilience.
- Local character and the role of good design should be explicitly considered as a factor, to take account of and protect the quality of the landscape and built environment and local distinctiveness.
- Land and soil quality should be considered, including geology.
- Existing land use should be considered to protect valued open spaces and the best and most versatile agricultural land, and to focus development on previously developed land.

2.2.8 *Possible Future Issues*

The Issues and Options document identifies a number of strategies which are currently in draft form but which will be relevant to the WCS in identifying the scale of change likely to take place in each area, the broad location of developments and some indicative timing for the changes likely. All of these are factors which will guide what the WCS needs to address. Although not directly relevant to a SA process, the list has been reviewed and the following suggestions are made for additional draft strategies which are likely to be relevant:

- RSS Phase 2 Revision;
- Wyre Forest Core Strategy; and
- Catchment Flood Management Plans.

2.2.9 *Approach to Green Belt*

Relaxing the restrictions on development in the green belt, the WCS would make it more likely that development could be delivered close to some of the larger settlements, particularly Redditch, Kidderminster and Bromsgrove. This could help to reduce waste transport distances and associated emissions including greenhouse gas emissions. It may also help to improve public access to waste facilities although there is no information available about where need currently arises.

Although regarding waste development as appropriate in the green belt will result in a reduction in the area of land of green belt value, all the options will ensure that green belt objectives are supported, including protection of

landscapes, securing nature conservation interest, protection of accessible open spaces and land of recreational and amenity value, and retaining land in agricultural use. This would require any green belt developments to either avoid land with these particular uses or values, for example in the case of agricultural land, or to protect the uses or values on any waste sites, for example in the case of nature conservation interest. By requiring any green belt development to be on previously developed land, the second option would support the prioritisation of previously developed land, although this could also be achieved if waste development is regarded as inappropriate through a separate policy to prioritise previously developed land.

2.2.10 *Urban or Rural Locations*

Focusing waste development in urban areas will help to locate facilities closer to the source of arisings than the more rurally-focused options. This will support the minimisation of waste transport distances in comparison to the other options, thereby helping to reduce emissions of greenhouse gases. It will also avoid development pressure on land assets and open spaces in rural areas and is more likely to focus development on previously developed land. This could also be achieved in rural areas if incorporated into criteria for site identification (see *Section 2.2.7*). Urban-focused development may also help to improve public access to recycling sites although no data is available on where need currently arises.

Effects on biodiversity and geodiversity are less likely with urban development, although this is dependent on sensitivities at individual sites, as are the potential effects on natural resources such as air and water quality which could arise with development anywhere. Waste development in urban locations is less likely to have a negative impact on landscape character and quality than rural developments and in some circumstances may enhance it depending on specific site conditions and design quality.

2.2.11 *Small or Large Facilities*

Larger facilities will provide greater energy generation efficiency thus providing a greater reduction in greenhouse gas emissions than would be possible with small facilities or a mix of large and small.

The significance of effects on waste transport depends on the locations of sites in relation to the sources of arisings, but it is possible that a larger number of smaller facilities could minimise the transport of waste, thus minimising emissions and other effects from transport. However, emissions from transport are likely to be much smaller than emissions from waste processing therefore the benefit will be relatively small. A mix of large and small facilities would deliver a more balanced approach to waste management, by reducing waste transport distances, but still providing the generation benefits from economies of scale.

Larger facilities are likely to have a greater impact on landscape, because effects may be more difficult to mitigate. However, the significance of landscape impacts depends primarily on individual sites and types of facilities proposed.

Although all options will promote Worcestershire taking responsibility for the waste produced by the county, the more small facilities there are, the more the responsibility for waste will be spread among different communities.

2.2.12 *Centralised or Dispersed Facilities*

By centralising facilities on a single site, the WCS could give greater encouragement to industrial symbiosis between waste management activities, thereby giving greater support to innovation, promoting the economic contribution of the waste sector and encouraging the management of waste at higher levels of the waste hierarchy.

Centralised facilities can also increase opportunities for use of CHP which can help to reduce greenhouse gas emissions, and help to reduce waste transport by co-locating facilities. However, dispersed facilities could also reduce waste transport by locating facilities close to the source of arisings. The significance of effects arising from transport depends on specific locations of sites, including in relation to the source of arisings. The relative benefits of the different options can only be determined when more information on sites is available.

Centralised facilities may have a greater cumulative impact on landscape, although the significance of impacts depends on individual sites and types of facilities proposed.

Although all options will promote Worcestershire taking responsibility for the waste produced by the county, the more dispersed the facilities are, the more the responsibility for waste will be spread among different communities.

2.2.13 *Approach to Targets*

In question 20, the Issues and Options document proposes meeting the targets adopted in the existing BPEO strategy. In question 8, it alternatively proposes meeting targets set out in national and regional policy. Both approaches will increase the diversion of waste from landfill and will promote the management of waste at higher levels of the waste hierarchy than currently, thereby reducing the climate change effects of waste management and creating more opportunity for energy generation and use. This will also encourage the introduction of innovative technologies and greater economic benefits. However, it is likely to require more waste transport due to the need for multiple handling of process outputs instead of, for example, a single trip to landfill. Achieving BPEO targets rather than national or regional targets will reduce the amount of waste landfilled even further and thereby increase

these effects in comparison to meeting RSS or national targets. However, the BPEO would not meet national recycling targets for MSW.

Increasing diversion from landfill will require new facilities to be constructed, which could have effects on natural resources, biodiversity and geodiversity, landscape and open spaces and cultural heritage. However, the significance of effects is dependent on conditions at specific sites, the type of facility proposed and operational standards, rather than the overall approach to targets.

2.2.14 *Approach to Technologies*

The Issues and Options document proposes to identify broad locations of sites appropriate for different groups of technologies, rather than specifying the particular type of technologies. However, by specifying particular technologies which should be developed, the WCS will provide greater certainty about the amounts of waste which will be managed at different levels of the waste hierarchy, and will provide WCC with greater control over the achievement of the hierarchy. It is not possible to predict what the different effects of either option would be on greenhouse gas emissions, energy generation or waste transport requirements, but specifying the type of technologies which should be developed will give WCC greater control over the contribution of waste management activities to these effects. However, while either option would promote the development of resource-efficient technologies, by not specifying the type of technology required the WCS will provide flexibility to give greater support to innovation.

3.1 *DEVELOPMENT OF PREFERRED OPTION FOR WCS*

The consultation comments which have been received on the Issues and Options document will be considered and taken into account in developing the Preferred Option for the WCS. WCC will also take into account the results, conclusions and recommendations set out in this report on the SA of the Issues and Options document in developing the Preferred Option.

In parallel with the development of the Preferred Option, a detailed SA will be undertaken of the emerging Preferred Option, showing the likely sustainability effects in comparison to alternative options. The SA will include recommendations for mitigating the predicted negative effects and maximising opportunities for positive effects. It will also include recommendations for monitoring the effects of implementing the WCS. The SA will be undertaken in an iterative fashion as the WCS Preferred Option emerges and will inform its development so that sustainability considerations can be taken into account during the drafting process.

The Preferred Option and an SA Report will be issued for public consultation. This is currently scheduled for September 2009.

3.2 *SUBSEQUENT STAGES*

Following the Preferred Option stage, the WCS will be further refined before finalising the WCS for submission to the Secretary of State. The WCS Submission Version will be appraised by the SA and the SA Report will be revised as appropriate to reflect the development of the WCS from the Preferred Options stage.

The submitted WCS will then be subject to an Examination in Public before an independent Inspector.

Assuming the WCS is found to be sound by the Inspector, the WCS will be adopted. At that stage, a post-adoption statement will be required for the SA to show how the SA has influenced the development of the WCS and to indicate the monitoring arrangements which will be put in place.

Annex A

Detailed Assessment of Issues and Options

Key:

Impacts	Significance
+ positive impact	Low significance
- negative impact	Medium significance
0 no significant impact	High significance
? impact unknown	
Ø not relevant	

Table A.1 Assessment of Spatial Portrait

SA objectives		SA commentary
Waste 1. Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.	Ø	Not relevant
Climate Change 2. Reduce causes of and adapt to the impacts of climate change.	-	Take account of climate change mitigation and adaptation.
Flooding 3. Ensure inappropriate development does not occur in high-risk flood-prone areas and does not adversely contribute to fluvial flood risks or contribute to surface water flooding in all other areas.	+	Included
Traffic and transport 4. Reduce the need to travel and move towards more sustainable travel patterns.	+	Included
Growth with prosperity for all 5. Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.	+	Included
Participation by all 6. Provide opportunities for communities to participate in and contribute to the decisions that affect their neighbourhood and quality of life, encouraging pride and social responsibility in the local community.	Ø	Not relevant
Technology, innovation and inward investment 7. Promote and support the development of new technologies, of high value and low impact, especially resource efficient technologies and environmental technology initiatives.	Ø	Not relevant
Energy generation and use 8. Promote energy efficiency and energy generated from renewable energy and low carbon sources.	-	Take account of potential for generation of CHP
Natural resources 9. Protect and enhance the quality of water, soil and air.	-	Take account of air quality
Access to services 10. Improve the quality of, and equitable access to, local services and facilities, regardless of age, gender, ethnicity, disability, socio-economic status or educational attainment.	-	Ensure access to services

SA objectives		SA commentary
Landscape 11. Safeguard and strengthen landscape character and quality.	-	Consider quality of landscape
Biodiversity, geodiversity, flora and fauna 12. Conserve and enhance Worcestershire's biodiversity and geodiversity and ensure networks of habitats are conserved and enhanced.	-	Take account of habitats and species important for nature conservation
Health 13. Improve the health and well being of the population and reduce inequalities in health.	-	Consider effects on residential amenity
Provision of housing 14. Provide decent affordable housing for all, of the right quality and tenure and for local needs, in clean, safe and pleasant local environments.	-	Consider effects on residential amenity
Population (learning and skills) 15. Raise the skills level and qualifications of the workforce.	Ø	Not relevant
Cultural heritage, built design and archaeology 16. Conserve and enhance the historic and built environment and seek well-designed, resource efficient, high quality built environment in new development proposals which respects local character and distinctiveness.	-	Take account of quality of the built environment and potential effects on historic assets
Population (antisocial behaviour, crime, litter and graffiti) 17. Reduce crime, fear of crime and antisocial behaviour.	Ø	Not relevant
Material assets 18. Ensure efficient use of land through safeguarding of mineral reserves, the best and most versatile agricultural lands, land of green belt value, maximising use of previously developed land and reuse of vacant buildings, where this is not detrimental to open space and biodiversity interest.	-	Take account of valued open spaces and consider existing land use

Table A.2 Assessment of Vision

SA objectives		SA commentary
Waste 1. Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.	+	Waste will be used as a resource although the hierarchy is not explicitly promoted. Should include a statement that reuse and recycling levels will be high
Climate Change 2. Reduce causes of and adapt to the impacts of climate change.	+	Mitigation is implicit in recovery of resources. Avoids flood risk and requires good design.
Flooding 3. Ensure inappropriate development does not occur in high-risk flood-prone areas and does not adversely contribute to fluvial flood risks or contribute to surface water flooding in all other areas.	+	Flood risk areas will be avoided.
Traffic and transport 4. Reduce the need to travel and move towards more sustainable travel patterns.	+/?	Locating facilities in and around Worcester, Kidderminster and Redditch will help to reduce the need for waste transport. Facilities are unlikely to be located in Malvern which may otherwise contribute to reducing waste transport. Alternatives to road will be promoted.
Growth with prosperity for all 5. Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.	+	Recognises the importance and contribution of waste management to the economy. Allows for both urban and rural developments.
Participation by all 6. Provide opportunities for communities to participate in and contribute to the decisions that affect their neighbourhood and quality of life, encouraging pride and social responsibility in the local community.	+	Aims to promote community-wide responsibility for waste.
Technology, innovation and inward investment 7. Promote and support the development of new technologies, of high value and low impact, especially resource efficient technologies and environmental technology initiatives.	+	Allows for flexibility to respond to technological changes. Greater resource efficiency in waste management should be explicitly promoted.
Energy generation and use 8. Promote energy efficiency and energy generated from renewable energy and low carbon sources.	+/0	Use of waste as a fuel is promoted. Energy efficiency should be promoted.
Natural resources 9. Protect and enhance the quality of water, soil and air.	+/0	Aims to ensure no pollution from waste management activities and envisages use of waste as a soil improver and for land reclamation. Water efficiency should be promoted.
Access to services 10. Improve the quality of, and equitable access to, local services and facilities, regardless of age, gender, ethnicity, disability, socio-economic status or educational attainment.	?	Locating facilities near the main settlements will help to ensure access to services where relevant, although access issues area not specifically addressed in the Vision.
Landscape	+	Aims to avoid damage to natural assets, which

SA objectives		SA commentary
11. Safeguard and strengthen landscape character and quality.		should include landscape assets. Seeks to enhance landscape character through waste use.
Biodiversity, geodiversity, flora and fauna 12. Conserve and enhance Worcestershire's biodiversity and geodiversity and ensure networks of habitats are conserved and enhanced.	+	Aims to avoid damage to natural assets, which should biodiversity assets. Seeks to enhance biodiversity through waste use.
Health 13. Improve the health and well being of the population and reduce inequalities in health.	0	Aims to avoid adverse effects on human health and amenity.
Provision of housing 14. Provide decent affordable housing for all, of the right quality and tenure and for local needs, in clean, safe and pleasant local environments.	Ø	Not relevant to Vision
Population (learning and skills) 15. Raise the skills level and qualifications of the workforce.	Ø	Not relevant to Vision
Cultural heritage, built design and archaeology 16. Conserve and enhance the historic and built environment and seek well-designed, resource efficient, high quality built environment in new development proposals which respects local character and distinctiveness.	+	Aims to avoid damage to cultural assets, which should include the historic and built environment. Seeks well-designed waste management facilities.
Population (antisocial behaviour, crime, litter and graffiti) 17. Reduce crime, fear of crime and antisocial behaviour.	Ø	Not relevant
Material assets 18. Ensure efficient use of land through safeguarding of mineral reserves, the best and most versatile agricultural lands, land of green belt value, maximising use of previously developed land and reuse of vacant buildings, where this is not detrimental to open space and biodiversity interest.	+	Seeks to avoid damage to natural and cultural assets and the amenity of local people. This should help to ensure no adverse effects on valued land and open spaces. In particular, use of PDL will be promoted and greenfield land avoided.

Table A.3 Assessment of Guiding Principles

SA objectives		SA commentary
Waste 1. Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.	+	Promotes the waste hierarchy
Climate Change 2. Reduce causes of and adapt to the impacts of climate change.	+	Promotes climate change mitigation and high quality design.
Flooding 3. Ensure inappropriate development does not occur in high-risk flood-prone areas and does not adversely contribute to fluvial flood risks or contribute to surface water flooding in all other areas.	+	Will follow national guidance on development and flood risk
Traffic and transport 4. Reduce the need to travel and move towards more sustainable travel patterns.	+	Promotes net self-sufficiency and seeks to reduce the transport of waste by road. Could include a principle to locate waste facilities primarily in or close to the main settlements in Worcestershire.
Growth with prosperity for all 5. Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.	0	Not covered by principles
Participation by all 6. Provide opportunities for communities to participate in and contribute to the decisions that affect their neighbourhood and quality of life, encouraging pride and social responsibility in the local community.	+	Aims to involve all those affected and to reflect the concerns and interests of people and businesses
Technology, innovation and inward investment 7. Promote and support the development of new technologies, of high value and low impact, especially resource efficient technologies and environmental technology initiatives.	0	Not covered by principles
Energy generation and use 8. Promote energy efficiency and energy generated from renewable energy and low carbon sources.	+	Seeks to promote the use of waste as a resource, which should include the recovery of energy. Reducing road transport will help to reduce energy use.
Natural resources 9. Protect and enhance the quality of water, soil and air.	+	Seeks to conserve and enhance the natural environment.
Access to services 10. Improve the quality of, and equitable access to, local services and facilities, regardless of age, gender, ethnicity, disability, socio-economic status or educational attainment.	0	Not addressed in principles. Could include an objective to ensure good access to waste services.
Landscape 11. Safeguard and strengthen landscape character and quality.	+	Aims to conserve and enhance the natural and built environment which should include landscapes and townscapes, and seeks high quality design.
Biodiversity, geodiversity, flora and fauna 12. Conserve and enhance Worcestershire's biodiversity and geodiversity and ensure networks of	+	Seeks to conserve and enhance the natural environment which should include biodiversity and

SA objectives		SA commentary
habitats are conserved and enhanced.		geodiversity
Health		
13. Improve the health and well being of the population and reduce inequalities in health.	+	Seeks to conserve and enhance health and amenity.
Provision of housing		
14. Provide decent affordable housing for all, of the right quality and tenure and for local needs, in clean, safe and pleasant local environments.	Ø	Not relevant
Population (learning and skills)		
15. Raise the skills level and qualifications of the workforce.	Ø	Not relevant
Cultural heritage, built design and archaeology		
16. Conserve and enhance the historic and built environment and seek well-designed, resource efficient, high quality built environment in new development proposals which respects local character and distinctiveness.	+	Seeks to conserve and enhance the historic and built environment and seeks high quality design in waste management facilities
Population (antisocial behaviour, crime, litter and graffiti)		
17. Reduce crime, fear of crime and antisocial behaviour.	+	Seeks high quality design in waste management facilities, to reflect the concerns and interests of people and businesses and to involve all those affected
Material assets		
18. Ensure efficient use of land through safeguarding of mineral reserves, the best and most versatile agricultural lands, land of green belt value, maximising use of previously developed land and reuse of vacant buildings, where this is not detrimental to open space and biodiversity interest.	+	Seeks to use PPS10 locational criteria which will promote use of PDL and to apply national policy which will protect valued land and spaces

Table A.4 Assessment of Objectives

SA objectives		SA commentary
Waste 1. Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.	+	References the Joint Municipal Waste Management Strategy, Local Area Agreement, Climate Change Strategy, Sustainable Community Strategy. Could also make reference to Worcestershire County Structure Plan
Climate Change 2. Reduce causes of and adapt to the impacts of climate change.	+	References the Climate Change Strategy
Flooding 3. Ensure inappropriate development does not occur in high-risk flood-prone areas and does not adversely contribute to fluvial flood risks or contribute to surface water flooding in all other areas.	+	References district and city Strategic Flood Risk Assessments, Local Area Agreement and Climate Change Strategy. Could also make reference to forthcoming Catchment Flood Management Plans.
Traffic and transport 4. Reduce the need to travel and move towards more sustainable travel patterns.	0	Could make reference to the Local Transport Plan and Worcestershire County Structure Plan
Growth with prosperity for all 5. Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.	+	References the Economic Strategy for Worcestershire. Could make reference to Worcestershire County Structure Plan (objective on urban and rural regeneration)
Participation by all 6. Provide opportunities for communities to participate in and contribute to the decisions that affect their neighbourhood and quality of life, encouraging pride and social responsibility in the local community.	+	References the Sustainable Community Strategy
Technology, innovation and inward investment 7. Promote and support the development of new technologies, of high value and low impact, especially resource efficient technologies and environmental technology initiatives.	+	References the Economic Strategy for Worcestershire and Sustainable Community Strategy
Energy generation and use 8. Promote energy efficiency and energy generated from renewable energy and low carbon sources.	+	References Sustainable Community Strategy. Could make reference to Worcestershire County Structure Plan
Natural resources 9. Protect and enhance the quality of water, soil and air.	+ / 0	References Sustainable Community Strategy. Could make reference to Air Quality Strategy for Herefordshire and Worcestershire, CAMS (Severn Corridor, Severn Vale, Teme, Worcestershire Middle Severn, Warwickshire Avon), Worcestershire County Structure Plan
Access to services 10. Improve the quality of, and equitable access to, local services and facilities, regardless of age, gender, ethnicity, disability, socio-economic status or educational attainment.	0	No strategies identified
Landscape	+ / 0	References Worcestershire Landscape Character

SA objectives		SA commentary
11. Safeguard and strengthen landscape character and quality.		Assessment, Historic Landscape Characterisation. Could make reference to Worcestershire County Structure Plan, AONB Management Plans
Biodiversity, geodiversity, flora and fauna 12. Conserve and enhance Worcestershire's biodiversity and geodiversity and ensure networks of habitats are conserved and enhanced.	+ / 0	References Sustainable Community Strategy. Could make reference to Worcestershire Biodiversity Action Plan and County Structure Plan
Health 13. Improve the health and well being of the population and reduce inequalities in health.	+	References Sustainable Community Strategy
Provision of housing 14. Provide decent affordable housing for all, of the right quality and tenure and for local needs, in clean, safe and pleasant local environments.	Ø	Not relevant
Population (learning and skills) 15. Raise the skills level and qualifications of the workforce.	Ø	Not relevant
Cultural heritage, built design and archaeology 16. Conserve and enhance the historic and built environment and seek well-designed, resource efficient, high quality built environment in new development proposals which respects local character and distinctiveness.	+ / 0	References the Historic Landscape Characterisation. Could make reference to Worcestershire County Structure Plan
Population (antisocial behaviour, crime, litter and graffiti) 17. Reduce crime, fear of crime and antisocial behaviour.	Ø	Not relevant
Material assets 18. Ensure efficient use of land through safeguarding of mineral reserves, the best and most versatile agricultural lands, land of green belt value, maximising use of previously developed land and reuse of vacant buildings, where this is not detrimental to open space and biodiversity interest.	0	Could make reference to Worcestershire County Structure Plan

Table A.5 Assessment of Monitoring Proposals

SA objectives		SA commentary
Waste 1. Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.	+ / 0	Monitor at all levels of hierarchy
Climate Change 2. Reduce causes of and adapt to the impacts of climate change.	0	No monitoring practicable
Flooding 3. Ensure inappropriate development does not occur in high-risk flood-prone areas and does not adversely contribute to fluvial flood risks or contribute to surface water flooding in all other areas.	0	No monitoring practicable
Traffic and transport 4. Reduce the need to travel and move towards more sustainable travel patterns.	0	Tonne-km travelled by waste
Growth with prosperity for all 5. Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.	0	No recommendations
Participation by all 6. Provide opportunities for communities to participate in and contribute to the decisions that affect their neighbourhood and quality of life, encouraging pride and social responsibility in the local community.	0	No recommendations
Technology, innovation and inward investment 7. Promote and support the development of new technologies, of high value and low impact, especially resource efficient technologies and environmental technology initiatives.	0	No recommendations
Energy generation and use 8. Promote energy efficiency and energy generated from renewable energy and low carbon sources.	0	Amount of energy generated by waste facilities, including renewable energy.
Natural resources 9. Protect and enhance the quality of water, soil and air.	0	Compliance/non-compliance with development consent conditions.
Access to services 10. Improve the quality of, and equitable access to, local services and facilities, regardless of age, gender, ethnicity, disability, socio-economic status or educational attainment.	0	% of population within 5/10 km of recycling site/HWRC
Landscape 11. Safeguard and strengthen landscape character and quality.	0	No monitoring practicable
Biodiversity, geodiversity, flora and fauna 12. Conserve and enhance Worcestershire's biodiversity and geodiversity and ensure networks of habitats are conserved and enhanced.	0	Compliance/non-compliance with development consent conditions.
Health 13. Improve the health and well being of the population and reduce inequalities in health.	0	Compliance/non-compliance with development consent conditions.
Provision of housing 14. Provide decent affordable housing for all, of the right quality and tenure and for local needs, in clean, safe and pleasant local environments.	Ø	Not relevant

SA objectives		SA commentary
Population (learning and skills) 15. Raise the skills level and qualifications of the workforce.	0	No monitoring practicable
Cultural heritage, built design and archaeology 16. Conserve and enhance the historic and built environment and seek well-designed, resource efficient, high quality built environment in new development proposals which respects local character and distinctiveness.	0	Compliance/non-compliance with development consent conditions.
Population (antisocial behaviour, crime, litter and graffiti) 17. Reduce crime, fear of crime and antisocial behaviour.	0	No monitoring practicable
Material assets 18. Ensure efficient use of land through safeguarding of mineral reserves, the best and most versatile agricultural lands, land of green belt value, maximising use of previously developed land and reuse of vacant buildings, where this is not detrimental to open space and biodiversity interest.	0	Former land use lost to development

Table A.6 Assessment of Approach to Allocating Capacity for C&I and C&D Waste

SA objectives	Allocating capacity	No allocation	SA commentary
Waste 1. Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.	?	?	By allocating capacities to districts/boroughs, it is possible that insufficient sites will be found to deliver the required capacity in each in order to move both C&I and C&D waste up the waste hierarchy. Allowing facilities anywhere in the county may lessen that risk.
Climate Change 2. Reduce causes of and adapt to the impacts of climate change.	?	?	It is unclear what effect allocation of capacity to district/boroughs will have on emissions from transport. It may result in waste from a town being transported a greater distance than if a site was available in a neighbouring district.
Flooding 3. Ensure inappropriate development does not occur in high-risk flood-prone areas and does not adversely contribute to fluvial flood risks or contribute to surface water flooding in all other areas.	Ø	Ø	Not relevant to strategic approach to allocating capacity. Areas of flood risk should be avoided in principle.
Traffic and transport 4. Reduce the need to travel and move towards more sustainable travel patterns.	?	?	The effect of the options on waste transport is unclear. Allocation should in principle mean waste is managed close to the sources of arising, but may result in waste being transported greater distances than if a convenient site were available in a neighbouring district. The significance of effects depends on where suitable sites are found.
Growth with prosperity for all 5. Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.	++	+	Allocating capacities to each borough/district will help to ensure that the economic benefits from waste related development will be spread throughout the county. Not allocating capacities will still provide economic benefits wherever sites are located, but these may be less evenly spread.
Participation by all 6. Provide opportunities for communities to participate in and contribute to the decisions that affect their neighbourhood and quality of life, encouraging pride and social responsibility in the local community.	++	+	Allocating capacities to each borough/district will help to spread the responsibility for waste management among different communities. Not allocating capacities will still ensure that responsibility is taken within the county but it may be less equitably spread.
Technology, innovation and inward investment	Ø	Ø	Not relevant

SA objectives	Allocating capacity	No allocation	SA commentary
7. Promote and support the development of new technologies, of high value and low impact, especially resource efficient technologies and environmental technology initiatives.			
<i>Energy generation and use</i> 8. Promote energy efficiency and energy generated from renewable energy and low carbon sources.	+	+	Both options could support the generation of energy, particularly from C&I waste but also potentially from wood C&D waste, although it does not help to differentiate between the approach to allocation.
<i>Natural resources</i> 9. Protect and enhance the quality of water, soil and air.	?	?	Some districts/boroughs have significantly greater amounts of their area covered by poor air quality, notably Bromsgrove, Worcester and Redditch. Allocating capacities to districts/boroughs may result in a greater contribution to poor air quality in these areas than may otherwise be the case. However, the significance of impacts depends on specific sites and types of facility and capacity proposed.
<i>Access to services</i> 10. Improve the quality of, and equitable access to, local services and facilities, regardless of age, gender, ethnicity, disability, socio-economic status or educational attainment.	Ø	Ø	Not relevant to C&I and C&D
<i>Landscape</i> 11. Safeguard and strengthen landscape character and quality.	Ø	Ø	Landscape impacts depend on individual sites and types of facility proposed.
<i>Biodiversity, geodiversity, flora and fauna</i> 12. Conserve and enhance Worcestershire's biodiversity and geodiversity and ensure networks of habitats are conserved and enhanced.	Ø	Ø	Biodiversity impacts depend on individual sites and types of facility proposed.
<i>Health</i> 13. Improve the health and well being of the population and reduce inequalities in health.	0	0	Unlikely to significantly affect health
<i>Provision of housing</i> 14. Provide decent affordable housing for all, of the right quality and tenure and for local needs, in clean, safe and pleasant local environments.	Ø	Ø	Not relevant
<i>Population (learning and skills)</i> 15. Raise the skills level and qualifications of the workforce.	Ø	Ø	Not relevant
<i>Cultural heritage, built design and archaeology</i> 16. Conserve and enhance the historic and built environment and seek well-designed, resource efficient, high quality built environment in new development proposals which respects local character and distinctiveness.	Ø	Ø	Impacts on built and historic environment depend on individual sites and types of facility proposed.
<i>Population (antisocial behaviour, crime, litter and graffiti)</i> 17. Reduce crime, fear of crime and antisocial behaviour.	Ø	Ø	Not relevant
<i>Material assets</i>	?	?	Allocating capacities between districts/boroughs

SA objectives	Allocating capacity	No allocation	SA commentary
18. Ensure efficient use of land through safeguarding of mineral reserves, the best and most versatile agricultural lands, land of green belt value, maximising use of previously developed land and reuse of vacant buildings, where this is not detrimental to open space and biodiversity interest.			may result in some open or greenfield land being lost to development if sufficient PDL is not available in every district. However, significance of impacts depends on individual sites.

Table A.7 Assessment of Factors in Protecting the Environment, Health, Employment and Amenity

SA objectives		SA commentary
Waste 1. Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.	Ø	Not relevant to individual developments or sites
Climate Change 2. Reduce causes of and adapt to the impacts of climate change.	0	Mitigation could be promoted by ensuring waste transport is minimised. Adaptation should be a factor in site selection and development control, including flood risk and resilience.
Flooding 3. Ensure inappropriate development does not occur in high-risk flood-prone areas and does not adversely contribute to fluvial flood risks or contribute to surface water flooding in all other areas.	0	Flood risk, flood resilience and adaptation measures should be a factor in site selection and development control.
Traffic and transport 4. Reduce the need to travel and move towards more sustainable travel patterns.	?	Traffic and access is mentioned as a factor in site selection and development control, but it is not clear whether this includes waste transport distances. The consideration of waste transport should be explicitly considered.
Growth with prosperity for all 5. Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.	Ø	Not relevant to site selection and development control
Participation by all 6. Provide opportunities for communities to participate in and contribute to the decisions that affect their neighbourhood and quality of life, encouraging pride and social responsibility in the local community.	Ø	Not relevant
Technology, innovation and inward investment 7. Promote and support the development of new technologies, of high value and low impact, especially resource efficient technologies and environmental technology initiatives.	Ø	Not relevant to site selection and development control
Energy generation and use 8. Promote energy efficiency and energy generated from renewable energy and low carbon sources.	0	Include consideration of the potential for use of CHP
Natural resources 9. Protect and enhance the quality of water, soil and air.	+ / 0	Include consideration of land and soil quality
Access to services 10. Improve the quality of, and equitable access to, local services and facilities, regardless of age, gender, ethnicity, disability, socio-economic status or educational attainment.	Ø	Not relevant to protection of environment, health, employment and amenity
Landscape 11. Safeguard and strengthen landscape character and quality.	+	Visual intrusion is a factor in site selection and development control, but local character and good design should be explicitly considered as factors.
Biodiversity, geodiversity, flora and fauna 12. Conserve and enhance Worcestershire's biodiversity and geodiversity and ensure networks of	+ / 0	Nature conservation is a factor to be considered in site selection and development control. Geology

SA objectives		SA commentary
habitats are conserved and enhanced.		should also be considered.
Health 13. Improve the health and well being of the population and reduce inequalities in health.	+	Health effects are most likely to arise from emissions to air, which are considered in site selection and development control. Noise and visual intrusion are also considered.
Provision of housing 14. Provide decent affordable housing for all, of the right quality and tenure and for local needs, in clean, safe and pleasant local environments.	Ø	Not relevant
Population (learning and skills) 15. Raise the skills level and qualifications of the workforce.	Ø	Not relevant
Cultural heritage, built design and archaeology 16. Conserve and enhance the historic and built environment and seek well-designed, resource efficient, high quality built environment in new development proposals which respects local character and distinctiveness.	+	Historic environment, built heritage and visual intrusion are considered as factors in site selection and development control. Local character and good design should be explicitly considered as factors.
Population (antisocial behaviour, crime, litter and graffiti) 17. Reduce crime, fear of crime and antisocial behaviour.	0	Local character and good design should be considered as factors.
Material assets 18. Ensure efficient use of land through safeguarding of mineral reserves, the best and most versatile agricultural lands, land of green belt value, maximising use of previously developed land and reuse of vacant buildings, where this is not detrimental to open space and biodiversity interest.	?	Geology should be explicitly considered as a factor in site selection and development control. Existing land use should also be considered to protect valued open spaces and the best and most versatile agricultural land, and to focus development on PDL.

Table A.8 Assessment of Approach to Green Belt

SA objectives	A1 Inappropriate	A2 Appropriate on PDL	A3 Appropriate anywhere	Comments
Waste 1. Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.	Ø	Ø	Ø	Not relevant to location of development
Climate Change 2. Reduce causes of and adapt to the impacts of climate change.	?	+	++	By relaxing the restrictions on development in the green belt, the WCS would make it more likely that development could be delivered close to some of the larger settlements, particularly Redditch, Kidderminster and Bromsgrove. This could help to reduce greenhouse gas emissions from waste transport.
Flooding 3. Ensure inappropriate development does not occur in high-risk flood-prone areas and does not adversely contribute to fluvial flood risks or contribute to surface water flooding in all other areas.	Ø	Ø	Ø	Effects depend on individual site sensitivities rather than policy approach to green belt.
Traffic and transport 4. Reduce the need to travel and move towards more sustainable travel patterns.	?	+	++	By relaxing the restrictions on development in the green belt, the WCS would make it more likely that development could be delivered close to some of the larger settlements, particularly Redditch, Kidderminster and Bromsgrove. This could help to reduce waste transport distances.
Growth with prosperity for all 5. Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.	Ø	Ø	Ø	Not relevant to green belt policy.
Participation by all 6. Provide opportunities for communities to participate in and contribute to the decisions that affect their neighbourhood and quality of life, encouraging pride and social responsibility in the local community.	Ø	Ø	Ø	Not relevant.
Technology, innovation and inward investment 7. Promote and support the development of new technologies, of high value and low impact, especially resource efficient technologies and environmental technology initiatives.	Ø	Ø	Ø	Not relevant to green belt policy.
Energy generation and use	Ø	Ø	Ø	Not relevant to green belt policy.

SA objectives	A1 Inappropriate	A2 Appropriate on PDL	A3 Appropriate anywhere	Comments
8. Promote energy efficiency and energy generated from renewable energy and low carbon sources.				
<i>Natural resources</i> 9. Protect and enhance the quality of water, soil and air.	Ø	Ø	Ø	Not relevant to green belt policy.
<i>Access to services</i> 10. Improve the quality of, and equitable access to, local services and facilities, regardless of age, gender, ethnicity, disability, socio-economic status or educational attainment.	?	?	?	By relaxing the restrictions on development in the green belt, the WCS would make it more likely that development could be delivered closer to some of the larger settlements, particularly Redditch, Kidderminster and Bromsgrove. This may help to improve public access to waste facilities although there is no information available about where need currently arises.
<i>Landscape</i> 11. Safeguard and strengthen landscape character and quality.	+	+	+	By ensuring development is in accordance with green belt objectives, including on preserving and enhancing landscapes, all the options should ensure that landscape character is safeguarded. Option A2 may help to improve landscapes by improving derelict sites. However, significance of impacts is dependent on the landscape sensitivities of individual sites.
<i>Biodiversity, geodiversity, flora and fauna</i> 12. Conserve and enhance Worcestershire's biodiversity and geodiversity and ensure networks of habitats are conserved and enhanced.	?	?	?	By ensuring development is in accordance with green belt objectives, including on securing nature conservation interest, all the options should ensure that biodiversity is safeguarded. However, significance of impacts is dependent on the particular biodiversity value of individual sites, including in comparison to the biodiversity value of alternative sites outside the green belt.
<i>Health</i> 13. Improve the health and well being of the population and reduce inequalities in health.	0	0	0	By ensuring development is in accordance with green belt objectives, including on providing opportunities for public access and outdoor sport and recreation, all the options should ensure that opportunities for healthy

SA objectives	A1 Inappropriate	A2 Appropriate on PDL	A3 Appropriate anywhere	Comments
				recreation are safeguarded although health will not be improved. However, significance of impacts is dependent on the accessibility and use of individual sites.
Provision of housing 14. Provide decent affordable housing for all, of the right quality and tenure and for local needs, in clean, safe and pleasant local environments.	Ø	Ø	Ø	Not relevant
Population (learning and skills) 15. Raise the skills level and qualifications of the workforce.	Ø	Ø	Ø	Not relevant
Cultural heritage, built design and archaeology 16. Conserve and enhance the historic and built environment and seek well-designed, resource efficient, high quality built environment in new development proposals which respects local character and distinctiveness.	Ø	Ø	Ø	Not relevant to green belt policy
Population (antisocial behaviour, crime, litter and graffiti) 17. Reduce crime, fear of crime and antisocial behaviour.	Ø	Ø	Ø	Not relevant
Material assets 18. Ensure efficient use of land through safeguarding of mineral reserves, the best and most versatile agricultural lands, land of green belt value, maximising use of previously developed land and reuse of vacant buildings, where this is not detrimental to open space and biodiversity interest.	0/0	-/+	--/0	Relaxing restrictions on development in the green belt will result in a reduction in land of green belt value, even though all options require development to be in accordance with green belt objectives and therefore should protect open spaces of recreational and amenity value and retain land in agricultural use. Option A2 should help to focus development on previously developed land although priority could also be given to this with the other options through a separate policy.

Table A.9 Assessment of Approach to Urban or Rural Development

SA objectives	B1 Urban	B2 Mixed	B3 Rural	Comments
Waste 1. Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.	Ø	Ø	Ø	Not relevant to spatial distribution of facilities
Climate Change 2. Reduce causes of and adapt to the impacts of climate change.	+	0	-	It is assumed the first option (B1) will reduce transportation of waste, thus reducing the impact on the climate. The subsequent options would not reduce the transport of waste.
Flooding 3. Ensure inappropriate development does not occur in high-risk flood-prone areas and does not adversely contribute to fluvial flood risks or contribute to surface water flooding in all other areas.	?	?	?	Depends on location of specific sites. To ensure a positive impact, consideration of flooding issues will need to be incorporated into developing preferred options.
Traffic and transport 4. Reduce the need to travel and move towards more sustainable travel patterns.	++	0	-	It is assumed that the majority of waste arisings would be in the urban areas. Therefore, waste development in urban areas would reduce transport burdens.
Growth with prosperity for all 5. Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.	+	+	+	Waste facilities can provide economic benefits wherever they are located. However the contribution to urban and rural economic regeneration will be small.
Participation by all 6. Provide opportunities for communities to participate in and contribute to the decisions that affect their neighbourhood and quality of life, encouraging pride and social responsibility in the local community.	Ø	Ø	Ø	Not relevant to spatial distribution of facilities
Technology, innovation and inward investment 7. Promote and support the development of new technologies, of high value and low impact, especially resource efficient technologies and environmental technology initiatives.	Ø	Ø	Ø	Not relevant to spatial distribution of facilities
Energy generation and use 8. Promote energy efficiency and energy generated from renewable energy and low carbon sources.	Ø	Ø	Ø	Not relevant to spatial distribution
Natural resources 9. Protect and enhance the quality of water, soil and air.	?	?	?	New waste facilities have the potential to have negative or positive impacts on natural resources, i.e. water, soil and air in both urban and rural locations. To mitigate any negative impacts, site selection criteria should consider these impacts (see <i>Table A.5</i> for recommendations on land and soil quality). Suitable mitigation measures could also be incorporated at the

SA objectives	B1 Urban	B2 Mixed	B3 Rural	Comments
				planning application stage.
Access to services 10. Improve the quality of, and equitable access to, local services and facilities, regardless of age, gender, ethnicity, disability, socio-economic status or educational attainment.	++	+	+	Each spatial option would help to enhance provision and public access to local recycling and HWRC sites. This is more likely to improve with a focus on urban areas although there is no information available on where need is located currently.
Landscape 11. Safeguard and strengthen landscape character and quality.	0/?	-/?	-/?	Waste development in urban locations is less likely to have a negative impact on landscape character and quality than rural developments, and may in some circumstances enhance it depending specific site conditions and on design quality. Such developments in rural locations might adversely impact the quality of landscape although this also depends on the location of specific sites, type of facility and quality of design. To mitigate these impacts good design should be incorporated at the planning application stage.
Biodiversity, geodiversity, flora and fauna 12. Conserve and enhance Worcestershire's biodiversity and geodiversity and ensure networks of habitats are conserved and enhanced.	0	-	-	Waste development in urban locations is less likely to have a negative impact on biodiversity and geodiversity than developments in rural locations. To mitigate the impacts, these factors need to be taken into account in the site selection stage and good design should be incorporated at the planning application stage.
Health 13. Improve the health and well being of the population and reduce inequalities in health.	0	0	0	It is unlikely that there will be any significant health issues associated with waste facilities.
Provision of housing 14. Provide decent affordable housing for all, of the right quality and tenure and for local needs, in clean, safe and pleasant local environments.	Ø	Ø	Ø	Not relevant
Population (learning and skills) 15. Raise the skills level and qualifications of the workforce.	Ø	Ø	Ø	Not relevant
Cultural heritage, built design and archaeology 16. Conserve and enhance the historic and built environment and seek well-designed, resource efficient, high quality built environment in new development proposals which respects local character and distinctiveness.	?	?	?	The WCS has the potential to deliver well designed, resource efficient and high quality built environment but the significance of effects depends on specific site sensitivities and applies to both urban and rural developments. To mitigate any negative impacts on the historic and cultural environment, appropriate measures, including good design, need to be taken into account in the site selection stage and planning

SA objectives	B1 Urban	B2 Mixed	B3 Rural	Comments
				application stage.
Population (antisocial behaviour, crime, litter and graffiti) 17. Reduce crime, fear of crime and antisocial behaviour.	Ø	Ø	Ø	Not relevant
Material assets 18. Ensure efficient use of land through safeguarding of mineral reserves, the best and most versatile agricultural lands, land of green belt value, maximising use of previously developed land and reuse of vacant buildings, where this is not detrimental to open space and biodiversity interest.	+	-	--	Facilities in urban locations are more likely to safeguard land assets and open spaces and focus development on previously developed land. This could also be achieved in rural areas if incorporated into criteria for site identification (see <i>Table A.5</i>).

Table A.10 Assessment of Approach to Small or Large Facilities

SA objectives	C1 Large	C2 Mixed	C3 Small	Comments
Waste 1. Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.	Ø	Ø	Ø	Not relevant to spatial distribution of facilities
Climate Change 2. Reduce causes of and adapt to the impacts of climate change.	+++/?	++/?	+/?	Larger facilities will provide greater energy generation efficiency thus providing the greatest reduction in greenhouse gas emissions. The significance of effects on waste transport distances depends on the locations of sites in relation to the sources of arisings. However, it is possible that a larger number of smaller facilities could minimise the transport of waste, thus minimising greenhouse gas emissions from transport. However, emissions from transport are likely to be much smaller than emissions from waste processing. A mix of large and small facilities would deliver a more balanced approach to waste management, by reducing transportation and distances, but still providing the benefits of economies of scale.
Flooding 3. Ensure inappropriate development does not occur in high-risk flood-prone areas and does not adversely contribute to fluvial flood risks or contribute to surface water flooding in all other areas.	?	?	?	Depends on location of specific sites. To ensure a positive impact, consideration of flooding issues will need to be incorporated into developing preferred options.
Traffic and transport 4. Reduce the need to travel and move towards more sustainable travel patterns.	?	?	?	The significance of effects on waste transport distances depends on the locations of sites in relation to the sources of arisings. However, it is possible that a larger number of smaller facilities could minimise the transport of waste.
Growth with prosperity for all 5. Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.	+	+	+	Waste facilities can provide economic benefits wherever they are located. However the contribution to economic regeneration will be small.
Participation by all 6. Provide opportunities for communities to participate in and contribute to the decisions that affect their neighbourhood and quality of life, encouraging pride and social responsibility in the local community.	+	++	+++	All options will promote Worcestershire taking responsibility for the waste produced by the county. The more small facilities there are, the more the responsibility will be spread among different communities.
Technology, innovation and inward investment	Ø	Ø	Ø	Not relevant to spatial distribution of facilities

SA objectives	C1 Large	C2 Mixed	C3 Small	Comments
7. Promote and support the development of new technologies, of high value and low impact, especially resource efficient technologies and environmental technology initiatives.				
Energy generation and use 8. Promote energy efficiency and energy generated from renewable energy and low carbon sources.	+++	++	+	Large waste management facilities will enable greater energy generation efficiency. To ensure a positive impact, energy capture should be encouraged wherever appropriate. However, none of the options are technology specific at this stage.
Natural resources 9. Protect and enhance the quality of water, soil and air.	?	?	?	New waste facilities have the potential to have a negative impact on natural resources, i.e. water, soil and air, depending on particular sensitivities at individual sites. Suitable mitigation measures could also be incorporated at the planning application stage.
Access to services 10. Improve the quality of, and equitable access to, local services and facilities, regardless of age, gender, ethnicity, disability, socio-economic status or educational attainment.	0	0	0	Access to services is unlikely to be significantly affected by size and distribution of facilities.
Landscape 11. Safeguard and strengthen landscape character and quality.	--	-	?	Larger facilities are likely to have a greater impact on landscape, because these might be more difficult to mitigate. Suitable mitigation measures, including good design, could also be incorporated at the planning application stage. However landscape impacts depend on individual sites and types of facilities proposed.
Biodiversity, geodiversity, flora and fauna 12. Conserve and enhance Worcestershire's biodiversity and geodiversity and ensure networks of habitats are conserved and enhanced.	?	?	?	Impacts depend on individual sites and types of facilities proposed rather than size of facility. Suitable mitigation measures, including good design, could be incorporated at the planning application stage.
Health 13. Improve the health and well being of the population and reduce inequalities in health.	0	0	0	It is unlikely that there will be any significant health issues associated with waste facilities.
Provision of housing 14. Provide decent affordable housing for all, of the right quality and tenure and for local needs, in clean, safe and pleasant local environments.	Ø	Ø	Ø	Not relevant
Population (learning and skills) 15. Raise the skills level and qualifications of the workforce.	Ø	Ø	Ø	Not relevant to size of facility.
Cultural heritage, built design and archaeology 16. Conserve and enhance the historic and built environment and seek well-designed, resource efficient, high quality built environment in new	0	0	0	All the options have the potential to deliver well designed, resource efficient and high quality built environment. To mitigate any negative impacts on the

SA objectives	C1 Large	C2 Mixed	C3 Small	Comments
development proposals which respects local character and distinctiveness.				historic and cultural environment, appropriate measures, including good design, need to be taken into account in the site selection stage and planning application stage.
Population (antisocial behaviour, crime, litter and graffiti) 17. Reduce crime, fear of crime and antisocial behaviour.	Ø	Ø	Ø	Not relevant
Material assets 18. Ensure efficient use of land through safeguarding of mineral reserves, the best and most versatile agricultural lands, land of green belt value, maximising use of previously developed land and reuse of vacant buildings, where this is not detrimental to open space and biodiversity interest.	?	?	?	These are relevant to individual site selection and should therefore be used in criteria for site identification. If this is undertaken, a positive impact could be created.

Table A.11 Assessment of Approach to Centralised or Dispersed Facilities

SA objectives	D1 Centralised	D2 Mixed	D3 Dispersed	Comments
Waste 1. Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.	0	0	0	By centralising facilities on a single site the WCS could give greater encouragement to managing waste at higher levels of the hierarchy by facilitating symbiosis between waste management activities. However, the significance of the contribution to the waste hierarchy may be relatively small.
Climate Change 2. Reduce causes of and adapt to the impacts of climate change.	?	?	?	The effect on greenhouse gas emissions is unclear. Centralised facilities can increase opportunities for use of CHP which can help to reduce greenhouse gas emissions. They could also reduce waste transport by co-locating facilities, while dispersed facilities could also reduce waste transport by locating facilities close to the source of arisings. The significance of effects arising from transport depends on specific locations of sites, including in relation to the source of arisings.
Flooding 3. Ensure inappropriate development does not occur in high-risk flood-prone areas and does not adversely contribute to fluvial flood risks or contribute to surface water flooding in all other areas.	0	0	0	Depends on location of specific sites. To ensure a positive impact, consideration of flooding issues will need to be incorporated into developing preferred options.
Traffic and transport 4. Reduce the need to travel and move towards more sustainable travel patterns.	?	?	?	The effect on waste transport is unclear. Centralised facilities can reduce waste transport by co-locating facilities, while dispersed facilities could also reduce waste transport by locating facilities close to the source of arisings. The significance of effects depends on specific locations of sites, including in relation to the source of arisings.
Growth with prosperity for all 5. Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.	+	+	?	Having centralised facilities would encourage the development of symbiotic businesses which can increase the economic contribution from waste management activities.
Participation by all 6. Provide opportunities for communities to participate in and contribute to the decisions that affect their neighbourhood and quality of life, encouraging pride and social responsibility in the local community.	+	++	+++	All options will promote Worcestershire taking responsibility for the waste produced by the county. The more dispersed the facilities are, the more the responsibility will be spread among different communities.

SA objectives	D1 Centralised	D2 Mixed	D3 Dispersed	Comments
Technology, innovation and inward investment 7. Promote and support the development of new technologies, of high value and low impact, especially resource efficient technologies and environmental technology initiatives.	+++	++	+	Centralised waste management facilities would provide more opportunities for the use of new technologies and inward investment as all the necessary infrastructure would be located in the same area and industrial symbiosis encouraged.
Energy generation and use 8. Promote energy efficiency and energy generated from renewable energy and low carbon sources.	++	+	?	Centralised waste management facilities would provide more opportunities for use of energy generated by waste management facilities, including CHP which is classed as renewable. Energy capture should be encouraged wherever appropriate. However, none of the options are technology specific at this stage.
Natural resources 9. Protect and enhance the quality of water, soil and air.	?	?	?	New waste facilities have the potential to have a negative impact on natural resources, i.e. water, soil and air, depending on particular sensitivities at individual sites. Suitable mitigation measures could also be incorporated at the planning application stage.
Access to services 10. Improve the quality of, and equitable access to, local services and facilities, regardless of age, gender, ethnicity, disability, socio-economic status or educational attainment.	0	0	0	Unlikely to affect access to services.
Landscape 11. Safeguard and strengthen landscape character and quality.	--	-	?	Centralised facilities may have a greater cumulative impact on landscape, although the significance of impacts depends on individual sites and types of facilities proposed.
Biodiversity, geodiversity, flora and fauna 12. Conserve and enhance Worcestershire's biodiversity and geodiversity and ensure networks of habitats are conserved and enhanced.	?	?	?	Significance of impacts depends on individual sites and types of facilities proposed. Suitable mitigation measures, including good design, could also be incorporated at the planning application stage.
Health 13. Improve the health and well being of the population and reduce inequalities in health.	0	0	0	It is unlikely that there will be any significant health issues associated with waste facilities.
Provision of housing 14. Provide decent affordable housing for all, of the right quality and tenure and for local needs, in clean, safe and pleasant local environments.	Ø	Ø	Ø	Not relevant
Population (learning and skills) 15. Raise the skills level and qualifications of the workforce.	0	0	0	These options are unlikely to have a significant impact on skills levels of the workforce.

SA objectives	D1 Centralised	D2 Mixed	D3 Dispersed	Comments
<i>Cultural heritage, built design and archaeology</i> 16. Conserve and enhance the historic and built environment and seek well-designed, resource efficient, high quality built environment in new development proposals which respects local character and distinctiveness.	0	0	0	All the options have the potential to deliver well designed, resource efficient and high quality built environment. To mitigate any negative impacts on the historic and cultural environment, appropriate measures, including good design, need to be taken into account in the site selection stage and planning application stage.
<i>Population (antisocial behaviour, crime, litter and graffiti)</i> 17. Reduce crime, fear of crime and antisocial behaviour.	Ø	Ø	Ø	Not relevant
<i>Material assets</i> 18. Ensure efficient use of land through safeguarding of mineral reserves, the best and most versatile agricultural lands, land of green belt value, maximising use of previously developed land and reuse of vacant buildings, where this is not detrimental to open space and biodiversity interest.	?	?	?	These are relevant to individual site selection and should therefore be used in criteria for site identification. If this is undertaken, a positive impact could be created.

Table A.12 Assessment of Approach to Meeting Targets

SA objectives	E1 BPEO targets	E2 National/regional targets	Comments
Waste 1. Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.	++	+	The BPEO gives greater support to the waste hierarchy than meeting RSS targets by reducing the amount of waste which would be sent to landfill for all three waste streams. However, the BPEO would not meet national recycling targets for MSW.
Climate Change 2. Reduce causes of and adapt to the impacts of climate change.	++	+	By moving waste up the waste hierarchy, the BPEO strategy will reduce the climate change impacts of waste management.
Flooding 3. Ensure inappropriate development does not occur in high-risk flood-prone areas and does not adversely contribute to fluvial flood risks or contribute to surface water flooding in all other areas.	Ø	Ø	Not relevant to target tonnages for waste management.
Traffic and transport 4. Reduce the need to travel and move towards more sustainable travel patterns.	--	-	Moving waste management up the waste hierarchy is likely to require more waste transport due to the need for multiple handling of process outputs instead of a single trip to landfill.
Growth with prosperity for all 5. Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.	++	+	Both options will move waste up the waste hierarchy and so increase the economic contribution from waste management activities. Greater diversion through the achievement of BPEO will provide a slightly greater economic stimulus although the difference will be small.
Participation by all 6. Provide opportunities for communities to participate in and contribute to the decisions that affect their neighbourhood and quality of life, encouraging pride and social responsibility in the local community.	Ø	Ø	Not relevant to the BPEO strategy.
Technology, innovation and inward investment 7. Promote and support the development of new technologies, of high value and low impact, especially resource efficient technologies and environmental technology initiatives.	++	+	Both options will move waste up the waste hierarchy and so would encourage the use of new technologies, innovation and inward investment. Greater diversion through the achievement of BPEO will provide a slightly greater stimulus to innovation and investment although the difference will be small.
Energy generation and use 8. Promote energy efficiency and energy generated from renewable energy	++	+	The BPEO targets would provide more opportunities for energy generation and use compared to meeting

SA objectives	E1 BPEO targets	E2 National/regional targets	Comments
and low carbon sources.			national or regional targets. Energy capture should be encouraged wherever appropriate.
<i>Natural resources</i> 9. Protect and enhance the quality of water, soil and air.	?	?	The approach to targets itself does not impact on natural resources, however the requirement for new facilities could have effects on water, soil and air quality. The significance of effects is dependent on conditions at specific sites and on operational standards.
<i>Access to services</i> 10. Improve the quality of, and equitable access to, local services and facilities, regardless of age, gender, ethnicity, disability, socio-economic status or educational attainment.	0	0	The approach to targets has no impact on access to services.
<i>Landscape</i> 11. Safeguard and strengthen landscape character and quality.	?	?	The approach to targets itself does not impact on landscape, however the requirement for new facilities could have effects on landscape. The significance of effects is dependent on conditions at specific sites and on the type of facility.
<i>Biodiversity, geodiversity, flora and fauna</i> 12. Conserve and enhance Worcestershire's biodiversity and geodiversity and ensure networks of habitats are conserved and enhanced.	?	?	The approach to targets itself does not impact on biodiversity or geodiversity. However the requirement for new facilities could have effects through the need for new developments. The significance of effects is dependent on conditions at specific sites and on operational standards.
<i>Health</i> 13. Improve the health and well being of the population and reduce inequalities in health.	++	+	Increasing the diversion of waste from landfill will help to reduce the risk of any health effects from landfill sites, although the scale of effects is very small. Achieving the BPEO targets will divert greater tonnages from landfill than meeting national/regional targets, although the difference in health effects is likely to be very small.
<i>Provision of housing</i> 14. Provide decent affordable housing for all, of the right quality and tenure and for local needs, in clean, safe and pleasant local environments.	Ø	Ø	Not relevant
<i>Population (learning and skills)</i> 15. Raise the skills level and qualifications of the workforce.	0	0	Increasing diversion of waste from landfill is unlikely to significantly affect skills levels within the workforce overall.

SA objectives	E1 BPEO targets	E2 National/regional targets	Comments
<i>Cultural heritage, built design and archaeology</i> 16. Conserve and enhance the historic and built environment and seek well-designed, resource efficient, high quality built environment in new development proposals which respects local character and distinctiveness.	?	?	The approach to targets itself does not impact on cultural heritage, built design and archaeology. However the requirement for new facilities could have effects through the need for new developments. The significance of effects is dependent on conditions at specific sites and on the type of facility proposed.
<i>Population (antisocial behaviour, crime, litter and graffiti)</i> 17. Reduce crime, fear of crime and antisocial behaviour.	Ø	Ø	Not relevant
<i>Material assets</i> 18. Ensure efficient use of land through safeguarding of mineral reserves, the best and most versatile agricultural lands, land of green belt value, maximising use of previously developed land and reuse of vacant buildings, where this is not detrimental to open space and biodiversity interest.	++	+	Increasing the diversion of C&D waste from landfill will help to increase the efficient use of mineral resources. The approach to targets itself does not impact on land assets such as open spaces and agricultural land. However, the requirement for new facilities may have effects through the need for new waste developments. The significance of effects is dependent on conditions at specific sites.

Table A.13 Assessment of Approach to Technologies

SA objectives	Specify technologies	Group by type	Comments
Waste 1. Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.	++	+	By specifying the type of technologies which should be developed, the WCS will provide greater certainty about the amounts of waste which will be managed at different levels of the waste hierarchy, and will provide WCC with greater control over the achievement of the hierarchy.
Climate Change 2. Reduce causes of and adapt to the impacts of climate change.	++	+	It is not possible to predict what the different effects on greenhouse gas emissions will be with the different options. However, specifying the type of technologies which should be developed will give WCC greater control over the contribution of waste management activities to greenhouse gas emissions.
Flooding 3. Ensure inappropriate development does not occur in high-risk flood-prone areas and does not adversely contribute to fluvial flood risks or contribute to surface water flooding in all other areas.	Ø	Ø	Not relevant to technologies
Traffic and transport 4. Reduce the need to travel and move towards more sustainable travel patterns.	++	+	It is not possible to predict what the different effects on waste transport will be with the different options. However, specifying the type of technologies which should be developed will give WCC greater control over the amount of waste transport required.
Growth with prosperity for all 5. Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.	+	+	Both options will contribute to regeneration and provide business opportunities in the waste sector.
Participation by all 6. Provide opportunities for communities to participate in and contribute to the decisions that affect their neighbourhood and quality of life, encouraging pride and social responsibility in the local community.	Ø	Ø	Not relevant
Technology, innovation and inward investment 7. Promote and support the development of new technologies, of high value and low impact, especially resource efficient technologies and environmental technology initiatives.	+	++	Both options will promote resource-efficient technologies, although by not specifying the type of technology required, the WCS will provide flexibility to give greater support to innovation.
Energy generation and use 8. Promote energy efficiency and energy generated from renewable energy and low carbon sources.	++	+	It is not possible to predict what levels of energy generation and efficiency may be achieved through the different options. However, specifying the type of

SA objectives	Specify technologies	Group by type	Comments
			technologies which should be developed will give WCC greater control over the energy generation potential arising from waste management activities.
Natural resources 9. Protect and enhance the quality of water, soil and air.	Ø	Ø	Dependent on individual sites and developments rather than the approach to specifying technologies.
Access to services 10. Improve the quality of, and equitable access to, local services and facilities, regardless of age, gender, ethnicity, disability, socio-economic status or educational attainment.	Ø	Ø	Not relevant
Landscape 11. Safeguard and strengthen landscape character and quality.	Ø	Ø	Dependent on individual sites and developments rather than the approach to specifying technologies.
Biodiversity, geodiversity, flora and fauna 12. Conserve and enhance Worcestershire's biodiversity and geodiversity and ensure networks of habitats are conserved and enhanced.	Ø	Ø	Dependent on individual sites and developments rather than the approach to specifying technologies.
Health 13. Improve the health and well being of the population and reduce inequalities in health.	0	0	Neither option is likely to significantly affect health
Provision of housing 14. Provide decent affordable housing for all, of the right quality and tenure and for local needs, in clean, safe and pleasant local environments.	Ø	Ø	Not relevant
Population (learning and skills) 15. Raise the skills level and qualifications of the workforce.	Ø	Ø	Not relevant
Cultural heritage, built design and archaeology 16. Conserve and enhance the historic and built environment and seek well-designed, resource efficient, high quality built environment in new development proposals which respects local character and distinctiveness.	Ø	Ø	Dependent on individual sites and developments rather than the approach to specifying technologies.
Population (antisocial behaviour, crime, litter and graffiti) 17. Reduce crime, fear of crime and antisocial behaviour.	Ø	Ø	Not relevant
Material assets 18. Ensure efficient use of land through safeguarding of mineral reserves, the best and most versatile agricultural lands, land of green belt value, maximising use of previously developed land and reuse of vacant buildings, where this is not detrimental to open space and biodiversity interest.	Ø	Ø	Dependent on individual sites and developments rather than the approach to specifying technologies.

