GLOUCESTERSHIRE WASTE CORE STRATEGY
Sustainability Appraisal Report

Prepared for Gloucestershire County Council
by
Land Use Consultants

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43 Chalton Street
London NW1 1JD
Tel: 020 7383 5784
Fax: 020 7383 4798
london@landuse.co.uk

14 Great George Street
Bristol BS1 5RH
Tel: 0117 929 1997
Fax: 0117 929 1998
bristol@landuse.co.uk

37 Otago Street
Glasgow G12 8JJ
Tel: 0141 334 9595
Fax: 0141 334 7789
glasgow@landuse.co.uk

28 Stafford Street
Edinburgh EH3 7BD
Tel: 0131 202 1616
edinburgh@landuse.co.uk

Sustainability Appraisal of Gloucestershire Waste Core Strategy
Non-Technical Summary

INTRODUCTION

1. Gloucestershire County Council is the Minerals Planning Authority and Waste Planning Authority for Gloucestershire, which means that it has to prepare the Minerals & Waste Development Framework (MWDF) that will replace its currently adopted Minerals Local Plan and Waste Local Plan. The MWDF will comprise a range of planning documents containing policies relating to minerals and waste development in the county. To date, Gloucestershire County Council's Minerals & Waste Planning Policy Team has been working on the preparation of the following documents within the MWDF:

   - A Supplementary Planning Document on Waste Minimisation in Development Projects (Adopted September 2006)
   - The Minerals Core Strategy (Consultation completed on Preferred Options, January 2008)
   - The Waste Core Strategy (Consultation completed on Preferred Options, January 2008, and Site Options 2009)

2. The preparation of the MWDF documents is required to be subject to a full Sustainability Appraisal (SA) in line with the Planning and Compulsory Purchase Act 2004 and current Government planning policy (PPS 12[1]). The preparation of the MWDF documents must also be in accordance with the requirements of European Directive 2001/42/EC (known as the Strategic Environment Assessment, or 'SEA' Directive).

3. The difference between Strategic Environment Assessment and Sustainability Appraisal is that, where SEA is more focused on identifying environmental impacts of a plan, Sustainability Appraisal addresses wider ranging considerations, including social and economic impacts. This summary and the full SA report describe the joint SA/SEA process that has been undertaken in line with the government guidance on SA[2]. Throughout this summary and the full SA Report, the term "SA" is used to mean "Sustainability Appraisal incorporating the requirements of SEA".

4. Land Use Consultants (LUC) was appointed by Gloucestershire County Council (GCC) in February 2009 to undertake the next stages of the SA of the Waste Core Strategy. Initially, this comprised two main components:

[1] *Planning Policy Statement 12: Local Spatial Planning.* Communities and Local Government, 2008
[2] *Sustainability Appraisal of Regional Spatial Strategies and Local Development Frameworks*. ODPM, November 2005 – See the Planning Advisory Service website: www.pas.gov.uk.

- SA Report for the 106 potential waste site options being considered for allocation as Strategic Waste Sites in the Waste Core Strategy (Stage 1, completed in April 2009); and

- SA Report for the short list of site options and the options being considered for the spatial distribution of waste sites for the Waste Core Strategy Options consultation held in October 2009 (Stage 2, completed in September 2009).

5. Following the Site Options Consultation in October-November 2009, the Waste Core Strategy has now been brought together in one document, taking account of the three main consultation phases: Issues and Options, Preferred Options and Site Options. Following a final six week consultation period starting in December 2010, and provided no major changes are needed, the Waste Core Strategy will be formally submitted to the Secretary of State for adoption.

SUSTAINABILITY APPRAISAL STAGES

6. The ODPM Sustainability Appraisal Guidance specifies a number of stages of work that have to be undertaken. The first three stages of the SA have been completed (i.e. Stages A, B & C). These involved the following:

Stage A – Setting the context and scope

7. Gloucestershire County Council undertook the Scoping stage of the SA for the Waste Core Strategy in-house. The Scoping stage involved gathering baseline evidence for the SA and developing a framework of sustainability objectives against which the documents in the MWDF could be assessed. The Council prepared two reports (Context and Scoping Reports) containing all of the information gathered during this stage. The "SA Context Reports" prepared by the Council set out the review of all international, national, regional, county and local plans or programmes that are relevant to the MWDF, including the Waste Core Strategy. The latest update of the SA Context Report (Update 3) was produced in January 2009.

8. In addition to the SA Context Report, the latest update of the SA Scoping Report (Update 3) was also produced in January 2009. This report describes the baseline information and sustainability issues for Gloucestershire in relation to minerals and waste, as well as setting out the SA Framework. The SA Framework consists of a set of sustainability objectives which state desired outcomes[3]. The SA objectives are distinct from the objectives of the Waste Core Strategy – the potential sustainability effects of the Waste Core Strategy are assessed against the SA objectives.

9. The original SA Framework that was developed and used during the appraisal of the emerging Waste Core Strategy policies at both the Issues and Options and Preferred Options stages comprised 15 SA objectives. However, prior

[3] The ODPM SA Guidance explains that SA objectives should focus on outcomes, rather than how the outcomes will be achieved. For example, they should focus on 'improved biodiversity' (the outcome), rather than 'protection of specific wildlife sites' (a means to achieving it).

to the SA of the Waste Site Options, the SA Framework was amended to ensure that it was appropriate for the appraisal of specific sites, rather than overarching policy approaches. As such, an amended list of 22 SA Objectives was produced and used for the SA of the Site Options. The original intention was that at the Publication stage, the SA of the Waste Core Strategy would revert back to using the initial list of 15 SA Objectives; however following discussions between LUC and Gloucestershire County Council it was decided to continue using the amended SA Framework of 22 objectives as it was felt that this list was more comprehensive, and because the Waste Core Strategy now includes site allocations.

10. It should also be noted that two of the SA objectives that had been 'scoped out' of the SA Framework prior to the SA of the Site Options consultation, as they were not considered to be useful for the appraisal of specific waste sites, have been 'scoped back in' to the SA Framework as they are considered to be relevant to the appraisal of the policies within the publication version of the Waste Core Strategy. These have been referred to throughout the appraisal as 'original SA objectives 1 and 2', and relate to promoting sustainable communities through sustainable design and provision of affordable housing, and safeguarding waste sites from other proposed development.

11. The 22 Headline SA Objectives used for the appraisal of the publication version of the Waste Core Strategy, including the strategic waste site options allocated within the plan, are listed in **Table 1** below. The development of the SA Framework and the specific assumptions used for the appraisal of the Waste Core Strategy, including the allocated waste sites, are discussed further in **Chapter 3** of the full SA Report.

Table 1: SA Headline Objectives used for the appraisal of the publication version of the Waste Core Strategy

SA Objectives
Social
1. To promote sustainable development and sustainable communities and improve the **health and well-being** of people living and working in Gloucestershire as well as visitors to the County.
2. To **educate the public** about waste issues and to **maximise community participation** and access to waste services and facilities in Gloucestershire.
3. To safeguard the **amenity of local communities** from the adverse impacts of waste development.
Original SA Objective 1: To promote **sustainable development** and **sustainable communities** in Gloucestershire in particular giving people the opportunity to live in an affordable and sustainably designed and constructed home.
Economic
4. To promote **sustainable economic development** in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.
5. To manage waste in an **economically sustainable** way through means that represent good value for tax payers in Gloucestershire.
6. To provide **employment opportunities** in both rural and urban areas of the County, promoting diversification in the economy.
7. To ensure that waste sites do not compromise the **safety of commercial or military aerodromes**.
Original SA Objective 2: To **safeguard sites** suitable for the location of waste management facilities or future mineral development from other proposed development.
Environmental
8. To protect, conserve and enhance **biodiversity** in Gloucestershire.
9. To protect, conserve and enhance the **landscape** in Gloucestershire.
10. To ensure that waste sites have the potential for adequate **screening and / or innovative design** to be incorporated.
11. To protect conserve and enhance Gloucestershire's **material, cultural and recreational assets**.
12. To protect conserve and enhance **geodiversity** in Gloucestershire.
13. To protect conserve and enhance **townscapes** and Gloucestershire's **architectural and archaeological heritage**.
14. To prevent **flooding**, in particular preventing inappropriate development in the floodplain and to ensure that waste development does not compromise sustainable sources of water supply.
15. To **prevent pollution** and to apply the precautionary principle in consultation with waste regulation authorities.
16. To protect and enhance **soil / land quality** in Gloucestershire.
17. To protect and enhance **air quality** in Gloucestershire.
18. To protect and enhance **water quality** in Gloucestershire.
19. To reduce the adverse **impacts of lorry traffic** on the environment and communities through means such as: a) reducing the need to travel b) promoting more sustainable means of transport e.g. by rail or water c) sensitive lorry routing d) the use of sustainable alternative fuels e) promoting the management of waste in one of the nearest appropriate installations.
20. To **reduce waste to landfill** and in dealing with all waste streams to actively **promote the waste hierarchy** (i.e. Prevent, Reduce, Reuse, Recycle, Recover, Dispose)

SA Objectives
to achieve the sustainable management of waste.
21. To reduce the global **use of primary materials** and minimise net energy balance requirements.
22. To reduce contributions to and to **adapt to Climate Change**.

Stage B – Developing and refining options and assessing effects

12. Sustainability considerations have been taken into account throughout the development of options for the Waste Core Strategy. Gloucestershire County Council prepared SA Reports at both the Issues & Options and Preferred Options stages and published them for consultation (as set out in Table 1.1 in the Introduction to the full SA Report). In addition, on behalf of the Council LUC produced two SA Reports (Stage 1 and 2) in relation to the Waste Core Strategy Site Options consultation.

13. The SEA Directive requires "*reasonable* alternatives" to be taken into account during development of a plan such as the Waste Core Strategy, and so not every possible alternative (or option) needs to be considered. In some instances, other policy considerations (e.g. government's Planning Policy Statements) will pre-determine which policy approach needs to be adopted, effectively ruling out some options.

Issues and Options

14. The initial Issues and Options stage began in 2005 with evidence gathering and data collection exercises. In March 2006 a forum event was hosted by the Waste Planning Authority and the Waste Disposal Authority at which broad strategic options for future waste management in Gloucestershire were considered. The outcomes of this event were drawn together and the views and ideas expressed were compiled into two Issues and Options consultation papers which were published in July 2006. The consultation responses received in relation to these papers during the period July-September 2006 were summarised in an evidence report entitled '*Stakeholder Responses to the Issues and Options Papers*' (March 2007).

15. A further waste forum event was held in October 2007 at which the key emerging options for the Waste Core Strategy were discussed and debated. Land Use Consultants facilitated this event on behalf of GCC and reported on the outcomes in the '*Report of Waste Core Strategy Stakeholder Forum Event'* (November 2007).

Preferred Options

16. The Waste Core Strategy Preferred Options document was published in January 2008, based on the outcomes of the Issues and Options consultation and the evidence gathered to date. This document set out Preferred Options for an overarching vision and five strategic objectives, as well as 33 Preferred Options for the Waste Core Strategy policies, grouped into topics such as Waste Minimisation, Recycling and Composting, Recovery and Locational Strategy. A public consultation on the Preferred Options version of the

Waste Core Strategy and the accompanying SA Report took place between January and March 2008 and the responses received during that period were used to inform the development of the publication version of the plan.

Site Options

17. The Government Office for the South West's consultation response to the Waste Core Strategy Preferred Options document required GCC to consider options for Strategic Waste Sites. The GCC Minerals & Waste Planning Policy Team carried out a comprehensive exercise to identify all sites in the County with some potential for waste use, and then to refine the list down to a set of 106 'reasonable' options, which were appraised in the Stage 1 SA Report for the Site Options. The selections were made based on factors including the size of potential sites and their relative locations, in order to ensure that potential sites would be able to accommodate waste facilities of an adequate size and that they would be appropriately located in relation to the main settlements within Gloucestershire (Cheltenham, Gloucester, Cirencester, Coleford, Tewkesbury, Stroud and Lydney).

18. Following the production of the Stage 1 SA Report, which appraised this long list of 106 sites, the list was further reduced by GCC on the basis of the SA findings, technical input and deliverability investigations. As well as detailing the reduced list of potential waste sites, the Site Options consultation document which was produced set out four potential spatial options centred on the designation of 'Zone C', which is an area running through the Central Severn Vale close to Gloucester and Cheltenham. This area was identified following the Preferred Options consultation in 2008, which discussed the broad locational strategy for waste treatment facilities. The four spatial options set out were:

- Focus strategic sites within Zone C;
- Allocate sites outside of Zone C for smaller-scale facilities/transfer;
- Incorporate waste treatment into the urban extensions to Cheltenham and Gloucester proposed under the Regional Spatial Strategy; or
- A combination of the above options.

19. Within the context of these spatial options, the original list of 106 potential sites was further reduced to 13 potential sites: ten within Zone C and three outside of Zone C. The Stage 2 SA Report comprised the appraisal of these four broad spatial options as well as the reduced list of specific waste site options, and the findings helped to inform the selection of the four strategic sites which have now been allocated in the publication version of the Waste Core Strategy.

Publication version

20. All of the responses received in relation to the Waste Core Strategy Preferred Options consultation were summarised in a Consultation Response Report (Summer 2008). Now that the Site Options consultation has been

completed, the wider consultation responses from the Preferred Options stage have also been taken into account and the publication version of the Waste Core Strategy has been produced. Four strategic site allocations have been incorporated into policy WCS4 'Other Recovery (including energy recovery)', and were selected on the basis of the findings of the SA of the Site Options consultation document, as well as the responses received to that consultation and practical deliverability considerations.

Assessing Sustainability Effects

21. At each stage of the development of the Waste Core Strategy, a Sustainability Appraisal has been carried out and SA Reports produced, as set out in **Table 1.1** and **Chapter 1** in the full SA Report.

22. As described above and in **Chapter 1** of the full SA Report, the SA reports for both the Issues and Options and Preferred Options versions of the Waste Core Strategy were produced in-house by GCC. The SA report for the Issues and Options version was published alongside the two consultation documents in July 2006 and the SA Report for the Preferred Options was published in January 2008 alongside that consultation paper. At each stage, the likely effects of the emerging options were appraised against the SA Framework (the original 15 SA Objectives, before the SA Framework was amended for the SA of the Site Options consultation as described above) and the findings were summarised in the SA Reports published.

23. The Waste Core Strategy Site Options consultation was also carried out and subject to SA. For each of the original 106 potential waste sites, GCC's planning officers carried out a detailed Site Assessment, collating information and visiting the sites to consider a number of criteria such as landscape, green belt, transport, biodiversity, flood risk etc.

24. Site Assessments were developed by GCC for all of the original 106 potential waste sites, setting out the results of the assessment against each criterion, photos of the site and a short description of its location and characteristics. The GCC Site Assessments can be found within the evidence base, which is made up of Technical Papers.

25. In addition to the detailed site selection process undertaken by GCC, as required by the SEA Directive and the Planning and Compulsory Purchase Act 2004, all of the 106 potential waste site options were appraised by the LUC SA team against the SA Framework, and the sustainability implications and likely effects were predicted and assessed. During Stage 1 of the SA process, all 106 of the original potential site options were appraised through a desk-based exercise which drew on our own Geographical Information Systems (GIS) analysis and the extensive data collected and assessments undertaken by the Council and its experts. The findings are contained in the Stage 1 SA Report (April 2009). During Stage 2 of the SA, the reduced list of site options was appraised, drawing upon the Stage 1 appraisal findings and additional information provided by the Council, and presented in the Stage 2 SA Report (September 2009).

26. The publication version of the Waste Core Strategy has now also been subject to SA and the detailed method used for this appraisal (including the site specific allocations set out in policy WCS4) is described in **Chapter 3** of the full SA report. The findings are summarised in **Chapter 4** and the full appraisal matrices can be found in **Appendix 3**.

Stage C – Preparing the Sustainability Appraisal report

27. This document is a non-technical summary of the Sustainability Appraisal report for the SA of the publication version of the Waste Core Strategy. It summarises the information contained in the full SA Report, which sets out the likely significant effects on the environment, and the likely social and economic implications of the policies and the waste site allocations. It outlines the method used for developing and refining the policies and site options and the measures that are envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan. It has been written to meet all the requirements of the SEA Directive for an environmental report (see **Table 1.2** in the full SA report), as well as the Planning and Compulsory Purchase Act requirement to prepare a report setting out the findings of the Sustainability Appraisal.

Stage D – Consulting on the DPD and Sustainability Appraisal Report

28. The Sustainability Appraisal Report (for which this is the non-technical summary) has been produced to inform the development of the Waste Core Strategy. It will be available during the consultation on the publication version of the Waste Core Strategy in December 2010. At this stage, responses are invited only in relation to the soundness of the plan. Following the consultation, GCC will consider whether any major changes to the plan are required, and if not, will formally submit the Waste Core Strategy to the Secretary of State.

Stage E – Monitoring Implementation of the Plan

29. Stage E will follow adoption of the Waste Core Strategy. LUC has not been commissioned to undertake the SA monitoring. However, the SEA Directive and SA guidance require that the Sustainability Report includes a description of measures envisaged concerning monitoring. This is discussed in **Chapter 5** of the full SA Report.

CHARACTERISATION OF GLOUCESTERSHIRE

30. A summary of the characteristics of Gloucestershire and the local environment is provided in the SA Report for the Waste Core Strategy Preferred Options[4]. The key sustainability issues identified are:

- High house prices

[4] *Waste Core Strategy Preferred Options Sustainability Appraisal Report:* Gloucestershire County Council, January 2008.

- Low average income
- Crime levels (high in certain areas)
- Health (poor for certain segments of the population)
- Traffic impacts and congestion
- Rural economy (certain areas in need of support)
- Areas of deprivation and social exclusion
- Potential for flooding (high in certain areas of the County)
- Increasing levels of waste going to landfill

SUMMARY OF FINDINGS

31. The findings of the full Sustainability Appraisal of the Gloucestershire Waste Core Strategy are shown at the end of this non-technical summary, which sets out the predicted effects of each policy and allocated site against the 24 SA objectives (note that the four allocated sites have not been appraised against the 'original SA objectives 1 and 2' as they are not considered relevant to the appraisal of particular site allocations, as described above). Our appraisal has attempted to differentiate between significant effects and other more minor effects through the use of symbols (see **Table 2** below).

Table 2 Key to the symbols used in predicting potential sustainability effects of the Waste Core Strategy

Symbol	Type of effect
++	Significant positive effect likely
++ ?	Significant positive effect uncertain
+	Minor positive effect likely
+?	Minor positive effect uncertain
0	No effect likely
+/- or ++/-- etc	A mixture of positive and negative effects
-?	Minor negative effect uncertain
-	Minor negative effect likely
- -?	Significant negative effect uncertain
--	Significant negative effect likely
?	Effect uncertain due to lack of baseline information or detail regarding type of facility that would be developed
N/A	No effect has been assessed. This only relates to SA Objective 15 for the appraisal of the strategic sites allocated within policy WCS4, and is explained in the assumptions that were used for the appraisal of the strategic sites, as set out in **Appendix 2** of the full SA Report.

32. The SEA Directive requires that the assessment of effects should include "secondary, cumulative, synergistic, short, medium and long-term, permanent and temporary effects" (SEA Directive Annex I). In the case of the strategic waste sites allocated in policy WCS4, the exact nature of their future use will be very dependent on the proposals that come forward from the waste industry. Therefore, at this stage in the SA it is difficult to be precise about when, where and in what form the effects will arise, and how one effect might relate to another. However, the combined effects of the vision, strategic objectives and policies (i.e. the Waste Core Strategy as a whole) and the potential for cumulative effects, has been considered.

33. While there are no fixed definitions of short, medium or long term, it is possible to draw some broad conclusions from the SA about the nature and interrelationship of the likely effects of the Waste Core Strategy:

- Most of the effects will be long-term, in that the Waste Core Strategy aims to provide a structure for waste management and waste development that will last over time. However, there will inevitably be some temporary and short or medium term effects during the construction or operation of individual waste facilities (see below).

- The effects that have been identified in the appraisal of the strategic waste sites, both positive and negative, are likely to increase over time as the policies in the Waste Core Strategy are implemented and more waste-related development is delivered in Gloucestershire.

Short-term Effects of the Waste Core Strategy

34. The policies within the Waste Core Strategy (excluding the development that will occur at the strategic sites allocated in policy WCS4) are generally unlikely to have short term impacts as they relate to the approach to be taken to waste management within the county up to 2027. Instead, the short-term effects associated with the Waste Core Strategy are generally related to the initial impacts of construction of waste management facilities where this occurs, either on one or all of the four allocated sites in policy WCS4, or other sites that come forward through the planning application process. This would include the removal of vegetation, top soil, sub soil, and the construction of any additional infrastructure required. Such work could have negative impacts on biodiversity, local amenity (possible disruption to Rights of Way, traffic flows, noise generation etc.), soil quality, and the landscape. However, these impacts would be temporary in nature and many are likely to be minimised through good design and successful implementation of development control policies.

Medium-term Effects of the Waste Core Strategy

35. The medium-term impacts of the Waste Core Strategy relate to employment creation and other economic benefits of waste management. Potential negative impacts in the medium term include the possible effects of operational waste management facilities on health and local amenity (e.g. noise, dust and increased traffic).

Long-term Effects of the Waste Core Strategy

36. Most of the likely effects of the Waste Core Strategy policies will be long-term as they provide the context for waste management within the county up to 2027. The long-term (i.e. longer than ten years) or permanent positive effects that could result from the Waste Core Strategy include the provision of sufficient waste management capacity to meet Gloucestershire's needs, and the associated benefits of diverting waste from landfill (e.g. reducing greenhouse gases and contributions to climate change). Long-term negative impacts of the site allocations could include climate change contributions from the energy required to operate facilities and vehicle movements to transport waste and minerals.

37. The overall significant effects identified during the Sustainability Appraisal are summarised below.

Significant sustainability effects

38. Most of the SA objectives against which the Waste Core Strategy vision, strategic objectives and policies were appraised against are likely to be significantly positively affected by at least one of the proposals within the plan. The following **significant positive** effects have been identified:

- Protecting the health and wellbeing of local communities (Strategic Objective 5);
- Maximising the opportunities for education and public participation in waste management (Strategic Objective 1 and WCS1);
- Safeguarding levels of amenity within Gloucestershire (Strategic Objective 5);
- Conserving the quality of the landscape (WCS10, 11 and 13);
- Maximising the opportunities available for screening waste sites and/or incorporating innovative design (WCS13);
- Protecting Gloucestershire's material, cultural and recreational assets (WCS11 and 13);
- Protecting townscapes and built heritage assets (WCS13);
- Minimising the risk of flooding (WCS9);
- Preventing pollution (WCS5);
- Conserving water quality (WCS5);
- Reducing the impacts of lorry traffic associated with the transportation of waste (Strategic Objective 5 and WCS4, 14);
- Encouraging the movement of waste up the waste hierarchy (Vision, Strategic Objectives 1 to 3, WCS1, 2, 3, 4, 6);
- Minimising the use of primary materials (Vision, WCS1, 2, 3, 6);
- Adapting to, or mitigating the effects of, climate change (Strategic Objective 5, WCS2, 3, 14); and

- Safeguarding waste sites for waste management facilities (Strategic Objective 5 and WCS8).

39. The majority of the significant positive impacts identified are associated with the proposals in the Waste Core Strategy to move waste management practices up the waste hierarchy, minimise the use of primary materials and adapt to and mitigate the effects of climate change.

40. No **significant negative** effects were associated with the Vision or any of the Waste Core strategy strategic objectives or policies.

41. In general, the four allocated strategic waste sites in policy WCS4 are likely to have the following **significant positive effects**:

- Focusing development in areas at lower risk of flooding;
- Reduction in the loss of good quality soil/land through the use of large previously developed sites;
- Minimising lorry movements, particularly on local roads, and therefore having a further positive impact on air quality;
- Reduced contributions to climate change through reductions in carbon dioxide (CO2) and methane (CH4) emissions; and
- Reduced contribution to climate change if energy, including heat, were to be generated from the waste management process and used within nearby development as waste as a fuel can act as a substitute for fossil fuel energy generation.

42. No potentially **significant negative** effects were identified in relation to the construction and operation of new waste management facilities on the four allocated sites. However, some minor negative effects were identified, as described in the summary of findings by SA objective which can be found in **Chapter 4** of the full SA Report.

Mitigation of potential negative effects

43. It is likely that many of the potential negative effects would be reduced through the successful implementation of the policies contained within the Waste Core Strategy or an associated DPD requiring good practice techniques by the waste industry, the saved policies from the Waste Local Plan or through the Environmental Impact Assessment that may be required to accompany a planning application for a new large waste facility. It is therefore assumed that the planning application process should ensure that any proposals for waste management facilities on the allocated strategic waste sites will seek to enhance the significant positive effects and mitigate the potential negative effects through well designed and operated facilities.

44. Most waste management facilities will also need to meet high standards of design and operation in order to obtain an Environmental Permit (EP) (formerly Pollution Prevention and Control (PPC) Permit) as regulated by the Environment Agency. The requirement to meet EP/PPC permitting standards (relating to emissions to air, land and water, energy efficiency, noise, vibration, heat and accident prevention) should ensure that the design and

operation of waste management facilities minimises most of the potentially negative effects.

CONCLUSIONS

45. In general, the Waste Core Strategy is considered likely to be a positive plan in sustainability terms and it is expected to result in positive impacts on the sustainability objectives, with relatively few negative effects having been identified, none of which were significant. The generally robust development management policies (including the General Development Criteria for the strategic allocations in Appendix 5) within the plan should help to mitigate the potential adverse effects of waste management on areas such as health and amenity, biodiversity, landscape and flood risk; however the extent to which these policies can successfully deliver mitigation will also depend heavily on their appropriate implementation. In addition, some recommendations for further mitigation within the policies have been made below.

46. The four strategic waste sites that have been allocated within the Waste Core Strategy are expected to result in a wide range of positive and significant positive sustainability effects; reflecting the thorough site selection process that has been undertaken and the findings of the previous appraisals of site options. Where negative impacts have been highlighted, none of which are significant, these generally relate to issues which were likely to be scored as negative for all or the vast majority of the site options that came forward during the site options consultation. In addition, the appropriate implementation of the development management policies within the Core Strategy should help to mitigate the potential adverse effects of the sites on particular SA objectives such as geodiversity and the potential for screening waste facilities.

47. Past experience suggests that when development proposals are being considered, there will often be tensions when applying different policies and deciding where the most weight should apply. Despite the best intentions of the planning authority, it may not always be possible to deliver development that meets all policy criteria as well as good practice guidance, and difficult choices will often have to be made.

Recommendations

48. While the Waste Core Strategy is generally expected to have mostly positive sustainability impacts, some potential negative effects were identified in relation to biodiversity and the potential for areas of habitat within or adjacent to waste sites to be lost as a result of development.

49. Some of the 'saved' policies in the Gloucestershire Waste Local Plan (2004) are still valid, until they are replaced by the Development Management Policies DPD, which is due to be prepared after the Waste Core Strategy has been adopted. While it is recognised that saved policy 45 (Planning Obligations) includes habitat creation in the list of matters that may be appropriate for inclusion in a planning obligation related to a development proposal, it is recommended that a requirement is included in policy either within the Waste Core Strategy or the forthcoming Development

Management Policies DPD to consider implementation of more specific measures to create and enhance biodiversity in new waste developments where appropriate. This could include, for example, the establishment of green roofs, climbing plants on walls, individual trees and patches of grassland, and the use of sustainable drainage systems which can also help to create habitats for wildlife.

Monitoring of Sustainability Effects

50. The SEA Directive requires that "*member states shall monitor the significant environmental effects of the implementation of plans or programmes… in order to identify at an early stage, unforeseen adverse effects, and be able to undertake appropriate remedial action*" (Article 10.1) and that the environmental report should provide information on "*a description of the measures envisaged concerning monitoring*" (Annex 1 (i)). The ODPM's SA Guidance states that monitoring proposals should be designed to provide information that can be used to highlight specific issues and significant effects, and which could help guide decision-making.

51. The ODPM's SA Guidance also states that it is not necessary to monitor all effects of a plan. Instead, monitoring should focus on the significant sustainability effects that may give rise to irreversible damage (with a view to identifying trends before such damage is caused) and the significant effects where there is uncertainty in the SA and where monitoring would enable prevention or mitigation measures to be implemented.

52. The effects of the implementation of the Waste Core Strategy will be influenced by the degree to which other plans forming the MWDF are successfully implemented. For this reason, monitoring the sustainability effects of implementing the Waste Core Strategy should be conducted as part of an overall approach to monitoring the sustainability effects of the MWDF as a whole, as well as taking account of broader social, economic and environmental trends. This approach is based on the ODPM's Good Practice Guidance on monitoring Local Development Frameworks[5].

53. The Council is required under the Planning and Compulsory Purchase Act to prepare an Annual Monitoring Report (AMR) to assess the extent to which policies in each MWDF document are being implemented. A framework for monitoring is set out within Chapter 6 of the publication version of the Waste Core Strategy, including targets and indicators that will be used to monitor how well the policies within the plan are being implemented. This includes targets and indicators that will also be relevant for monitoring the predicted significant sustainability effects of the Waste Core Strategy.

54. **Table 5.1** in the full SA report sets out the likely significant effects that were identified by this SA Report, and the corresponding indicators that are included in the Waste Core Strategy Annual Monitoring Framework. Additional potential indicators have been suggested where appropriate,

[5] *Local Development Framework Monitoring: A Good Practice Guide.* The Office of the Deputy Prime Minister 2004.

particularly where no indicators are currently included in the framework in relation to a particular likely significant effect.

55. As stated in the SA Guidance, the data used for monitoring will in many cases be provided by outside bodies (e.g. District Councils, the Environment Agency and Natural England). This has already been evidenced by the additional baseline information provided by the statutory environmental consultees during consultation on the Scoping Report for the SA. It is therefore recommended that Gloucestershire County Council continues the dialogue with statutory environmental consultees and other stakeholders that it began as part of the SA process and MWDF preparation, and works with them to agree the relevant sustainability effects to be monitored and to obtain information that is appropriate, up to date and reliable. It should be noted that the sustainability effects to be monitored may need to be revised at subsequent stages of the Waste Core Strategy preparation in response to consultation comments received and any revisions that are made to the DPD.

Land Use Consultants
24th November 2010

Summary of SA Findings by SA Objective: Waste Core Strategy Vision, Strategic Objectives and Policies

SA Objectives	Waste Core Strategy Vision, Strategic Objectives and Policies																			
	Vision	Strategic Objective 1	Strategic Objective 2	Strategic Objective 3	Strategic Objective 4	Strategic Objective 5	WCS1: Waste Reduction	WCS2: Recycling and Composting	WCS3: Inert Waste Recycling & Recovery	WCS4: Other Recovery	WCS5: Waste Water	WCS6: Hazardous Waste	WCS7: Cumulative Impacts	WCS8: Safeguarding Sites	WCS9: Flood Risk	WCS10: Green Belt	WCS11: AONBs	WCS12: Nature Conservation	WCS13: Design	WCS14: Sustainable Transport
1: Health & Wellbeing	+	+?	0	0	0	++	+?	+	+	+/-	+?	+?	+	+	+	+?	+?	0	0	+
2: Public Education/Participation	+	++	+?	+?	0	0	++	+?	+?	0	0	0	0	0	0	0	0	0	0	0
3: Amenity	+	+?	0	0	0	++	+?	+	+	+/-	+?	+?	+	+	0	+?	+?	0	+	+
4: Sustainable Economic Development	0	0	0	+?	+?	0	0	+?	0	0	0	0	0	-?	+	0	0	0	0	0
5: Economical Waste Management	+	+	0	0	0	+	+	0	0	+	0	0	+/-?	0	0	0	0	0	0	0
6: Employment	+	-	0	+	+?	+/-?	+/-	+	+	+	+	+	0	+/-	0	-?	0	0	0	-?
7: Aircraft Safety	0	+?	0	0	0	0	+?	0	0	0	0	0	0	0	0	0	0	0	0	0
8: Biodiversity	+	+?	0	0	0	+	+?	+/-?	+?	0	+?	+?	+	0	+	+	0	++/-?	0	0
9: Landscape	+	+?	0	0	0	+	+?	+?	+?	0	+?	+?	0	0	0	++	++	0	++	0
10: Screening & Innovative Design	-?	0	0	0	0	+/-?	0	+?	0	0	0	0	0	0	0	0	0	0	++	0
11: Material, Cultural & Recreational Assets	0	+?	0	0	0	-?	+?	0	0	0	0	+?	0	0	+	+	++	0	++	0
12: Geodiversity	+	+?	0	0	0	0	+?	0	+?	0	0	+?	0	0	0	0	0	0	0	0
13: Townscapes and Heritage	0	+?	0	0	0	-?	+?	+?	+?	0	0	+?	0	0	0	+	0	0	++	0
14: Flooding	+	+?	0	0	0	+	+?	0	0	0	0	+?	+	0	++	0	0	0	++	0
15: Pollution Prevention	+	+?	+?	+?	+?	0	+	+	+	0	++	+?	+	0	0	0	0	0	0	+
16: Soil/Land Quality	+	+?	0	0	0	+	+	0	+?	+	0	+?	+	0	0	+	0	0	0	0
17: Air Quality	+/-?	+	0	0	0	+	+	+	+	+	0	+?	+	0	0	0	0	0	0	+
18: Water Quality	+	+?	+?	+?	+?	+?	+	+	+	0	++	+?	+	0	0	0	0	0	0	0
19: Impacts of Lorry Traffic	+/-?	+	0	0	0	++	+	+	+	++	0	+?	+/-?	0	0	0	0	0	0	++
20: Waste Hierarchy	++	++	++	++	+/-	0	++	++	++	++	0	++	0	+	0	0	0	0	0	0
21: Use of Primary Materials	++	+	+	0	+	+?	++	++	++	+	0	++	0	0	0	+?	0	0	+?	0
22: Climate Change Adaptation	+	+	+	+?	+?	++	+	++	++	+	+	0	0	0	+	+?	0	0	+	++
Original SA Objective 1: Sustainable Communities	0	0	0	0	0	0	+	0	0	0	0	0	0	0	0	0	0	0	0	0
Original SA Objective 2: Safeguarding Sites	0	0	0	0	0	++	0	0	0	0	0	0	0	++	0	0	0	0	0	0

Summary of SA Findings by SA Objective: Strategic Sites Allocated in Policy WCS4

SA Objectives	Wingmoor Farm East				Wingmoor Farm West				Javelin Park				Land at Moreton Valance			
	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)
1: Health & Wellbeing	0	0	0	0	0	0	0	0	-	-?	-	-?	-	-?	-	-?
2: Public Education/Participation	+?	+?	+?	+?	+?	+?	+?	+?	+?	+?	+?	+?	+?	+?	+?	+?
3: Amenity	0	0	0	0	0	0	0	0	-	-	-?	-?	-	-	-?	-?
4: Sustainable Economic Development	+?	+?	+?	+?	+?	+?	+?	+?	+?	+?	+?	+?	+?	+?	+?	+?
5: Economical Waste Management	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
6: Employment	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-
7: Aircraft Safety	-?	0	-?	0	-?	0	-?	0	0	0	0	0	0	0	0	0
8: Biodiversity	-?	-?	-?	-?	-?	-?	-?	-?	-?	-?	-?	-?	-?	-?	-?	-?
9: Landscape	-?	0	-?	0	-?	-?	-?	0	-?	-?	-?	-?	-	0	-	0
10: Screening & Innovative Design	-	-	-	-	+?	+?	+?	+?	-?	-?	-?	-?	-	-	-	-
11: Material, Cultural & Recreational Assets	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-
12: Geodiversity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13: Townscapes and Heritage	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
14: Flooding	+	+	+	+	+?	+?	+?	+?	+	+	+	+	++	++	++	++
15: Pollution Prevention	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
16: Soil/Land Quality	+	+	+	+	++	++	++	++	++	++	++	++	++	++	++	++
17: Air Quality	+/-	+	+/-	+	+/-	+	+/-	+	++/-	++	++/-	++	++/-	++	++/-	++
18: Water Quality	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19: Impacts of Lorry Traffic	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	++/-	++/-	++/-	++/-	++/-	++/-	++/-	++/-
20: Waste Hierarchy	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
21: Use of Primary Materials	++?	+	++?	+	++?	+	++?	+	++?	+	++?	+	++?	+	++?	+
22: Climate Change Adaptation	++	+?	++	+?	++	+?	++	+?	++	+?	++	+?	++	+?	++	+?

As described in the full SA Report, a score was not given to any of the four allocated sites in relation to SA Objective 15. This is because, in relation to the location of potential waste sites, potential pollution effects are covered under SA Objectives 1, 3, 16-18. The precautionary principle is inherently being applied to the site allocation process through the Council's own site assessment methodology and the independent SA of the site allocations.

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APPENDICES

1 Introduction

1.1 Gloucestershire County Council (GCC) as Minerals Planning Authority (MPA) and Waste Planning Authority (WPA) has been working on a Minerals & Waste Development Framework (MWDF) that will replace its currently adopted Minerals Local Plan and Waste Local Plan. To date, Gloucestershire County Council's Minerals & Waste Planning Policy Team has completed or started to work on the following documents within the MWDF:

- An SPD on Waste Minimisation in Development Projects (Adopted September 2006);
- The Minerals Core Strategy (MCS) (Consultation completed on Preferred Options January 2008); and
- The Waste Core Strategy (WCS) (Consultation completed on Preferred Options January 2008).

1.2 The preparation of the MWDF documents is being subject to a full Sustainability Appraisal (SA), in line with the Planning and Compulsory Purchase Act 2004 and current Government planning policy (PPS 12[1]). The preparation of the MWDF documents must also be in accordance with the requirements of European Directive 2001/42/EC (known as the Strategic Environment Assessment, or SEA Directive).

1.3 This Sustainability Appraisal Report has been prepared to provide key stakeholders and members of the public with information on the process and the findings of the Sustainability Appraisal undertaken in preparing the Waste Core Strategy Development Plan Document (DPD) (Publication version 2010). In particular, this report documents the likely significant sustainability implications of implementing the Gloucestershire Waste Core Strategy DPD. It has been prepared by Land Use Consultants (LUC) on behalf of Gloucestershire County Council.

PURPOSE OF THE SUSTAINABILITY APPRAISAL

1.4 The purpose of Sustainability Appraisal is to promote sustainable development by integrating sustainability considerations in to the preparation and adoption of plans.

1.5 The objective of Strategic Environmental Assessment, as defined in Article 1 of the SEA Directive is *'to provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans….with a view to promoting sustainable development'*.

1.6 The 2005 Office of the Deputy Prime Minister (ODPM) guidance on Sustainability Appraisal[2] ("the SA Guidance") explains the difference between the requirements of the SEA Directive and the Sustainability Appraisal of development plans that is required by the UK Government. There are many parallels between the two processes, but also some differences and the guidance clearly shows how assessment

[1] *Planning Policy Statement 12: Local Spatial Planning.* Communities and Local Government, 2008

[2] *Sustainability Appraisal of Regional Spatial Strategies and Local Development Frameworks. Guidance for Regional Planning Bodies and Local Planning Authorities.* Office of the Deputy Prime Minister, November 2005. Note that this has been superseded for Local Development Documents by on-line guidance hosted on the Planning Advisory Service website: www.pas.gov.uk.

to comply with the SEA Directive can be integrated with Sustainability Appraisal. Simply put, Sustainability Appraisal includes a wider range of considerations, extending to social and economic impacts of plans, whereas SEA is more focussed on environmental impacts. The SA guidance describes how it is possible to satisfy both requirements through a single appraisal process undertaking a joint SA/SEA and from this point on, references to Sustainability Appraisal (SA) should be taken as meaning the SA incorporating the requirements of SEA.

1.7 A key output of the SA process is a Sustainability Appraisal Report which describes what has been appraised and how, along with the likely significant sustainability effects of implementation of the plan.

BACKGROUND

1.8 Gloucestershire County Council (GCC) began undertaking Sustainability Appraisal work for the MWDF 'in-house'[3] in terms of both the development of the SA Framework and the production of SA Reports. **Table 1.1** sets out the SA Reports that have been produced by GCC to date as part of the development of the SPD on Waste Minimisation in Development Projects (adopted in September 2006), the Waste Core Strategy and the Minerals Core Strategy (both up to the Preferred Options stage, January 2008). All of the reports produced to date are available on GCC's website.[4]

Table 1.1: SA Reports produced to date for the MWDF by Gloucestershire County Council

SA Document	Date
Original SA Framework Context & Scoping Report	August 2005
Update 1 SA Framework Context & Scoping Report	November 2005
Update 2 SA Framework Context & Scoping Report	April 2006
Update 3 SA Framework Context & Scoping Report	January 2009
SA Framework Combined Context & Scoping Report for Waste Sites	July 2008 – added into Update 3 SA Framework Context & Scoping Reports Update 3
SA Report for Waste Minimisation in Development Projects SPD	April 2006
SA Report for the Waste Core Strategy Issues & Options	July 2006
SA Report for the Minerals Core Strategy Issues & Options	September 2006
SA Report for the Waste Core Strategy Preferred Options	January 2008
SA Report for the Minerals Core Strategy Preferred Options	January 2008

1.9 Consultation was carried out on the Minerals Core Strategy and Waste Core Strategy Preferred Options between January and March 2008. Since then, changes in

[3] This work, both the SA Framework as well as individual SA Reports have been peer reviewed by Levett-Therivel Sustainability Consultants. Habitat Regulations Assessments (HRA) of the Core Strategies have also been undertaken in-house with the use of expertise from the County Ecologist.

[4] www.gloucestershire.gov.uk Go to: Environment, Planning and Waste > Planning and Development > Minerals and Waste Policy > Sustainability Appraisal

Government policy (including PPS 12 on the preparation of Local Development Frameworks) have influenced where GCC has focused its efforts. The fourth revision of the project plan for the MWDF (the 'Minerals and Waste Development Scheme', July 2010) shows that the Waste Core Strategy will now be progressed in advance of the Minerals Core Strategy.

1.10 As part of the consultations on the Minerals Core Strategy and the Waste Core Strategy Preferred Options, the Government Office for the South West responded to GCC stating that strategic sites for waste management (particularly focusing on facilities to manage residual municipal waste) should now be included in the Waste Core Strategy. Previously, following guidance in PPS12, no sites had been identified. The revised PPS12 'Local Spatial Planning' (2008) allows for the identification of strategic sites if they are 'central to the achievement of the strategy'. GCC agreed with the Government Office for the South West that strategic sites would be added to the Waste Core Strategy, but this had implications for the SA process. Until this point, the SA Objectives set out in the SA Framework Context & Scoping Reports had been designed with the aim of assessing high level non-site specific policy options within the Waste and Minerals Core Strategies.

1.11 GCC sought to address this situation by producing a report for consultation which amended the existing SA Framework, with the aim of ensuring that the objectives were suitable for assessing the likely sustainability impacts of potential strategic waste sites. This revision to the SA Framework was consulted upon and is contained within the SA Framework Context and Scoping Reports (Update 3, January 2009). It is described in more detail in **Chapter 3** of this report and the amendments made to the original SA Framework are set out in **Appendix 1**.

1.12 Although the next 'Options' stage of consultation would require an extensive evidence base to be prepared, much of it compiled through technical and professional assessment, GCC considered that, due to the element of 'subjective' judgement, the preparation of an independent SA report would be appropriate and would assist in producing a sustainable and sound Waste Core Strategy for Gloucestershire.

1.13 Subsequently, Land Use Consultants was appointed by GCC in February 2009 to undertake the next stages of the SA of the Waste Core Strategy, comprising two main components:

- An SA Report for the 106 potential waste site options being considered for allocation as Strategic Waste Sites in the Waste Core Strategy (Stage 1, completed in April 2009); and

- An SA Report for the short list of site options and other policy options for the Waste Core Strategy options consultation to be held in October 2009 (Stage 2, completed in September 2009).

1.14 Both of these SA Reports are also available on GCC's website, and were published as part of the Site Options Consultation (which took place between October and November 2009). The Waste Core Strategy has now been brought together into one document which takes account of the three main consultation phases that have been completed to date: Issues and Options, Preferred Options and Site Options. Following a final six week consultation period starting in December 2010, and

provided no major changes are needed, the Waste Core Strategy will be formally submitted to the Secretary of State.

THE WASTE CORE STRATEGY

1.15 The publication version of the Gloucestershire Waste Core Strategy includes an overarching Vision for waste management within the county, which states that:

> *'By 2027 Gloucestershire is a clean, green, healthy and safe place in which to live, work and visit. Residents and businesses are fully aware of the economic and environmental importance of waste management, including its impact on climate change and proactively minimise their waste production to achieve 'zero-growth' by 2020.*
> *Opportunities for re-using, recycling and composting waste are maximised across all waste streams. Effective joint working through the Gloucestershire Waste Partnership (GWP) has led to a more consistent and co-ordinated approach towards municipal waste collection across the county with everyone able to recycle and compost a broad range of materials easily and conveniently. At least 60% of household waste is recycled and composted by 2020.*
> *The 'residual' waste that cannot be re-used, recycled or composted is seen as a valuable resource and is managed through a number of 'strategic' waste recovery sites (>50,000 tonnes/year) located in the central area of the county, proximate to the main urban areas along the M5 corridor including Gloucester and Cheltenham.*
> *Strategic sites will be located so as to maximise the potential use of heat and power and give priority to the re-use of previously developed land and buildings.*
> *'Local' facilities (<50,000 tonnes/year) including supporting infrastructure such as waste transfer and bulking are dispersed more widely around the county including those more distant rural areas such as the Forest of Dean and the Cotswolds.*
> *These strategic, local and existing waste facilities form an integrated sustainable waste management system for Gloucestershire.*
> *Gloucestershire's communities, key landscape/environmental assets and land liable to current and future potential flood risk, are safeguarded from the adverse impacts of waste management activities.*
> *The continuing role of landfill is recognised but increasingly seen as a last resort'.*

1.16 Five Strategic Objectives are then set out as follows:

- 1: Waste Reduction
- 2: Re-use, Recycling and Composting
- 3: Other Recovery (including energy recovery)
- 4: Waste Disposal
- 5: Minimising Impact

1.17 Fourteen Core Policies, based around these Strategic Objectives, then follow. These are:

- WCS1: Waste Reduction
- WCS2: Recycling & Composting/Anaerobic Digestion (including Bulking and Transfer)

- WCS3: Inert Waste Recycling & Recovery
- WCS4: Other Recovery (including Energy Recovery)
- WCS5: Waste Water
- WCS6: Hazardous Waste
- WCS7: Cumulative Impact
- WCS8: Safeguarding Sites for Waste Management
- WCS9: Flood Risk
- WCS10: Green Belt
- WCS11: Areas of Outstanding Natural Beauty
- WCS12: Nature Conservation (Biodiversity & Geodiversity)
- WCS13: Design
- WCS14: Sustainable Transport

1.18 Policy WCS4 includes four strategic waste site allocations.

1.19 In addition to the policies included within the Waste Core Strategy, there are also a number of saved policies from the Waste Local Plan (2004) which have not been replaced by the Waste Core Strategy Policies and therefore will remain valid until the development management DPD for the Waste Development Framework is prepared following adoption of the Waste Core Strategy. These are:

- 11: Waste Collection Facilities
- 17: Mining of Waste
- 22: Landspreading
- 25: Conservation Outside Designated Sites
- 28: Sites of National Archaeological Importance
- 29: Sites of Local Archaeological Importance
- 31: Historic Heritage
- 33: Water Resources – Pollution Control
- 37: Proximity to Other Land Uses
- 38: Hours of Operation
- 41: Public Rights of Way
- 42: Reinstatement
- 43: After Use
- 45: Planning Obligations

AIM AND STRUCTURE OF THE REPORT

1.20 This report constitutes the SA Report for the publication version of the Waste Core Strategy and has been produced in advance of the final consultation on the Waste Core Strategy which is due to start in December 2010. This SA Report will be available during the consultation period as a reference point when commenting on the Waste Core Strategy.

1.21 This SA Report sets out the process undertaken and the findings of the Sustainability Appraisal of the publication version of the Waste Core Strategy, incorporating strategic site allocations. In carrying out the SA, account has been taken of the previous work conducted as part of the preparation of the Scoping Report and previous SA reports described above, and much of the contextual material has been drawn from those reports and the consultation responses received in relation to them.

1.22 As described above, the SA of the MWDF is being conducted as a joint SA/SEA because it is also necessary to undertake a Strategic Environmental Assessment of the documents within the Minerals and Waste Development Framework. This SA Report and the previous SA Reports, Framework Context & Scoping Reports prepared by GCC and LUC include the required elements of an 'Environmental Report' (the output required by the SEA Directive). **Table 1.2** sign-posts the relevant sections of the SA Reports that are considered to meet the requirements of the SEA Directive.

1.23 This chapter provides the background to the SA of the Gloucestershire Waste Core Strategy. The remainder of the report is structured as follows:

Chapter 2 – SA Process: describes the stages involved in SA, the approach used and the specific SA tasks undertaken, along with the background to the development of the Waste Core Strategy (including the strategic site options).

Chapter 3 – Appraisal Method and Assumptions: describes the SA Framework and the assumptions used for assessing the potential sustainability effects of the Waste Core Strategy (including the strategic site options).

Chapter 4 – Appraisal of the Waste Core Strategy: sets out the main findings from the appraisal of the Waste Core Strategy.

Chapter 5 – Monitoring: makes recommendations regarding the approach to be taken to monitoring the sustainability effects of the Waste Core Strategy once it has been adopted.

Table 1.2: Summary of the requirements of the SEA Directive and where these have been addressed in this SA Report and previous reports (after Appendix 1, SA Guidance, ODPM, 2005)

SEA Directive Requirements	Where covered
Preparation of an environmental report in which the likely significant effects on the environment of implementing the plan or programme, and reasonable alternatives taking into account the objectives and geographical scope of the plan or programme, are identified, described and evaluated. The information to be given is (Art. 5 and Annex I):	
a) An outline of the contents, main objectives of the plan or programme, and relationship with other relevant plans and programmes;	Chapter 1 for outline of contents and main objectives of the plan, SA Context Report (Update 3, January 2009) for relationship with other relevant plans and programmes
• The relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or programme;	SA Scoping Report (Update 3, January 2009)
• The environmental characteristics of areas likely to be significantly affected;	SA Scoping Report (Update 3, January 2009)
• Any existing environmental problems which are relevant to the plan or programme including, in particular, those relating to any areas of a particular environmental importance, such as areas designated pursuant to Directives 79/409/EEC and 92/43/EEC.;	SA Scoping Report (Update 3, January 2009)
b) The environmental protection, objectives, established at international, Community or national level, which are relevant to the plan or programme and the way those objectives and any environmental, considerations have been taken into account during its preparation;	SA Context Report (Update 3, January 2009)
c) The likely significant effects on the environment, including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors. (Footnote: These effects should include secondary, cumulative, synergistic, short, medium and long-term permanent and temporary, positive and negative effects);	Chapter 4 Appendix 3,
d) The measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan or programme;	Chapter 4 Appendix 3,
e) An outline of the reasons for selecting the alternatives dealt with, and a description of how the assessment was undertaken including any difficulties (such as technical deficiencies or lack of know-how) encountered in compiling the required information;	Chapters 2 and 4
f) a description of measures envisaged concerning monitoring in accordance with Art. 10;	Chapter 5
g) a non-technical summary of the information provided under the above headings	Non-technical Summary available as separate document.
The report shall include the information that may reasonably be required taking into account current knowledge and methods of assessment, the contents and level of detail in the plan or programme, its stage in the decision-making process and the extent to which certain matters are more appropriately assessed at different levels in that process to avoid duplication of the assessment (Art. 5.2)	This report adheres to this requirement.
Consultation: • authorities with environmental responsibility, when deciding on the scope and level of detail of the information which must be included in the environmental report (Art. 5.4)	SA Context and Scoping Reports consulted upon in 2005-2008
• authorities with environmental responsibility and the public, shall be given an early and effective opportunity within appropriate time frames to express their opinion on the draft plan or programme and the accompanying environmental report before the adoption of the plan or programme (Art. 6.1, 6.2)	Consultation on this SA Report and subsequent stages
• other EU Member States, where the implementation of the plan or programme is likely to have significant effects on the environment of that country (Art. 7).	Not applicable
Taking the environmental report and the results of the consultations into account in decision-making (Art. 8)	To be addressed at a later stage
Provision of information on the decision: When the plan or programme is adopted, the public and any countries consulted under Art.7 must be informed and the following made available to those so informed: • the plan or programme as adopted • a statement summarising how environmental considerations have been integrated into the plan or programme and how the environmental report of Article 5, the opinions expressed pursuant to Article 6 and the results of consultations entered into pursuant to Art. 7 have been taken into account in accordance with Art. 8, and the reasons for choosing the plan or programme as adopted, in the light of the other reasonable alternatives dealt with; and • the measures decided concerning monitoring (Art. 9)	To be addressed at a later stage
Monitoring of the significant environmental effects of the plan's or programme's implementation (Art. 10)	To be addressed at a later stage

SEA Directive Requirements	Where covered
Quality assurance: environmental reports should be of a sufficient standard to meet the requirements of the SEA Directive (Art. 12).	Details of how this SA Report meets the requirements of the SEA Directive are outlined above.

2 Sustainability Appraisal Process

2.1 As described in **Chapter 1**, the Sustainability Appraisal of the Gloucestershire Waste Core Strategy is being undertaken in line with the Government's SA Guidance, and seeks to meet the requirements of both the Planning and Compulsory Purchase Act 2004 and the SEA Directive (European Directive 2001/42/EC).

STAGES AND TASKS IN SA

2.2 The Government's SA Guidance introduces the SA process and explains how SA should be carried out as an integral part of the preparation of a DPD. **Table 2.1** below sets out the main stages of DPD preparation and shows how these relate to the SA process. Note that there is currently no updated version of this table within PPS12 to reflect the changes in the Regulations for DPD preparation and consultation, thus reference to 'preferred options' remains.

Table 2.1: Stages in DPD preparation and corresponding stages in SA (from SA Guidance, ODPM 2005)

Generic stages of DPD preparation	Stages and tasks	Purpose
Pre-production - Evidence gathering	**Stage A: Setting the context and objectives, establishing the baseline and deciding on the scope**	
	A1: Identifying other relevant policies, plans and programmes, and sustainability objectives	To document how the DPD is affected by outside factors and suggest ideas for how any constraints can be addressed.
	A2: Collecting baseline information	To provide an evidence base for sustainability issues, effects prediction and monitoring.
	A3: Identifying sustainability issues and problems	To help focus the SA and streamline the subsequent stages, including baseline information analysis, setting of the SA Framework, prediction of effects and monitoring
	A4: Developing the SA Framework	To provide a means by which the sustainability of the DPD can be appraised
	A5: Consulting on the scope of the SA	To consult with statutory bodies with social, environmental, or economic responsibilities to ensure the appraisal covers the key sustainability issues
Production	**Stage B: Developing and refining options and assessing effects**	
	B1: Testing the DPD objectives against the SA Framework	To ensure that the overall objectives of the DPD are in accordance with sustainability principles and provide a suitable framework for developing options
	B2: Developing the DPD options	To assist in the development and refinement of the options, by identifying potential sustainability effects of options for achieving the DPD objectives
	B3: Predicting the effects of the DPD	To predict the significant effects of the DPD

Generic stages of DPD preparation	Stages and tasks	Purpose
	B4: Evaluating the effects of the DPD	To assess the significance of the predicted effects of the DPD and assist in the refinement of the DPD
	B5: Considering ways of mitigating adverse effects and maximising beneficial effects	To ensure all potential mitigation measures and measures for maximising beneficial effects are considered and as a result residual effects identified
	B6: Proposing measures to monitor the significant effects of implementing the DPD	To detail the means by which the sustainability performance of the DPD can be assessed
	Stage C: Preparing the Sustainability Appraisal Report	
	C1: Preparing the SA Report	To provide a detailed account of the SA process, including the findings of the appraisal and how it influenced the development of the DPD, in a format suitable for public consultation and decision-makers
Examination	**Stage D: Consulting on the preferred options of the DPD and SA Report**	
	D1: Public participation on the preferred options of the DPD and the SA Report	To provide the public and statutory bodies with an effective opportunity to express their opinions on the SA Report and to use it as a reference point in commenting on the DPD
	D2(i): Appraising significant changes	To ensure that any significant changes to the DPD are assessed for their sustainability implications and influence the revision of the DPD
	D2(ii): Appraising significant changes resulting from representations	To ensure that any significant changes to the DPD resulting from representations are assessed for their sustainability implications and influence the revision of the DPD
Adoption and Monitoring	**D3: Making decisions and providing information**	To provide information on how the SA Report and consultees' opinions were taken into account in preparing the DPD
	Stage E: Monitoring implementation of the plan	
	E1: Finalising aims and methods for monitoring	To measure the sustainability performance of the DPD in order to determine whether its effects are as anticipated, and thereby inform future revisions
	E2: Responding to adverse effects	To ensure that the adverse effects can be identified and appropriate responses developed

STAGE A: SETTING THE CONTEXT AND OBJECTIVES, ESTABLISHING THE BASELINE AND DECIDING ON THE SCOPE

2.3 GCC undertook the Scoping stage of the SA for the Waste Core Strategy in-house and has presented the findings in two documents, which have been updated three times during the preparation of the Waste Core Strategy. These "SA Context Reports" prepared set out the review of international, national, regional, county and local plans or programmes that are relevant to the MWDF, including the Waste Core

Strategy, i.e. Task A1 in the table above. The latest update of the SA Context Report (Update 3) was produced in January 2009.

2.4 In addition to the SA Context Report, the latest update of the SA Scoping Report (Update 3) was produced by GCC in January 2009. The "SA Scoping Report" sets out the outcomes of Tasks A2 to A5 as shown in **Table 2.1** above, i.e. it describes the baseline information and key sustainability issues for Gloucestershire in relation to minerals and waste and sets out the SA Framework. Development of an SA Framework is not a requirement of the SEA Directive; however it provides a recognised way in which the likely sustainability effects of a plan or document can be described, analysed and compared. The SA Framework consists of a set of sustainability objectives which state desired outcomes[5]. These SA objectives are distinct from the objectives of the MWDF and the MWDF's performance in terms of sustainability is appraised against the SA objectives. The SA objectives went through a series of iterations based on consultation responses and changes in response to the development of documents in the MWDF (e.g. the need to appraise specific potential waste sites). The development of the SA Framework which has been used for the appraisal of the Waste Core Strategy, including the strategic site allocations, is discussed further in **Chapter 3**.

STAGE B: DEVELOPING AND REFINING OPTIONS AND ASSESSING EFFECTS

2.5 Sustainability considerations have been taken into account throughout the development of the Waste Core Strategy. GCC prepared SA Reports at both the Issues & Options and Preferred Options stages and commissioned LUC to do so in relation to the Site Options consultation, and has published these SA reports for consultation as set out in **Table 1.1** in **Chapter 1**.

2.6 The SEA Directive requires "*reasonable* alternatives" to be taken into account, and so not every possible alternative needs to be considered. In some instances, other policy considerations (e.g. Planning Policy Statements, Mineral Policy Statements]) will pre-determine which policy approach needs to be adopted, effectively ruling out some options.

2.7 As described in **Chapter 1**, a number of policies from the Waste Local Plan (2004) have been saved and will remain valid alongside the Waste Core Strategy. These have not been included in the SA process at this stage as they were subject to SEA prior to being adopted.

Developing and Refining Options for the Waste Core Strategy

Issues and Options

2.8 The initial Issues and Options stage began in 2005 with evidence gathering and data collection exercises. In March 2006 a forum event was hosted by the Waste Planning Authority and the Waste Disposal Authority at which broad strategic options for future waste management in Gloucestershire were considered. The outcomes of this

[5] The ODPM SA Guidance explains that SA objectives should focus on outcomes, not how the outcomes will be achieved. For example, they should focus on improved biodiversity (the outcome), rather than protection of specific wildlife sites (a means to achieving it).

event were collated and the views and ideas expressed were incorporated into two Issues and Options consultation papers which were published in July 2006. Known as 'Part A' and 'Part B', these documents comprised an accessible jargon-free paper and a more detailed data and policy context paper. The consultation responses received in relation to these papers during the period July-September 2006 were summarised in the evidence report '*Stakeholder Responses to the Issues and Options Papers*' (March 2007).

2.9 A further waste forum was held in October 2007 at which the key emerging options for the WCS were discussed and debated. Land Use Consultants facilitated this event on behalf of GCC and reported on the outcomes in the '*Report of Waste Core Strategy Stakeholder Forum Event*' (November 2007).

Preferred Options

2.10 The Waste Core Strategy Preferred Options document was then published in January 2008, based on the outcomes of the Issues and Options consultation and the evidence gathered to date. This document set out Preferred Options for an overarching vision and five strategic objectives, as well as 33 Preferred Options for the Waste Core Strategy policies, grouped into topics such as Waste Minimisation, Recycling and Composting, Recovery and Locational Strategy. A public consultation on the Preferred Options version of the Waste Core Strategy and the accompanying SA Report took place between January and March 2008.

Site Options

2.11 As described in **Chapter 1**, the Government Office for the South West's consultation response to the Waste Core Strategy Preferred Options required GCC to consider specific options for strategic waste sites. GCC's Minerals & Waste Planning Policy Team carried out a comprehensive exercise to identify all sites in the County which had some potential for waste use, and then refined the list down to a set of 106 'reasonable' options. The selections were made based on factors including the size of the potential sites and their relative locations, in order to ensure that the sites considered would be able to accommodate waste facilities of an adequate size and that they would be appropriately located in relation to the key settlements within Gloucestershire (Cheltenham, Gloucester, Cirencester, Coleford, Tewkesbury, Stroud and Lydney).

2.12 Following the production of the Stage 1 SA Report, which appraised this long list of 106 sites, it was further reduced by GCC on the basis of the SA findings, technical input and deliverability investigations. A Site Options consultation document was then produced in October 2009, setting out four potential spatial options for the distribution of the waste sites throughout Gloucestershire, centred on the designation of 'Zone C' - an area running through the Central Severn Vale close to Gloucester and Cheltenham. This area had been identified following the Preferred Options consultation in 2008, which discussed the broad locational strategy for waste treatment facilities. The four spatial options set out in the Site Options consultation document were:

- Focus strategic sites within Zone C;
- Allocate sites outside of Zone C for smaller-scale facilities/transfer;

- Incorporate waste treatment into the urban extensions to Cheltenham and Gloucester proposed under the RSS; or
- A combination of the above options.

2.13 Within the context of these spatial options, the original list of 106 potential sites was reduced to 13 potential sites: ten within Zone C and three that were located outside of Zone C. The Stage 2 SA Report for the Site Options consultation comprises the appraisal of these four broad spatial options, as well as the reduced list of 13 waste site options.

Publication version

2.14 All of the responses received in relation to the Waste Core Strategy Preferred Options consultation were summarised in a Consultation Response Report (Summer 2008). Now that the Site Options Consultation has been completed on the recommendation of the Government Office for the South West, the wider consultation responses from the Preferred Options stage have also been taken into account and the publication version of the Waste Core Strategy has been produced. Four strategic site allocations have been incorporated into policy WCS4 'Other Recovery (including energy recovery)', and were selected on the basis of the findings of the SA of the Site Options consultation document, as well as the responses received to that consultation and practical deliverability considerations.

Assessing Sustainability Effects

2.15 At each stage of the development of the Waste Core Strategy, Sustainability Appraisal has been carried out and SA Reports produced, as set out in **Table 1.1** and **Chapter 1**.

2.16 As described in **Chapter 1**, the SA reports for both the Issues and Options and Preferred Options versions of the Waste Core Strategy were produced in-house by GCC. The SA report for the Issues and Options version was published alongside the two consultation documents in July 2006 and the SA Report for the Preferred Options was published in January 2008 alongside that consultation paper. At each stage, the likely effects of the emerging options were appraised against the SA Framework (the original 15 SA Objectives, before the SA Framework was amended for the SA of the Site Options consultation as described in **Chapter 3**) and the findings were summarised in the SA Reports published.

2.17 As described above, the consultation response received from the Government Office for the South West in relation to the Preferred Options Version of the Waste Core Strategy required GCC to consider specific sites within the county for allocation as strategic waste management sites. As such, the Site Options consultation was carried out and subject to SA. For each of the original 106 potential waste sites, GCC's planning officers carried out a detailed site assessment, collating information and visiting the sites to consider a number of criteria such as landscape, green belt, transport, biodiversity and flood risk. The full list of criteria and the process used are set out in GCC's own Technical Evidence Papers. In order to obtain more specialised information about some of the issues to be considered at each of the potential sites, GCC requested input from:

- GCC's Highways Development Co-ordination team
- GCC's Public Rights of Way team
- Gloucestershire Airport and the Ministry of Defence
- GCC's Ecologist and the Gloucestershire Centre for Environmental Records
- Gloucestershire Geology Trust at the Geological Records Centre
- GCC's Archaeology team
- Gloucestershire's 6 District Councils
- Halcrow consultants for flood risk assessment.

2.18 Site Assessments were developed by GCC for all of the original 106 potential waste sites, setting out the results of the assessment against each criterion, photos of the site and a short description of its location and characteristics. The GCC Site Assessments can be found as part of the evidence base, which is made up of Technical Papers.

2.19 In addition to the detailed site assessment and selection process undertaken by GCC, as required by the SEA Directive and the Planning and Compulsory Purchase Act 2004, all of the potential waste site options were appraised by the LUC SA team against the SA Framework and the sustainability implications and likely effects of developing each site for waste management uses were assessed. During Stage 1 of the SA process, all 106 of the original potential sites were appraised through a desk-based exercise and the methodology and findings are contained in the Stage 1 SA Report (April 2009). Stage 2 of the SA appraised the reduced list of site options and drew on the Stage 1 appraisal findings, along with additional information provided by the Council as detailed in the Stage 2 SA Report (September 2009).

2.20 The publication version of the Waste Core Strategy has now also been subject to SA and the detailed method used for this appraisal (including the site specific allocations set out in policy WCS4) is described in **Chapter 3** of this report. The findings are summarised in **Chapter 4** and the full appraisal matrices can be found in **Appendix 3**.

STAGE C: PREPARING THE SUSTAINABILITY APPRAISAL REPORT

2.21 This document is the Sustainability Appraisal Report for the publication version of the Waste Core Strategy. It sets out the likely significant effects of the plan on the environment, as well as the social and economic implications of the policies within the Waste Core Strategy. It outlines the method used for developing and refining the policy options, including the strategic sites that have been allocated within policy WCS4, as well as the measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan. It has been written to meet all the requirements of the SEA Directive (see **Table 1.2)** as well as the Planning and Compulsory Purchase Act requirement to report on the findings of the Sustainability Appraisal.

STAGE D: CONSULTING ON THE DPD AND SA REPORT

2.22 This Sustainability Appraisal Report has been produced to accompany the consultation on the Waste Core Strategy commencing in December 2010. At this stage, responses are invited only in relation to the soundness of the Waste Core Strategy. Following the consultation, GCC will consider whether any major changes to the DPD are required, and if not, will formally submit the Waste Core Strategy to the Secretary of State.

STAGE E: MONITORING IMPLEMENTATION OF THE PLAN

2.23 Stage E will follow adoption of the Waste Core Strategy. LUC has not been commissioned to undertake the SA monitoring. However, the SEA Directive and the Government's SA Guidance require that the Sustainability Report includes a description of measures envisaged concerning monitoring. This is discussed in **Chapter 5**.

3 Appraisal Method and Assumptions

DEVELOPMENT OF SA OBJECTIVES

3.1 Development of an SA Framework is not a requirement of the SEA Directive. However, it provides a recognised way in which the likely sustainability effects of a plan can be described, analysed and compared. GCC developed the original SA Framework for the Waste Core Strategy, which comprised 15 SA objectives, through a series of consultations with the public and relevant stakeholders such as Natural England and the Environment Agency. The policies of the emerging Waste Core Strategy were appraised against these objectives at both the Issues and Options and Preferred Options stages. However, prior to the SA of the waste site options, GCC reviewed the SA objectives to ensure that they were suitable for appraising specific potential waste sites. As a result of this review, some of the objectives were 'scoped out' and some others were split out into a number of separate objectives. More detailed information on the development of the site-focused SA Framework is available in the report: *Sustainability Appraisal Context & Scoping Report for Strategic Waste Sites* (July 2008) and is summarised in **Appendix 1**.

3.2 The full set of SA objectives and sub-questions, or the "SA Framework", against which the potential waste management sites were appraised during the two stages of the Site Options consultation is set out in the *Sustainability Appraisal Scoping Report (Update 3)* (January 2009). The SA Framework is structured into 22 "SA headline objectives" (see **Table 3.1**) highlighting the key sustainability objectives for the Waste Core Strategy.

Table 3.1: Headline SA Objectives

SA Objective and Sub Questions[6]
Social
1. To promote sustainable development and sustainable communities and improve the **health and well-being** of people living and working in Gloucestershire as well as visitors to the County. *- What are the potential health impacts on communities?* *- What are the potential health impacts on the employees at the site or facility?*
2. To **educate the public** about waste issues and to **maximise community participation** and access to waste services and facilities in Gloucestershire. *- Are there any groups who are particularly disadvantaged in terms of participation and access to waste services?* *- Does the site option cater for future demographic changes and waste growth?*
3. To safeguard the **amenity of local communities** from the adverse impacts of waste development. *- What are the impacts in terms of noise and vibration?* *- What is the potential for significant problems with litter?* *- To what extent are there potential land use conflict issues?* *- What is the potential for significant problems with vermin and birds?* *- Are there any cumulative effects in terms of adverse impacts on environmental quality, social cohesion and inclusion or economic potential?* *- Does the site provide opportunities for the co-location of complementary activities?* *- Will fly tipping in the County increase?*

[6] From: *Gloucestershire Minerals and Waste Development Framework Sustainability Appraisal Scoping Report (Update 3)* Gloucestershire County Council, January 2009.

SA Objective and Sub Questions[6]
Economic
4. To promote **sustainable economic development** in Gloucestershire giving opportunities to people from all social and ethnic backgrounds. *- Does the site present opportunities for spin off employment or other opportunities?* *- Will the number of waste based Community or Social enterprises change as a result of the site option?*
5. To manage waste in an **economically sustainable** way through means that represent good value for tax payers in Gloucestershire. *- What are the costs?* *- Are there costs in the longer term that may not be obvious at the present time?*
6. To provide **employment opportunities** in both rural and urban areas of the County, promoting diversification in the economy. *- How many new jobs are likely to be created?* *- How far will employees have to travel to work?* *- Are there opportunities for employees to use sustainable transport?*
7. To ensure that waste sites do not compromise the **safety of commercial or military aerodromes**. *- Is the site close to an aerodrome or low flying area?* *- Will the site attract large numbers of scavenging birds / gulls etc?*
Environmental
8. To protect, conserve and enhance **biodiversity** in Gloucestershire. *- What are the potential impacts on sites which are Internationally and Nationally designated?* *- Are there any other potential significant impacts over and above the effects on designated sites - including on local sites, protected species and habitats and species of principle importance for biodiversity?* *- What are the potential impacts on the Strategic Nature Areas as indicated on the Gloucestershire Nature Map?* *- What potential is there for achieving biodiversity targets?*
9. To protect, conserve and enhance the **landscape** in Gloucestershire. *- What are the impacts on AONB?* *- What is the likely impact on specific landscape character as detailed in Gloucestershire's Landscape Character Assessment?* *- What is the scope for landscape improvement / enhancement?*
10. To ensure that waste sites have the potential for adequate **screening and / or innovative design** to be incorporated. *- Does the topography and setting naturally screen the site?* *- What is the potential for design-led solutions?*
11. To protect conserve and enhance Gloucestershire's **material, cultural and recreational assets**. *- What are the likely impacts on material, cultural and recreational assets?* *- Have any material assets been overlooked?*
12. To protect conserve and enhance **geodiversity** in Gloucestershire. *- What if any are the likely impacts on geodiversity?*
13. To protect conserve and enhance **townscapes** and Gloucestershire's **architectural and archaeological heritage**. *- What are the potential adverse effects on heritage sites of International importance and / or sites or buildings with a nationally recognised designation?*
14. To prevent **flooding**, in particular preventing inappropriate development in the floodplain and to ensure that waste development does not compromise sustainable sources of water supply. *- Can the risk of flooding be minimised through site design?* *- Will surface water runoff be reduced?* *- Is there the potential to enhance and restore the river corridor?* *- Is there the potential to protect and promote areas for future flood alleviation schemes?* *- Do proposals improve flood awareness and emergency planning?*
15. To **prevent pollution** and to apply the precautionary principle in consultation with waste regulation authorities. *- Is there a level of scientific uncertainty about risk such that the best available scientific advice cannot assess the risk with sufficient confidence to inform decision-making?*
16. To protect and enhance **soil / land quality** in Gloucestershire. *- What is the landtake?* *- Does the site suffer from potential land instability?*

SA Objective and Sub Questions[6]
- Is the site previously developed? *- If the site is or was previously contaminated – is there the potential for effective remedial clean up?*
17. To protect and enhance **air quality** in Gloucestershire. *- What is the proximity of sensitive receptors and to what extent can air emissions, including dust be controlled?* *- What is the proximity of receptors sensitive to odours, and to what extent can odours be controlled.*
18. To protect and enhance **water quality** in Gloucestershire. *- What is the proximity of vulnerable surface or groundwater?* *- What are the impacts on water consumption?*
19. To reduce the adverse **impacts of lorry traffic** on the environment and communities through means such as: a) reducing the need to travel b) promoting more sustainable means of transport e.g. by rail or water c) sensitive lorry routing d) the use of sustainable alternative fuels e) promoting the management of waste in one of the nearest appropriate installations. *- What is the capacity of the site and transport infrastructure to support the sustainable movement of waste and products arising from resource recovery?* *- Will access be reliant on local roads?*
20. To **reduce waste to landfill** and in dealing with all waste streams to actively **promote the waste hierarchy** (i.e. Prevent, Reduce, Reuse, Recycle, Recover, Dispose) to achieve the sustainable management of waste. *- What is the impact of any waste prevention and waste reduction activities?* *- What are the levels of reuse, recycling (including composting) and recovery achieved by each site option?* *- What is the diversion from landfill?*
21. To reduce the global **use of primary materials** and minimise net energy balance requirements. *- What is the impact on total material requirement?* *- What are the energy balance impacts?*
22. To reduce contributions to and to **adapt to Climate Change**. *- To what extent does the site or facility offer the capacity for net electricity generation, community heating / combined heat and power or the production of waste derived biofuels / biogas?* *- How flexible or adaptable is the site or facility in terms of a) adapting to Climate Change and b) using new technology as it develops?*

3.3 When the SA Framework was amended from the original 15 SA objectives for the purpose of carrying out the appraisal of the Site Options consultation, the intention was that the appraisal of the Waste Core Strategy would revert back to using the original SA Framework of 15 objectives for the stages following the Site Options consultation. However, following discussions between Council officers and the SA team, it was decided that the revised SA Framework would be retained for the appraisal of the publication version of the Waste Core Strategy as it was felt to be more comprehensive, and because the Waste Core Strategy now includes strategic site allocations. However, the following SA objectives that had been 'scoped out' of the SA Framework prior to the SA of the Site Options consultation have been 'scoped back in' to the SA Framework as they are considered to be relevant to the appraisal of the policies within the publication version of the Waste Core Strategy:

- **Original SA Objective 1**: To promote sustainable development and sustainable communities in Gloucestershire in particular giving people the opportunity to live in an affordable and sustainably designed and constructed home.
- **Original SA Objective 2:** To safeguard sites suitable for the location of waste management facilities or future mineral development from other proposed development.

3.4 These two objectives had been scoped out of the SA Framework on the basis that they were not considered to be appropriate for the appraisal of specific waste sites. However, they are considered to be relevant to the appraisal of the wider Waste Core Strategy policies so have been included in the appraisal matrices, as seen in **Appendix 3**. As such, the full SA Framework used for the appraisal of the publication version of the Waste Core Strategy comprises a total of 24 SA Objectives. For the appraisal of the four strategic sites that are allocated within policy WCS4, the SA Framework of 22 SA objectives has been used as the two 'Original SA Objectives' were still considered to be unrelated to the appraisal of specific waste sites.

3.5 The following two SA objectives were also scoped out of the original SA Framework prior to the Site Options consultation but have not been scoped back in at this stage as they are considered to be more relevant to the SA of the Minerals Core Strategy which will take place at a later date. The original SA Framework was developed for use in the appraisal of both the Waste and the Minerals Core Strategies, but as the two DPDs are now being progressed separately, it is not considered appropriate for these objectives to be used in the appraisal of the Waste Core Strategy and so they have again been left out:

- **Original SA Objective 6:** To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.
- **Original SA Objective 13:** To restore mineral sites to a high standard in order to achieve the maximum after use benefits including the conservation and enhancement of biodiversity.

ASSUMPTIONS AND FACTORS TAKEN INTO ACCOUNT DURING THE SA

3.6 Sustainability Appraisal inevitably relies on an element of subjective judgement. In predicting and assessing the likely sustainability effects of the Waste Core Strategy, GCC's analysis of the characteristics of Gloucestershire and the sustainability issues it faces has been drawn on (see *Sustainability Appraisal Scoping Report (Update 3)* (January 2009)) plus the professional experience of the SA team. In making SA judgements for the appraisal of policy WCS4 (which includes the strategic site allocations) the SA team has also used the extensive data collated and the assessments produced by GCC for each site (see Appendix 5 of the publication version of the Waste Core Strategy).

3.7 As part of the revision of the SA Framework that was carried out prior to the Site Options consultation, a series of decision-making criteria for each SA headline objective was developed (this can be seen in full in **Appendix 2**) with the purpose of providing a consistent approach to the prediction and assessment of effects. The decision-making criteria related specifically to the assessment of the potential sites being considered at that stage for allocation in the Waste Core Strategy, and set out assumptions and justifications for the level of significance of the potential effects that waste management facilities developed at those sites may have. These assumptions were developed so that, where possible, quantitative data could be used to appraise the sites. The same assumptions have now been used in the appraisal of the strategic

sites that are allocated in policy WC4 of the publication version of the Waste Core Strategy.

3.8 The type of waste management facilities that might be developed on each of the strategic sites that have been allocated in policy WC4 of the Waste Core Strategy is unknown at this stage, and different types of facility may have different effects on certain SA objectives. For example, under SA Objective 9, which considers the likely impacts on the landscape, facilities that incorporate a tall emissions stack may have more significant effects than other types of developments. Although for many of the SA objectives there will be no difference in the predicted effects, in order to highlight where this is the case, each site has been appraised on the basis of four different types of facility:

- Large facility (Thermal Treatment)
- Large facility (not Thermal Treatment)
- Medium facility (Thermal Treatment)
- Medium facility (not Thermal Treatment)

3.9 The definition of each size of facility was taken to be:

- **Medium** – Capable of handling between 50,000 and 100,000 tonnes per annum (tpa) of waste
- **Large** – Capable of handling over 100,000 tpa of waste

3.10 It is likely that none of the strategic sites will be used for small-sized facilities, i.e. those handling up to 50,000 tpa of waste; therefore the likely effects of developing small facilities at each strategic site was not appraised.

3.11 Although the sustainability effects of each of the allocated sites are still somewhat uncertain without knowing exact details regarding types of facilities to be developed and their design, appraising these four broad facility types against each objective allows for a more detailed assessment of the likely sustainability effects and highlights which effects may be particularly dependent on the type and size of facility eventually developed at each of the strategic sites.

Determining significance

3.12 Annex II of the SEA Directive sets out criteria for determining the likely significance of effects. These criteria relate to:

- The characteristics of the plan or programme (in this case Gloucestershire Waste Core Strategy); and
- The characteristics of the effects and of the area likely to be affected (in this case the whole of Gloucestershire).

3.13 In determining the significance of the effects of the Waste Core Strategy it is important to bear in mind its relationship with the other documents that together comprise the development plan for waste planning in Gloucestershire. These include other MWDF documents and Local Development Frameworks within

Gloucestershire. Prior to July 2010, the South West Regional Spatial Strategy (July 2008) was also a significant consideration; however the current status of the plan and the extent to which it needs to be taken into consideration during the development of the Waste Core Strategy is somewhat uncertain. It was revoked along with all other RSSs in July 2010; but a recent court ruling7 has declared the revocation unlawful. Despite this ruling, the Secretary of State has made clear that the proposed abolition of RSSs remains a Government commitment. Planning Inspectorate guidance[8] states that until any further announcement is made and/or legislation to formally repeal or revoke RS is implemented, the recent decision means that the South West RSS needs to be considered as part of the development plan on an ongoing basis. It is also important to take into account national planning policy (e.g. PPS10) and other statutory mechanisms such as the environmental permitting which is required by the Environment Agency.

3.14 The likely effects of the Waste Core Strategy itself need to be determined in order that their significance can be assessed, which inevitably requires a series of judgments to be made. The appraisal has attempted to differentiate between the most significant effects and other more minor effects through the use of colour coded symbols, as set out in **Table 3.2** below.

Table 3.2: Key to symbols used in predicting potential sustainability effects

Symbol	Type of effect
++	Significant positive effect likely
++ ?	Significant positive effect uncertain
+	Minor positive effect likely
+?	Minor positive effect uncertain
0	No effect likely
+/- or ++/-- etc	A mixture of positive and negative effects
-?	Minor negative effect uncertain
-	Minor negative effect likely
- -?	Significant negative effect uncertain
--	Significant negative effect likely
?	Effect uncertain due to lack of baseline information or detail regarding type of facility that would be developed
N/A	No effect has been assessed. This only relates to SA Objective 15 for the appraisal of the strategic sites allocated within policy WCS4, and is explained in the assumptions that were used for the appraisal of the strategic sites, as set out in **Appendix 2**.

3.15 The dividing line in making a decision about the significance of an effect is often quite small. Where either ++ or – has been used to distinguish significant effects from more minor effects (+ or -), this is because the effect on the SA objective of the

[7] The Cala Homes (South) Ltd case (2010 EWHC 2866) was decided on 10 November 2010 and the outcome was to quash the 6 July revocation.

[8] http://www.planning-inspectorate.gov.uk/pins/advice_for_insp/Cala_Homes.pdf

policy is considered to be of such magnitude that it will have a noticeable and measurable effect compared with other factors that may influence the achievement of that objective. The assumptions that have been used to assess the significance of effects in relation to the strategic waste sites allocated in policy WCS4 are set out in **Appendix 2**. These assumptions are based on the generic potential effects of waste management activities, as described in various documents such as PPS10, Planning for Waste Management Facilities[9], Government research conducted in 2004[10] and the Environmental Report for the Review of England's Waste Strategy[11].

3.16 Mitigation of the potential effects identified could be provided by the successful implementation of other policies within the Waste Core Strategy, and we have highlighted where this is the case. We have also assumed that future waste management facilities would be constructed and operated in line with current environmental protection techniques and standards, and would be well-run and well-regulated.

Limitations of Sustainability Appraisal

3.17 It is important to understand that the SA of the Waste Core Strategy was a desk-based exercise, carried out to report on the generic potential sustainability effects of the plan. It is a strategic level exercise to inform the preparation of the DPD and therefore the appraisal of the strategic sites which have been allocated within policy WCS4 does not contain as much detail as a site-specific environmental impact assessment that might accompany a specific development proposal. This part of the SA should be read in conjunction with the Site Assessments prepared by GCC for each allocated site, as they set out in more detail the specific characteristics of each site and its potential sensitivities in relation to the site selection criteria.

3.18 In addition, it should be noted that the SA was not the only consideration when refining the policies and determining the sites to be allocated in the Waste Core Strategy. Rather, it satisfies the requirements of the SEA Directive and the Planning and Compulsory Purchase Act to identify the likely significant sustainability effects of implementing the DPD, i.e. it sets out the potential sustainability effects (both minor and significant) of all the policies and strategic sites allocations which are included in the Waste Core Strategy.

3.19 In relation to the appraisal of the strategic site allocations it should be noted that, in sustainability terms, it is often the case that similar positive and negative effects are expected to arise in relation to the SA objectives from locating waste management facilities on any of the sites, and the findings of the SA do not necessarily identify major differences between the four sites. Indeed, for some of the SA objectives, the sustainability effects for all sites are predicted to be the same, as the score reflects the nature of the use proposed (i.e. waste management) for the sites, not each site's specific location. For example, employment generation (SA objective 6) would be the same for similar sized waste management facilities regardless of the location of the site used, and reducing waste to landfill (SA objective 20) is not site-specific, because

[9] *Planning for Waste Management Facilities. A Research Study.* ODPM, August 2004.
[10] *Review of Environmental and Health Effects of Waste Management: Municipal Solid Waste and Similar Wastes.* Prepared for Defra by Enviros and University of Birmingham, May 2004.
[11] *Review of England's Waste Strategy. Environmental Report under the "SEA" Directive.* Prepared for Defra by Enviros/Scott Wilson/Mark Hannan, February 2006.

all of the new waste facilities that might be developed would contribute to diverting waste from landfill. More significant differences were identified between the sites during the two stages of the SA for the Site Options consultation, and these were taken into account when selecting the four sites that have now been allocated.

APPRAISAL METHODOLOGY

3.20 The Vision, five Strategic Objectives and 14 policies included within the publication version of the Waste Core Strategy have been appraised using the SA Framework described earlier on in this chapter. For the Vision, each Strategic Objective and each policy, a matrix was drawn up and a judgement was made regarding the likely sustainability effect on each of the 24 SA Objectives. These matrices were populated with colour coded scores, as shown in **Table 3.2** and can be seen in full in **Appendix 3**.

3.21 The SA of the four strategic waste sites which are allocated in policy WCS4 built upon the findings of the Stage 2 SA Report from the Site Options consultation, which used mapped and digital data, as well as the detailed information provided by the GCC Site Assessments, to assess the potential effects of each site on each of the SA objectives. The detailed methodology for this process is set out in the Stage 2 SA Report and is summarised below.

3.22 LUC developed a Microsoft Access database to record the assessment of sites against SA Objectives, and to prepare individual site SA Schedules (see **Appendix 2** of the Stage 2 SA report). The assessment of each SA Objective was completed using a variety of desk-based methods.

3.23 Where possible, the datasets needed to assess the sites were collated and mapped in GIS and shown on an Ordnance Survey (OS) 1:10,000 basemap. For those datasets where digital mapping was possible, GIS was used to carry out intersection analyses to determine which potential waste sites were within, or within the relevant proximity distances of, particular areas of constraint as described in the decision-making criteria (see **Appendix 2**) e.g. where sites were within 250m of sensitive receptors such as residential housing, schools and hospitals. For the relevant SA objectives, LUC populated the site assessment database with the SA scores based on this GIS analysis. In a number of cases, an initial assessment of the sites against the SA Objectives using GIS analysis was undertaken; however, this needed to be followed up by a further check of the data by LUC team members.

3.24 In the case of a number of the SA Objectives, all sites had the potential to have the same type and magnitude of effect regardless of the location of the site. Therefore GIS and data analysis was not required to appraise sites against these SA Objectives.

3.25 The site database was populated during the Stage 1 SA and site SA Schedules were produced, which summarised the potential sustainability effects of developing a waste management facility at each of the sites. These SA Schedules can be found in Appendix 2 of the Stage 1 SA Report.

3.26 The Stage 2 SA drew heavily on the findings of this detailed first assessment; however whereas the Stage 1 appraisal considered the effects of a waste management facility generally on each site, this second stage considered the likely effects of six different types of facility (small, medium and large, both thermal and non-thermal). In addition,

the assumptions used were updated to take into consideration additional information that had been provided by the Council, including the landscape assessment[12] and highways assessment.

3.27 In addition, the Site Options consultation document included some broad spatial options for the distribution of waste facilities within Gloucestershire (as described in Section 2.9). These were also appraised, using the same SA framework that was used to assess individual sites. For the first two spatial options, a number of specific sites were proposed: ten for the option of focusing development within Zone C and three for the option of allocating sites outside of Zone C for smaller-scale transfer/facilities. Site specific appraisals were therefore carried out for these 13 sites, in addition to an appraisal of each of the four broad spatial options.

3.28 Now that the publication version of the Waste Core Strategy has been produced, the four strategic sites allocated within policy WCS4 have again been subject to appraisal. This appraisal drew on the findings of the Stage 2 SA, although in some cases the site boundaries had been adjusted and this was taken into consideration where relevant. The site schedules presented in Appendix 5 of the publication version of the Waste Core Strategy have also been used, as some of the information had been updated since the production of the previous site schedules, and it was also considered to be more up to date in that it related specifically to the sites as defined at this stage, taking into account any boundary changes that had been made since the previous site appraisal.

3.29 The findings of the SA of the publication version of the Waste Core Strategy, including the strategic sites allocated in policy WCS4, are presented in **Chapter 4**.

[12] Atkins (2009) Gloucestershire County Council Potential Waste Sites: Landscape and Visual Impact Assessment

4 Appraisal of the Waste Core Strategy

4.1 The Waste Core Strategy vision, Strategic objectives and policies have been appraised against the SA Framework (as described in **Chapter 3**). The detailed SA matrices for the vision, strategic objectives, policies and four strategic site allocations can be found in **Appendix 3** and the findings are summarised below. The potential significant effects are listed at the end of this chapter and summary tables of the SA scores for all policies can be seen in **Figures 4.1** and **4.2** at the end of this chapter.

SUMMARY OF SA FINDINGS

4.2 As discussed in the summaries below, it is likely that many of the potential negative effects of the Waste Core Strategy policies would be reduced through the successful implementation of the development management policies within the plan itself, or where these effects are associated with specific sites, through conditions applied to planning permissions requiring good practice techniques and specific construction or operational mitigation measures. In addition, a number of the saved policies from the Waste Local Plan (2004) include measures that will help to mitigate potential adverse effects, of the Waste Core Strategy policies. It is therefore assumed that the planning application process should ensure that any proposals for waste management facilities on the allocated sites will seek to mitigate potential negative effects through the provision of well designed and operated facilities.

4.3 Most waste management facilities will also need to meet the high standards of design and operation that are required to obtain an Environmental Permit (formerly Pollution Prevention and Control permits), as regulated by the Environment Agency. The requirement to meet Environmental Permitting standards (including emissions to air, land and water, energy efficiency, noise, vibration and heat and accident prevention) should ensure that the design and operation of waste facilities minimises most of the potentially significant effects outlined above.

Potential Sustainability Effects by SA Objective

4.4 A summary of the likely effects of the Waste Core Strategy on each SA Objective, and how they may interact to result in cumulative effects, is set out below. Summary tables of the SA scores can be seen in **Figures 4.1** and **4.2** at the end of this chapter and the potential significant effects are also listed at the end of the chapter.

SA Objective 1: To promote sustainable development and sustainable communities and improve the health and well-being of people living and working in Gloucestershire as well as visitors to the County

4.5 In general the Waste Core Strategy is likely to have a positive impact on public health, as a result of the measures that it includes to ensure that waste management activities within Gloucestershire do not adversely impact the health and wellbeing of local communities, for example in Strategic Objective 5: Minimising Impact and policy WCS7: Cumulative Impact. In addition, certain policies such as WCS5: Waste Water, are likely to have a positive impact by ensuring that appropriate waste management takes place to avoid adverse impacts on public health that may otherwise arise. However, the likely impacts of waste management activities on

public health will depend largely on the proximity of individual waste sites to sensitive receptors such as residential properties, which is assessed separately for the strategic waste sites that have been allocated, but in the case of other smaller facilities, will not be known until specific locations for development come forward at the planning application stage.

4.6 There is much debate about the potential health effects of waste facilities due to biospores or gaseous emissions that may be released from certain waste management technologies such as composting, anaerobic digestion or producing energy from waste. However, Government research conducted in 2004[13] reviewed evidence from a wide range of studies and concluded that modern waste management practices have at most a minor effect on human health. These minor effects were found to relate only to residents living close to two types of waste management facility: landfill sites or commercial composting facilities. In addition, a more recent Health Protection Agency report[14] and other studies[15] also found that modern well-run incinerators make only a very small contribution to local concentrations of air pollutants and any damage to the health of local residents is "likely to be very small, if detectable". Emissions from incinerators make up only a fraction of one per cent of particulate emissions, whereas other industry and private car traffic account for more than 50 percent.

4.7 Two of the sites allocates in policy WCS4 (Wingmoor Farm East and Wingmoor Farm West) are expected to have a negligible impact on health and amenity due to their distance from sensitive receptors. Although the other two sites have the potential for minor negative effects on the health and wellbeing of local communities in Gloucestershire due to their proximity to sensitive receptors (both are within 250m of residential areas properties and work places), most of the potential negative effects could be mitigated by the need to meet the high standards required by EP/PPC permits and the effective implementation of robust development management policies within the Waste Core Strategy such as WCS7: Cumulative Impacts.

SA Objective 2: To educate the public about waste issues and to maximise community participation and access to waste services and facilities in Gloucestershire

4.8 Most of the proposals included in the Waste Core Strategy will not affect this relatively narrow SA objective; however a number of likely positive and significant positive effects have been identified where public engagement is expressly supported, e.g. within WCS1: Waste Reduction which supports engagement with schools and colleges in order to raise awareness about waste minimisation. A number of potential positive effects are also identified where proposals will result in the development of new waste management facilities, as new waste facilities may include education centres within the site. As such, all of the four strategic sites that have

[13] *Review of Environmental and Health Effects of Waste Management: Municipal Solid Waste and Similar Wastes.* Prepared for Defra by Enviros and University of Birmingham, May 2004.
[14] *The impact on health from emissions to air from municipal waste incinerators.* Health Protection Agency, February 2010.
[15] *The Health Effects of Energy from Waste in Context* report by Enviros Consulting Ltd for the Waste Recycling Group (2006) found that 'There is no consistent evidence of adverse health effects for EfW facilities. If there are any effects, they are at very low levels, and are much smaller than other influences on our health such as passive smoking, diet or accidents in the home' (p.1).

been allocated in policy WCS4 could have an indirect positive effect on education opportunities. In addition, if sites came forward for a new household recycling centre under policy WCS2 then there could also be a positive effect on encouraging community involvement and participation in recycling. However, this effect is uncertain at this stage in the planning process as the types of facilities to be developed and locations are unknown.

SA Objective 3: To safeguard the amenity of local communities from the adverse impacts of waste development

4.9 The potential effects of the Waste Core Strategy that have been identified in relation to public amenity are generally positive or significantly positive, as the Waste Core Strategy includes a number of proposals which aim to minimise the potential impacts of waste management in this sense, for example Strategic Objective 5: Minimising Impact and policy WCS7: Cumulative Impacts. However, as with SA Objective 1, the impacts of waste management on public amenity will depend largely on the location and type of individual waste management facilities, which is assessed separately for the four strategic waste sites that have been allocated, but in the case of other smaller facilities, will not be known until specific sites come forward at the planning application stage. There is also a strong link between public amenity and the impacts of lorry traffic associated with waste management, which are appraised separately under SA objective 19.

4.10 As for SA Objective 1, two of the allocated waste sites (Javelin Park and Land at Moreton Valance) have the potential for minor negative effects on the amenity of local communities due to their proximity to sensitive receptors (they are located within 250m of residential properties and work places). This is because all development would be expected to result in some level of noise, traffic, and light pollution during construction and potentially during operation as well. However, most of the negative effects of development at these sites could be mitigated by the requirement to meet the high standards required by EP/PPC permits and the effective implementation of development control policies within the Waste Core Strategy such as WCS7: Cumulative Impacts. Development at the other two sites is expected to have a negligible impact on amenity due to their distance from sensitive receptors.

4.11 It should also be noted that all of the four allocated waste sites, which all lie within 250m of residential areas, are also adjacent to or within 250m of existing waste facilities, which in combination with a new waste management facility could result in cumulative negative effects on local amenity. PPS10[16] states that the cumulative effects of existing waste management facilities on the wellbeing of the local community should be considered when assessing the suitability of sites; thus regard should be given to the potential cumulative effects of sites located in close proximity to existing waste facilities when development proposals come forward. However, this issue is recognised within the Waste Core Strategy; for example within Strategic Objective 5 which states that the cumulative impact of waste management facilities must not be unacceptable to the host location, and policy WCS7: Cumulative Impacts which identifies noise, odour and other amenity effects as important considerations when assessing the cumulative impacts of waste-related developments.

[16] Planning Policy Statement 10: Planning for Sustainable Waste Management. *ODPM*, 2005.

SA Objective 4: To promote sustainable economic development in Gloucestershire giving opportunities to people from all social and ethnic backgrounds

4.12 Most of the proposals within the Waste Core Strategy will not affect this relatively narrow SA objective; however where the co-location of waste management facilities is encouraged, e.g. through policy WCS2: Recycling & Composting/Anaerobic Digestion (including Bulking and Transfer), positive effects are associated with the potential for complementary activities to waste management to be encouraged. However, the measures included in policy WCS8 to ensure that sites are safeguarded for waste management may have some adverse impacts by limiting the opportunities for other development which may be of greater benefit to the local economy than waste management facilities, for example by providing greater numbers of employment opportunities.

4.13 The creation of any new waste management facilities within Gloucestershire may have a minor positive impact on encouraging investment and growth of 'green industry' in the County, regardless of their location. However, all of the four allocated waste sites are within existing industrial estates and are within 250m of, adjacent to or include existing waste facilities or sites allocated in the current Waste Local Plan and therefore have the potential for positive effects on sustainable local economic activity as they could encourage complementary activities to waste management, e.g. reprocessing facilities or composting outlets that could make use of recyclate or compost generated. However, this potential effect is dependent on the type of facility proposed on each site, and on the nature of neighbouring industrial/commercial outlets, which is not known at this stage.

SA Objective 5: To manage waste in an economically sustainable way through means that represent good value for tax payers in Gloucestershire

4.14 The Waste Core Strategy is likely to have a generally positive impact on the economically sustainable management of waste as it supports the co-location of waste facilities and their location close to the main sources of arisings, both of which should result in reduced transport distances and therefore lower associated costs. However, a potential negative effect is highlighted in relation to WCS7: Cumulative Impacts which may result in co-location opportunities being limited as a result of other constraints.

4.15 Certain waste management sites will be more efficient than others in terms of reductions in transport movements and costs, given their proximity to the main sources of waste arisings and to transfer stations and/or any other facilities that may service them. All of the four allocated sites lie within reasonable proximity to Cheltenham or Gloucester which are the main sources of waste arisings within the county. Additionally, the type of facilities eventually proposed on sites allocated in the Waste Core Strategy may differ in terms of cost but this will not be known until the planning application stage and will not be affected by their spatial location.

4.16 The costs of disposing of waste to landfill are rising rapidly through the influence of the Landfill Allowance Trading Scheme (LATS) and the landfill tax. Therefore, by providing for new waste management facilities using processes other than landfill, the Waste Core Strategy should have a long-term positive impact by reducing the costs associated with LATS. The Environment Report for the Gloucestershire Municipal

Waste Management Strategy[17] notes that in terms of costs of the municipal waste management options, the cost of not segregating waste and depositing it to landfill will become higher than the cost of source segregation and waste treatment. In addition, while treating residual waste is expensive, these costs will be offset by the avoidance of LATS penalties and landfill tax. The actual impact will depend on the choice of technologies.

SA Objective 6: To provide employment opportunities in both rural and urban areas of the County, promoting diversification in the economy

4.17 The likely effects of the Waste Core Strategy on employment are generally mixed. Positive impacts are likely to result from a number of the policies that will result in the provision of new waste management facilities, as employment will generally be created. The relatively small number of jobs (compared with other employment sectors) that are likely to be created means that such impacts are unlikely to be significant. In contrast, minor negative effects on employment may be associated with the fact that the Waste Core Strategy aims to reduce waste production as the first stage in the waste hierarchy, as this may reduce the demand for waste management which would in turn reduce the available jobs. However, this potential impact would only be minor and long-term as it is unlikely that waste generation could be reduced to the extent that it would impact notably on the generation of employment within the county, where waste management contributes only a very small proportion of overall employment. Similarly, where Waste Core Strategy proposals may result in other types of development being restricted (e.g. as a result of safeguarding sites for waste management activities in policy WCS8), the potential employment generation that may otherwise have occurred would also be restricted.

4.18 The allocation of four strategic waste management sites within the Waste Core Strategy will help to ensure that new waste management facilities are developed, which would be likely to generate employment opportunities during both construction and operation. The cumulative effects of new waste developments together are likely to be positive in relation to the employment opportunities available in the County. However, due to a lack of precise information about the current contribution of the waste industry to overall employment in Gloucestershire, it is uncertain whether the number of jobs created by development of the four strategic waste sites allocated in the Waste Core Strategy (plus other smaller sites in other locations) is likely to be high enough to result in a significant positive effect on local employment.

4.19 In terms of the opportunities available for future employees of waste facilities to use sustainable modes of transport to travel to and from work, all of the four allocated sites have been assessed as having fairly limited opportunities, due to either their distance from residential areas or because of potential hazards or obstructions that are created by roads or canals for walkers and cyclists.

4.20 The fact that all of the allocated sites are distributed within the central 'Zone C' also means that there would be less of a beneficial effect in terms of rural employment

[17] *Environmental Report for the Gloucestershire Municipal Waste Management Strategy.* Prepared for Gloucestershire County Council by Eunomia, October 2007.

opportunities. As such, the overall likely effects of all four of the allocated sites are mixed.

SA Objective 7: To ensure that waste sites do not compromise the safety of commercial or military aerodromes

4.21 In general, the proposals within the Waste Core Strategy (other than the strategic waste site allocations included in policy WCS4) will not directly affect aircraft safety as this will be dependent on the location and nature of individual waste management sites; however some minor positive impacts may be associated with the proposals that aim to reduce overall waste production (Strategic Objective 1 and policy WCS1). This is because the potential effects of waste management on aircraft safety are associated with the development of new waste facilities incorporating chimneys, and so where overall waste production is reduced, the demand for such new facilities would also be reduced, lessening the likelihood of conflicts arising between aircraft safeguarding areas and potential waste sites.

4.22 Two of the four allocated waste sites (Wingmoor Farm East and Wingmoor Farm West) may compromise the safety of commercial or military aerodromes as they lie within an aerodrome safeguarding area (the Gloucestershire Airport zone). As such, negative effects may result from the potential for birds and tall emissions stacks to provide a hazard to aircraft. However, this effect would only apply if these sites were allocated for new landfill or thermal treatment facilities. There are no allocations for new landfills in the Waste Core Strategy, thus development of these two sites would not be associated with increased bird risk to aircraft. However, tall emissions stacks which may be required for some thermal treatment facilities could also present a hazard to aircraft. The specific types of facilities proposed on the allocated waste sites is not known at this stage, and so this issue will need to be re-considered once more detailed development proposals are made at the planning application stage.

SA Objective 8: To protect, conserve and enhance biodiversity in Gloucestershire

4.23 In general, the Waste Core Strategy makes good provision for the protection of biodiversity assets from the potential adverse impacts of waste management. Certain policies address environmental protection issues specifically; in particular WCS12: Nature Conservation, whilst other policies may have indirect benefits, for example by reducing the reliance on landfill which may be more likely to have an adverse impact on biodiversity as a result of the increased potential for pollution incidents.

4.24 Conversely, a small number of potential adverse impacts on biodiversity are also identified, for example where development in redundant rural buildings is supported (in policy WCS2) as such buildings may harbour important biodiversity, e.g. bats. Policy WCS12 is focused on the protection of nationally and locally designated nature conservation sites, and it is important that the conservation and enhancement of all biodiversity assets, not just those that have been formally designated, is assured through the Waste Core Strategy. However, saved policy 25 (Conservation Outside Designated Sites) in the Waste Local Plan 2004 seeks to protect undesignated biodiversity from waste developments, and this policy will remain in force until it is

updated through the preparation of a separate development management waste DPD to be prepared following adoption of the Waste Core Strategy.

4.25 Development at all four of the allocation waste sites could have minor negative effects on biodiversity, due to the presence of Biodiversity Action Plan (BAP) habitats or species on the site, the potential loss of land and habitats to development, or from emissions to air and water affecting designated habitats and species in proximity or hydrologically connected to the potential waste sites. The preliminary emerging findings of the HRA work that is being carried out for the Waste Core Strategy indicate that, due to the distance of the allocated waste sites from designated European sites, there may not be a significant effect on the integrity of these sites as a result of development. However, the HRA was not able to rule out the possibility of there being a significant effect on sites including Dixton Wood SAC (from Wingmoor Farm East and Wingmoor Farm West), Severn Estuary SAC/SPA/Ramsar site, Walmore Common SPA, Ramsar, Cotswold Beechwoods SAC and Rodborough Common SAC (from Javelin Park and Moreton Valance). Although the HRA findings thus far do not preclude the development of a thermal treatment facility, where this is proposed it will be necessary for the planning application to demonstrate that there will be no significant effect on any European site as a result of air pollution. It is assumed that the need to meet Environmental Permit standards through the Environment Agency's waste licensing process should ensure that impacts on air quality from waste operations are minimised. In addition, the General Development Criteria set out in Appendix 5 of the Waste Core Strategy do require any proposals for thermal treatment facilities on the strategic allocated sites to demonstrate that there will be no significant effect on European sites (as required in the Habitats Regulations).

4.26 In addition, the development of waste sites in combination with other large-scale development, such as the housing growth proposed in Gloucestershire, can potentially contribute to (or maintain) the fragmentation of habitats that are important for wildlife, particularly where these habitats are either on site or adjacent to proposed waste sites (e.g. hedgerows, ponds, woodland etc). The site schedules for the four strategic allocation sites in Appendix 5 of the Waste Core Strategy state that there are areas of important habitat adjacent to Wingmoor Farm East (Lowland meadows Priority Habitat and Wingmoor Farm Meadow GC/SO92/W01 Grassland Inventory sites), and these habitats are also within 1km of Wingmoor Farm West. The Key Development Criteria for both these sites note that trees, ponds and rough grassland are habitat features which could be affected by development on this land. The presence of protected species has been confirmed in the area surrounding the Javelin Park site (e.g. badger and barn owl) but reptiles, nesting birds and bats may also occur on the land itself. The site schedule notes that there is some probability that water voles and great crested newts may use land around the margins of the site. In addition, on site habitat features include scrub and regenerating 'brownfield' land and there are boundary features including hedgerows and a watercourse which could be affected by new development. The Land at Moreton Valance site schedule states that badgers have been confirmed in the general area of the site, and boundary features of hedgerows, trees and ditches may possibly support other protected species (e.g. nesting birds and bats).

4.27 Habitat fragmentation breaks up large areas of habitat into small, unconnected habitat 'fragments', which are often too small to support viable populations of plant and animal species. Various guidance documents show that while this should be avoided where possible, there are mitigation measures that could be implemented to help ensure that adverse effects do not occur, such as the retention of open space 'buffer zones', 'stepping stones' or wide 'corridors' of habitat around and linking the fragments[18]. The best stepping stones are large in area, but as space is often limited within development sites, the establishment of green roofs, climbing plants on walls, sustainable drainage systems, individual trees and patches of grassland all offer the opportunity to incorporate some wildlife habitats within new development.

4.28 Policy WCS12 also indicates that developments will be allowed, even where they may be harmful to biodiversity assets, if it is proven that the benefits are judged to outweigh adverse impacts. Demonstrating that benefits outweigh impacts would be difficult as there would necessarily be an element of subjectivity in making this decision, and may differ in terms of differing priorities (e.g. need for waste capacity over protection of biodiversity). If adverse impacts on biodiversity were allowed at a waste development site, adequate compensation (e.g. creation of the same habitat in equal area and quality, or re-location of affected species etc.) should be required, in accordance with PPS9: Biodiversity and Geological Conservation. This issue should be adequately addressed by saved policy 45 (Planning Obligations) in the Waste Local Plan 2004, which states that environmental protection and enhancement (including landscaping, habitat and species protection and creation), protection and/or replacement of local, regional and national sites of acknowledged importance, and replacement of important environmental and landscape features may be appropriate matters for inclusion in a planning obligation where related to the development proposal. This policy will remain in force until it is updated through the preparation of a separate development management waste DPD to be prepared following adoption of the Waste Core Strategy.

SA Objective 9: To protect, conserve and enhance the landscape in Gloucestershire.

4.29 The Waste Core Strategy includes landscape considerations in a number of policies; and as such, a number of positive and significant positive impacts are associated with this objective. In particular, the focus on co-locating waste sites where possible and locating them centrally, closer to the existing urban areas, should help to ensure that the likelihood of impacts on more sensitive rural landscapes are lessened. However, the impacts of waste management activities on the landscape are largely dependent on their specific design and location. In addition, certain policies within the Waste Core Strategy such as WCS13: Design should help to ensure that all waste facilities are designed to blend in with their surroundings, thus reducing the likelihood of an adverse impact on the local landscape, and policy WCS11: AONBs, will help to protect the nationally important landscapes within the three AONBs in Gloucestershire.

4.30 Development of all four of the allocated waste sites could have a negative effect on the landscape due to the potential for emissions stacks at thermal facilities to create a visual intrusion in the landscape. However, all of the allocated sites are within or

[18] *Design for biodiversity.* London Development Agency, undated. (http://www.d4b.org.uk/why/design4Biodiversity.pdf)

adjacent to existing industrial estates, which may reduce their impact on landscape character and the quality or setting of settlements. The ultimate effects of a waste facility will be very dependent on its exact nature and proposed design, which would not be known until the planning application stage.

SA Objective 10: To ensure that waste sites have the potential for adequate screening and/or innovative design to be incorporated

4.31 The potential for waste sites to be adequately screened is largely dependent on the location of particular waste sites and the characteristics of the surrounding landscape. However, the incorporation of high quality design in new developments is supported by a number of policies within the Waste Core Strategy; for example WCS13: Design.

4.32 All new waste development has the potential for positive effects to be achieved through innovative design, regardless of the site location, but the effects are uncertain until the exact nature and design of the proposed facility are submitted with a planning application. The landscape and visual impact assessment carried out for the allocated sites has highlighted a number of potential adverse impacts, although in most cases it is acknowledged that there is potential for these effects to be minimised through design and screening measures, such as those required by policy WCS13: Design. In general, waste development is more likely to be compatible within the urban townscape/landscape, therefore the fact that all of the allocated sites lie within the central 'Zone C' indicates that the potential adverse effects may be more easily mitigated.

SA Objective 11: To protect conserve and enhance Gloucestershire's material, cultural and recreational assets

4.33 The impacts of waste management on material, cultural and recreational assets will depend largely on the location of waste management facilities in relation to assets such as public rights of way and leisure facilities, where the quality of these assets may be compromised. As such, the likely impacts of the Waste Core Strategy on this objective are largely dependent on the impacts of the allocated waste sites. However, applications for smaller facilities on non-strategic sites will also come forward at a later stage and their proximity to such assets cannot yet be known. In these cases, mitigation may be provided by certain policies within the Waste Core Strategy, such as WCS11: AONBs and WCS13: Design which aim to preserve the quality and setting of material, cultural and recreational assets within the county.

4.34 All of the sites that have been allocated within policy WCS4 are considered to potentially have a negative impact on recreational assets in Gloucestershire because they are located within close proximity to such an asset, the setting or enjoyment of which may be compromised by the development of waste management facilities. However, in all four cases the overall likely effects are mixed due to the distances of each site from public rights of way which, meaning that these routes will not be adversely affected by development.

SA Objective 12: To protect conserve and enhance geodiversity in Gloucestershire

4.35 The impacts of waste management activities on geodiversity will depend largely on the location of particular waste sites in relation to geodiversity assets; however positive impacts are associated with a number of the proposals in the Waste Core Strategy which specifically aim to conserve the natural environment, including geodiversity. This issue is addressed specifically in policy WCS12: Nature Conservation (Biodiversity and Geodiversity) which may help to mitigate any potential adverse impacts arising where proposals for waste management facilities come forward in close proximity to geodiversity assets.

4.36 The potential for loss of geodiversity may occur as a result of developing waste management facilities on two of the allocated waste sites (Wingmoor Farm East and Wingmoor Farm West) was recognised, due to their location within 500m of a Regionally Important Geological/Geomorphological Site, Wingmoor Farm Quarry. However, the site is a temporary RIG which the geological trust indicates will eventually be landfilled. In addition, the rigorous implementation of wider policies within the Waste Core Strategy such as WCS12: Nature Conservation (Biodiversity and Geodiversity) should also help to avoid any potential adverse impact. As such, a negligible impact on geodiversity is considered most likely to result from the development of all of the allocated sites.

SA Objective 13: To protect conserve and enhance townscapes and Gloucestershire's architectural and archaeological heritage

4.37 The impacts of the Waste Core Strategy on this objective are likely to be generally positive, as a number of policies are included which aim to ensure that high standards of design are achieved in new developments, thus having a likely positive impact on the wider built environment. A potential minor negative effect is, however, identified where the Waste Core Strategy endorses the co-location of waste facilities in central areas, which may be more likely to result in an adverse impact on the built environment. However, this may be able to be mitigated by the stringent enforcement of other Waste Core Strategy policies such as WCS13: Design.

4.38 There is some potential for positive effects on townscapes and architectural heritage at all of the allocated waste sites, and any additional sites that come through the planning application process, as the design of modern waste management facilities is increasingly adopting innovative practice, for example, an incinerator in the centre of Vienna has become one of the biggest tourist attractions in the area[19]. However, this would be very dependent on the exact nature and proposed design of the planned waste facility type, which would not be known until the planning application stage.

SA Objective 14: To prevent flooding, in particular preventing inappropriate development in the floodplain and to ensure that waste development does not compromise sustainable sources of water supply

4.39 A number of the Waste Core Strategy policies aim to reduce the potential for waste management activities to have an adverse impact on flood risk, in particular policy WCS9: Flood Risk which requires waste-related development to be located in areas

[19] http://www.wieninternational.at/en/node/9543

of low flood risk. In line with this requirement, all of the allocated waste sites are likely to have either positive or significant positive effects on this objective, as they are located away from Flood Risk Zones and all are located on previously developed land, which means that new development will not result in a significant increase in the area of impermeable surface. In addition, the application of policy WCS13: Design should further help to reduce the risk of flooding, as it supports the use of sustainable drainage in new waste-related developments.

SA Objective 15: To prevent pollution and to apply the precautionary principle in consultation with waste regulation authorities

4.40 In general, positive impacts are likely to result from the Core Strategy on pollution prevention, as a number of the policies include measures relating to this issue, for example WCS5: Waste Water. The recurring theme of reducing the amount of waste disposed of via landfill may also result in positive effects, as the likelihood of pollution incidents, which can be more often associated with landfill than other types of waste disposal, would be lessened. In relation to the location of the allocated waste sites, potential pollution effects are already covered under SA Objectives 1, 3, 16-18. In addition, most new waste management facilities will also need to meet the high standards of design and operation that are required to obtain an Environmental Permit, as regulated by the Environment Agency. The requirement to meet Environmental Permitting standards (including emissions to air, land and water, energy efficiency, noise, vibration and heat and accident prevention) should ensure that the design and operation of waste facilities prevents or minimises pollution.

4.41 The precautionary principle has inherently been applied during the development of the Waste Core Strategy, including the site allocation process, through the Council's own site assessment methodology and this independent SA of the Waste Core Strategy.

SA Objective 16: To protect and enhance soil / land quality in Gloucestershire.

4.42 A number of the policies within the Waste Core Strategy are likely to have a positive impact on this objective as they support the prioritisation of development on brownfield sites, which should help to avoid the loss or damage of good quality land and soils in previously undeveloped locations. In addition, the measures included within the Core Strategy (e.g. policy WCS6) to deal appropriately with hazardous waste are likely to minimise the chances of soil pollution occurring from hazardous waste.

4.43 All of the allocated sites are likely to have either minor or significant positive effects on soil/land quality as they are located on previously developed land and are within industrial estates, thus should not affect soil or land quality.

SA Objective 17: To protect and enhance air quality in Gloucestershire

4.44 In general, the Waste Core Strategy is likely to have positive effects on air quality as it includes policies which aim to reduce the distances that waste is transported by lorry. This is to be achieved both through the increased use of alternative sustainable transport modes and the co-location of waste facilities in more central areas of the county which are closer to the main sources of waste arisings.

4.45 However, the development of new waste management facilities is inevitably likely to result in some increased emissions to air, as a result of waste transportation by road as well as any air pollution associated with the operation of the facilities and the processes used, such as dust and odour if waste is stored in open areas, bio-aerosols from biological process and acid gases/CO2/dioxins and furans from thermal processes. The type and extent of air pollution effects will depend on the particular type of facility proposed on the site. However, where thermal treatment facilities are proposed on the allocated waste sites, it is assumed that there will be minor negative effects on air quality due to the release of gases through thermal processes. These effects should not be significant across the County however, because the overall scale of emissions from thermal treatment facilities is relatively small compared with emissions from road transport.

4.46 It is assumed that the need to meet EP/PPC standards should ensure that impacts on air quality from waste operations are minimised. In addition, the General Development Criteria set out in Appendix 5 of the Waste Core Strategy do require any proposals for thermal treatment facilities on the strategic allocated sites to demonstrate that there will be no significant effect on European sites (as required in the Habitats Regulations). In addition, policy WCS14: Sustainable Transport will contribute to minimising air pollution from transport of waste, and there are references to protecting local communities or local health and amenity (in Strategic Objective 5 and WCS7). Finally, saved policy 37 (Proximity to Other Land Uses) in the Waste Local Plan 2004 seeks to avoid adverse effects from waste developments on the environment, amenity and health, and where appropriate, incorporate suitable ameliorative measures in the proposals to mitigate, attenuate and control landfill gas and flue emissions (among other things). This policy will remain in force until it is updated through the preparation of a separate development management waste DPD to be prepared following adoption of the Waste Core Strategy.

SA Objective 18: To protect and enhance water quality in Gloucestershire

4.47 The Waste Core Strategy includes a number of policies that are likely to have a positive impact on water quality; namely those that support consideration of the natural environment (which is taken to include water quality) when assessing applications for waste management sites. In addition, the support given through a number of Waste Core Strategy policies for reducing the disposal of waste via landfill may have an indirect positive impact as a result of lessening the risk of pollution incidents occurring that may be associated with landfill. Policy WCS5: Waste Water is likely to have a particularly significant positive effect on water quality, as it will ensure that adequate water treatment facilities are available to meet requirements in Gloucestershire, and there will be associated benefits to human health.

4.48 All of the waste management facilities that will be developed as a result of the Waste Core Strategy, including at the strategic sites allocated under policy WCS4, are likely to be enclosed facilities (such as MRFs and in-vessel composting facilities) and as such are not expected to affect water quality. As stated in Planning for Waste Management Facilities[20], "as most facilities are under cover and on concrete hard standing with separate foul water drainage, rainfall is unlikely to come into contact

[20] *Planning for Waste Management Facilities: A Research Study,* ODPM, August 2004.

with the waste materials and, as such, water pollution is unlikely." Although composting operations produce leachate, the enclosure of such facilities will reduce the likelihood of such potential impacts. Standard design features of such facilities require that sites are surfaced adequately, drainage is segregated and containment principles are applied. As such, negligible impacts on water quality are expected in relation to all of the allocated strategic sites, as well as from any smaller sites that may come forward for development in other locations.

SA Objective 19: To reduce the adverse impacts of lorry traffic on the environment and communities

4.49 Transport of waste by road can result in impacts on air pollution from emissions and on local amenity from noise and increased traffic and congestion on local roads. These effects have been partially predicted and assessed under SA Objective 17 above. Measures designed to reduce the impacts of lorry traffic are included in a number of the Waste Core Strategy policies, with policy WCS14: Sustainable Transport specifically addressing this issue. However, a small number of minor negative impacts are also associated with this objective, where it is possible that the co-location of waste facilities (which would help to reduce transport distances) may be prevented as a result of prioritising other issues such as environmental constraints. It should be recognised, however, that in such cases, although there may be resulting negative impacts on transport distances and therefore the likely impacts of lorry traffic, there will be positive effects on several other SA objectives such as those relating to the natural environment and public health and amenity which are likely to outweigh the adverse effect on the impacts of lorry traffic. However, in general the Waste Core Strategy makes good provision for co-locating waste facilities and for their location near to the main sources of waste arisings, and so generally positive impacts on this objective are expected.

4.50 The prediction of the likely effects of the strategic waste site allocations on this objective are based on the GCC Highways assessment of each site's potential to provide opportunities to explore more sustainable modes of transporting waste (with associated benefits for reducing contribution to climate change). In addition, direct impacts of lorry traffic (i.e. noise, nuisance, safety, congestion as opposed to air pollution) on communities relate to how much access is reliant on local roads, therefore the GCC Highways assessment in relation to proximity to the strategic highway network has also been used to assess the potential for the allocated sites to have an effect on this objective.

4.51 At all four of the allocated strategic sites, opportunities for sustainable transport for strategic access were considered to be low, for example as a result of prohibitive costs that may prevent the development of new rail/canal links required. However, all of the sites were also assessed as having either reasonable or good access to the strategic highways network, for example in terms of access to the M5. This indicates that positive effects are likely in terms of reducing the adverse impacts of lorry traffic on smaller local roads. As such, the likely effects of development at all four of the strategic sites are mixed.

SA Objective 20: To reduce waste to landfill and in dealing with all waste streams to actively promote the waste hierarchy (i.e. Prevent, Reduce,

Reuse, Recycle, Recover, Dispose) to achieve the sustainable management of waste.

4.52 A large number of the policies within the Waste Core Strategy are likely to have a significant positive impact on this objective. Reducing the disposal of waste via landfill is one of the main overarching aims of the Waste Core Strategy and this is reflected in the policies throughout, and all of the strategic sites that are allocated for waste development will be used for waste disposal facilities other than landfill. However, Strategic Objective 4 states that there will be a continuing role for landfill despite prioritising other means of waste disposal, reflecting the fact that it would be unrealistic at this stage to expect landfill activities to be entirely excluded from the waste management strategy for Gloucestershire.

4.53 In terms of the waste sites that are allocated in policy WCS4, all facility types that may be developed on these sites are likely to have a minor positive effect by ensuring that waste management uses processes higher up the waste hierarchy than landfill. However, the specific location of sites for these waste management facilities has no effect on this objective as the effects will instead depend on the type of facility that is eventually proposed and developed, rather than on its location.

SA Objective 21: To reduce the global use of primary materials and minimise net energy balance requirements.

4.54 The overarching aim of the Waste Core Strategy to encourage movement up the waste hierarchy means that it is generally likely to have positive effects on this objective and no negative impacts were identified. A number of the strategic objectives and policies aim to encourage recycling and the re-use of waste, which will help to reduce the use of primary materials in developments, both of waste management facilities themselves and other types of development occurring within Gloucestershire such as housing, infrastructure and employment sites (in particular policy WCS1 which sets out the requirements for all developments to adopt waste minimisation measures during construction).

4.55 As with SA Objective 20 above, all facility types that may be developed on the sites allocated for waste management are likely to have a minor positive effect by ensuring that waste management uses processes higher up the waste hierarchy than landfill, which should help to recycle, compost and recover value or energy from waste and reduce the use of primary materials. However, the specific location of sites for these waste management facilities would have no effect on this objective as the effects will be determined by the type of facility to be developed, rather than by its location.

4.56 The potential for energy generation from waste facilities is considered under SA Objectives 4 and 22. The mass energy balance that may be achieved through the use of different technologies can only be estimated when specific facility types are identified for individual sites, which has not yet been done.

SA Objective 22: To reduce contributions to and to adapt to Climate Change.

4.57 The need to adapt to and mitigate the effects of climate change is a strong theme throughout the Waste Core Strategy and is addressed in a number of the strategic objectives and policies. As such, a large number of positive and significant positive

impacts are identified as a result of the plan, and are primarily associated with measures aiming to maximise energy generation from waste (therefore replacing the use of energy from fossil fuels), to reduce the distance that waste is transported and to reduce the use of lorries in favour of other more sustainable modes of transport.

4.58 All of the four allocated strategic waste sites are expected to have either positive or significant positive effects on reducing contributions to and adapting to climate change. These effects have been predicted based on the scenario that energy recovered from the waste management process could have a positive effect (which is particularly likely where thermal treatment facilities are proposed) on increasing the proportion of energy generated from renewable sources in Gloucestershire. However, in general, the opportunity to incorporate a CHP scheme is generally only available to future residential or business park developments as opposed to retrofitting infrastructure into existing development and proximity to future residential/business developments is difficult to determine.

4.59 With respect to the other sub-questions for SA Objective 22, it was not possible to predict the likely effects as it is not possible for an undeveloped site to have an impact on reducing energy demand. In addition, the flexibility of the site to adapt to climate change will depend more on factors such as the specific design of the facility and its layout, and incorporation of sustainable construction techniques, drainage systems and measures to enable changes to new technologies as they develop. This can not be assessed until the detailed proposals for a site are known at the planning application stage. Other policies in the Waste Core Strategy, such as WCS13: Design and WCS14: Sustainable Transport provide criteria for that ensuring these measures are included in planning applications and so should help to ensure that the potential climate change benefits of waste management facilities are maximised and the potential adverse impacts (e.g. increased road traffic generation) are minimised.

Original SA Objective 1: To promote sustainable development and sustainable communities in Gloucestershire in particular giving people the opportunity to live in an affordable and sustainably designed and constructed home.

4.60 The majority of the Waste Core Strategy policies are not expected to affect this SA objective; however a positive impact is likely to result from policy WCS1 which sets out the requirements for all developments (including housing) to adopt waste minimisation measures during construction. This will help to ensure that houses are constructed with sustainable considerations in mind.

4.61 As explained in **Chapter 3**, the four strategic sites allocated within policy WCS4 have not been appraised against this SA objective as it was 'scoped back in' only in relation to the appraisal of the vision, strategic objectives and policies within the Waste Core Strategy.

Original SA Objective 2: To safeguard sites suitable for the location of waste management facilities or future mineral development from other proposed development.

4.62 This relatively specific SA objective is likely to be affected by only a very small number of the policies within the Waste Core Strategy; namely WCS8 which specifically addresses the issue of safeguarding sites and is expected to have a significant positive impact.

4.63 As explained in **Chapter 3**, the four strategic sites allocated within policy WCS4 have not been appraised against this SA objective as it was 'scoped back in' only in relation to the appraisal of the vision, strategic objectives and policies within the Waste Core Strategy.

CONCLUSIONS

4.64 In general, the Waste Core Strategy is considered likely to be a positive plan in sustainability terms and it is expected to result in positive impacts on the sustainability objectives, with relatively few negative effects having been identified, none of which were significant. A number of the policies (including the General Development Criteria for the strategic allocations in Appendix 5) within the plan should help to mitigate the potential adverse effects of waste management on areas such as health and amenity, biodiversity, landscape and flood risk; however the extent to which these policies can successfully deliver mitigation will also depend heavily on their appropriate implementation. In addition, some recommendations for further mitigation measures have been made below. These could be included within the Waste Core Strategy policies and/or a subsequent Development Management Policies DPD.

4.65 The four strategic waste sites that have been allocated within the Waste Core Strategy are expected to result in a wide range of positive and significant positive sustainability effects; reflecting the rigorous site selection process that has been undertaken and the findings of the previous appraisals of site options. Where negative impacts have been highlighted, none of which are significant, these generally relate to issues which were likely to be scored as negative for all or the vast majority of the site options that came forward at the previous stage. In addition, the appropriate implementation of the development management policies within the Core Strategy should mitigate the potential adverse effects of the sites on particular SA objectives such as geodiversity and the potential for screening waste facilities.

4.66 Past experience suggests that when development proposals are being considered, there will often be tensions when applying different policies and deciding where the most weight should apply. Despite the best intentions of the planning authority, it may not always be possible to deliver development that meets all policy criteria as well as good practice guidance, and difficult choices will often have to be made.

Summary of Sustainability Effects

Short, Medium and Long Term Effects

4.67 The SEA Directive requires that the assessment of effects should include "secondary, cumulative, synergistic, short, medium and long-term, permanent and temporary effects" (SEA Directive Annex I). In the case of the strategic waste sites allocated in policy WCS4, the exact nature of their future use will be very dependent on the proposals that come forward from the waste industry. Therefore, at this stage in the SA it is difficult to be precise about when, where and in what form the effects will arise, and how one effect might relate to another. However, we have considered the combined effects of the vision, strategic objectives and policies (i.e. the Waste Core Strategy as a whole) and the potential for cumulative effects, within the summary of SA findings by SA objective.

4.68 The Government's SEA Guidance[21] states that "Where possible, it is useful to apply short, medium and long timescales consistently throughout the assessment. However if different timescales are used, this will need to be made clear within the Environmental Report. For air pollution, for instance, the short, medium and long terms could be 3, 10 and 25 years, while for climate change they could be 5, 20 and 100 years".

4.69 While there are no fixed definitions of short, medium or long term, it is possible to draw some broad conclusions from the SA about the nature and interrelationship of the likely effects of the Waste Core Strategy:

- Most of the effects will be long-term, in that the Waste Core Strategy aims to provide a structure for waste management and waste development that will last over time. However, there will inevitably be some temporary and short or medium term effects during the construction or operation of individual waste facilities (see below).

- The effects that have been identified in the appraisal of the strategic waste sites, both positive and negative, are likely to increase over time as the policies in the Waste Core Strategy are implemented and more waste-related development is delivered in Gloucestershire.

Short-term Effects of the Waste Core Strategy

4.70 The policies within the Waste Core Strategy (excluding the development that will occur at the strategic sites allocated in policy WCS4) are generally unlikely to have short term impacts as they relate to the approach to be taken to waste management within the county up to 2027. Instead, the short-term effects associated with the Waste Core Strategy are generally related to the initial impacts of construction of waste management facilities where this occurs, either on one or all of the four allocated sites in policy WCS4, or other sites that come forward through the planning application process. This would include the removal of vegetation, top soil, sub soil, and the construction of any additional infrastructure required. Such work could have negative impacts on biodiversity, local amenity (possible disruption to Rights of Way, traffic flows, noise generation etc.), soil quality, and the landscape. However, these impacts would be temporary in nature and many are likely to be minimised through good design and successful implementation of development control policies.

Medium-term Effects of the Waste Core Strategy

4.71 The medium-term impacts of the Waste Core Strategy relate to employment creation and other economic benefits of waste management. Potential negative impacts in the medium term include the possible effects of operational waste management facilities on health and local amenity (e.g. noise, dust and increased traffic).

[21] *A Practical Guide to the Strategic Environmental Assessment Directive.* ODPM, September 2005.

Long-term Effects of the Waste Core Strategy

4.72 Most of the likely effects of the Waste Core Strategy policies will be long-term as they provide the context for waste management within the county up to 2027. The long-term (i.e. longer than ten years) or permanent positive effects that could result from the Waste Core Strategy include the provision of sufficient waste management capacity to meet Gloucestershire's needs, and the associated benefits of diverting waste from landfill (e.g. reducing greenhouse gases and contributions to climate change). Long-term negative impacts of the site allocations could include climate change contributions from the energy required to operate facilities and vehicle movements to transport waste and minerals.

Significant Effects

4.73 Most of the SA objectives against which the Waste Core Strategy vision, strategic objectives and policies were appraised against are likely to be significantly positively affected by from at least one of the proposals within the plan. The following **significant positive** effects have been identified:

- Protecting the health and wellbeing of local communities (Strategic Objective 5);
- Maximising the opportunities for education and public participation in waste management (Strategic Objective 1 and WCS1);
- Safeguarding levels of amenity within Gloucestershire (Strategic Objective 5);
- Conserving the quality of the landscape (WCS10, 11 and 13);
- Maximising the opportunities available for screening waste sites and/or incorporating innovative design (WCS13);
- Protecting Gloucestershire's material, cultural and recreational assets (WCS11 and 13);
- Protecting townscapes and built heritage assets (WCS13);
- Minimising the risk of flooding (WCS9);
- Preventing pollution (WCS5);
- Conserving water quality (WCS5);
- Reducing the impacts of lorry traffic associated with the transportation of waste (Strategic Objective 5 and WCS4, 14);
- Encouraging the movement of waste up the waste hierarchy (Vision, Strategic Objectives 1 to 3, WCS1, 2, 3, 4, 6);
- Minimising the use of primary materials (Vision, WCS1, 2, 3, 6);
- Adapting to, or mitigating the effects of, climate change (Strategic Objective 5, WCS2, 3, 14); and
- Safeguarding waste sites for waste management facilities (Strategic Objective 5 and WCS8).

4.74 The majority of the significant positive impacts identified are associated with the proposals in the Waste Core Strategy to move waste management practices up the

waste hierarchy, minimise the use of primary materials and adapt to and mitigate the effects of climate change.

4.75 No **significant negative** effects were associated with the Vision or any of the Waste Core strategy strategic objectives or policies.

4.76 In general, the four allocated waste sites in policy WCS4 are likely to have the following **significant positive effects**:

- Focusing development in areas at lower risk of flooding;
- Reduction in the loss of good quality soil/land through the use of large previously developed sites;
- Minimising lorry movements, particularly on local roads, and therefore having a further positive impact on air quality;
- Reduced contributions to climate change through reductions in carbon dioxide (CO2) and methane (CH4) emissions; and
- Reduced contribution to climate change if energy, including heat, were to be generated from the waste management process and used within nearby development as waste as a fuel can act as a substitute for fossil fuel energy generation.

4.77 No **potentially significant negative** effects were identified in relation to the construction and operation of new waste management facilities on the four allocated sites. However, some minor negative effects were identified, described in the summary of findings by SA objective above.

4.78 **Figures 4.1** and **4.2** at the end of this chapter summarise all of the potential sustainability effects identified for each element of the Waste Core Strategy in relation to all of the SA headline objectives.

Recommendations

4.79 While the Waste Core Strategy is generally expected to have mostly positive sustainability impacts, some potential negative effects were identified in relation to biodiversity and potential loss of habitat areas within or adjacent to waste development sites, as described under the summary for SA Objective 8 above. While it is recognised that saved policy 45 (Planning Obligations) from the Waste Local Plan includes habitat creation in the list of matters that may be appropriate for inclusion in a planning obligation related to the development proposal, it is recommended that a requirement is included in policy either within the Waste Core Strategy or the forthcoming Development Management Policies DPD to consider implementation of more specific measures to create and enhance biodiversity in new waste developments where appropriate, for example the establishment of green roofs, climbing plants on walls, individual trees and patches of grassland and through the use of sustainable drainage systems which can also help to create habitats for wildlife.

Implementation

4.80 Implementation will be the key to the Waste Core Strategy's success and raises some key issues. A strong commitment is required to ensure that development delivers the potential positive effects identified. If not, then positive effects could easily

become negative effects, for example by the delivery of development that, through its location and design, erodes settlement and landscape and townscape character rather than enhancing it. Similarly, the policies included in the Waste Core Strategy with aims such as protecting environmental assets (e.g. policy WCS12: Nature Conservation), reducing the need to transport waste and minerals (policy WCS14: Sustainable Transport) and avoiding increasing the flood risk (policy WCS9: Flood Risk) will need to be applied with rigour if development on the allocated sites and waste management in general within Gloucestershire is to be sustainable.

4.81 There is a need to co-ordinate the delivery of the MWDF documents as a package of policies to ensure that synergies between the economic, social and environmental objectives are maximised e.g. maximising the re-use of construction and demolition materials to avoid the use of primary aggregates and linking with improvements to the quality of the natural and built environment.

Key to symbols and colour coding used in Figures 4.1 and 4.2

Symbol	Type of effect
++	Significant positive effect likely
++ ?	Significant positive effect uncertain
+	Minor positive effect likely
+?	Minor positive effect uncertain
0	No effect likely
+/- or ++/-- etc	A mixture of positive and negative effects
-?	Minor negative effect uncertain
-	Minor negative effect likely
- -?	Significant negative effect uncertain
--	Significant negative effect likely
?	Effect uncertain due to lack of baseline information or detail regarding type of facility that would be developed
N/A	No effect has been assessed.

Figure 4.1: Summary of SA Scores for the Waste Core Strategy

SA Objectives	Waste Core Strategy Vision, Strategic Objectives and Policies																			
	Vision	Strategic Objective 1	Strategic Objective 2	Strategic Objective 3	Strategic Objective 4	Strategic Objective 5	WCS1: Waste Reduction	WCS2: Recycling and Composting	WCS3: Inert Waste Recycling & Recovery	WCS4: Other Recovery	WCS5: Waste Water	WCS6: Hazardous Waste	WCS7: Cumulative Impacts	WCS8: Safeguarding Sites	WCS9: Flood Risk	WCS10: Green Belt	WCS11: AONBs	WCS12: Nature Conservation	WCS13: Design	WCS14: Sustainable Transport
1: Health & Wellbeing	+	+?	0	0	0	++	+?	+	+	+/-	+?	+?	+	+	+	+?	+?	0	0	+
2: Public Education/Participation	+	++	+?	+?	0	0	++	+?	+?	0	0	0	0	0	0	0	0	0	0	0
3: Amenity	+	+?	0	0	0	++	+?	+	+	+/-	+?	+?	+	+	0	+?	+?	0	+	+
4: Sustainable Economic Development	0	0	0	+?	+?	0	0	+?	0	0	0	0	0	-?	+	0	0	0	0	0
5: Economical Waste Management	+	+	0	0	0	+	+	0	0	+	0	0	+/-?	0	0	0	0	0	0	0
6: Employment	+	-	0	+	+?	+/-?	+/-	+	+	+	+	+	0	+/-	0	-?	0	0	0	-?
7: Aircraft Safety	0	+?	0	0	0	0	+?	0	0	0	0	0	0	0	0	0	0	0	0	0
8: Biodiversity	+	+?	0	0	0	+	+?	+/-?	+?	0	+?	+?	+	0	+	+	0	++/-?	0	0
9: Landscape	+	+?	0	0	0	+	+?	+?	+?	0	+?	+?	0	0	0	++	++	0	++	0
10: Screening & Innovative Design	-?	0	0	0	0	+/-?	0	+?	0	0	0	0	0	0	0	0	0	0	++	0
11: Material, Cultural & Recreational Assets	0	+?	0	0	0	-?	+?	0	0	0	0	+?	0	0	+	+	++	0	++	0
12: Geodiversity	+	+?	0	0	0	0	+?	0	+?	0	0	+?	0	0	0	0	0	0	0	0
13: Townscapes and Heritage	0	+?	0	0	0	-?	+?	+?	+?	0	0	+?	0	0	0	+	0	0	++	0
14: Flooding	+	+?	0	0	0	+	+?	0	0	0	0	+?	+	0	++	0	0	0	++	0
15: Pollution Prevention	+	+?	+?	+?	+?	0	+	+	+	0	++	+?	+	0	0	0	0	0	0	+
16: Soil/Land Quality	+	+?	0	0	0	+	+	0	+?	+	0	+?	+	0	0	+	0	0	0	0
17: Air Quality	+/-?	+	0	0	0	+	+	+	+	+	0	+?	+	0	0	0	0	0	0	+
18: Water Quality	+	+?	+?	+?	+?	+?	+	+	+	0	++	+?	+	0	0	0	0	0	0	0
19: Impacts of Lorry Traffic	+/-?	+	0	0	0	++	+	+	+	++	0	+?	+/-?	0	0	0	0	0	0	++
20: Waste Hierarchy	++	++	++	++	+/-	0	++	++	++	++	0	++	0	+	0	0	0	0	0	0
21: Use of Primary Materials	++	+	+	0	+	+?	++	++	++	+	0	++	0	0	0	+?	0	0	+?	0
22: Climate Change Adaptation	+	+	+	+?	+?	++	+	++	++	+	+	0	0	0	+	+?	0	0	+	++
Original SA Objective 1: Sustainable Communities	0	0	0	0	0	0	+	0	0	0	0	0	0	0	0	0	0	0	0	0
Original SA Objective 2: Safeguarding Sites	0	0	0	0	0	++	0	0	0	0	0	0	0	++	0	0	0	0	0	0

Figure 4.2: Summary of SA Scores for the Strategic Site Allocations

SA Objectives	Wingmoor Farm East				Wingmoor Farm West				Javelin Park				Land at Moreton Valance			
	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)
1: Health & Wellbeing	0	0	0	0	0	0	0	0	-	-?	-	-?	-	-?	-	-?
2: Public Education/Participation	+?	+?	+?	+?	+?	+?	+?	+?	+?	+?	+?	+?	+?	+?	+?	+?
3: Amenity	0	0	0	0	0	0	0	0	-	-	-?	-?	-	-	-?	-?
4: Sustainable Economic Development	+?	+?	+?	+?	+?	+?	+?	+?	+?	+?	+?	+?	+?	+?	+?	+?
5: Economical Waste Management	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
6: Employment	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-
7: Aircraft Safety	-?	0	-?	0	-?	0	-?	0	0	0	0	0	0	0	0	0
8: Biodiversity	-?	-?	-?	-?	-?	-?	-?	-?	-?	-?	-?	-?	-?	-?	-?	-?
9: Landscape	-?	0	-?	0	-?	-?	-?	0	-?	-?	-?	-?	-	0	-	0
10: Screening & Innovative Design	-	-	-	-	+?	+?	+?	+?	-?	-?	-?	-?	-	-	-	-
11: Material, Cultural & Recreational Assets	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-
12: Geodiversity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13: Townscapes and Heritage	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
14: Flooding	+	+	+	+	+?	+?	+?	+?	+	+	+	+	++	++	++	++
15: Pollution Prevention	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
16: Soil/Land Quality	+	+	+	+	++	++	++	++	++	++	++	++	++	++	++	++
17: Air Quality	+/-	+	+/-	+	+/-	+	+/-	+	++/-	++	++/-	++	++/-	++	++/-	++
18: Water Quality	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19: Impacts of Lorry Traffic	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	++/-	++/-	++/-	++/-	++/-	++/-	++/-	++/-
20: Waste Hierarchy	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
21: Use of Primary Materials	++?	+	++?	+	++?	+	++?	+	++?	+	++?	+	++?	+	++?	+
22: Climate Change Adaptation	++	+?	++	+?	++	+?	++	+?	++	+?	++	+?	++	+?	++	+?

5 Monitoring

PROPOSALS FOR MONITORING

5.1 The SEA Directive requires that "*member states shall monitor the significant environmental effects of the implementation of plans or programmes… in order, inter alia, to identify at an early stage, unforeseen adverse effects, and be able to undertake appropriate remedial action*" (Article 10.1) and that the environmental report should provide information on "*a description of the measures envisaged concerning monitoring*" (Annex I (i)). The ODPM's SA Guidance states that monitoring proposals should be designed to provide information that can be used to highlight specific issues and significant effects, and which could help decision-making. This represents Task E1 in the ODPM's SA Guidance.

5.2 The ODPM's SA Guidance states that it is not necessary to monitor everything. Instead, monitoring should be focussed on the significant sustainability effects that may give rise to irreversible damage (with a view to identifying trends before such damage is caused) and the significant effects where there is uncertainty in the SA and where monitoring would enable preventative measures or mitigation to be applied. The monitoring measures proposed in this SA Report therefore focus on the predicted significant effects only, as listed at the end of the previous chapter.

5.3 It is recognised that these are all potential effects, and many should be able to be mitigated by proper implementation of the development management policies both in the Waste Core Strategy and those saved in the Waste Local Plan 2004 (until replaced by a subsequent development management waste DPD due to be prepared after adoption of the Waste Core Strategy) and the environmental permitting regime controlled by the Environment Agency. Nonetheless, monitoring will need to be undertaken to try and identify trends before such damage is caused, and enable preventative or further mitigation measures to be taken.

5.4 The vision, strategic objectives and policies within the Waste Core Strategy will be delivered in the context of the MWDF as a whole, and the wider policy framework which sits alongside the planning system. This means that the effects of the implementation of the Waste Core Strategy will be influenced by the degree to which other plans forming the MWDF are successfully implemented (e.g. the development management DPD once prepared). For this reason, monitoring the sustainability effects of implementing the Waste Core Strategy should be conducted as part of an overall approach to monitoring the sustainability effects of the MWDF as a whole, as well as taking account of broader social, economic and environmental trends. This approach is based on the ODPM's Good Practice Guidance on monitoring Local Development Frameworks[22].

5.5 The Council is required under the Planning and Compulsory Purchase Act to prepare an Annual Monitoring Report to assess the extent to which policies

[22] *Local Development Framework Monitoring: A Good Practice Guide.* The Office of the Deputy Prime Minister 2004.

in each MWDF document are being implemented. Chapter 6 of the Waste Core Strategy sets out its own framework for monitoring, including targets and indicators that will be used to monitor successful implementation of all its policies. This includes targets and indicators that will also be relevant for monitoring the predicted significant sustainability effects of the Waste Core Strategy.

5.6 It is therefore recommended that Gloucestershire County Council continues the dialogue with statutory environmental consultees and other stakeholders that it has commenced as part of the MWDF preparation, in particular the SA process, and works with them to obtain information that is appropriate, up to date and reliable. It should be noted that the sustainability effects to be monitored may need to be revised at the final stage of Waste Core Strategy preparation, in response to consultation comments, any revisions that are made to the DPD and Government changes to the national indicator sets.

5.7 **Table 5.1** below sets out the likely significant effects that were identified by this SA Report, and the indicators included in the Waste Core Strategy Annual Monitoring Framework. Additional potential indicators have been suggested where appropriate, particularly where no indicators are currently included in the framework in relation to a particular significant effect.

Table 5.1: How significant SA effects will be monitored through the Gloucestershire Waste Core Strategy Annual Monitoring Framework

What needs to be monitored?	Is it covered by the WCS monitoring framework?
Protecting the health and wellbeing of local communities (SA objective 1)	**Yes** – indicators include: • The number and percentage of proposals where cumulative impact was cited as a reason for refusal • Overall levels of satisfaction with local area (currently NI005)
Maximising the opportunities for education and public participation in waste management (SA objective 2)	**Yes** – indicators include: • The number of education/promotional visits/exhibitions carried out per annum. Suggested additional indicators include: • The number of waste facilities incorporating education centres etc.
Safeguarding levels of amenity within Gloucestershire (SA objective 3)	**Yes** – indicators include: • The number and percentage of proposals where cumulative impact was cited as a reason for refusal • Overall levels of satisfaction with local area (currently NI005)

What needs to be monitored?	Is it covered by the WCS monitoring framework?
Conserving the quality of the landscape (SA objective 9)	**Yes** – indicators include: • The number of waste related planning permissions granted in AONB per annum • The number of waste related planning applications refused per annum where AONB issues were cited as part of the reasons for refusal
Maximising the opportunities available for screening waste sites and/or incorporating innovative design (SA objective 10)	**Yes** – indicators include: • The number of waste management planning applications submitted with a design and access statement.
Protecting Gloucestershire's material, cultural and recreational assets (SA objective 11)	**No** – suggested indicators include: • Percentage of planning permissions that either maintain, provide for or enhance Public Rights of Way.
Protecting townscapes and built heritage assets (SA objective 13)	**No** – suggested indicators include: • Number of planning permissions granted contrary to English Heritage and/or officer advice on historic environment grounds.
Minimising the risk of flooding (SA objective 14)	**Yes** – indicators include: • The number and percentage of waste sites incorporating sustainable drainage measures per annum • The number and percentage of waste permissions located on designated floodplain land
Preventing pollution (SA objective 15)	**No** – suggested indicators include: • Number of pollution/contaminated land incidents related to waste • Levels of key air pollutants
Conserving water quality (SA objective 18)	**No** – suggested indicators include: • The percentage of rivers assessed as being of good chemical and good biological quality • Number of pollution incidents recorded by the Environment Agency in relation to licensed waste sites

What needs to be monitored?	Is it covered by the WCS monitoring framework?
Reducing the impacts of lorry traffic associated with the transportation of waste (SA objective 19)	**Yes** – indicators include: • The number and percentage of waste related developments using non-road means of transport • The number and percentage of waste related planning applications supported by Travel Plans
Encouraging the movement of waste up the waste hierarchy (SA objective 20)	**Yes** – indicators include: • The amount of residual waste per household • The percentage of household waste sent for reuse, recycling and composting • The total available recycling/composting capacity
Minimising the use of primary materials (SA objective 21)	**Yes** – indicators include: • The number of new developments involving the use of recycled aggregates
Adapting to, or mitigating the effects of, climate change (Original SA objective 2)	**Yes** – indicators include: • The installed capacity of new renewable energy systems associated with waste water proposals • The percentage of renewable energy sourced from the by-products of waste management
Safeguarding sites for waste management facilities	**Yes** – indicators include: • The number and percentage of non-waste developments permitted on proposed (allocated) waste sites • The number and percentage of proposals where impact on an existing or proposed waste management facility was cited as a reason for refusal

Appendix 1

Revisions Made to the Original SA Framework

Original SA Objectives	Amendments made for the Site Options Consultation	Current SA Framework
1. To promote sustainable development and sustainable communities in Gloucestershire in particular giving people the opportunity to live in an affordable and sustainably designed and constructed home.	Scoped out.	Scoped back in, included in the SA matrices as '**Original SA Objective 1**'.
2. To safeguard sites suitable for the location of waste management facilities or future mineral development from other proposed development.	Scoped out.	Scoped back in, included in the SA matrices as '**Original SA Objective 2**'.
3. To protect and improve the health and well-being of people living and working in Gloucestershire as well as visitors to the County.	Retained and sub questions added to sharpen the focus. Became **Objective 1**.	Retained as at Site Options stage.
4. To promote education and economic development in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	Split out into three objectives and sub-questions added to each: **Objective 2:** To educate the public about waste issues and to maximise community participation and access to waste services and facilities in Gloucestershire. **Objective 3:** To promote sustainable economic development in Gloucestershire giving opportunities to people from all social and ethnic backgrounds. **Objective 4:** To manage waste in an economically sustainable way through means that represent good value for taxpayers in Gloucestershire.	Retained as at Site Options stage.
5. To safeguard the amenity of local communities from the potential adverse impacts of minerals and waste development.	Retained and sub questions added to sharpen the focus. Remained as **Objective 5**.	Retained as at Site Options stage.

Original SA Objectives	Amendments made for the Site Options Consultation	Current SA Framework
6. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	Scoped out.	Left scoped out as at Site Options stage.
7. To provide employment opportunities in both rural and urban areas of the County, promoting diversification in the economy.	Retained and sub questions added to sharpen the focus. Became **Objective 6**.	Retained as at Site Options stage.
8. To protect, conserve and enhance Gloucestershire's wildlife and natural environment – its landscape and biodiversity.	Split out into three objectives and sub-questions added to each: **Objective 7:** To protect, conserve and enhance biodiversity in Gloucestershire. **Objective 8:** To protect, conserve and enhance the landscape in Gloucestershire. **Objective 9:** To ensure that waste sites have the potential for adequate screening and/or innovative design to be incorporated.	Retained as at Site Options stage.

Original SA Objectives	Amendments made for the Site Options Consultation	Current SA Framework
9. To protect conserve and enhance Gloucestershire's material, cultural and recreational assets including its architectural and archaeological heritage.	Split out into four objectives and sub-questions added to each: **Objective 10:** To conserve and enhance Gloucestershire's material, cultural and recreational assets. **Objective 11:** To protect, conserve and enhance geodiversity in Gloucestershire. **Objective 12:** To protect, conserve and enhance townscapes and Gloucestershire's architectural and archaeological heritage. **Objective 13:** To ensure that waste sites do not compromise the safety of commercial or military aerodromes.	Retained as at Site Options stage.
10. To prevent flooding, in particular preventing inappropriate development in the floodplain and to ensure that waste development does not compromise sustainable sources of water supply.	Retained and sub questions added to sharpen the focus. Became **Objective 14**.	Retained as at Site Options stage.

Original SA Objectives	Amendments made for the Site Options Consultation	Current SA Framework
11. To prevent the pollution of land, air and water in Gloucestershire and to apply the precautionary principle.	Split out into four objectives and sub-questions added to each: **Objective 15:** To prevent pollution and to apply the precautionary principle in consultation with waste regulation authorities. **Objective 16:** To protect and enhance soil/land quality in Gloucestershire. **Objective 17:** To protect and enhance air quality in Gloucestershire. **Objective 18:** To protect and enhance water quality in Gloucestershire.	Retained as at Site Options stage.
12. To reduce the adverse impacts of lorry traffic on communities through means such as: a) Reducing the need to travel b) Promoting more sustainable means of transport c) Sensitive lorry routing d) The use of sustainable alternative fuels e) Promoting the management of waste in one of the nearest appropriate installations	Retained and sub questions added to sharpen the focus. Became **Objective 19**.	Retained as at Site Options stage.
13. To restore mineral sites to a high standard in order to achieve the maximum after use benefits including the conservation and enhancement of biodiversity.	Scoped out.	Left scoped out as at Site Options stage.
14. To reduce waste to landfill and in dealing with all waste	Retained and sub questions added to sharpen the	Retained as at Site Options

Original SA Objectives	Amendments made for the Site Options Consultation	Current SA Framework
streams to actively promote the waste hierarchy (i.e. Prevent, Reduce, Reuse, Recycle, Recover, Dispose) to achieve the sustainable management of waste.	focus. Became **Objective 20**.	stage.
15. To reduce contributions to and to adapt to Climate Change.	Split out into two objectives and sub-questions added to each: **Objective 21:** To reduce the global use of primary materials and minimise net energy balance requirements. **Objective 22:** To reduce contributions to and to adapt to climate change.	Retained as at Site Options stage.

Appendix 2

Assumptions Used in the Appraisal of Strategic Site Allocations

Gloucestershire Waste Core Strategy –Waste Sites SA Framework and Assumptions

Decision-making criteria based on SA Objectives for Waste Core Strategy with assumptions and justifications for SA scores used to guide the appraisal of waste sites, and sources of data to aid the appraisal.

SA Objective and Sub Questions[23]	Score	Justification/reasons for score	Data sources (and limitations)
Social			
1. To promote sustainable development and sustainable communities and improve the **health and well-being** of people living and working in Gloucestershire as well as visitors to the County. *- What are the potential health impacts on communities?* *- What are the potential health impacts on the employees at the site or facility?*		Some types of waste facilities could have a negative effect on protecting the health of local residents, communities and visitors to the County. This is due to the biospores or gaseous emissions that may be released from certain waste management technologies such as composting, anaerobic digestion or producing energy from waste. However, Government research conducted in 2004[24], reviewed evidence from a large range of studies, and concluded that modern waste management practices have at most a <u>minor</u> effect on human health. The minor effects related only to possible effects on residents living close to two types of waste management facility: landfills or commercial composting facilities. The studies into commercial composting facilities showed that there <u>might</u> be a link between emissions from the facility and the incidence of bronchitis and minor ailments in residents living nearby. The Government research explains that there are more studies into the health of employees at composting facilities, which showed some association between health effects in employees and exposure to bioaerosols. The Government research found no consistent evidence of a link between exposure to emissions from incinerators and an increased rate of cancer, or that emissions from incinerators make respiratory problems worse. In most cases the incinerator contributes only a small proportion to the local level of pollutants (compared with emissions from other sectors such as transport). *Planning for Waste Management Facilities: A Research Study* (ODPM, 2004) states in the General Siting Criteria sections for all of the different waste management facilities that where possible, they should be located at least 250 metres from sensitive properties (except Materials Recycling Facilities, which could be located within 100m). Specifically for composting operations, it states *"Site specific risk assessment needs to be a condition if composting operations are to be located within 250m of any working or dwelling place. Where possible facilities should be located at least 250m from sensitive properties, which may include business premises."*	GIS data from Gloucestershire County Council (GCC), Ordnance Survey (OS), and information from Council's own site assessments. Existing residential areas: examination of OS base maps Planned residential areas: South West RSS – indicative only as the strategic locations have yet to be confirmed through the District LDF process.
		Planning Policy Statement 10 (PPS10)[25] states at paragraph 30 that: *"Modern, appropriately located, well-run and well-regulated, waste management facilities operated in line with current pollution control techniques and standards should pose little risk to human health."* Development of waste facilities will need to meet the high standards of design and operation required to obtain Pollution Prevention and Control (PPC) permits and the Environmental Permits (EP) regulated and enforced by the Environment Agency. Emissions limits are set by the EC Waste Incineration Directive (2000), and waste management facilities are required under their PPC permits and EPs to operate within these limits. The requirement to meet PPC/EP permitting standards (including emissions to air, land and water, energy efficiency, noise, vibration and heat and accident prevention) should ensure that design and operation of waste facilities minimises any potentially significant effects on health of both the local residents and the employees at the site. In addition, many waste management facilities will meet the criteria that require a site-specific environmental impact assessment to be undertaken to accompany the planning application, which would look at the potential impacts and mitigation	Offices: Strategic Employment Allocations. (Potential data limitation) Schools: http://www.edubase.gov.uk Primary road network:

[23] From: *Gloucestershire Minerals and Waste Development Framework Sustainability Appraisal Scoping Report (Update 3)* Gloucestershire County Council, January 2009.
[24] *Review of Environmental and Health Effects of Waste Management: Municipal Solid Waste and Similar Wastes.* Prepared for Defra by Enviros and University of Birmingham, May 2004.
[25] *Planning Policy Statement 10: Planning for Sustainable Waste Management.* Office of the Deputy Prime Minister, July 2005.

SA Objective and Sub Questions[23]	Score	Justification/reasons for score	Data sources (and limitations)
	measures in more detail, and influence the conditions placed on the planning permission.		Ordnance Survey Hospitals: data from GCC and examination of OS base maps Faith centres: examination of OS base maps
	++	N/A	
	+	N/A	
	0	Potential sites which are: • Over 250m from sensitive receptors (i.e. residents, schools, hospitals, offices, faith centres)[26] are expected to have no or negligible effects on health.	
	-?	Potential sites which are: • Within 250m of sensitive receptors (i.e. residents, schools, hospitals, offices, faith centres) could have minor negative effects on health due to the potential release of biospores and air emissions from certain facilities such as composting, anaerobic digestion or producing energy from waste, although this impact is very dependent on the type of facility, its design and potential mitigation measures proposed, which would be assessed at the planning application stage. In addition, it is assumed that the facility will be well run and that mitigation measures implemented should be sufficient to avoid any potential health effects. Where any potential sites are within 250m of sensitive receptors, they will score a -? to reflect the uncertainty about the type of facility that would be developed on the site at this stage.	
	--	N/A	

[26] In the absence of GIS data for all hotels, B&B accommodation in the County, it is assumed that most visitor accommodation would be found within existing residential areas.

<table>
<tr><th>SA Objective and Sub Questions[23]</th><th>Score</th><th>Justification/reasons for score</th><th>Data sources (and limitations)</th></tr>
<tr><td>2. To educate the public about waste issues and to maximise community participation and access to waste services and facilities in Gloucestershire.
- Are there any groups who are particularly disadvantaged in terms of participation and access to waste services?
- Does the site option cater for future demographic changes and waste growth?</td><td colspan="2">Some modern waste facilities are beginning to build small education centres on-site (e.g. MBT plant at Frog Island, East London) to improve understanding of sustainable waste management practices for the public and schools, thus waste development on sites could have a positive effect on education opportunities in the County. However, this would not be known until the planning application stage when details of developments may be proposed on the sites allocated for waste in the Core Strategy.

In terms of community participation and access to waste services, the location of new large scale waste facilities is unlikely to affect this SA objective. The location of smaller bring facilities or a household recycling centre could have an indirect positive effect on encouraging involvement and participation in recycling, however it is not known at this stage, which potential sites may be used for household recycling centres.

In order to ensure there is adequate waste management capacity in suitable locations close to the current and future sources of waste arisings, all of the 106 potential waste sites have been screened for their proximity to the principal urban areas, following the spatial approach set out in Policy W2 of the South West Regional Spatial Strategy (GOSW Proposed Changes, July 2008). Policy W2, through a sequential approach, aims to focus principal waste facilities within, or in close proximity to Strategically Significant Cities and Towns (SSCTs). Following Policy W2, GCC defined a 16km buffer around Gloucester and Cheltenham and also considered a limited number of sites in or very close to the RSS named settlements of Cirencester, Coleford, Tewkesbury, Stroud, and Lydney. Therefore, the sub-question relating to future demographic changes has already been addressed during the site assessment process.
<table>
<tr><td>++</td><td>N/A</td></tr>
<tr><td>+?</td><td>All of the sites could have an indirect positive effect on education opportunities, as they may include education centres within the site. If the site were to be allocated for a new household recycling centre then it could also have an indirect positive effect on encouraging involvement and participation in recycling. However, this effect is uncertain at this stage in the planning process.</td></tr>
<tr><td>0</td><td>N/A</td></tr>
<tr><td>-</td><td>N/A</td></tr>
<tr><td>--</td><td>N/A</td></tr>
</table></td><td>No data needed.</td></tr>
<tr><td>3. To safeguard the amenity of local communities from the adverse impacts of waste development.
- What are the impacts in terms of noise and vibration?
- What is the potential for significant problems with litter?
- To what extent are there potential land use conflict issues?
- What is the potential for</td><td colspan="2">Waste facilities could have a negative effect on protecting the amenity of local residents and communities. This is because all development would result in some level of noise, traffic, and light pollution during construction and potentially during operation as well. Annex E of PPS 10 requires consideration of the suitability of the road network in testing the suitability of potential waste management sites, and the extent to which access would require reliance on local roads and this is considered further under SA Objectives 17 and 19 below. Planning for Waste Management Facilities: A Research Study (ODPM, 2004) states in the General Siting Criteria sections for many of the different waste management facilities (composting, anaerobic digestion, mechanical and biological treatment, pyrolysis and gasification, thermal treatment) that where possible, they should be located at least 250 metres from sensitive properties (i.e. residential areas, schools, hospitals etc.). However, for Materials Recycling Facilities, it notes that if amenity issues such as noise and litter can be minimised facilities could be located within 100m of sensitive receptors.</td><td>As for SA Objective 1, plus existing waste facilities:

Grid references from GCC and information from Council's site assessments undertaken by GCC Highways.</td></tr>
</table>

SA Objective and Sub Questions[23]	Score	Justification/reasons for score	Data sources (and limitations)
significant problems with vermin and birds? *- Are there any cumulative effects in terms of adverse impacts on environmental quality, social cohesion and inclusion or economic potential?* *- Does the site provide opportunities for the co-location of complementary activities?* *- Will fly tipping in the County increase?* (Partially covered under SA Objectives 17 and 19 in terms of reducing road transport of waste and reliance on local roads with associated impacts on amenity)		As above for SA Objective 1, development of waste facilities will need to meet the high standards of design and operation required to obtain PPC permits and Environmental Permits regulated and enforced by the Environment Agency. Emissions limits are set by the EC Waste Incineration Directive (2000), and waste management facilities are required under their PPC permits and EPs to operate within these limits. The requirement to meet PPC/EP permitting standards (including emissions to air, land and water, energy efficiency, noise, vibration and heat and accident prevention) should ensure that design and operation of waste facilities minimises most of the potentially significant effects on local amenity. In addition, many waste management facilities will meet the criteria that require a site-specific environmental impact assessment to be undertaken to accompany the planning application, which would look at the potential impacts and mitigation measures in more detail, and influence the conditions placed on the planning permission. PPS 10 (para. 21) states that when assessing the suitability of sites and areas for waste management, local authorities should have regard to the potential cumulative effect of previous waste disposal facilities on the well-being of the local community. Sub-question 6 (Co-location of complementary activities) is addressed under SA Objective 4 below. The choice of locations for potential waste sites is unlikely to have an effect on fly-tipping in the County.	
	++	N/A	
	+	N/A	
	0	Potential sites which are: • Over 250m from sensitive receptors (i.e. residents, schools, hospitals, offices, faith centres) are expected to have no or negligible effects on local amenity. Potential sites which are greater than 250m from an existing waste facility are not expected to have a cumulative effect on the local community. Potential sites which are adjacent to or within 250m of an existing waste management facility, but over 250m from sensitive receptors are not expected to have a cumulative effect on the local community.	

SA Objective and Sub Questions[23]	Score	Justification/reasons for score	Data sources (and limitations)
	-	Potential sites which are: • Within 250m of sensitive receptors (i.e. residents, schools, hospitals, offices, faith centres) could have a minor negative impact on amenity, although this impact is very dependent on the type of facility, its design and potential mitigation measures proposed, which would be assessed at the planning application stage. In addition, it is assumed that the facility will be well run and that mitigation measures implemented should be sufficient to avoid any potential impacts on amenity. In addition, potential sites which are: • Within 250m from residential areas, and • Adjacent to or within 250m of existing waste management facilities could have a cumulative effect on the local community.	
	--	N/A	
Economic			
4. To promote **sustainable economic development** in Gloucestershire giving opportunities to people from all social and ethnic backgrounds. *- Does the site present opportunities for spin off employment or other opportunities?* *- Will the number of waste based Community or Social enterprises change as a result of the site option?*	As the number of new waste management facilities focusing on sustainable waste management at the higher end of the waste hierarchy increases, a need to service these facilities should generate activity in the local economy and help to develop markets for waste materials. In addition, new recycling and composting facilities will generate feedstock for reprocessing facilities or composting outlets in close proximity, and facilities utilising energy recovery technologies would provide energy which could be used by existing or planned development, providing sustainability benefits associated with the proximity principle, reduced transportation distances, and potentially combined heat and power opportunities.		Existing industrial: examination of OS base maps and GCC site assessments Proximity to existing waste facilities: Grid references from GCC, and information from Council's own site assessments.
	++	N/A	
	+?	The creation of additional waste management facilities within Gloucestershire may have a minor positive impact on encouraging investment and growth of 'green industry' in the County. Potential sites that are within an industrial estate, within 250m of, adjacent to or include existing waste facilities or sites allocated in the current Waste Local Plan could also have the potential for positive effects on sustainable local economic activity as they could encourage complementary activities to waste management, e.g. reprocessing facilities or composting outlets that could make use of recyclate or compost generated. This score is uncertain however, as it will depend on the type of facility proposed on the site, and the nature of neighbouring industrial/commercial outlets.	
	0	Sites that are greater than 250m from an industrial estate or existing waste facility or site allocated in the current Waste Local Plan would have no effect on this objective.	
	-	N/A	
	--	N/A	
5. To manage waste in an **economically sustainable** way through means that represent good value for tax	0	At this stage it is difficult to assess how the location of new large scale waste facilities may affect this SA objective. However it is important to note that certain sites will be more efficient than others (e.g. in terms of reductions in transport movements & costs), given their proximity to the main sources of waste arisings and to transfer stations and/or any other facilities that may service them. Additionally, the type of facilities eventually proposed on sites	No data needed.

SA Objective and Sub Questions[23]	Score	Justification/reasons for score	Data sources (and limitations)
payers in Gloucestershire. *- What are the costs?* *- Are there costs in the longer term that may not be obvious at the present time?*		once allocated in the Waste Core Strategy may differ in terms of cost but this will not be known until the planning application stage.	
6. To provide **employment opportunities** in both rural and urban areas of the County, promoting diversification in the economy. *- How many new jobs are likely to be created?* *- How far will employees have to travel to work?* *- Are there opportunities for employees to use sustainable transport?*	All of the sites could have an indirect positive effect on increasing employment levels when developed during construction and operation, as they are likely to result in a small amount of job creation for local people. However, job creation from the development of waste management facilities is not expected to be significant within the Gloucestershire economy. The Gloucestershire County Council Technical Paper WCS-G on Facility Types shows that most facilities would only employ on average one site manager and 2-3 operatives (in a few cases where hand-picking of waste may be needed, such as in a Materials Recycling Facility this would increase to between 10 and 50 operatives dependent on the scale of facility). However, given that the overall number of new waste management facilities likely to be developed in the County will not be a large number each year, the total numbers of new employment opportunities likely to be provided within the County is not considered to be significant. In relation to sub-questions 2 and 3 regarding potential employee transport, the GCC transport assessment considered the opportunities for future employees of potential waste facilities on each site to use sustainable transport to travel to work, and these assessments have been used to predict potential effects against this objective.		No data needed for job creation. GCC site assessments provide information on distances employees may have to travel to work.
	++	Potential sites which are: • Assessed by GCC Highways as having very good potential in relation to opportunities for future employees to use sustainable transport to travel to the site for work are expected to have a significant positive impact on this objective.	
	+	Potential sites which are assessed as: • Assessed by GCC Highways as having reasonable potential in relation to opportunities for future employees to use sustainable transport to travel to the site for work • are expected to have a positive impact on this objective.	
	0	N/A	
	-	Potential sites which are assessed as: • Assessed by GCC Highways as having poor potential in relation to opportunities for future employees to use sustainable transport to travel to the site for work are expected to have a minor negative impact on this objective.	
	--	N/A	

SA Objective and Sub Questions[23]	Score	Justification/reasons for score	Data sources (and limitations)
7. To ensure that waste sites do not compromise the **safety of commercial or military aerodromes**. *- Is the site close to an aerodrome or low flying area?* *- Will the site attract large numbers of scavenging birds / gulls etc?*		PPS 10 (Annex E) states that some waste management facilities, especially landfills which accept putrescible waste, can attract birds. The numbers, and movements of some species of birds, may be influenced by the distribution of landfill sites. Where birds congregate in large numbers, they can provide a hazard to aircraft at locations close to aerodromes or low flying areas. As part of the aerodrome safeguarding procedure (ODPM Circular 1/2003) local planning authorities are required to consult aerodrome operators on proposed developments likely to attract birds. Consultation arrangements apply within safeguarded areas (which should be shown on the proposals map in the local development framework). This effect would only apply to sites allocated for new landfill, and it is unlikely that any of the potential sites being considered for allocation within the Waste Core Strategy will be for landfill. However, tall emissions stacks which may be required for some thermal treatment facilities could also present a hazard to aircraft. The specific types of facilities proposed on the potential waste sites is not known at this stage of the assessment, and would need to be considered once specific proposals are made.	Aerodrome safeguarding areas are provided in GCC site assessments for Gloucestershire Airport and MOD Airport.
	++	N/A	
	+	N/A	
	0	Potential sites that are not within an aerodrome safeguarding area are not expected to have an effect on this objective.	
	-?	Potential landfill or thermal treatment sites that are: • Within an aerodrome safeguarding area could have negative effects on the safety of commercial or military aerodromes due to the potential for birds and tall emissions stacks to provide a hazard to aircraft. A ? will be used to denote uncertainty about this effect as it is dependent on the type of facility to be proposed and eventually developed on a site, which will not be known until a later stage in the DPD preparation or even at the planning application stage.	
	--	N/A	
Environmental			
8. To protect, conserve and enhance **biodiversity** in Gloucestershire. *- What are the potential impacts on sites which are Internationally and Nationally designated?* *- Are there any other potential significant impacts over and above the effects on designated sites - including on local sites, protected species and habitats and species of principle importance for biodiversity?*		International and national sites have statutory protection through international and EU conventions (Ramsar, 1971; Bern, 1979; Bonn, 1979) and directives (79/409/EEC; 92/43/EC) or should receive the highest possible planning protection as outlined in Planning Policy Statement 9: Biodiversity and Geological Conservation (PPS9). Locally important sites of nature conservation should also be protected under PPS9, and it will be necessary to consider those sites that are not afforded statutory protection but are of local importance; especially those that provide ecological connectivity. In addition, previously developed land will not be assumed to have no biodiversity value. Previously developed land that has been undisturbed for a significant period of time can in some instances have greater ecological value than 'greenfield sites'. Note that sites of geological interest are considered under SA Objective 12. The design of modern waste management facilities is increasingly adopting innovative practice and there may be opportunities to incorporate green or brown roofs within the design. Good design of any landscaped areas within the site could also incorporate the use of native species and habitats to encourage biodiversity within the site, which could contribute to achieving biodiversity targets. However, this would be very dependent on the exact nature and proposed design of the planned waste facility type,	GIS data from Natural England (http://www.natureonthemap.org.uk/), GCC data on Strategic Nature Areas as indicated on the Gloucestershire Nature Map, ancient woodlands. There is no GIS data available for BAP Priority Species and Habitats, however, the Council's site assessments by GCC Ecologist and GCER

SA Objective and Sub Questions[23]	Score	Justification/reasons for score	Data sources (and limitations)
- *What are the potential impacts on the Strategic Nature Areas as indicated on the Gloucestershire Nature Map?* - *What potential is there for achieving biodiversity targets?*	which would not be known until the planning application stage.		provide assessments of the potential to affect biodiversity.
	++	N/A	
	+?	Potential sites which are: • Scored as positive (+) by GCC Ecologist and GCER (where the overall impact on biodiversity could be potentially uncertain or positive), and/or • Scored as +* by GCC Ecologist and GCER, which indicates proximity to designated aquifer/surface/flood water dependent site over 1km distant which may be affected. could have a minor positive effect on this objective.	
	0	Potential sites which are: • More than 500m from international (SAC, RAMSAR, SPA), national (NNR, SSSI), or local nature conservation designation, or BAP Priority Species and Habitats, or • Scored as neutral by GCC Ecologist Team and GCER (where the overall impact on biodiversity could be potentially negative, uncertain or positive) and where the identified ecological constraint is up to and including 250m distant, and/or • Scored as 0* which indicates proximity to designated aquifer/surface/flood water dependent site over 1km distant which may be affected. are not expected to affect this objective[27].	
	-	Potential sites which are: • Within 500m of an international (SAC, RAMSAR, SPA), national (NNR, SSSI), or local nature conservation designation, or BAP Priority Species and Habitats, or • Assessed as -* by GCC Ecologist and GCER due to overall negative or uncertain impact on a nationally designated site fed by a designated aquifer or surface water/flood water dependent site, or • Within 10km of a designated site which lies downwind of the potential waste site (thus may experience adverse impacts relating to air quality) could have a negative effect on this objective.	

[27] The distances from assets within all of the SA Objectives used to predict the magnitude potential effects of allocating the sites are for a guide only and do not mean that facilities within a certain distance would definitely have an effect in every instance. The potential effect depends significantly on the type and design of facilities eventually developed on the site, which will need to be assessed if prescribed within the strategic allocations in the Waste Core Strategy or at the planning application stage.

SA Objective and Sub Questions[23]	Score	Justification/reasons for score	Data sources (and limitations)
	--	Potential sites which are: • Within the boundary of an international (SAC, RAMSAR, SPA), national (NNR, SSSI), or local nature conservation designation, or BAP Priority Species and Habitats, or • Assessed as negative (0) and (--* in relation to aquifer fed/surface water/flood water dependent site) by GCC Ecologist and GCER due to potentially negative or uncertain impact on an internationally designated site over 1km distant which may be affected (where the chosen waste technology and development design poses a risk to the water environment), or • Within 10km of a designated site which is downwind of the potential waste site and is already experiencing air quality issues could have significant negative effects on this objective.	
9. To protect, conserve and enhance the **landscape** in Gloucestershire. *- What are the impacts on AONB?* *- What is the likely impact on specific landscape character as detailed in Gloucestershire's Landscape Character Assessment?* *- What is the scope for landscape improvement / enhancement?*	AONBs have statutory protection through the Countryside and Rights of Way Act (2000). Areas of high landscape quality and the setting of settlements may be affected by the development of waste management facilities. In addition, areas with poor landscape character could be enhanced through the creation of a high quality design or landmark waste facility. However, this will not be able to be determined until the planning application stage. It is assumed that sites within or adjacent to existing industrial estates should not have a significant effect on landscape character or the quality or setting of settlements.		GIS data from Natural England. Digital data on character areas not available. The Council's own site assessments provide information about landscape character areas. Industrial estates: examination of OS base maps and information from Council's own site assessments.
	++	N/A	
	+?	The design of modern waste management facilities is increasingly adopting innovative practice and this could have positive effects on landscape character. However, this would be very dependent on the exact nature and proposed design of the planned waste facility type, which would not be known until the planning application stage, thus is not recorded in the site appraisal. Positive scores are also assumed for those sites that have been classed as being of high landscape suitability in the landscape and visual impact assessment[28] carried out for the sites.	
	0	Potential sites which: • Are more than 1km from an AONB, locally designated area of high landscape quality; and/or • Within or adjacent to existing industrial estates • Have been classed as being of medium landscape suitability in landscape and visual impact assessment[29] carried out for the sites are considered to have no effect on these assets.	

[28] Atkins (2009) Gloucestershire County Council Potential Waste Sites: Landscape and Visual Impact Assessment
[29] Atkins (2009) Gloucestershire County Council Potential Waste Sites: Landscape and Visual Impact Assessment

SA Objective and Sub Questions[23]	Score	Justification/reasons for score	Data sources (and limitations)
	-	Potential sites which: • Are within 1km of an AONB, locally designated area of high landscape quality ; and/or • Are not within or adjacent to existing industrial estates • Have been classed as being of low landscape suitability in landscape and visual impact assessment[30] carried out for the sites could have a negative effect on these assets. This effect would be uncertain however, if the site was also within an existing industrial estate.	
	--	Potential sites which: • Are located within an AONB or locally designated area of high landscape quality could have a significant negative effect on these assets. This effect would be uncertain however, if the site was also within an existing industrial estate.	
10. To ensure that waste sites have the potential for adequate **screening and / or innovative design** to be incorporated. *- Does the topography and setting naturally screen the site?* *- What is the potential for design-led solutions?*	The design of modern waste management facilities is increasingly adopting innovative practice and this could have positive effects on this SA objective. However, this would be very dependent on the exact nature and proposed design of the planned waste facility type, which would not be known until the planning application stage. If a site is lower lying than the surrounding landscape it would be less likely to have an effect than a site in a more prominent position.		Digital data on topography not available. The Council's own site assessments provide limited levels of detail about topography and potential for screening.
	++	N/A	
	+?	Positive effects through innovative design could be achieved at any of the potential sites regardless of location, but the effects are uncertain until the exact nature and design of the proposed facility are submitted with a planning application, thus is not recorded in the site appraisal.	
	0	Potential sites which: • Are not likely to be prominent in the landscape due to their topography (e.g. if facility were to be located at the base of an mineral extraction site that is much lower lying than the surrounding landscape) are considered to have no effect on these assets.	
	-	Potential sites which: • Are partially prominent in the landscape. For example, they may be visible from a small number of sensitive receptors, or from transient views from roads, but may be screened by woodland or existing development such as industrial warehousing. could have a negative effect on these assets.	

[30] Atkins (2009) Gloucestershire County Council Potential Waste Sites: Landscape and Visual Impact Assessment

SA Objective and Sub Questions[23]	Score	Justification/reasons for score	Data sources (and limitations)
	--	Potential sites which: • Are likely to be prominent in the landscape because the surrounding landscape is very low-lying and flat, or the site is on a ridge or slope that would make it visible, and would be visible from a number of receptors could have a significant negative effect on these assets.	
11. To protect conserve and enhance Gloucestershire's **material, cultural and recreational assets**. *- What are the likely impacts on material, cultural and recreational assets?* *- Have any material assets been overlooked?*	All of the potential waste sites could have negative effects on access to and the enjoyment of nature and recreational facilities if they are in close proximity, by making the sites less attractive for users or in some cases removing the access (e.g. public rights of way). This is because all development would result in some level of noise, traffic, and light pollution during construction and potentially during operation as well. There may be some opportunities for enhancement to footpaths/Public Rights of Way (PRoW) through development of particular sites. Protection and conservation of cultural assets is covered under SA Objective 13 below.		GIS data from GCC, OS base map and information from Council's own site assessments.
	++	Potential sites which are: • Assessed as having an opportunity for major enhancement and/or additional routes to be constructed, as identified in the GCC PRoW assessment for the site could have a significant positive effect on recreational assets in the County.	
	+	Potential sites which are: • Assessed by the GCC PRoW Team as having no Public Right of Way network present, or presence of a PRoW network where there is an opportunity for the existing route to be enhanced. could have a positive effect on recreational assets in the County.	
	0	Potential sites which are: • More than 250m from a leisure or recreational facility or open space, including Rights of Way, or • Identified in GCC PRoW Team assessment as being a PRoW but not requiring diversion or enhancement. are not expected to have an effect on recreation assets in the County.	
	-	Potential sites which are: • Within 250m of a leisure or recreational facility or open space, including Rights of Way, or • Identified by GCC PRoW Team assessment as having an impact on the PRoW network with some minor re-routing required. could have a negative effect on recreation activities assets in the County by making the facilities less attractive for users.	

SA Objective and Sub Questions[23]	Score	Justification/reasons for score	Data sources (and limitations)
	--	Potential sites which: • Include a leisure or recreational facility or open space, including Rights of Way, or • Are identified by GCC PRoW Team as having a major adverse impact on the Network with potential closure, or major deviation to the network required could have a significant negative effect on recreation activities, as development of the sites would either mean removing part of a facility/open space, or removing land which has potential for recreation/access to the countryside.	
12. To protect conserve and enhance **geodiversity** in Gloucestershire. *- What if any are the likely impacts on geodiversity?*	National and regionally important sites of geological/geomorphological interest (SSSIs or RIGGS) should also be protected under PPS 9. PPS 9 states that the aim of planning decisions should be to prevent harm to biodiversity and geological conservation interests. Where granting planning permission would result in significant harm to those interests, local planning authorities will need to be satisfied that the development cannot reasonably be located on any alternative sites that would result in less or no harm. In the absence of any such alternatives, local planning authorities should ensure that, before planning permission is granted, adequate mitigation measures are put in place. Finally, plan policies should promote opportunities for the incorporation of beneficial biodiversity and geological features within the design of development.		GIS data from Natural England.
	++	N/A	
	+?	The design of modern waste management facilities is increasingly adopting innovative practice and there may be opportunities to incorporate important geological features within the design of the development. However, this would be very dependent on the exact nature and proposed design of the planned waste facility type, which would not be known until the planning application stage, thus is not recorded in the overall SA judgement.	
	0	Potential sites which are: • More than 500m from a national site of geological interest (SSSI) or Regionally Important Geological/Geomorphological Site (RIGGS) are not expected to affect this objective.	
	-	Potential sites which are: • Within 500m of a national site of geological interest (SSSI) or Regionally Important Geological/Geomorphological Site could have a negative effect on this objective.	
	--	Potential sites which are: • Within the boundary of a national site of geological interest (SSSI) or Regionally Important Geological/Geomorphological Site could have significant negative effects on this objective.	

SA Objective and Sub Questions[23]	Score	Justification/reasons for score	Data sources (and limitations)
13. To protect conserve and enhance **townscapes** and Gloucestershire's **architectural and archaeological heritage**. *- What are the potential adverse effects on heritage sites of International importance and / or sites or buildings with a nationally recognised designation?*	Listed buildings have statutory protection through the Planning (Listed Buildings and Conservation Areas) Act 1990. The Ancient Monuments and Archaeological Areas Act (1979) protects monuments whose preservation is given priority over other land uses. Local authorities are required to make provision for the protection of the historic environment in their policies and their allocation of resources and registration of historic parks and gardens is a material consideration in planning terms, as defined in Planning Policy Guidance Note 15: Planning and the Historic Environment paragraph 2.24. The development of waste management facilities on sites in proximity to these assets could have a negative effect on the setting of these assets.		GIS data from English Heritage (EH) and information from Council's own site assessments. Conservation Areas designated within Gloucestershire Structure Plan and District Local Plans / LDFs
	++	N/A	
	+	The design of modern waste management facilities is increasingly adopting innovative practice and this could have positive effects on townscape character. However, this would be very dependent on the exact nature and proposed design of the planned waste facility type, which would not be known until the planning application stage, thus is not recorded in the overall SA judgement. However, potential sites which: • Scores positive (+) in GCC Archaeology Team site assessment due to known historical or archaeological remains Could have a positive effect on archaeological heritage.	
	0	Potential sites which are: • Within or adjacent to industrial estates • More than 250m from a Historic Park or Garden or Registered Battlefield • More than 100m from a Scheduled Ancient Monument or Listed Building • More than 100m from a Conservation Area, or • Scores neutral (0) in GCC Archaeology Team site assessment since the site contains no known historical or archaeologically significant remains, but may provide a setting or potential to contain significant remains are considered to have no effect on these assets.	
	-	Potential sites which are: • Within 250m of a Historic Park or Garden or Registered Battlefield • Within 100m of a Scheduled Ancient Monument or Listed Building • Within 100m of a Conservation Area, or • Scores negative (-) in GCC Archaeology Team site assessment since it provides setting to a designated Category 1 site on known significant archaeological remains could have a negative effect on these assets.	

SA Objective and Sub Questions[23]	Score	Justification/reasons for score	Data sources (and limitations)
	--	Potential sites which: • Are within a Historic Park or Garden or Registered Battlefield • Have Listed Buildings or Scheduled Ancient Monuments present on site • Are located within a Conservation Area, or • Are assessed by GCC Archaeology Team as double negative (--) due to containing one of the above features. could have a significant negative effect on these assets.	
14. To prevent **flooding**, in particular preventing inappropriate development in the floodplain and to ensure that waste development does not compromise sustainable sources of water supply. *- Can the risk of flooding be minimised through site design?* *- Will surface water runoff be reduced?* *- Is there the potential to enhance and restore the river corridor?* *- Is there the potential to protect and promote areas for future flood alleviation schemes?* *- Do proposals improve flood awareness and emergency planning?*	Planning Policy Statement 25: Development and Flood Risk (PPS 25) requires Local Authorities to take a risk based approach to proposals for development in or affecting flood-risk areas. Local Authorities should apply a Sequential Test when allocating land in Local Development Documents to demonstrate that there are no reasonably available alternative sites in areas with a lower probability of flooding that would be appropriate for the type of development proposed. Local authorities should take a sequential approach to developing in areas at risk of flooding, giving preference to locating development in Flood Zone 1, followed by Flood Zone 2 then Flood Zone 3.		GIS data from Environment Agency; and GCC's site assessment.
	++	Potential sites which are: • Entirely within Flood Zone 1, and • Scored very positively in relation to fluvial flood risk (++) by the GCC flood risk site assessment because the site is fully in Flood Zone 1 could have a significant positive effect on preventing flooding and reducing risk to public water supply.	
	+	Potential sites which are: • Scored as positive (+) in the GCC flood risk site assessment, which indicates that the site is mainly in Flood Zone 1, but is marginally affected by Flood Zones 2, 3a and 3b.	
	0	Potential sites which are: • Mainly in Flood Zone 1 and/or marginally affected by Flood Zones 2 or 3, and the GCC flood risk site assessment indicates that site may have some potential for waste uses through certain conditions (score 0) are not expected to have an effect on flood-risk areas.	
	-	Potential sites which are: • Partially or entirely within Flood Zone 2, and scored as a negative (-) in the GCC flood risk site assessment could have a negative effect on flood-risk areas.	
	--	Potential sites which are: • Partially or entirely within Flood Zone 3, and scored as a double negative (--) in the flood risk site assessment by GCC due to historical flood risk or flood risk from other sources could have a significant negative effect on flood-risk areas.	
15. To **prevent pollution** and to apply the	In relation to the <u>location</u> of potential waste sites, potential pollution effects are already covered under SA Objectives 1, 3, 16-18. The precautionary principle is inherently being applied to the site allocation process through the Council's own site		No data needed.

SA Objective and Sub Questions[23]	Score	Justification/reasons for score	Data sources (and limitations)
precautionary principle in consultation with waste regulation authorities. *- Is there a level of scientific uncertainty about risk such that the best available scientific advice cannot assess the risk with sufficient confidence to inform decision-making.*	assessment methodology and this independent SA of the potential waste sites.		
16. To protect and enhance **soil / land quality** in Gloucestershire. *- What is the landtake?* *- Does the site suffer from potential land instability?* *- Is the site previously developed?* *- If the site is or was previously contaminated – is there the potential for effective remedial clean up?*	According to Planning Policy Statement 3: Housing, '*previously developed land is that which is or was occupied by a permanent structure, including the curtilage of the developed land and any associated fixed surface infrastructure*.' Most industrial sites are likely to be on previously developed land, but there may be some sites on the edges of towns etc. that are greenfield sites and may even be on high quality agricultural land. For the purposes of this appraisal, active or former waste management or minerals extraction sites have been assessed as previously developed. However, as stated in PPS3, previously developed land does not include '*land that has been developed for minerals extraction or waste disposal by landfill purposes where the provision for restoration has been made through development control procedures*.' Therefore, where former minerals and waste sites have been restored, these are not considered as previously developed land in the sustainability appraisal. Planning Policy Statement 7: Sustainable Development in Rural Areas states 'where significant development of agricultural land is unavoidable, local planning authorities should seek to use areas of poorer quality land (grades 3b, 4 and 5) in preference to that of a higher quality, except where this would be inconsistent with other sustainability considerations'. Mixed effects will be recorded for sites that although being classified as previously developed, also include or are wholly within grades 1, 2 or 3 best and most versatile agricultural land.		GIS data from National Land Use Database (PDL). Also from *Contaminated Land Officers at District Councils. (Note: Not all Districts were able to supply GCC with the information requested).* Defra (Best and Most Versatile (BMV) agricultural land) No data is available for areas of instability.
	++	Potential sites which are: • Large (i.e. over 5 ha) <u>and entirely</u> on previously developed land (PDL) could have a significant positive effect on protecting or enhancing soil/land quality.	
	+	Potential sites which are: • Large (i.e. over 5 ha) <u>and partially</u> on previously developed land, <u>or</u> • Small to medium (i.e. less than 5 ha) <u>and entirely</u> on previously developed land (PDL) could have a positive effect on protecting or enhancing soil/land quality.	
	0	Potential sites which are: • Not within grade 1, 2 or 3 agricultural land • Not on greenfield sites are not expected to have an effect on protecting or enhancing soil/land quality.	

SA Objective and Sub Questions[23]	Score	Justification/reasons for score	Data sources (and limitations)
	-	Potential sites which are: • Large (i.e. over 5 ha) and partially within grade 1, 2 or within grade 3 BMV agricultural land, or partially within greenfield land; or • Small to medium (i.e. less than 5 ha) and entirely within grade 1, 2 or within grade 3 BMV agricultural land or entirely within greenfield land could have a negative effect on protecting or enhancing soil/land quality.	
	--	Potential sites which are: • Large (i.e. over 5 ha) and located entirely on greenfield sites or entirely within grade 1 or 2 BMV agricultural land could have a significant negative effect on protecting or enhancing soil/land quality.	
17. To protect and enhance **air quality** in Gloucestershire. *- What is the proximity of sensitive receptors and to what extent can air emissions, including dust be controlled?* *- What is the proximity of receptors sensitive to odours, and to what extent can odours be controlled?* (Partially covered under SA Objective 19 in terms of reducing road transport of waste)	Proposals for all types of waste management facilities could contribute to increasing air pollution in the County with regards to waste transportation by road, as well as any air pollution associated with the operation of the facility and processes used, such as dust and odour if waste is stored in open areas, bio-aerosols from biological process and acid gases/CO_2/dioxins and furans from thermal processes. The type and extent of air pollution (e.g. from dust or other emissions) will depend on the type of facility proposed on the site, which is not known at this stage in the planning process. Development of waste facilities will need to meet the high standards of design and operation required to obtain Pollution Prevention and Control (PPC) permits and the Environmental Permits (EP) regulated and enforced by the Environment Agency. Emissions limits are set by the EC Waste Incineration Directive (2000), and waste management facilities are required under their PPC permits and EPs to operate within these limits. The requirement to meet PPC/EP permitting standards (including emissions to air, land and water, energy efficiency, noise, vibration and heat and accident prevention) should ensure that design and operation of waste facilities minimises any potentially significant effects on human health and the environment. In addition, many waste management facilities will meet the criteria that require a site-specific environmental impact assessment to be undertaken to accompany the planning application, which would look at the potential impacts and mitigation measures in more detail, and influence the conditions placed on the planning permission. The 2004 Government[31] research showed that management of municipal solid waste accounts for less than 2.5% of all emissions for which data are available (including carbon dioxide and toxic gases but excluding methane). These conclusions mean that the overall scale of direct effects of releases to air from waste management practices is relatively small compared with emissions from other sectors such as transport. The contributions of municipal solid waste to air emissions of methane are higher (27% of UK total) but these arise mostly from landfill and are not considered in this SA as the Gloucestershire Waste Core Strategy is not seeking to make provision for new landfill sites. The sub-questions relating to air quality impacts on sensitive receptors due to emissions from the facility itself are already covered under the assumptions for SA Objectives 1 and 3 above. The assumptions discussed below for potential effects on this	GIS data from GCC and the Council's own site assessments.

[31] *Review of Environmental and Health Effects of Waste Management: Municipal Solid Waste and Similar Wastes.* Prepared for Defra by Enviros and University of Birmingham, May 2004.

SA Objective and Sub Questions[23]	Score	Justification/reasons for score	Data sources (and limitations)
		objective therefore relate to air emissions from road transport of waste only and consider the proximity of the site to the strategic highway network and Air Quality Management Areas (AQMAs) identified by local authorities as areas where existing air pollution is already an issue. Any increases in road transport of waste will lead to increases in local air pollution and emissions of CO2. The further vehicles transporting waste have to travel along local roads (i.e. not on the primary road network), the higher the potential for more localised air pollution as they are likely to travel more slowly on local roads. In addition, if the waste facility is within, or vehicles are travelling through, AQMAs where existing air pollution issues have been identified, there is more potential for negative effects on air quality. The Environment Report for the Gloucestershire Municipal Waste Management Strategy[32] notes that decreased quality of local air pollution could, in severe cases, lead to an increase in adverse health effects. It refers to the Health & Safety Executive website[33] which states that exposure to fumes from diesel engines can cause irritation to the eyes or respiratory tract. These effects are generally short term and should disappear when away from the source of exposure. However, prolonged exposure to diesel fumes can cause longer term problems, but the public are not considered to be at risk from these long term impacts as their exposure is only short term. Waste collection crews may be at higher risk as they may have more prolonged exposure to fumes. However, this will depend to a large extent on the type and size of vehicle and can not be considered within this SA as it relates only to the potential sites for new facilities, and not the waste collection processes or routes. It should be noted also that general improvements in vehicle engines and abatement techniques have led to dramatic improvements in vehicle emissions. The potential of each site to reduce the distance waste travels by road (through the use of more sustainable transport modes) is covered under SA Objective 19 below.	
	++	Potential sites which are: • Assessed by GCC as being within good proximity to the strategic highway network and are not within 1km of an AQMA are expected to have a significant positive impact on protecting air quality, although this impact is very dependent on the design, access and potential mitigation measures proposed, which would be assessed at the planning application stage.	
	+	Potential sites which are: • Assessed by GCC as being within medium proximity to the strategic highway network and are not within 1km of an AQMA are expected to have a positive impact on air quality, although this impact is very dependent on the design, access and potential mitigation measures proposed, which would be assessed at the planning application stage.	

[32] *Environmental Report for the Gloucestershire Municipal Waste Management Strategy.* Prepared for Gloucestershire County Council by Eunomia, October 2007.
[33] http://www.hse.gov.uk/pubns/indg286.htm

SA Objective and Sub Questions[23]	Score	Justification/reasons for score	Data sources (and limitations)
	0	Potential sites which are: • Assessed by GCC as being in either good or reasonable proximity to the strategic highway network but are within 1km of an AQMA are expected to have a negligible impact on protecting air quality, although this impact is very dependent on the design, access and potential mitigation measures proposed, which would be assessed at the planning application stage.	
	-	Potential sites which are: • Within 1km of an Air Quality Management Areas (AQMA), or • Assessed by GCC Highways as being within low proximity to the strategic highway network and requiring access via other (local) roads (which may involve trips through the AONB). could have a negative impact on air quality, although this impact is very dependent on the design and potential mitigation measures proposed, which would be assessed at the planning application stage.	
	--	N/A	
18. To protect and enhance **water quality** in Gloucestershire. *- What is the proximity of vulnerable surface or groundwater?* *- What are the impacts on water consumption?*	The Water Framework Directive[34] applies to all surface freshwater bodies (including lakes, streams and rivers), groundwaters, groundwater dependent ecosystems, estuaries and coastal waters out to one mile from low-water. It aims to improve inland and coastal waters and protect them from diffuse pollution in urban and rural areas; increase the sustainable use of water as a natural resource and create better habitats for wildlife that lives in and around water. The extent to which a waste management facility will affect ground and surface water on a potential site depends on the type of facility used. Non-inert landfill sites that are in Source Protection Zone 1 or adjacent to a water body could potentially lead to loss of contaminants or accidental pollution incidents. However, proposals for enclosed facilities are not expected to affect this objective. As stated in Planning for Waste Management Facilities[35], "*as most facilities are under cover and on concrete hard standing with separate foul water drainage, rainfall is unlikely to come into contact with the waste materials and, as such, water pollution is unlikely*." Although composting operations produce leachate, the enclosure of such facilities will reduce potential impacts. Standard design features of such facilities require that sites are surfaced adequately, drainage is segregated and containment principles are applied. As stated in Planning for Waste Management Facilities, "*leachate that is not recirculated should be collected or directed into a sewer or water course with appropriate consent or an inlet at a wastewater treatment plant*." Therefore proposals for enclosed composting facilities are not expected to affect this objective. Potential for adverse effects on water quality will also be assessed at the planning application stage. It will not be possible to assess water use and efficiency at this stage in the planning process, as it will very much depend on the proposal (facility type, design, etc), which would be assessed at the planning application stage.		No data needed, but the Council's EA provided GIS data provides information about the location of underlying aquifers and Source Protection Zones.
	++	N/A	
	+	N/A	

[34] The European Water Framework Directive into force in December 2000, and was transposed into UK law by December 2003.
[35] *Planning for Waste Management Facilities: A Research Study,* ODPM, August 2004.

SA Objective and Sub Questions[23]	Score	Justification/reasons for score	Data sources (and limitations)
	0	Potential sites for waste management are expected to have no effect on this objective, as the requirement for future waste management within Gloucestershire is likely to be met by modern facilities within enclosed buildings (as opposed to landfill).	
	-	N/A	
	--	N/A	
19. To reduce the adverse **impacts of lorry traffic** on the environment and communities through means such as: a) reducing the need to travel b) promoting more sustainable means of transport e.g. by rail or water c) sensitive lorry routing d) the use of sustainable alternative fuels e) promoting the management of waste in one of the nearest appropriate installations. *- What is the capacity of the site and transport infrastructure to support the sustainable movement of waste and products arising from resource recovery?* *- Will access be reliant on local roads?* (Partially covered under SA Objectives 6 and 17 in terms of employee transport opportunities and air quality impacts of waste vehicles	All facilities that may be proposed on sites allocated for waste management in the Core Strategy are likely to involve some road transportation of waste, however, proximity to rail lines/depots/sidings, rivers/canals or wharves could provide opportunities to explore more sustainable modes of transporting waste. Paragraph 21 of PPS 10 sets out criteria for site assessments, which include the need to assess sites and areas against the capacity of existing and potential transport infrastructure to support sustainable movement of waste and products arising from resource recovery, seeking to use modes other than road transport where practicable and beneficial. As discussed above under SA Objective 17, air emissions from transport of waste are likely to have more of an effect on the environment and communities than air emissions from the facility itself, therefore, opportunities to reduce road transport of waste would have positive effects on this objective. Direct impacts of lorry traffic (i.e. noise, nuisance, safety, congestion as opposed to air pollution) on communities relates to how much access is reliant on local roads, therefore the GCC Highways assessment in relation to proximity to the strategic highways network has also been used to assess the potential for effects on this objective. Mixed effects may be recorded where a site is assessed by the GCC Highways assessment as having good or high potential for sustainable transport but poor in relation to its proximity to the strategic highway network (and vice versa). If the more detailed assessment of the sites undertaken in September 2009[36] provides more detail about the potential for sustainable transport then this has been reflected in the scoring. Some of the sub-questions for this objective are also covered under the assumptions for SA Objectives 6 and 17 above in relation to employee transport opportunities and air quality impacts of lorries travelling on local roads.		GIS data for mapped freight rail sidings, rivers, canals and wharves, OS base map, and Council's own site assessments relating to transport.
	++	Potential sites which are: • Assessed by GCC Highways as having good potential for sustainable transport for operational access. • Assessed by GCC Highways as being within good proximity to the strategic highway network could have a significant positive effect on reducing the impacts of lorry traffic on the environment and communities.	
	+	Potential sites which are: • Assessed by GCC Highways as as having medium potential for sustainable transport for operational access due to distance from the nearest appropriate water/rail facility. • Assessed by GCC Highways as being within medium proximity to the strategic highway network could have positive effect on reducing the impacts of lorry traffic on the environment and communities.	

[36] GCC (2009) Transport Appraisal of the Phase 2 list of Strategic Waste Sites identified as part of the Waste Core Strategy

SA Objective and Sub Questions[23]	Score	Justification/reasons for score	Data sources (and limitations)
travelling on local roads)	0	N/A	
	-	Potential sites which are: • Assessed by GCC Highways as having no potential for rail and/or water transport due to distances involved. • Assessed by GCC Highways as being within low proximity of the strategic highway network and requiring access via other (local) roads (which may involve trips through the AONB). could have a minor negative effect on reducing the impacts of lorry traffic on the environment and communities.	
	--	N/A	
	+/-	A mixed effect (any combination of positives and negatives) will be recorded for sites which score a positive for the GCC Highways assessment as having good potential for sustainable transport but poor in relation to its proximity to the strategic highway network (and vice versa). The score for the sustainable transport potential is shown first, with the proximity to the strategic highways network score second.	
20. To **reduce waste to landfill** and in dealing with all waste streams to actively **promote the waste hierarchy** (i.e. Prevent, Reduce, Reuse, Recycle, Recover, Dispose) to achieve the sustainable management of waste. *- What is the impact of any waste prevention and waste reduction activities?* *- What are the levels of reuse, recycling (including composting) and recovery achieved by each site option?* *- What is the diversion from landfill?*	The Waste Core Strategy aims to ensure that landfill is a 'last resort' when developing waste management facilities.		None needed.
	++	N/A	
	+	All facility types that may be developed on sites allocated for waste management in the Core Strategy are likely to have a minor positive effect by ensuring waste management occurs using processes higher up the waste hierarchy than landfill. However, the specific location of sites for these waste management facilities would have no effects on this objective as the effects depend on the type of facility that eventually gets proposed. This may need to be re-assessed at a later stage if facility types are prescribed on the sites that get allocated in the Waste Core Strategy.	
	0	N/A	
	-	N/A	
	--	N/A	
21. To reduce the global **use of primary materials** and minimise net energy balance requirements. *- What is the impact on total material requirement?* *- What are the energy balance impacts?*	All facility types that may be developed on sites allocated for waste management in the Core Strategy are likely to have a minor positive effect by ensuring waste management occurs using processes higher up the waste hierarchy than landfill, which should help to recycle, compost and recover value or energy from waste and reduce use of primary materials. However, the specific location of sites for these waste management facilities would have no effects on this objective as the effects depend on the type of facility that eventually gets proposed. The potential for energy generation from waste facilities is considered under SA Objectives 4 and 22. The mass energy balance that may be achieved through the use of different technologies would only be able to be estimated if specific facility types were identified on sites.		Potential data source are The Gloucestershire Energy Strategy & Carbon Management Strategy & Implementation Plan http://www.gloucestershire.gov.uk/index.cfm?articleid=1133

SA Objective and Sub Questions[23]	Score	Justification/reasons for score	Data sources (and limitations)
(Partially covered under SA Objective 19 in terms of reducing road transport of waste)	++	N/A	But these documents are general in scope and until a particular technology is proposed it will be difficult to assess energy balance impacts.
	+	All facility types that may be developed on sites allocated for waste management in the Core Strategy are likely to have a minor positive effect by ensuring waste management occurs using processes higher up the waste hierarchy than landfill. However, the specific location of sites for these waste management facilities would have no effects on this objective as the effects depend on the type of facility that eventually gets proposed. This may need to be re-assessed at a later stage if facility types are prescribed on the sites that get allocated in the Waste Core Strategy.	
	0	N/A	
	-	N/A	
	--	N/A	
22. To reduce contributions to and to **adapt to Climate Change**. *- To what extent does the site or facility offer the capacity for net electricity generation, community heating / combined heat and power or the production of waste derived biofuels / biogas?* *- How flexible or adaptable is the site or facility in terms of a) adapting to Climate Change and b) using new technology as it develops?*	It is not possible for the undeveloped site to have an impact on reducing energy demand, however, if energy were to be recovered from the waste management process under a combined heat and power (CHP) scheme, this could have a significant positive effect on increasing the proportion of energy generated from renewable sources in Gloucestershire. However, in general, the opportunity to incorporate a CHP scheme is only available to future residential or business park developments as opposed to retrofitting infrastructure into existing development. Proximity to future residential/business developments is difficult to determine. In addition, the type of facility to be developed on each site will not be known until the planning application stage thus the significant positive effects would be uncertain. The flexibility of the site to adapt to climate change will depend more on the specific design of the facility and its layout, and incorporation of sustainable construction techniques, drainage systems and measures to enable changes to new technologies as they develop etc. This can not be assessed until the detailed proposals for a site are known, which would be at the planning application stage. Other policies in the Waste Core Strategy which provide criteria for ensuring these measures are included in planning applications will be assessed separately from the potential waste sites.		No specific data available at this point in time as to suitable heat clients.
	++?	Sites that are within or adjacent to an industrial estate or known/proposed user of CHP have the potential for significant positive effects if energy were to be generated from the waste management process and used within nearby development. This score is uncertain however, as it will depend on the type of facility proposed on the site, and the feasibility of incorporating energy use within nearby development, which will not be able to be determined until planning application stage.	
	+?	Sites that are within 250m of an industrial estate or known/proposed user of CHP could have a minor positive effect with regards this objective if energy were to be generated from the waste management process and used by neighbouring users. However, the potential for this will depend on the nature of the facility that would be developed on the site.	
	0	Sites that are greater than 250m from an industrial estate or known/proposed user of CHP would have no effect on this objective.	
	-	N/A	

SA Objective and Sub Questions[23]	Score	Justification/reasons for score	Data sources (and limitations)
	--	N/A	

Appendix 3

SA Matrices for the Publication Version of the Waste Core Strategy

CONTENTS OF APPENDIX 3

Table 1: Key to symbols used in predicting potential sustainability effects

Symbol	Type of effect
++	Significant positive effect likely
++ ?	Significant positive effect uncertain
+	Minor positive effect likely
+?	Minor positive effect uncertain
0	No effect likely
+/- or ++/-- etc	A mixture of positive and negative effects
-?	Minor negative effect uncertain
-	Minor negative effect likely
- -?	Significant negative effect uncertain
--	Significant negative effect likely
?	Effect uncertain due to lack of baseline information or detail regarding type of facility that would be developed
N/A	No effect has been assessed.

Table 2: Appraisal of Waste Core Strategy Vision for 2027

SA Objective	SA Score	Justification
Waste Core Strategy Vision for 2027		
1. To promote sustainable development and sustainable communities and improve the **health and wellbeing** of people living and working in Gloucestershire as well as visitors to the County.	+	The vision states that Gloucestershire will be a healthy and safe place to live and that communities will be safeguarded from the adverse impacts of waste management, which can include impacts on public health such as odours.
2. To **educate the public** about waste issues and to **maximise community participation** and access to waste services and facilities in Gloucestershire.	+	The high targets for household recycling (60% by 2027) indicate that levels of public participation in waste management are likely to increase; although no direct impact on public education about waste management is expected.
3. To safeguard the **amenity of local communities** from the adverse impacts of waste development.	+	The vision states that communities within Gloucestershire will be safeguarded from the adverse impacts of waste management, which can include impacts on amenity such as noise and odours.
4. To promote **sustainable economic development** in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	0	The vision is not expected to have a direct effect on sustainable economic development within Gloucestershire.
5. To manage waste in an **economically sustainable** way through means that represent good value for tax payers in Gloucestershire.	+	The location of strategic waste sites in the central area of the county, in close proximity to the main sources of waste arisings and the transport links of the M5 indicates that positive impacts on this objective are likely as the cost of transporting waste is likely to be reduced. In addition, the vision aims that businesses will be aware of the economic issues surrounding waste management, which means that they will be more able to carry this out in the most economically sustainable ways. In addition, the vision seeks to improve the way municipal waste collection occurs across the county through a more co-ordinated approach, which should also help to represent good value for tax payers in Gloucestershire.
6. To provide **employment opportunities** in both rural and urban areas of the County, promoting diversification in the economy.	+	The fact that new strategic and non-strategic waste management facilities are to be developed within Gloucestershire will result in employment generation. The fact that strategic sites are to be located in the central part of the county indicates that the majority of opportunities may be located close to the main urban areas; however the vision also specifies that non-strategic 'local' facilities will be dispersed more widely around the county including in the more rural areas, so there should also be some job creation in these areas.

SA Objective	SA Score	Justification
Waste Core Strategy Vision for 2027		
7. To ensure that waste sites do not compromise the **safety of commercial or military aerodromes**.	0	The impacts of waste management on aircraft safety will be determined by the precise type and location of individual waste management facilities, which is either unknown at this stage or appraised separately in the case of the strategic allocations, and will not be influenced by the overarching vision for waste management in the county.
8. To protect, conserve and enhance **biodiversity** in Gloucestershire.	+	The vision states that the environmental importance of waste management will be recognised, which is taken to include the potential impacts on biodiversity. In addition, it states that Gloucestershire's key environmental assets will be safeguarded from the adverse impacts of waste management.
9. To protect, conserve and enhance the **landscape** in Gloucestershire.	+	The vision states that the environmental importance of waste management will be recognised, which is taken to include the potential impacts on the landscape. In addition, it specifically states that Gloucestershire's key landscape assets will be safeguarded from the adverse impacts of waste management.
10. To ensure that waste sites have the potential for adequate **screening and/or innovative design** to be incorporated.	-?	The likely impacts of the vision on the screening potential and design of waste sites is uncertain. The potential for screening sites will depend largely on the individual site locations, which are either unknown at this stage or appraised separately in the case of the strategic allocations. However, the fact that the vision endorses the provision of non-strategic sites in the more rural areas such as the Forest of Dean and the Cotswolds indicates that screening for those new facilities may be more challenging than in the more built up areas of the county. In addition, the fact that previously developed buildings will be utilised where possible may limit the opportunities available for incorporating innovative design into new waste facilities.
11. To protect conserve and enhance Gloucestershire's **material, cultural and recreational assets**.	0	The impacts of waste management on material, cultural and recreational assets will be determined by the precise location of individual waste management facilities which is either unknown at this stage or is appraised separately in the case of the strategic allocations, and will not be influenced by the overarching vision for waste management in the county.
12. To protect conserve and enhance **geodiversity** in Gloucestershire.	+	The vision states that the environmental importance of waste management will be recognised, which is taken to include the potential impacts on geodiversity. In addition, it states that Gloucestershire's key environmental assets will be safeguarded from the adverse impacts of waste management.
13. To protect conserve and enhance **townscapes** and Gloucestershire's **architectural and archaeological heritage**.	0	The impacts of waste management townscapes and architectural and archaeological assets will be determined by the precise location and design of individual waste management facilities which is either unknown at this stage or is appraised separately in the case of the strategic allocations, and will not be influenced by the overarching vision for waste management in the county.
14. To prevent **flooding**, in particular preventing inappropriate development in the floodplain and to ensure that waste development does not compromise sustainable sources of water supply.	+	The vision states that land liable to flooding (considering both the current and likely future flood risks) will be safeguarded from the adverse impacts of waste management.

SA Objective	SA Score	Justification
Waste Core Strategy Vision for 2027		
15. To **prevent pollution** and to apply the precautionary principle in consultation with waste regulation authorities.	+	The vision states that the environmental importance of waste management will be recognised, which is taken to include the potential impacts in terms of pollution. In addition, it states that Gloucestershire's key environmental assets will be safeguarded from the adverse impacts of waste management.
16. To protect and enhance **soil/land quality** in Gloucestershire.	+	The vision states that the environmental importance of waste management will be recognised, which is taken to include the potential impacts on soil and the land. In addition, it states that Gloucestershire's key environmental assets will be safeguarded from the adverse impacts of waste management. The fact that the vision supports the development of waste management facilities on previously developed land also indicates that there will be positive impacts relating to the preservation of good quality land/soil.
17. To protect and enhance **air quality** in Gloucestershire.	+/-?	The vision states that the environmental importance of waste management will be recognised, which is taken to include the potential impacts on air quality. In addition, it states that Gloucestershire's key environmental assets will be safeguarded from the adverse impacts of waste management. The fact that the vision supports the development of strategic waste sites in the central area of the county indicates that lorry transport distances may be reduced, having a positive impact on air quality; however the vision also supports non-strategic sites in more rural areas of the county may mean that in these cases, the opposite impact occurs. Overall, the likely impacts are mixed and uncertain.
18. To protect and enhance **water quality** in Gloucestershire.	+	The vision states that the environmental importance of waste management will be recognised, which is taken to include the potential impacts on water quality. In addition, it states that Gloucestershire's key environmental assets will be safeguarded from the adverse impacts of waste management.
19. To reduce the adverse **impacts of lorry traffic** on the environment and communities through means such as: a) reducing the need to travel; b) promoting more sustainable means of transport e.g. by rail or water; c) sensitive lorry routing; d) the use of sustainable alternative fuels; e) promoting the management of waste in one of the nearest appropriate installations.	+/-?	The fact that the vision supports the development of strategic waste sites in the central area of the county indicates that lorry transport distances may be reduced, having a positive impact on air quality; however the vision also supports non-strategic sites in more rural areas of the county may mean that in these cases, the opposite impact occurs. Overall, the likely impacts are mixed and uncertain.
20. To **reduce waste to landfill** and in dealing with all waste streams to actively **promote the waste hierarchy** (i.e. Prevent, Reduce, Reuse, Recycle, Recover, Dispose) to achieve the sustainable management	++	The core aims of the vision are to reduce the amount of waste created, and then to significantly increase the amount that is recycled or re-used in order to divert waste from landfill. In addition, other parts of the vision, such as the support given to the re-use of previously developed sites and buildings, should result in reduced waste generation, in this case during the construction phase.

SA Objective	SA Score	Justification
Waste Core Strategy Vision for 2027		
21. To reduce the global **use of primary materials** and minimise net energy balance requirements.	++	The support given to the re-use of previously developed sites and buildings should result in reduced use of primary materials. Increasing the rates of waste recycling and re-use and raising awareness of the need for waste minimisation will have further positive impacts. The location of strategic sites where the use of heat and power can be maximised will have a beneficial impact on energy consumption.
22. To reduce contributions to and to **adapt to Climate Change**.	+	The location of strategic sites where the use of heat and power can be maximised will help to reduce Gloucestershire's contribution to climate change by reducing energy consumption from other sources. The fact that land liable to flooding will be safeguarded should help to increase Gloucestershire's resilience to the increased flood risk which is likely to result from climate change.
Original SA Objective 1: To promote sustainable development and sustainable communities in Gloucestershire in particular giving people the opportunity to live in an affordable and sustainably designed and constructed home.	0	The vision is not expected to have a direct impact on this objective.
Original SA Objective 2: To safeguard sites suitable for the location of waste management facilities or future mineral development from other proposed development.	0	The vision is not expected to have a direct impact on this objective.

Table 3: Appraisal of Strategic Objective 1 - Waste Reduction

SA Objective	SA Score	Justification
Strategic Objective 1: Waste Reduction		
1. To promote sustainable development and sustainable communities and improve the **health and wellbeing** of people living and working in Gloucestershire as well as visitors to the County.	+?	Minimising the amount of waste produced in Gloucestershire may have an indirect, minor positive impact on this objective in the longer term, as over time, if waste volumes decrease significantly, then there may be a reduction in the potential impacts of waste management activities such as odour and noise, which can affect public health.
2. To **educate the public** about waste issues and to **maximise community participation** and access to waste services and facilities in Gloucestershire.	++	The strategic objective aims to drive waste minimisation through an increase in public awareness about waste issues; therefore a significant positive impact on this objective is likely.
3. To safeguard the **amenity of local communities** from the adverse impacts of waste development.	+?	Minimising the amount of waste produced in Gloucestershire may have an indirect, minor positive impact on this objective in the longer term, as over time, if waste volumes decrease significantly, then there may be a reduction in the potential impacts of waste management activities such as odour and noise, which can affect amenity.
4. To promote **sustainable economic development** in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	0	This strategic objective is not likely to have a direct impact on sustainable economic development within Gloucestershire.
5. To manage waste in an **economically sustainable** way through means that represent good value for tax payers in Gloucestershire.	+	A reduction in the volume of waste produced in Gloucestershire is expected to have a positive impact on the economy, due to the resulting reduction in the costs associated with waste management.
6. To provide **employment opportunities** in both rural and urban areas of the County, promoting diversification in the economy.	-	It is possible that reducing the volume of waste produced may have a negative impact on local employment opportunities in the longer term, by reducing the need for waste management and the associated jobs. This effect is only likely to be minor due to the relatively small contribution of the waste industry to employment in Gloucestershire.
7. To ensure that waste sites do not compromise the **safety of commercial or military aerodromes**.	+?	The strategic objective is not likely to have a direct effect on aircraft safety as this will be affected only by the design and location of individual waste facilities which is not determined by this policy. However, there may be an indirect positive impact in the long term in that reduced waste production may mean that fewer or smaller waste management facilities are likely to be required, which may reduce the chances of their being any conflicting interests with aircraft or aerodromes.

SA Objective	SA Score	Justification
Strategic Objective 1: Waste Reduction		
8. To protect, conserve and enhance **biodiversity** in Gloucestershire.	+?	The strategic objective is not considered likely to have a direct effect on biodiversity as the potential impacts will depend largely on the location of individual waste sites. However, there may be an indirect positive impact in the long term in that reduced waste production may mean that fewer or smaller waste management facilities are likely to be required, which may reduce the chances of there being any conflicting interests with biodiversity assets in Gloucestershire.
9. To protect, conserve and enhance the **landscape** in Gloucestershire.	+?	The strategic objective is not likely to have a direct effect on landscape as the potential impacts will depend largely on the location, scale and design of individual waste sites. However, there may be an indirect positive impact in the long term in that reduced waste production may mean that fewer or smaller waste management facilities are likely to be required, which may reduce the chances of their being any adverse impacts on the landscape in Gloucestershire.
10. To ensure that waste sites have the potential for adequate **screening and/or innovative design** to be incorporated.	0	The strategic objective is not likely to affect this objective as the potential for screening and innovative design to be incorporated into waste developments will depend largely on the location, scale and design of individual waste sites, which is not determined by this policy.
11. To protect conserve and enhance Gloucestershire's **material, cultural and recreational assets**.	+?	The strategic objective is not likely to have a direct effect on this objective as the potential impacts will depend largely on the location of individual waste sites in relation to particular material, cultural and recreational assets. However, there may be an indirect positive impact in the long term in that reduced waste production may mean that fewer or smaller waste management facilities are likely to be required, which may reduce the chances of their being any conflicting interests with material, cultural and recreational assets in Gloucestershire.
12. To protect conserve and enhance **geodiversity** in Gloucestershire.	+?	The strategic objective is not likely to have a direct effect on geodiversity as the potential impacts will depend largely on the location of individual waste sites. However, there may be an indirect positive impact in the long term in that reduced waste production may mean that fewer or smaller waste management facilities are likely to be required, which may reduce the chances of their being any adverse impacts on geodiversity assets.
13. To protect conserve and enhance **townscapes** and Gloucestershire's **architectural and archaeological heritage**.	+?	The strategic objective is not likely to have a direct effect on this objective as the potential impacts will depend largely on the location of individual waste sites in relation to architectural and archaeological assets and settlements where the townscape may be affected by the development of waste facilities. However, there may be an indirect positive impact in the long term in that reduced waste production may mean that fewer or smaller waste management facilities are likely to be required, which may reduce the chances of their being any conflicting interests with archaeological/architectural assets or townscapes within Gloucestershire.

SA Objective	SA Score	Justification
Strategic Objective 1: Waste Reduction		
14. To prevent **flooding**, in particular preventing inappropriate development in the floodplain and to ensure that waste development does not compromise sustainable sources of water supply.	+?	The strategic objective is not likely to have a direct effect on this objective as the potential impacts on flooding will depend largely on the location of individual waste sites in relation to areas of higher flood risk, as well as on the design of particular waste facilities (e.g. the incorporation of SuDS). However, there may be an indirect positive impact in the long term in that reduced waste production may mean that fewer or smaller waste management facilities are likely to be required, which may reduce the chances of their being any adverse impact from on flood risk from development.
15. To **prevent pollution** and to apply the precautionary principle in consultation with waste regulation authorities.	+?	The strategic objective is not likely to have a direct effect on this objective as the potential impacts on pollution will depend largely on the nature and practices of individual waste sites. However, there may be an indirect positive impact in the long term in that reduced waste production may mean that fewer or smaller waste management facilities are likely to be required, which may reduce the chances of pollution incidents associated with waste management occurring.
16. To protect and enhance **soil/land quality** in Gloucestershire.	+?	The strategic objective is not likely to have a direct effect on this objective as the potential impacts on soil/land quality will depend largely on the location and size of individual waste sites. However, there may be an indirect positive impact in the long term in that reduced waste production may mean that fewer or smaller waste management facilities are likely to be required, which may reduce the area of greenfield land which is developed and therefore good quality soil which is lost.
17. To protect and enhance **air quality** in Gloucestershire.	+	Reducing the overall volume of waste produced in Gloucestershire should help to reduce the level of road traffic generated in the long term by the transportation of waste, which should have a positive impact on air quality as a result of reduced emissions from lorries.
18. To protect and enhance **water quality** in Gloucestershire.	+?	The strategic objective is not likely to have a direct effect on water quality. However, there may be an indirect positive impact in the long term in that reduced waste production may mean that fewer or smaller waste management facilities are likely to be required, which may reduce the chances of adverse impacts on water quality occurring.
19. To reduce the adverse **impacts of lorry traffic** on the environment and communities through means such as: a) reducing the need to travel; b) promoting more sustainable means of transport e.g. by rail or water; c) sensitive lorry routing; d) the use of sustainable alternative fuels; e) promoting the management of waste in one of the nearest appropriate installations.	+	The aim of the strategic objective is to reduce the volume of waste being generated in Gloucestershire, which should have a positive impact in the long term in terms of reducing the need to transport waste around the county by lorry; therefore a positive effect on this objective is likely.

SA Objective	SA Score	Justification
Strategic Objective 1: Waste Reduction		
20. To **reduce waste to landfill** and in dealing with all waste streams to actively **promote the waste hierarchy** (i.e. Prevent, Reduce, Reuse, Recycle, Recover, Dispose) to achieve the sustainable management	++	The purpose of the strategic objective is to prevent waste production which will reduce the volume of waste being disposed of by all means, including through landfill. As such, a significant positive impact on this objective is likely.
21. To reduce the global **use of primary materials** and minimise net energy balance requirements.	+	The strategic objective aims to minimise the generation of waste, which should include the re-use of materials which will reduce the use of primary materials.
22. To reduce contributions to and to **adapt to Climate Change**.	+	Reducing the overall volume of waste produced in Gloucestershire should help to reduce the volume of road traffic generated in the long term by waste transportation, therefore having a positive impact on reducing the contribution to climate change made by emissions from vehicle transport.
Original SA Objective 1: To promote sustainable development and sustainable communities in Gloucestershire in particular giving people the opportunity to live in an affordable and sustainably designed and constructed home.	0	The strategic objective is not expected to have a direct impact on this objective.
Original SA Objective 2: To safeguard sites suitable for the location of waste management facilities or future mineral development from other proposed development.	0	The strategic objective is not expected to have a direct impact on this objective.

Table 4: Appraisal of Strategic Objective 2 - Re-use, Recycling and Composting

SA Objective	SA Score	Justification
Strategic Objective 2: Re-use, Recycling and Composting		
1. To promote sustainable development and sustainable communities and improve the **health and wellbeing** of people living and working in Gloucestershire as well as visitors to the County.	0	The strategic objective is not likely to have a direct impact on health and wellbeing of people in Gloucestershire.
2. To **educate the public** about waste issues and to **maximise community participation** and access to waste services and facilities in Gloucestershire.	+?	The strategic objective is not likely to have a direct impact on education and levels of participation in waste management. However, encouraging recycling may have an indirect positive impact if improvements are made in terms of the provision of community recycling facilities.
3. To safeguard the **amenity of local communities** from the adverse impacts of waste development.	0	The strategic objective is not likely to have a direct impact on local amenity in Gloucestershire.
4. To promote **sustainable economic development** in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	0	The strategic objective is not likely to have a direct impact on sustainable economic development in Gloucestershire.
5. To manage waste in an **economically sustainable** way through means that represent good value for tax payers in Gloucestershire.	0	The strategic objective is not likely to have a direct impact on the economically sustainable management of waste.
6. To provide **employment opportunities** in both rural and urban areas of the County, promoting diversification in the economy.	0	The strategic objective is not likely to have a direct impact on employment.
7. To ensure that waste sites do not compromise the **safety of commercial or military aerodromes**.	0	The strategic objective is not likely to have a direct impact on aircraft safety. This will be more strongly influenced by the location of particular recycling facilities, which is either appraised under other policies such as WCS4 or will not be known until the planning application stage.
8. To protect, conserve and enhance **biodiversity** in Gloucestershire.	0	The strategic objective is not likely to have a direct impact on biodiversity in Gloucestershire.
9. To protect, conserve and enhance the **landscape** in Gloucestershire.	0	The strategic objective is not likely to have a direct impact on the landscape in Gloucestershire. This will be more strongly influenced by the location and design of particular recycling facilities, which is either appraised under other policies such as WCS4 and WCS13 or will not be known until the planning application stage.

SA Objective	SA Score	Justification
Strategic Objective 2: Re-use, Recycling and Composting		
10. To ensure that waste sites have the potential for adequate **screening and/or innovative design** to be incorporated.	0	The strategic objective is not considered likely to have a direct effect on the potential for screening of waste facilities. This will be more strongly influenced by the location and design of particular recycling facilities, which is either appraised under other policies such as WCS4 and WCS13 or will not be known until the planning application stage.
11. To protect conserve and enhance Gloucestershire's **material, cultural and recreational assets**.	0	The strategic objective is not considered likely to have a direct effect on material, cultural and recreational assets in Gloucestershire. This will be more strongly influenced by the location and design of particular recycling facilities, which is either appraised under other policies such as WCS4 and WCS13 or will not be known until the planning application stage.
12. To protect conserve and enhance **geodiversity** in Gloucestershire.	0	The strategic objective is not considered likely to have a direct effect on geodiversity in Gloucestershire. This will be more strongly influenced by the location and design of particular recycling facilities, which is either appraised under other policies such as WCS4 and WCS13 or will not be known until the planning application stage.
13. To protect conserve and enhance **townscapes** and Gloucestershire's **architectural and archaeological heritage**.	0	The strategic objective is not considered likely to have a direct effect on townscapes and architectural/archaeological heritage in Gloucestershire. This will be more strongly influenced by the location and design of particular recycling facilities, which is either appraised under other policies such as WCS4 and WCS13 or will not be known until the planning application stage.
14. To prevent **flooding**, in particular preventing inappropriate development in the floodplain and to ensure that waste development does not compromise sustainable sources of water supply.	0	The strategic objective is not considered likely to have a direct effect on the flood risk in Gloucestershire. This will be more strongly influenced by the location and design of particular recycling facilities, which is either appraised under other policies such as WCS4 and WCS13 or will not be known until the planning application stage.
15. To **prevent pollution** and to apply the precautionary principle in consultation with waste regulation authorities.	+?	Diverting waste from landfill may have a positive impact on pollution prevention as the likelihood of pollution occurring that may be associated with landfill should be reduced.
16. To protect and enhance **soil/land quality** in Gloucestershire.	0	The strategic objective is not considered likely to have a direct effect on soil/land quality. This will be more strongly influenced by the location and design of particular recycling facilities, which is either appraised under other policies such as WCS4 and WCS13 or will not be known until the planning application stage.
17. To protect and enhance **air quality** in Gloucestershire.	0	The strategic objective is not considered likely to have a direct effect on air quality.
18. To protect and enhance **water quality** in Gloucestershire.	+?	Diverting waste from landfill may have a positive impact on water quality as the likelihood of water pollution occurring that may be associated with landfill should be reduced.

SA Objective	SA Score	Justification
Strategic Objective 2: Re-use, Recycling and Composting		
19. To reduce the adverse **impacts of lorry traffic** on the environment and communities through means such as: a) reducing the need to travel; b) promoting more sustainable means of transport e.g. by rail or water; c) sensitive lorry routing; d) the use of sustainable alternative fuels; e) promoting the management of waste in one of the nearest appropriate installations.	0	The strategic objective is not considered likely to have a direct effect on the impacts of lorry traffic within Gloucestershire.
20. To **reduce waste to landfill** and in dealing with all waste streams to actively **promote the waste hierarchy** (i.e. Prevent, Reduce, Reuse, Recycle, Recover, Dispose) to achieve the sustainable management	++	The strategic objective sets a target to divert 85,000 tonnes of C&D waste from landfill each year, in addition to increasing levels of household recycling to a minimum of 60% by 2020. As such, a significant positive impact is expected in relation to this objective.
21. To reduce the global **use of primary materials** and minimise net energy balance requirements.	+	The ambitious targets set out within the strategic objective for the re-use or recycling of waste should result in a positive impact on reducing the use of primary materials.
22. To reduce contributions to and to **adapt to Climate Change**.	+	The ambitious targets set out within the strategic objective for the re-use or recycling of waste should result in a positive impact on climate change mitigation, as a result of the reduced emissions associated with other forms of waste disposal and the use of primary resources.
Original SA Objective 1: To promote sustainable development and sustainable communities in Gloucestershire in particular giving people the opportunity to live in an affordable and sustainably designed and constructed home.	0	The strategic objective is not likely to have a direct impact on sustainable communities within Gloucestershire.
Original SA Objective 2: To safeguard sites suitable for the location of waste management facilities or future mineral development from other proposed development.	0	The strategic objective is not likely to have a direct impact on the safeguarding of waste sites.

Table 5: Appraisal of Strategic Objective 3 - Other Recovery (including energy recovery)

SA Objective	SA Score	Justification
Strategic Objective 3: Other Recovery (including energy recovery)		
1. To promote sustainable development and sustainable communities and improve the **health and wellbeing** of people living and working in Gloucestershire as well as visitors to the County.	0	The strategic objective is not likely to have a direct impact on public health.
2. To **educate the public** about waste issues and to **maximise community participation** and access to waste services and facilities in Gloucestershire.	+?	The provision of new waste facilities for waste recovery may have a positive impact on this objective if the new facilities include education centres within the sites.
3. To safeguard the **amenity of local communities** from the adverse impacts of waste development.	0	The strategic objective is not likely to have a direct impact on local amenity, although the development of new recovery facilities may impact on local amenity. This will be more strongly influenced by the location new recovery facilities, which is not addressed by this strategic objective. However, potential effects on amenity are appraised under policy such as WCS4 and WCS13 or will not be known until the planning application stage.
4. To promote **sustainable economic development** in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	+?	The provision of new waste management facilities at the higher end of the waste hierarchy should generate activity in the local economy, for example through the increased demand for servicing these facilities. In addition, energy recovered from waste, as supported by this strategic objective, may be used in nearby development (both existing and planned).
5. To manage waste in an **economically sustainable** way through means that represent good value for tax payers in Gloucestershire.	0	The strategic objective is not likely to have a direct impact on the economically sustainable management of waste.
6. To provide **employment opportunities** in both rural and urban areas of the County, promoting diversification in the economy.	+	The provision of new waste management facilities to meet the targets for energy recovery that are set out in this strategic objective should have a positive impact on employment in Gloucestershire; however this is only expected to be minor due to the relatively small contribution that waste management facilities make to overall employment in Gloucestershire.
7. To ensure that waste sites do not compromise the **safety of commercial or military aerodromes**.	0	The strategic objective is not likely to have a direct impact on aircraft safety as this will depend on the particular location of waste facilities developed which is not addressed by this strategic objective.
8. To protect, conserve and enhance **biodiversity** in Gloucestershire.	0	The strategic objective is not likely to have a direct impact on biodiversity as this will depend on the particular location of waste facilities developed which is not addressed by this strategic objective.

SA Objective	SA Score	Justification
Strategic Objective 3: Other Recovery (including energy recovery)		
9. To protect, conserve and enhance the **landscape** in Gloucestershire.	0	The strategic objective is not likely to have a direct impact on the landscape as this will depend on the particular design and location of waste facilities developed which is not addressed by this strategic objective.
10. To ensure that waste sites have the potential for adequate **screening and/or innovative design** to be incorporated.	0	The strategic objective is not likely to have a direct impact on the screening potential of waste sites as this will depend on the particular design and location of waste facilities developed which is not addressed by this strategic objective.
11. To protect conserve and enhance Gloucestershire's **material, cultural and recreational assets**.	0	The strategic objective is not likely to have a direct impact on Gloucestershire's material, cultural and recreational assets as this will depend on the particular location of waste facilities developed which is not addressed by this strategic objective.
12. To protect conserve and enhance **geodiversity** in Gloucestershire.	0	The strategic objective is not likely to have a direct impact on geodiversity as this will depend on the particular location of waste facilities developed which is not addressed by this strategic objective.
13. To protect conserve and enhance **townscapes** and Gloucestershire's **architectural and archaeological heritage**.	0	The strategic objective is not likely to have a direct impact on townscapes, architecture and archaeological heritage as this will depend on the particular design and location of waste facilities developed which is not addressed by this strategic objective.
14. To prevent **flooding**, in particular preventing inappropriate development in the floodplain and to ensure that waste development does not compromise sustainable sources of water supply.	0	The strategic objective is not likely to have a direct impact on flooding as this will depend on the particular design and location of waste facilities developed which is not addressed by this strategic objective.
15. To **prevent pollution** and to apply the precautionary principle in consultation with waste regulation authorities.	+?	The diversion of waste from landfill, as supported by this strategic objective, may have a positive impact on pollution prevention due to a reduction in the pollution risks that may be associated with the disposal of waste through landfill.
16. To protect and enhance **soil/land quality** in Gloucestershire.	0	The strategic objective is not likely to have a direct impact on soil/land quality in Gloucestershire as this will depend on the particular location of waste facilities developed which is not addressed by this strategic objective.
17. To protect and enhance **air quality** in Gloucestershire.	0	The strategic objective is not likely to have a direct impact on air quality in Gloucestershire as this will depend on factors such as the particular location of waste facilities developed which is not addressed by this strategic objective.
18. To protect and enhance **water quality** in Gloucestershire.	+?	The diversion of waste from landfill, as supported by this objective, may have a positive impact on water quality as enclosed facilities (which new recovery facilities would be) are less likely to pose a risk in terms of accidental pollution incidents than landfill sites.

SA Objective	SA Score	Justification
Strategic Objective 3: Other Recovery (including energy recovery)		
19. To reduce the adverse **impacts of lorry traffic** on the environment and communities through means such as: a) reducing the need to travel; b) promoting more sustainable means of transport e.g. by rail or water; c) sensitive lorry routing; d) the use of sustainable alternative fuels; e) promoting the management of waste in one of the nearest appropriate installations.	0	The strategic objective is not likely to have a direct impact on the impacts of lorry traffic as this will depend on factors such as the particular location of waste facilities developed which is not addressed by this strategic objective.
20. To **reduce waste to landfill** and in dealing with all waste streams to actively **promote the waste hierarchy** (i.e. Prevent, Reduce, Reuse, Recycle, Recover, Dispose) to achieve the sustainable management	++	The strategic objective should result in a large volume of waste being diverted from landfill through the provision of between 300-350,000 tpa residual waste recovery capacity, which will help to divert the municipal, C&I waste that needs to be diverted from landfill.
21. To reduce the global **use of primary materials** and minimise net energy balance requirements.	0	The strategic objective is not likely to have a direct impact on the use of primary materials.
22. To reduce contributions to and to **adapt to Climate Change**.	+?	The strategic objective aims to recover value from waste, including energy. Depending on the amount of energy produced in this way, there may be a positive impact on climate change mitigation as a result of the reduced demand for other energy sources. However, this will depend on the amount of energy produced.
Original SA Objective 1: To promote sustainable development and sustainable communities in Gloucestershire in particular giving people the opportunity to live in an affordable and sustainably designed and constructed home.	0	The strategic objective is not likely to have a direct impact on this objective.

SA Objective	SA Score	Justification
Strategic Objective 3: Other Recovery (including energy recovery)		
Original SA Objective 2: To safeguard sites suitable for the location of waste management facilities or future mineral development from other proposed development.	0	The strategic objective is not likely to have a direct impact on this objective.

Table 6: Appraisal of Strategic Objective 4 – Waste Disposal

SA Objective	SA Score	Justification
Strategic Objective 4: Waste Disposal		
1. To promote sustainable development and sustainable communities and improve the **health and wellbeing** of people living and working in Gloucestershire as well as visitors to the County.	0	The strategic objective is not likely to have a direct impact on public health. It does not seek to provide new landfill facilities, rather to maintain existing landfills that are necessary for the disposal of certain residual and hazardous wastes.
2. To **educate the public** about waste issues and to **maximise community participation** and access to waste services and facilities in Gloucestershire.	0	The strategic objective is not likely to have a direct impact on education and levels of public participation in waste management.
3. To safeguard the **amenity of local communities** from the adverse impacts of waste development.	0	The strategic objective is not likely to have a direct impact on local amenity. It does not seek to provide new landfill facilities, rather to maintain existing landfills that are necessary for the disposal of certain residual and hazardous wastes.
4. To promote **sustainable economic development** in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	+?	The provision of new waste management facilities at the higher end of the waste hierarchy, in order to meet the aim of the strategic objective to reduce reliance on landfill, should indirectly generate activity in the local economy, for example through the increased demand for servicing these facilities.
5. To manage waste in an **economically sustainable** way through means that represent good value for tax payers in Gloucestershire.	0	The strategic objective is not likely to have a direct impact on the economically sustainable management of waste.
6. To provide **employment opportunities** in both rural and urban areas of the County, promoting diversification in the economy.	+?	The provision of new waste management facilities at the higher end of the waste hierarchy, in order to meet the aim of the strategic objective to reduce reliance on landfill, may have an indirect, positive impact on employment generation in Gloucestershire; however this is only expected to be minor due to the relatively small contribution that waste management facilities make to overall employment in Gloucestershire.
7. To ensure that waste sites do not compromise the **safety of commercial or military aerodromes**.	0	The strategic objective is not likely to have a direct impact on aircraft safety. It does not seek to provide new landfill facilities, rather to maintain existing landfills that are necessary for the disposal of certain residual and hazardous wastes.
8. To protect, conserve and enhance **biodiversity** in Gloucestershire.	0	The strategic objective is not likely to have a direct impact on biodiversity. It does not seek to provide new landfill facilities, rather to maintain existing landfills that are necessary for the disposal of certain residual and hazardous wastes.

SA Objective	SA Score	Justification
Strategic Objective 4: Waste Disposal		
9. To protect, conserve and enhance the **landscape** in Gloucestershire.	0	The strategic objective is not likely to have a direct impact on the landscape. It does not seek to provide new landfill facilities, rather to maintain existing landfills that are necessary for the disposal of certain residual and hazardous wastes.
10. To ensure that waste sites have the potential for adequate **screening and/or innovative design** to be incorporated.	0	The strategic objective is not likely to have a direct impact on the screening potential of waste sites. It does not seek to provide new landfill facilities, rather to maintain existing landfills that are necessary for the disposal of certain residual and hazardous wastes.
11. To protect conserve and enhance Gloucestershire's **material, cultural and recreational assets**.	0	The strategic objective is not likely to have a direct impact on Gloucestershire's material, cultural and recreational assets. It does not seek to provide new landfill facilities, rather to maintain existing landfills that are necessary for the disposal of certain residual and hazardous wastes.
12. To protect conserve and enhance **geodiversity** in Gloucestershire.	0	The strategic objective is not likely to have a direct impact on geodiversity. It does not seek to provide new landfill facilities, rather to maintain existing landfills that are necessary for the disposal of certain residual and hazardous wastes.
13. To protect conserve and enhance **townscapes** and Gloucestershire's **architectural and archaeological heritage**.	0	The strategic objective is not likely to have a direct impact on townscapes, architecture and archaeological heritage. It does not seek to provide new landfill facilities, rather to maintain existing landfills that are necessary for the disposal of certain residual and hazardous wastes.
14. To prevent **flooding**, in particular preventing inappropriate development in the floodplain and to ensure that waste development does not compromise sustainable sources of water supply.	0	The strategic objective is not likely to have a direct impact on flooding. It does not seek to provide new landfill facilities, rather to maintain existing landfills that are necessary for the disposal of certain residual and hazardous wastes.
15. To **prevent pollution** and to apply the precautionary principle in consultation with waste regulation authorities.	+?	A reduction in the amount of waste disposed of via landfill, as supported by this strategic objective, may have a positive impact on pollution prevention due to a reduction in the pollution risks that may be associated with the disposal of waste through landfill.
16. To protect and enhance **soil/land quality** in Gloucestershire.	0	The strategic objective is not likely to have a direct effect on soil/land quality. It does not seek to provide new landfill facilities, rather to maintain existing landfills that are necessary for the disposal of certain residual and hazardous wastes.
17. To protect and enhance **air quality** in Gloucestershire.	0	The strategic objective is not likely to have a direct effect on air quality in Gloucestershire. It does not seek to provide new landfill facilities, rather to maintain existing landfills that are necessary for the disposal of certain residual and hazardous wastes.
18. To protect and enhance **water quality** in Gloucestershire.	+?	A reduction in the amount of waste disposed of via landfill, as supported by this objective, may have a positive impact on water quality as the risk of accidental pollution incidents from landfill sites should be reduced.

SA Objective	SA Score	Justification
Strategic Objective 4: Waste Disposal		
19. To reduce the adverse **impacts of lorry traffic** on the environment and communities through means such as: a) reducing the need to travel; b) promoting more sustainable means of transport e.g. by rail or water; c) sensitive lorry routing; d) the use of sustainable alternative fuels; e) promoting the management of waste in one of the nearest appropriate installations.	0	The strategic objective is not likely to have a direct effect on the impacts of lorry traffic. It does not seek to provide new landfill facilities, rather to maintain existing landfills that are necessary for the disposal of certain residual and hazardous wastes.
20. To **reduce waste to landfill** and in dealing with all waste streams to actively **promote the waste hierarchy** (i.e. Prevent, Reduce, Reuse, Recycle, Recover, Dispose) to achieve the sustainable management	+/-	The fact that the strategic objective supports a reduction in the extent to which Gloucestershire relies on landfill for waste disposal indicates a likely positive impact on this objective; however it also recognises that there will be a continuing role for landfill. As such, the overall impacts of the strategic objective are mixed.
21. To reduce the global **use of primary materials** and minimise net energy balance requirements.	+	The fact that the strategic objective supports a reduction in the reliance on landfill for waste disposal is likely to indirectly result in an increase in the amount of recycling and therefore a reduction in the use of primary materials.
22. To reduce contributions to and to **adapt to Climate Change**.	+?	The fact that the strategic objective supports a reduction in the reliance on landfill for waste disposal is likely to encourage a move towards other forms of waste disposal, and may indirectly result in an increase in the amount of energy recovered from waste.
Original SA Objective 1: To promote sustainable development and sustainable communities in Gloucestershire in particular giving people the opportunity to live in an affordable and sustainably designed and constructed home.	0	The strategic objective is not likely to have a direct impact on this objective.
Original SA Objective 2: To safeguard sites suitable for the location of waste management facilities or future mineral development from other proposed development.	0	The strategic objective is not likely to have a direct impact on this objective.

Table 7: Appraisal of Strategic Objective 5 - Minimising Impact

SA Objective	SA Score	Justification
Strategic Objective 5: Minimising Impact		
1. To promote sustainable development and sustainable communities and improve the **health and wellbeing** of people living and working in Gloucestershire as well as visitors to the County.	++	The strategic objective aims to ensure that the risks of waste management to human health are minimised; therefore a significant positive impact on this objective is likely.
2. To **educate the public** about waste issues and to **maximise community participation** and access to waste services and facilities in Gloucestershire.	0	The strategic objective is not likely to have a direct impact on education or levels of public participation in waste management.
3. To safeguard the **amenity of local communities** from the adverse impacts of waste development.	++	The strategic objective aims to ensure that the risks of waste management to human health are minimised and, as many of the risks to health such as noise and air pollution also impact on local amenity, a significant positive impact on this objective is also likely.
4. To promote **sustainable economic development** in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	0	The strategic objective is not likely to have a direct impact on sustainable economic development.
5. To manage waste in an **economically sustainable** way through means that represent good value for tax payers in Gloucestershire.	+	Managing waste close to its source of arising, which is supported by this strategic objective, should have a positive impact on this objective as the cost of waste transportation should be reduced.
6. To provide **employment opportunities** in both rural and urban areas of the County, promoting diversification in the economy.	+/-?	The fact that the strategic objective supports the provision of waste management facilities close to their source of arising indicates that the resulting employment opportunities may be focused in the central urban areas of the county rather than in the more rural areas, which may contribute to inequalities in employment provision. However, the opportunities for employees to make use of sustainable transport modes may be better in more central areas; therefore the overall effects may be mixed.
7. To ensure that waste sites do not compromise the **safety of commercial or military aerodromes**.	0	The strategic objective is not likely to have a direct impact on aircraft safety as this will depend on the specific locations of waste sites which is not specified by this strategic objective.
8. To protect, conserve and enhance **biodiversity** in Gloucestershire.	+	The strategic objective specifies that waste management facilities should protect national and local areas of nature conservation importance; therefore a positive impact on this objective is likely.
9. To protect, conserve and enhance the **landscape** in Gloucestershire.	+	The strategic objective specifies that waste management facilities should protect national and local areas of landscape importance; therefore a positive impact on this objective is likely.

SA Objective	SA Score	Justification
Strategic Objective 5: Minimising Impact		
10. To ensure that waste sites have the potential for adequate **screening and/or innovative design** to be incorporated.	+/-?	The fact that the strategic objective requires the use of high quality, sustainable design within waste related developments is likely to result on a positive impact on this objective; however it also supports the use of existing waste sites and previously developed sites which may limit the opportunities available for incorporating innovative design, if the re-use of existing buildings is required. As such, the overall effects are likely to be mixed but are uncertain as they will depend on the particular waste sites which are developed and their positioning in the landscape.
11. To protect conserve and enhance Gloucestershire's **material, cultural and recreational assets**.	-?	The strategic objective supports the management of waste close to where it arises, which indicates that adverse impacts on material, cultural and recreational assets may be more likely as waste sites will be located closer to the main urban areas of Gloucestershire. However, the location of new strategic facilities has been appraised under policy WCS4 below, and this any effects may be able to be mitigated by the stringent enforcement of other Waste Core Strategy policies such as WCS13: Design at the planning application stage.
12. To protect conserve and enhance **geodiversity** in Gloucestershire.	0	The strategic objective is not likely to have a direct impact on geodiversity in Gloucestershire.
13. To protect conserve and enhance **townscapes** and Gloucestershire's **architectural and archaeological heritage**.	-?	The strategic objective supports the management of waste close to where it arises, which indicates that adverse impacts on townscapes and architectural/archaeological assets may be more likely as waste sites will be located closer to the main urban areas of Gloucestershire. However, the location of new strategic facilities has been appraised under policy WCS4 below, and this any effects may be able to be mitigated by the stringent enforcement of other Waste Core Strategy policies such as WCS13: Design at the planning application stage.
14. To prevent **flooding**, in particular preventing inappropriate development in the floodplain and to ensure that waste development does not compromise sustainable sources of water supply.	+	The strategic objective requires waste related developments to avoid current and potential flood risk areas; therefore a positive impact on this objective is likely.
15. To **prevent pollution** and to apply the precautionary principle in consultation with waste regulation authorities.	0	The strategic objective is not likely to have a direct impact on pollution prevention.
16. To protect and enhance **soil/land quality** in Gloucestershire.	+	The strategic objective gives preference to the development of waste management facilities on previously developed sites where possible, which is expected to have a positive impact on the preservation of soil and land quality in Gloucestershire.
17. To protect and enhance **air quality** in Gloucestershire.	+	Managing waste close to where it arises, and the increased use of sustainable transport modes, both of which are supported by this strategic objective, is likely to have a positive impact on conserving air quality in Gloucestershire as a result of reduced transport emissions from lorries.

SA Objective	SA Score	Justification
Strategic Objective 5: Minimising Impact		
18. To protect and enhance **water quality** in Gloucestershire.	+?	The strategic objective does not make specific reference to preserving water quality; however it supports the protection of sites of nature conservation importance, which may include watercourses.
19. To reduce the adverse **impacts of lorry traffic** on the environment and communities through means such as: a) reducing the need to travel; b) promoting more sustainable means of transport e.g. by rail or water; c) sensitive lorry routing; d) the use of sustainable alternative fuels; e) promoting the management of waste in one of the nearest appropriate installations.	++	The strategic objective aims to promote the use of sustainable transport in waste management, which should have a positive impact on reducing the impacts of lorry traffic in Gloucestershire. In addition, managing waste close to where it arises (as supported by the strategic objective) should reduce the distances that waste is transported over, meaning that even where it continues to be transported via lorry, the impacts should be reduced.
20. To **reduce waste to landfill** and in dealing with all waste streams to actively **promote the waste hierarchy** (i.e. Prevent, Reduce, Reuse, Recycle, Recover, Dispose) to achieve the sustainable management	0	The strategic objective is not likely to have a direct impact on this objective.
21. To reduce the global **use of primary materials** and minimise net energy balance requirements.	+?	The strategic objective gives preference to previously developed sites over greenfield sites, indicating that the potential for re-using existing buildings, and therefore reducing the consumption of primary materials for constriction, may be increased. As such, a positive impact on this objective may arise.
22. To reduce contributions to and to **adapt to Climate Change**.	++	The overarching aim of the strategic objective is to minimise the risks that waste management poses to climate change, for example by the use of sustainable transport and high quality design in waste management facilities. As such, a significant positive impact on this objective is likely.
Original SA Objective 1: To promote sustainable development and sustainable communities in Gloucestershire in particular giving people the opportunity to live in an affordable and sustainably designed and constructed home.	0	The strategic objective is not likely to have a direct impact on this objective.

SA Objective	SA Score	Justification
Strategic Objective 5: Minimising Impact		
Original SA Objective 2: To safeguard sites suitable for the location of waste management facilities or future mineral development from other proposed development.	++	A significant positive impact on this objective is likely as the strategic objective states that existing and proposed waste sites should be safeguarded.

Table 8: Appraisal of Policy WCS1 – Waste Reduction

SA Objective	SA Score	Justification
Policy WCS1: Waste Reduction		
1. To promote sustainable development and sustainable communities and improve the **health and wellbeing** of people living and working in Gloucestershire as well as visitors to the County.	+?	The proposal states that waste that is unavoidably produced during development will be required to be disposed of in an 'environmentally acceptable manner' which may help to reduce certain adverse impacts such as noise and odour generation, which can affect public health. However, the policy wording does not specifically address these issues and it is not clear if the term 'environmentally acceptable' has been used only in relation to the natural environment or whether it encompasses other wider environmental impacts such as those potentially affecting public health; therefore the positive score is uncertain.
2. To **educate the public** about waste issues and to **maximise community participation** and access to waste services and facilities in Gloucestershire.	++	A key component of the proposal is the commitment to partnership working, including working with schools and colleges, in order to raise awareness of waste issues; therefore the policy is likely to have a significant positive impact on educating the public about waste. Engaging with young people in schools may be particularly beneficial in terms of achieving longer-term changes in attitudes and behaviour, such as participation in recycling schemes.
3. To safeguard the **amenity of local communities** from the adverse impacts of waste development.	+?	Although the policy does not directly address the issue of amenity, there may be an indirect positive effect in the long term in that reducing the volume of waste requiring disposal should in turn result in a reduction in the level of road traffic generated by waste transportation, which can otherwise cause adverse impacts on amenity through noise and air pollution. In addition, the policy states that waste that is unavoidably produced during development will be required to be disposed of in an 'environmentally acceptable manner' which may help to reduce certain adverse impacts such as noise and odour generation, which can affect amenity.
4. To promote **sustainable economic development** in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	0	The policy is not considered likely to have a direct effect on this objective.
5. To manage waste in an **economically sustainable** way through means that represent good value for tax payers in Gloucestershire.	+	Facilitating a reduction in the volume of waste produced in Gloucestershire is expected to have a positive impact on the economy, due to the resulting reduction in the costs associated with waste management.
6. To provide **employment opportunities** in both rural and urban areas of the County, promoting diversification in the economy.	+/-	It is possible that reducing the volume of waste produced may have a negative impact on local employment opportunities in the long term, by reducing the need for waste management and the associated jobs. However, encouraging recycling is likely to help to mitigate this impact by creating new employment opportunities; therefore a mixed impact is considered likely overall. The effects are likely to be minor due to the relatively small contribution of the waste industry to employment in Gloucestershire.

SA Objective	SA Score	Justification
Policy WCS1: Waste Reduction		
7. To ensure that waste sites do not compromise the **safety of commercial or military aerodromes**.	+?	The policy is not considered likely to have a direct effect on this objective, as aircraft safety will be affected only by the design and location of individual waste facilities which is not determined by this policy. However, there may be an indirect positive impact in the long term in that reduced waste production may mean that fewer or smaller waste management facilities are likely to be required, which may reduce the chances of their being any conflicting interests with aircraft or aerodromes.
8. To protect, conserve and enhance **biodiversity** in Gloucestershire.	+?	The policy is not considered likely to have a direct effect on this objective as the potential impacts on biodiversity will depend largely on the location of individual waste sites. However, there may be an indirect positive impact in the long term in that reduced waste production may mean that fewer or smaller waste management facilities are likely to be required, which may reduce the chances of their being any conflicting interests with biodiversity assets in Gloucestershire.
9. To protect, conserve and enhance the **landscape** in Gloucestershire.	+?	The policy is not considered likely to have a direct effect on this objective as the potential impacts on the landscape will depend largely on the location, scale and design of individual waste sites. However, there may be an indirect positive impact in the long term in that reduced waste production may mean that fewer or smaller waste management facilities are likely to be required, which may reduce the chances of their being any adverse impacts on the landscape in Gloucestershire.
10. To ensure that waste sites have the potential for adequate **screening and/or innovative design** to be incorporated.	0	The policy is not considered likely to affect this objective as the potential for screening and innovative design to be incorporated into waste developments will depend largely on the location, scale and design of individual waste sites, which is not determined by this policy.
11. To protect conserve and enhance Gloucestershire's **material, cultural and recreational assets**.	+?	The policy is not considered likely to have a direct effect on this objective as the potential impacts will depend largely on the location of individual waste sites in relation to particular material, cultural and recreational assets. However, there may be an indirect positive impact in the long term in that reduced waste production may mean that fewer or smaller waste management facilities are likely to be required, which may reduce the chances of their being any conflicting interests with material, cultural and recreational assets in Gloucestershire.
12. To protect conserve and enhance **geodiversity** in Gloucestershire.	+?	The policy is not considered likely to have a direct effect on this objective as the potential impacts on geodiversity will depend largely on the location of individual waste sites. However, there may be an indirect positive impact in the long term in that reduced waste production may mean that fewer or smaller waste management facilities are likely to be required, which may reduce the chances of their being any adverse impacts on geodiversity assets.

SA Objective	SA Score	Justification
Policy WCS1: Waste Reduction		
13. To protect conserve and enhance **townscapes** and Gloucestershire's **architectural and archaeological heritage**.	+?	The policy is not considered likely to have a direct effect on this objective as the potential impacts will depend largely on the location of individual waste sites in relation to architectural and archaeological assets and settlements where the townscape may be affected by the development of waste facilities. However, there may be an indirect positive impact in the long term in that reduced waste production may mean that fewer or smaller waste management facilities are likely to be required, which may reduce the chances of their being any conflicting interests with archaeological/architectural assets or townscapes within Gloucestershire.
14. To prevent **flooding**, in particular preventing inappropriate development in the floodplain and to ensure that waste development does not compromise sustainable sources of water supply.	+?	The policy is not considered likely to have a direct effect on this objective as the potential impacts on flooding will depend largely on the location of individual waste sites in relation to areas of higher flood risk, as well as on the design of particular waste facilities (e.g. the incorporation of SuDS). However, there may be an indirect positive impact in the long term in that reduced waste production may mean that fewer or smaller waste management facilities are likely to be required, which may reduce the chances of their being any adverse impact on flood risk.
15. To **prevent pollution** and to apply the precautionary principle in consultation with waste regulation authorities.	+	The policy specifically requires developers to set out how they will minimise the pollution potential of unavoidable waste generated on development sites, therefore a positive impact on this objective is likely.
16. To protect and enhance **soil/land quality** in Gloucestershire.	+	The fact that the policy requires developers to minimise the pollution potential of unavoidable waste should help to avoid the contamination of soil as a result of inappropriate waste disposal; therefore a positive effect on this objective is likely.
17. To protect and enhance **air quality** in Gloucestershire.	+	Reducing the overall volume of waste produced in Gloucestershire should help to reduce the level of road traffic generated by the transportation of waste, which should have a positive impact on air quality as a result of reduced emissions from lorries.
18. To protect and enhance **water quality** in Gloucestershire.	+	The fact that the policy requires developers to minimise the pollution potential of unavoidable waste should help to avoid the contamination of watercourses in Gloucestershire as a result of inappropriate waste disposal; therefore a positive effect on this objective is likely.

SA Objective	SA Score	Justification
Policy WCS1: Waste Reduction		
19. To reduce the adverse **impacts of lorry traffic** on the environment and communities through means such as: a) reducing the need to travel; b) promoting more sustainable means of transport e.g. by rail or water; c) sensitive lorry routing; d) the use of sustainable alternative fuels; e) promoting the management of waste in one of the nearest appropriate installations.	+	The overriding aim of the policy is to reduce the volume of waste being generated in Gloucestershire, which should have a positive impact in terms of reducing the need to transport waste around the county by lorry; therefore a positive effect on this objective is likely.
20. To **reduce waste to landfill** and in dealing with all waste streams to actively **promote the waste hierarchy** (i.e. Prevent, Reduce, Reuse, Recycle, Recover, Dispose) to achieve the sustainable management	++	The overarching purpose of the policy is to prevent waste production which will reduce the volume of waste being disposed of by all means, including through landfill. As such, a significant positive impact on this objective is likely.
21. To reduce the global **use of primary materials** and minimise net energy balance requirements.	++	The policy aims to minimise the use of construction materials, particularly primary materials, on development sites through the requirement for developers to produce a statement setting out how they will achieve this; therefore indicating that a significant positive impact on this objective is likely.
22. To reduce contributions to and to **adapt to Climate Change**.	+	Reducing the overall volume of waste produced in Gloucestershire should help to reduce the volume of road traffic generated by waste transportation, therefore having a positive impact in the long term on reducing the contribution to climate change made by emissions from vehicle transport.
Original SA Objective 1: To promote sustainable development and sustainable communities in Gloucestershire in particular giving people the opportunity to live in an affordable and sustainably designed and constructed home.	+	The policy sets out measures for the minimisation of waste in all developments, which will include housing development. As a result of the policy, a greater proportion of homes should be designed and constructed sustainably, in that waste minimisation will be taken into consideration both during the development phase and during operation. The policy states that all development will be expected to incorporate the principles of waste minimisation and re-use, which in the case of housing developments may include measures such as the provision of storage space for recycling.
Original SA Objective 2: To safeguard sites suitable for the location of waste management facilities or future mineral development from other proposed development.	0	The policy is not expected to have a direct effect on this objective.

Table 9: Appraisal of Policy WCS2 – Recycling and Composting/Anaerobic Digestion (including Bulking and Transfer)

SA Objective	SA Score	Justification
Policy WCS2: Recycling and Composting/Anaerobic Digestion (including Bulking and Transfer)		
1. To promote sustainable development and sustainable communities and improve the **health and wellbeing** of people living and working in Gloucestershire as well as visitors to the County.	+	The policy specifies that proposals for the development of waste management facilities must be located appropriately to avoid adverse impacts on housing and other sensitive receptors, indicating that a positive impact on this objective is likely due to the potential for impacts such as noise and odour to have a detrimental impact on public health when waste facilities are inappropriately located.
2. To **educate the public** about waste issues and to **maximise community participation** and access to waste services and facilities in Gloucestershire.	+?	The policy gives support to development of additional recycling and composting facilities, as well as the development of markets for recycled materials, in particular initiatives to assist small to medium-sized businesses to re-use/recycle their discarded waste materials, and should help to increase levels of community participation in recycling and waste management, therefore having a positive impact on this objective.
3. To safeguard the **amenity of local communities** from the adverse impacts of waste development.	+	The policy specifies that proposals for the development of waste management facilities must be located appropriately to avoid adverse impacts on housing and other sensitive receptors; therefore a positive impact on amenity is expected.
4. To promote **sustainable economic development** in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	+?	The fact that proposals will be supported where they would be co-located with operations of a similar or complementary nature means that complementary activities to waste management may be encouraged; therefore potentially having a positive impact on sustainable economic development in Gloucestershire.
5. To manage waste in an **economically sustainable** way through means that represent good value for tax payers in Gloucestershire.	0	The policy is not considered likely to have a direct effect on this objective.
6. To provide **employment opportunities** in both rural and urban areas of the County, promoting diversification in the economy.	+	The support given through the policy for the development of recycling, composting, bulking and transfer facilities as well as other businesses that process recyclates and re-use waste, is likely to make the creation of new employment opportunities from such developments more likely. In addition, the policy states that particular support will be given to developments which will enable employees to make use of sustainable modes of transport, which should have further positive effects.

SA Objective	SA Score	Justification
Policy WCS2: Recycling and Composting/Anaerobic Digestion (including Bulking and Transfer)		
7. To ensure that waste sites do not compromise the **safety of commercial or military aerodromes**.	0	The policy is not considered likely to have a direct effect on this objective as the precise location, scale and design of waste facilities, which will determine the potential for adverse impacts on aircraft, will be determined at the planning application stage and through other policies such as WCS4.
8. To protect, conserve and enhance **biodiversity** in Gloucestershire.	+/-?	The likely effects of the policy on biodiversity will depend on the specific location of the waste sites to be developed, which is not determined by this policy. However, the policy gives particular support to facilities for recycling, composting, bulking and transfer facilities that are located in previously developed buildings, including redundant farm buildings. Buildings such as disused barns can be important biodiversity sites, harbouring species such as bats which may be disturbed by development. However, the policy also particularly supports proposals for developments in existing urban areas, which are less likely to infringe on designated nature conservation sites. Overall, the potential effects are mixed and uncertain, being largely dependent on the specific location of waste sites, which will be determined in part through policy WCS4 and also at the planning application stage.
9. To protect, conserve and enhance the **landscape** in Gloucestershire.	+?	Again, the impacts of waste facilities to be developed under this policy will be largely dependent on their specific location in relation to areas of landscape sensitivity. However, the preference for proposals that are within or in close proximity to urban areas indicates that an adverse impact on the landscape is less likely, as facilities would be more able to be incorporated into the existing surroundings. In addition, policy WCS11, which relates to proposals for waste developments within AONBs, will help to mitigate any potentially adverse landscape impacts from waste facilities on the two AONBs within Gloucestershire.
10. To ensure that waste sites have the potential for adequate **screening and/or innovative design** to be incorporated.	+?	The fact that the policy gives preference to proposals for waste facilities that are located within the existing urban area may mean that opportunities for screening of waste sites are better. However, the precise location and individual design of waste facilities will have more of an influence on the potential for screening, which is not determined by this policy but will be influenced by other Waste Core Strategy Policies such as WCS4, WCS13 and at the planning application stage.
11. To protect conserve and enhance Gloucestershire's **material, cultural and recreational assets**.	0	The policy will not have a direct impact on this objective; instead it will be determined by the location of recycling/composting facilities in relation to assets such as public rights of way which may be affected by their development, which will be determined by other Waste Core Strategy Policies such as WCS4, WCS13 and at the planning application stage.

SA Objective	SA Score	Justification
Policy WCS2: Recycling and Composting/Anaerobic Digestion (including Bulking and Transfer)		
12. To protect conserve and enhance **geodiversity** in Gloucestershire.	0	The impact of waste facilities on geodiversity will depend on the specific location of sites in relation to geodiversity assets, which is not determined by this policy but will be determined by other Waste Core Strategy Policies such as WCS4, WCS13 and at the planning application stage.
13. To protect conserve and enhance **townscapes** and Gloucestershire's **architectural and archaeological heritage**.	+?	The policy favours the development of composting and recycling facilities in or near to existing urban areas, indicating that there may be good opportunities for enhancing the overall appearance of the townscape by implementing innovative and high quality designs. The impacts on archaeological heritage and architecture will depend largely on the location of any facilities to be developed in relation to such assets, and on their specific design and appearance, which are not determined by this policy but will be determined by other Waste Core Strategy Policies such as WCS4, WCS13 and at the planning application stage.
14. To prevent **flooding**, in particular preventing inappropriate development in the floodplain and to ensure that waste development does not compromise sustainable sources of water supply.	0	The impact of the policy on flood risk will depend largely on the precise location of recycling and composting facilities in relation to areas of higher flood risk and on the design of the development, for example whether SuDS are incorporated, all of which are not determined by this policy but will be determined by other Waste Core Strategy Policies such as WCS4, WCS13 and at the planning application stage.
15. To **prevent pollution** and to apply the precautionary principle in consultation with waste regulation authorities.	+	The policy states that preference will be given to proposals for recycling/composting facilities that are located within or close to an urban area, or within the central 'Zone C' where the proposal is of a strategic scale, which is likely to reduce the distance that waste needs to be transported between the place of origin and the treatment facility. In addition, the policy gives preference to proposals for sites that incorporate alternative modes of transport such as by water or rail. This is likely to have a positive impact on reducing air pollution within Gloucestershire as a result of a reduction in the distances required for lorries travelling to transport waste. Similarly, the risk of water pollution may be reduced by decreasing the amount of waste going to landfill by increasing levels of recycling.
16. To protect and enhance **soil/land quality** in Gloucestershire.	0	The impact of the policy on flood risk will depend largely on the precise location of recycling and composting facilities in relation to areas of high soil quality, which is not determined by this policy but will be determined by other Waste Core Strategy Policies such as WCS4, WCS13 and at the planning application stage.

SA Objective	SA Score	Justification
Policy WCS2: Recycling and Composting/Anaerobic Digestion (including Bulking and Transfer)		
17. To protect and enhance **air quality** in Gloucestershire.	+	The policy states that preference will be given to proposals for recycling/composting facilities that are located within or close to an urban area, which is likely to reduce the distance that waste needs to be transported between the place of origin and the treatment facility. In addition, the policy gives preference to proposals for sites that incorporate alternative modes of transport such as by water or rail. This is likely to have a positive impact on air quality within Gloucestershire as a result of reduced emissions from lorries transporting waste.
18. To protect and enhance **water quality** in Gloucestershire.	+	Reducing the volume of waste that goes to landfill by increasing the proportion that is recycled may have a positive impact on water quality in Gloucestershire by reducing the risk that landfill can pose to water quality.
19. To reduce the adverse **impacts of lorry traffic** on the environment and communities through means such as: a) reducing the need to travel b) promoting more sustainable means of transport e.g. by rail or water c) sensitive lorry routing d) the use of sustainable alternative fuels e) promoting the management of waste in one of the nearest appropriate installations.	+	The policy states that preference will be given to proposals for recycling/composting facilities that are located within or close to an urban area, which should reduce the distance that waste needs to be transported between the place of origin and the treatment facility. In addition, the policy gives preference to proposals for sites that incorporate alternative modes of transport such as by water or rail. This is likely to have a positive impact on reducing the distances that lorries are required to travel within Gloucestershire for transporting waste.
20. To **reduce waste to landfill** and in dealing with all waste streams to actively **promote the waste hierarchy** (i.e. Prevent, Reduce, Reuse, Recycle, Recover, Dispose) to achieve the sustainable management	++	The overriding purpose of the policy is to reduce the amount of waste going to landfill by increasing the proportion that is recycled; therefore a significant positive impact on this objective is expected.
21. To reduce the global **use of primary materials** and minimise net energy balance requirements.	++	Increasing the volume of waste that is recycled should help to reduce the use of primary materials, provided that the loop is closed and the use of recycled materials replaces the use of primary materials.

SA Objective	SA Score	Justification
Policy WCS2: Recycling and Composting/Anaerobic Digestion (including Bulking and Transfer)		
22. To reduce contributions to and to **adapt to Climate Change**.	++	Locating recycling/composting facilities in or near to urban areas should help to reduce emissions from transport as waste will be required to travel shorter distances via lorry between the place of origin and the treatment facility. In addition, recycling an increasing proportion of the waste generated in Gloucestershire should have a significant positive impact in terms of reducing emissions from waste incineration and landfill gas.
Original SA Objective 1: To promote sustainable development and sustainable communities in Gloucestershire in particular giving people the opportunity to live in an affordable and sustainably designed and constructed home.	0	The policy is not considered likely to have a direct effect on this objective.
Original SA Objective 2: To safeguard sites suitable for the location of waste management facilities or future mineral development from other proposed development.	0	The policy is not considered likely to have a direct effect on this objective.

Table 10: Appraisal of Policy WCS3 – Inert Waste Recycling and Recovery

SA Objective	SA Score	Justification
Policy WCS3: Inert Waste Recycling and Recovery		
1. To promote sustainable development and sustainable communities and improve the **health and wellbeing** of people living and working in Gloucestershire as well as visitors to the County.	+	The policy specifies that the impact of inert waste recycling and recovery facilities on neighbouring land uses must be acceptable; therefore a positive impact on this objective is expected as impacts such as noise and odour can have a detrimental impact on public health.
2. To **educate the public** about waste issues and to **maximise community participation** and access to waste services and facilities in Gloucestershire.	+?	Increasing the provision of recycling centres may help to increase public participation and awareness of waste management.
3. To safeguard the **amenity of local communities** from the adverse impacts of waste development.	+	The policy specifies that the impact of inert waste recycling and recovery facilities on neighbouring land uses must be acceptable, and that noise and dust impacts must be assessed and attenuated; therefore a positive impact on local amenity is expected.
4. To promote **sustainable economic development** in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	0	The policy is not considered likely to have a direct effect on sustainable economic development.
5. To manage waste in an **economically sustainable** way through means that represent good value for tax payers in Gloucestershire.	0	The policy is not considered likely to have a direct effect on economically sustainable waste management.
6. To provide **employment opportunities** in both rural and urban areas of the County, promoting diversification in the economy.	+	The support provided by the policy for the development of recycling and recovery facilities is likely to result in the creation of new employment opportunities within these developments, although the number of jobs created is likely to be relatively small in the context of employment in Gloucestershire overall.
7. To ensure that waste sites do not compromise the **safety of commercial or military aerodromes**.	0	The policy is not considered likely to have a direct effect on this objective.

SA Objective	SA Score	Justification
Policy WCS3: Inert Waste Recycling and Recovery		
8. To protect, conserve and enhance **biodiversity** in Gloucestershire.	+?	The likely effects of the policy on biodiversity will depend on the specific location of the inert waste sites to be developed, which is unknown until proposals come forward at the planning application stage. However, the fact that the policy allows for developments to potentially be incorporated into existing waste management sites indicates that new developments may be avoided in some cases; therefore reducing the potential for the waste management activities resulting from this policy to adversely impact on biodiversity assets.
9. To protect, conserve and enhance the **landscape** in Gloucestershire.	+?	Again, the impacts of waste facilities to be developed under this policy will be largely dependent on their specific location in relation to areas of landscape sensitivity. However, the fact that the policy allows for developments to potentially be incorporated into existing waste management sites indicates that development of new sites may be avoided in some cases; therefore reducing the potential for the waste management activities resulting from this policy to adversely impact on the landscape.
10. To ensure that waste sites have the potential for adequate **screening and/or innovative design** to be incorporated.	0	The potential for screening waste facilities will depend on their precise location and design, which is unknown until proposals come forward at the planning application stage. Proposals will be judged against other Waste Core Strategy Policies such as WCS13, which requires proposals to be appropriate to the local environment and surrounding uses, and make use of landscaping, therefore adequate screening is likely to be achieved.
11. To protect conserve and enhance Gloucestershire's **material, cultural and recreational assets**.	0	The policy will not have a direct impact on this objective; instead it will be determined by the location of inert waste recycling and recovery facilities in relation to assets such as public rights of way which may be affected by their development. This will not be known until proposals come forward at the planning application stage. Proposals will be judged against other Waste Core Strategy Policies such as WCS13, which requires proposals to be appropriate to the local environment and surrounding uses, and make use of landscaping, therefore protection of recreational assets etc. should be considered.
12. To protect conserve and enhance **geodiversity** in Gloucestershire.	+?	The impact of inert waste facilities on geodiversity will depend on the specific location of sites in relation to geodiversity assets, which is unknown until proposals come forward at the planning application stage. However, the fact that the policy allows for developments to potentially be incorporated into existing waste management sites indicates that development of new sites may be avoided in some cases; therefore reducing the potential for the waste management activities resulting from this policy to adversely impact on geodiversity assets.

SA Objective	SA Score	Justification
Policy WCS3: Inert Waste Recycling and Recovery		
13. To protect conserve and enhance **townscapes** and Gloucestershire's **architectural and archaeological heritage**.	+?	The impacts of waste facilities on archaeological heritage and architecture will depend largely on the location of any facilities to be developed in relation to such assets, and their specific design and appearance, which is unknown until proposals come forward at the planning application stage. However, the fact that the policy allows for developments to potentially be incorporated into existing waste management sites indicates that development of new sites may be avoided in some cases; therefore reducing the potential for the waste management activities resulting from this policy to adversely impact on architecture, the townscape and archaeological assets.
14. To prevent **flooding**, in particular preventing inappropriate development in the floodplain and to ensure that waste development does not compromise sustainable sources of water supply.	0	The impact of the policy on flood risk will depend largely on the precise location of inert waste recycling and recovery facilities in relation to areas of higher flood risk and on the design of the development, for example whether SuDS are incorporated, which will be unknown until proposals come forward at the planning application stage. Proposals will be judged against other Waste Core Strategy Policies such as WCS13, which requires proposals to include sustainable drainage.
15. To **prevent pollution** and to apply the precautionary principle in consultation with waste regulation authorities.	+	The policy gives preference to proposals for sites that incorporate alternative modes of transport such as by water or rail. This is likely to have a positive impact on reducing air pollution within Gloucestershire as a result of a reduction in the required distances for lorries travelling to transport waste. Similarly, the risk of water pollution may be reduced by decreasing the amount of waste going to landfill.
16. To protect and enhance **soil/land quality** in Gloucestershire.	+?	The impact of the policy on soil and land quality will depend largely on the precise location of inert waste recycling and recovery facilities in relation to areas of high soil quality, which is unknown until proposals come forward at the planning application stage. However, the fact that the policy allows for developments to potentially be incorporated into existing waste management sites indicates that development of new sites may be avoided in some cases; therefore reducing the potential for the waste management activities resulting from this policy to adversely impact on soil quality.
17. To protect and enhance **air quality** in Gloucestershire.	+	The policy gives preference to proposals for sites that incorporate alternative modes of transport such as by water or rail. This is likely to have a positive impact on air quality within Gloucestershire as a result of a reduction in the distances travelled by lorries transporting waste.
18. To protect and enhance **water quality** in Gloucestershire.	+	Reducing the volume of waste that goes to landfill by increasing the proportion that is recycled may have a positive impact on water quality in Gloucestershire by reducing the risk that landfill can pose to water quality.

SA Objective	SA Score	Justification
Policy WCS3: Inert Waste Recycling and Recovery		
19. To reduce the adverse **impacts of lorry traffic** on the environment and communities through means such as: a) reducing the need to travel b) promoting more sustainable means of transport e.g. by rail or water c) sensitive lorry routing d) the use of sustainable alternative fuels e) promoting the management of waste in one of the nearest appropriate installations.	+	The policy gives preference to proposals for sites that incorporate alternative modes of transport such as by water or rail. This is likely to have a positive impact on the distances that lorries travel within Gloucestershire for transporting waste.
20. To **reduce waste to landfill** and in dealing with all waste streams to actively **promote the waste hierarchy** (i.e. Prevent, Reduce, Reuse, Recycle, Recover, Dispose) to achieve the sustainable management	++	The overriding purpose of the policy is to reduce the amount of inert waste going to landfill by increasing the proportion that is recycled; therefore a significant positive impact on this objective is expected.
21. To reduce the global **use of primary materials** and minimise net energy balance requirements.	++	Increasing the volume of inert waste that is recycled should help to reduce the use of primary materials, provided that the loop is closed and the use of recycled materials replaces the use of primary materials, and this is encouraged through policy WCS1.
22. To reduce contributions to and to **adapt to Climate Change**.	++	Reducing the amount of inert waste going to landfill through provision of more recycling and recovery facilities, and by allowing temporary facilities for recycling and re-use at the point of inert waste generation should have a significant positive impact in terms of reducing emissions from lorry traffic used to transport the inert waste. In addition, the preference that the policy gives to proposals that make use of sustainable transport modes should help to reduce the level of emissions from lorry traffic generated by waste management.

SA Objective	SA Score	Justification
Policy WCS3: Inert Waste Recycling and Recovery		
Original SA Objective 1: To promote sustainable development and sustainable communities in Gloucestershire in particular giving people the opportunity to live in an affordable and sustainably designed and constructed home.	0	The policy is not considered likely to have a direct effect on this objective.
Original SA Objective 2: To safeguard sites suitable for the location of waste management facilities or future mineral development from other proposed development.	0	The policy is not considered likely to have a direct effect on this objective.

Table 11: Appraisal of Policy WCS4 (note that the specific sites allocated within the policy are appraised separately in Tables 12-15)

SA Objective	SA Score	Justification
Policy WCS4: Other Recovery (including Energy Recovery)		
1. To promote sustainable development and sustainable communities and improve the **health and wellbeing** of people living and working in Gloucestershire as well as visitors to the County.	+/-	The fact that all of the strategic scale waste facilities are to be allocated within the central 'Zone C' should reduce the distances that lorries are required to travel for the transportation of waste, as these larger sites will be located within reasonably close proximity of the main sources of waste arisings within the county, i.e. the main urban centres. As such, the emissions from transport that have an adverse impact on air quality will be reduced, resulting in a positive impact on public health in this sense. However, the fact that the lorries are more likely to be travelling within close proximity of the main population centres means that residents are more likely to experience adverse impacts such as noise pollution which can affect public health. As such, the overall likely effects on this objective are mixed.
2. To **educate the public** about waste issues and to **maximise community participation** and access to waste services and facilities in Gloucestershire.	0	The policy is not considered likely to have a direct impact on education or levels of public participation in waste management.
3. To safeguard the **amenity of local communities** from the adverse impacts of waste development.	+/-	The fact that all of the strategic scale waste facilities are to be allocated within the central 'Zone C' should reduce the distances that lorries are required to travel for the transportation of waste, as these larger sites will be located within reasonably close proximity of the main sources of waste arisings within the county, i.e. the main urban centres. As such, the emissions from transport that have an adverse impact on air quality will be reduced, resulting in a positive impact on local amenity in this sense. However, the fact that the lorries are more likely to be travelling within close proximity of the main population centres means that residents are more likely to experience adverse impacts on amenity such as noise pollution. As such, the overall likely effects on this objective are mixed.
4. To promote **sustainable economic development** in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	0	The policy is not considered likely to have a direct impact on sustainable economic development.
5. To manage waste in an **economically sustainable** way through means that represent good value for tax payers in	+	Locating strategic waste management facilities within the central 'Zone C' is expected to have a positive effect on this objective as this will require the majority of waste to be transported smaller distances which will be more economical.

SA Objective	SA Score	Justification
Policy WCS4: Other Recovery (including Energy Recovery)		
Gloucestershire.		
6. To provide **employment opportunities** in both rural and urban areas of the County, promoting diversification in the economy.	+	The allocation of four strategic scale waste management sites within the central 'Zone C' is expected to have a positive effect in terms of employment creation in easily accessible locations. The number of jobs created is not likely to be significant, however, in the context of overall employment levels within the county.
7. To ensure that waste sites do not compromise the **safety of commercial or military aerodromes**.	0	The policy is not likely to have a direct impact on aircraft safety; instead this will be determined by the type of facility developed at each site (i.e. whether it includes an emissions stack) and by its precise location. The locations of sites other than the four strategic allocations will not be known until the planning application stage, and the impacts of each strategic site are appraised separately below.
8. To protect, conserve and enhance **biodiversity** in Gloucestershire.	0	The policy is not likely to have a direct impact on biodiversity; instead this will be determined by the precise location of each facility developed. The locations of sites other than the four strategic allocations will not be known until the planning application stage, and the impacts of each strategic site are appraised separately below.
9. To protect, conserve and enhance the **landscape** in Gloucestershire.	0	The policy is not likely to have a direct impact on landscape; instead this will be determined by the precise location of each facility developed. The locations of sites other than the four strategic allocations will not be known until the planning application stage, and the impacts of each strategic site are appraised separately below.
10. To ensure that waste sites have the potential for adequate **screening and/or innovative design** to be incorporated.	0	The policy is not likely to have a direct impact on the potential for waste sites to be well-screened; instead this will be determined by the design and precise location of each facility developed. The locations of sites other than the four strategic allocations will not be known until the planning application stage, and the impacts of each strategic site are appraised separately below.
11. To protect conserve and enhance Gloucestershire's **material, cultural and recreational assets**.	0	The policy is not likely to have a direct impact on material, cultural and recreational assets; instead this will be determined by the type and precise location of each facility developed. The locations of sites other than the four strategic allocations will not be known until the planning application stage, and the impacts of each strategic site are appraised separately below.
12. To protect conserve and enhance **geodiversity** in Gloucestershire.	0	The policy is not likely to have a direct impact on geodiversity; instead this will be determined by the type and precise location of each facility developed. The locations of sites other than the four strategic allocations will not be known until the planning application stage, and the impacts of each strategic site are appraised separately below.
13. To protect conserve and enhance	0	The policy is not likely to have a direct impact on townscapes, architectural and archaeological heritage;

SA Objective	SA Score	Justification
Policy WCS4: Other Recovery (including Energy Recovery)		
townscapes and Gloucestershire's **architectural and archaeological heritage**.		instead this will be determined by the type and precise location of each facility developed. The locations of sites other than the four strategic allocations will not be known until the planning application stage, and the impacts of each strategic site are appraised separately below.
14. To prevent **flooding**, in particular preventing inappropriate development in the floodplain and to ensure that waste development does not compromise sustainable sources of water supply.	0	The policy is not likely to have a direct impact on townscapes, architectural and archaeological heritage; instead this will be determined by the type and precise location of each facility developed. The locations of sites other than the four strategic allocations will not be known until the planning application stage, and the impacts of each strategic site are appraised separately below. In addition, the policy states that non-strategic waste sites will need to meet the relevant policies and criteria set out elsewhere in the Waste Core Strategy, including WCS9: Flood Risk, which should help to ensure that both strategic and non-strategic waste sites do not have a detrimental effect in terms of the risk of flooding in Gloucestershire.
15. To **prevent pollution** and to apply the precautionary principle in consultation with waste regulation authorities.	0	The policy is not likely to have a direct impact on pollution prevention; instead this will be determined by the type, design and precise location of each facility developed. The locations of sites other than the four strategic allocations will not be known until the planning application stage, and the impacts of each strategic site are appraised separately below.
16. To protect and enhance **soil/land quality** in Gloucestershire.	+	The policy is likely to have a positive impact on soil/land quality in Gloucestershire as it states that non-strategic waste facilities must be either located on an existing employment site/industrial estate, on previously developed land, or involves the development of an existing waste or minerals site. As such, development on greenfield land which may involve the loss of high quality soil/land should be avoided. The impacts of each strategic site are appraised separately below.
17. To protect and enhance **air quality** in Gloucestershire.	+	The fact that all of the strategic scale waste facilities are to be allocated within the central 'Zone C' should reduce the distances that lorries are required to travel for the transportation of waste, as these larger sites will be located within reasonably close proximity of the main sources of waste arisings within the county, i.e. the main urban centres. As such, the emissions from transport that have an adverse impact on air quality will be reduced, resulting in a positive impact on this objective.
18. To protect and enhance **water quality** in Gloucestershire.	0	Potential sites for waste management are expected to have no effect on this objective, as the requirement for future residual waste management within Gloucestershire is likely to be met by modern facilities within enclosed buildings.
19. To reduce the adverse **impacts of lorry traffic** on the environment and	++	The fact that all of the strategic scale waste facilities are to be allocated within the central 'Zone C' should reduce the distances that lorries are required to travel for the transportation of waste, as these

SA Objective	SA Score	Justification
Policy WCS4: Other Recovery (including Energy Recovery)		
communities through means such as: a) reducing the need to travel b) promoting more sustainable means of transport e.g. by rail or water c) sensitive lorry routing d) the use of sustainable alternative fuels e) promoting the management of waste in one of the nearest appropriate installations.		larger sites will be located within reasonably close proximity of the main sources of waste arisings within the county, i.e. the main urban centres. As such, a significant positive effect on this objective is expected.
20. To **reduce waste to landfill** and in dealing with all waste streams to actively **promote the waste hierarchy** (i.e. Prevent, Reduce, Reuse, Recycle, Recover, Dispose) to achieve the sustainable management	++	The allocation of strategic sites to make provision for the recovery of 150,000 tonnes per year of municipal waste and between 143,000 and 193,000 tonnes per year of C&I waste is expected to have a significant positive impact on this objective by enabling the diversion of significant volumes of waste from landfill.
21. To reduce the global **use of primary materials** and minimise net energy balance requirements.	+	The policy is likely to have a positive impact on reducing the use of primary materials as it states that non-strategic waste facilities must be either located on an existing employment site/industrial estate, on previously developed land, or involves the development of an existing waste or minerals site. As such, development is more likely to incorporate existing buildings and require less primary materials for construction. The impacts of each particular strategic site are appraised separately below.
22. To reduce contributions to and to **adapt to Climate Change**.	+	The fact that all of the strategic scale waste facilities are to be allocated within the central 'Zone C' should reduce the distances that lorries are required to travel for the transportation of waste, as these larger sites will be located within reasonably close proximity of the main sources of waste arisings within the county, i.e. the main urban centres. As such, the emissions from transport that contribute to climate change will be reduced, resulting in a positive impact on this objective.
Original SA Objective 1: To promote sustainable development and sustainable communities in Gloucestershire in particular giving people the opportunity to live in an affordable and sustainably	0	The policy is not considered likely to have a direct effect on this objective.

SA Objective	SA Score	Justification
Policy WCS4: Other Recovery (including Energy Recovery)		
designed and constructed home.		
Original SA Objective 2: To safeguard sites suitable for the location of waste management facilities or future mineral development from other proposed development.	0	The policy is not considered likely to have a direct effect on this objective.

Appraisal of Site Allocations included in Policy WCS4

Table 12: Site 1 - Wingmoor Farm East

SA Objective	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)	Justification
Site 1: Wingmoor Farm East					
1. To promote sustainable development and sustainable communities and improve the **health and wellbeing** of people living and working in Gloucestershire as well as visitors to the County.	0	0	0	0	There are no sensitive receptors within 250m of the site boundaries, although some are present within 1km. As such, negligible effects on health and wellbeing are expected to result from development of a waste facility at this site, regardless of the size or type.

SA Objective	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)	Justification
Site 1: Wingmoor Farm East					
2. To **educate the public** about waste issues and to **maximise community participation** and access to waste services and facilities in Gloucestershire.	+?	+?	+?	+?	Waste management facilities at any of the strategic sites could have an indirect positive effect on education opportunities, as they may include education centres within the site.
3. To safeguard the **amenity of local communities** from the adverse impacts of waste development.	0	0	0	0	There are no sensitive receptors within 250m of the site boundaries, although some are present within 1km. As such, negligible effects on local amenity are expected to result from development of a waste facility at this site, regardless of the size or type.

SA Objective	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)	Justification
Site 1: Wingmoor Farm East					
4. To promote **sustainable economic development** in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	+?	+?	+?	+?	The creation of additional waste management facilities within Gloucestershire in any location may have a minor positive impact on encouraging investment and growth of 'green industry' in the County. This particular site is adjacent to existing landfill activities, meaning that there is potential for positive effects on sustainable local economic activity as complementary activities to waste management may be encouraged, e.g. reprocessing facilities or composting outlets that could make use of recyclate or compost generated. This score is uncertain, however, as it is dependent on the nature of neighbouring industrial/commercial outlets.
5. To manage waste in an **economically sustainable** way through means that represent good value for tax payers in Gloucestershire.	+	+	+	+	At this stage it is difficult to assess how the location of new strategic waste facilities may affect this objective. However it is important to note that certain sites will be more efficient than others (e.g. in terms of the resulting reductions in transport movements & costs), given their proximity to the main sources of waste arisings and to transfer stations and/or any other facilities that may service them. The proximity of this site to Cheltenham, along with the fact that there are already waste facilities located at the site, means that transport distances are likely to be lower, having a positive effect on this objective. It should also be noted that the type of facilities eventually proposed on sites once they have been allocated in the Waste Core Strategy may differ in terms of overall costs but this will not be known until the planning application stage.

SA Objective	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)	Justification
Site 1: Wingmoor Farm East					
6. To provide **employment opportunities** in both rural and urban areas of the County, promoting diversification in the economy.	+/-	+/-	+/-	+/-	In terms of opportunities for future employees to use sustainable transport to travel to work, the GCC Highways Assessment found that pedestrian access from Bishop's Cleeve may need upgrading and that bus frequency is poor, therefore in this sense negative effects on this objective are likely. However, positive effects are associated with the general job creation that will result from development of the site, so the overall effects are likely to be mixed. Although it is likely that larger facilities will result in greater levels of employment generation during both construction and operation, this will not always be the case and therefore significant positive effects for larger facilities cannot be assumed.
7. To ensure that waste sites do not compromise the **safety of commercial or military aerodromes**.	-?	0	-?	0	The site is within the Aerodrome Safeguarding zone for Gloucestershire Airport; therefore thermal treatment facilities, which are likely to include tall emissions stacks, could potentially present a hazard to aircraft if developed on this site.

SA Objective	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)	Justification
Site 1: Wingmoor Farm East					
8. To protect, conserve and enhance **biodiversity** in Gloucestershire.	-?	-?	-?	-?	A Key Wildlife Site (Wingmoor Farm Meadow GWT Reserve) and a BAP priority habitat (Lowland Meadows) are located adjacent to the site; indicating that there is the potential for a minor negative effect on biodiversity for all of the facility types; however this is dependent on the exact design and layout of the facility eventually developed. In addition, the initial findings of the HRA Report indicate that any proposal for a thermal treatment facility here will need to demonstrate that there will be no adverse impact on the integrity of Dixton Wood SAC. However, this is at present uncertain as the judgement is subject to the completion of the full HRA Report and further assessment that may be required at the planning application stage.
9. To protect, conserve and enhance the **landscape** in Gloucestershire.	-?	0	-?	0	This site is of poor landscape quality, is more than 1km from the nearest AONB and is adjacent to an existing landfill site; indicating that negligible impacts on the landscape may be expected. However, the site has been assessed as being of medium landscape suitability for a waste facility and the erection of an emissions stack would create a significant vertical landmark out of keeping with the surrounding landscape character. As such, potential negative effects are associated with the development of thermal treatment facilities here, depending on the height of any emissions stack.

SA Objective	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)	Justification
Site 1: Wingmoor Farm East					
10. To ensure that waste sites have the potential for adequate **screening and / or innovative design** to be incorporated.	-	-	-	-	The GCC assessment notes that there is limited screening around the site, particularly along the southern boundary, due to the predominantly flat topography of the land. The tall emissions stacks incorporated into the design of thermal treatment facilities could make screening particularly difficult. There are several residential properties overlooking fields adjacent to the site, with glimpses of the existing landfill activities on site; therefore it may be difficult to adequately screen any type of additional facility at this site.
11. To protect conserve and enhance Gloucestershire's **material, cultural and recreational assets**.	+/-	+/-	+/-	+/-	There is a park, a civic amenity site and areas of non-coniferous trees to the west of the site; therefore there is the potential for negative effects on recreation activities in the local area. The GCC assessment, however, scores the site positively (+) in relation PRoW, noting that there is no PRoW network present within 250m, so the overall likely effects are mixed.
12. To protect conserve and enhance **geodiversity** in Gloucestershire.	0	0	0	0	The site is within 500m of a RIG (Wingmoor Farm Pit) and so development of any type of waste facility here could potentially have a negative effect on local geodiversity. However, the site is a temporary RIG and the Geological Trust makes it clear that it will eventually be landfilled. As such, the likely effect of development at this site on local geodiversity is classed as negligible.

SA Objective	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)	Justification
Site 1: Wingmoor Farm East					
13. To protect conserve and enhance **townscapes** and Gloucestershire's **architectural and archaeological heritage**.	+	+	+	+	Wingmoor Farm East scored positively (+) in the GCC Archaeology site assessment due to the low potential for development to impact upon known historical or archaeological remains.
14. To prevent **flooding**, in particular preventing inappropriate development in the floodplain and to ensure that waste development does not compromise sustainable sources of water supply.	+	+	+	+	The SFRA Level 2 indicates that there are no significant flooding issues on the Wingmoor Farm East site therefore development here should have a positive effect.

SA Objective	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)	Justification
Site 1: Wingmoor Farm East					
15. To **prevent pollution** and to apply the precautionary principle in consultation with waste regulation authorities.	N/A	N/A	N/A	N/A	In relation to the location of potential waste sites, potential pollution effects are already covered under SA Objectives 1, 3, 16-18. The precautionary principle is inherently being applied to the site allocation process through the Council's own site assessment methodology and this independent SA of the Waste Core Strategy including the potential strategic waste sites to be allocated.
16. To protect and enhance **soil / land quality** in Gloucestershire.	+	+	+	+	This site is located on previously developed land; therefore should have a positive effect on this objective. Medium sized facilities may result in a smaller area of the site being developed, thus having even greater positive effects, although this is uncertain and will depend on the final design of the facility which will not be known until the planning application stage.
17. To protect and enhance **air quality** in Gloucestershire.	+/-	+	+/-	+	The GCC Highways Assessment found that the site is within reasonable proximity of the strategic highways network via the A435. In addition, it is more than 1km from an AQMA; therefore in this sense development of this site should have positive impacts on the protection of air quality. However, where thermal treatment facilities are proposed there could also be negative impacts on air quality due to the release of gases through thermal processes. This effect would not be significantly negative however, because the overall scale of emissions from thermal treatment facilities is relatively small and also because of the distance of the site from an AQMA.

SA Objective	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)	Justification
Site 1: Wingmoor Farm East					
18. To protect and enhance **water quality** in Gloucestershire.	0	0	0	0	Potential sites for waste management are expected to have no effect on this objective, as the requirement for future residual waste management within Gloucestershire is likely to be met by modern facilities within enclosed buildings.

SA Objective	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)	Justification
Site 1: Wingmoor Farm East					
19. To reduce the adverse **impacts of lorry traffic** on the environment and communities through means such as: a) reducing the need to travel b) promoting more sustainable means of transport e.g. by rail or water c) sensitive lorry routing d) the use of sustainable alternative fuels e) promoting the management of waste in one of the nearest appropriate installations.	+/-	+/-	+/-	+/-	The GCC Highways Assessment found that, although the site is adjacent to a mapped freight rail head, at present there are no sidings and thus a new main line connection and loading siding would be required. The cost of installing such a mainline connection is likely to be very high; therefore negative effects in terms of sustainable transport use are likely. However, the GCC Highways Assessment found that the site is within reasonable proximity of the strategic highways network via the A435, therefore mixed effects are likely overall. There may be some level of variation between the effects of medium and larger sites, as larger sites may result in higher levels of waste transportation. However, as this will not always be the case and cannot be assumed, no differences are reflected in the scores.

SA Objective	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)	Justification
Site 1: Wingmoor Farm East					
20. To **reduce waste to landfill** and in dealing with all waste streams to actively **promote the waste hierarchy** (i.e. Prevent, Reduce, Reuse, Recycle, Recover, Dispose) to achieve the sustainable management	+	+	+	+	The Waste Core Strategy is seeking to allocate strategic sites for recovery of residual municipal waste, as well as C&I waste. All facility types that may be developed on these sites are therefore likely to have minor positive effects by ensuring waste management occurs using processes higher up the waste hierarchy than landfill.
21. To reduce the global **use of primary materials** and minimise net energy balance requirements.	++?	+	++?	+	All facility types that may be developed on sites allocated for residual waste management in the Core Strategy are likely to have positive effects by ensuring that waste management occurs using processes higher up the waste hierarchy than landfill, which should involve recycling, composting and recovering value or energy from waste and reducing the use of primary materials. Thermal treatment facilities may have a significant positive effect on this objective if the potential for using the energy produced is realised.

SA Objective	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)	Justification
Site 1: Wingmoor Farm East					
22. To reduce contributions to and to **adapt to Climate Change**.	++	+?	++	+?	The fact that the site is already developed means that there are unlikely to be opportunities for incorporating a CHP scheme. However, the energy recovered from the waste management process within a thermal treatment facility may still be used for something other than CHP and this would have a significant positive effect on this objective. The contribution of the facility to climate change adaptation will depend more on the specific design of the facility and its layout, and the incorporation of sustainable construction techniques, drainage systems and measures to enable changes to new technologies as they develop. This cannot be assessed until the detailed proposals for a site are made known at the planning application stage, and will be influenced by other Waste Core Strategy policies such as WCS13: Design.

Table 13: Site 2 - Wingmoor Farm West

SA Objective	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)	Justification
Site 2: Wingmoor Farm West					
1. To promote sustainable development and sustainable communities and improve the **health and wellbeing** of people living and working in Gloucestershire as well as visitors to the County.	0	0	0	0	There are a small amount of sensitive receptors within 250m of the site boundaries, including a HRC and a gun club. However, the nearest residential properties and businesses are located further from the site. As such, a negligible effect on health and wellbeing is likely to result from development of a waste facility at this site, regardless of the type or size.
2. To **educate the public** about waste issues and to **maximise community participation** and access to waste services and facilities in Gloucestershire.	+?	+?	+?	+?	Waste management facilities at any of the strategic sites could have an indirect positive effect on education opportunities, as they may include education centres within the site.

SA Objective	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)	Justification
Site 2: Wingmoor Farm West					
3. To safeguard the **amenity of local communities** from the adverse impacts of waste development.	0	0	0	0	The only sensitive receptors within 250m of the site boundaries are a HRC and a gun club which are not considered likely to be adversely affected in amenity terms by the development of a waste management facility at this site. As such, a negligible effect is associated with all sizes and types of waste management facility here.
4. To promote **sustainable economic development** in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	+?	+?	+?	+?	The creation of additional waste management facilities within Gloucestershire in any location may have a minor positive impact on encouraging investment and growth of 'green industry' in the County. This particular site incorporates existing waste management uses and is close to a HRC and active landfill site. As a result there is potential for positive effects on sustainable local economic activity as complementary activities to waste management may be encouraged, e.g. reprocessing facilities or composting outlets that could make use of recyclate or compost generated. This score is at present uncertain, however, as it is dependent on the nature of neighbouring industrial/commercial outlets.

SA Objective	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)	Justification
Site 2: Wingmoor Farm West					
5. To manage waste in an **economically sustainable** way through means that represent good value for tax payers in Gloucestershire.	+	+	+	+	At this stage it is difficult to assess how the location of new large-scale waste facilities may affect this objective. However, it is important to note that certain sites will be more efficient than others (e.g. in terms of reductions in transport movements & costs), given their proximity to the main sources of waste arisings and to transfer stations and/or any other facilities that may service them. The proximity of the site to Cheltenham, along with the fact that there are existing waste facilities at the site, means that transport distances are likely to be lower, having a positive effect on the economically sustainable management of waste. It should also be noted that the type of facilities eventually proposed on strategic sites once they have been allocated in the Waste Core Strategy may differ in terms of overall costs but this will not be known until the planning application stage.

SA Objective	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)	Justification
Site 2: Wingmoor Farm West					
6. To provide **employment opportunities** in both rural and urban areas of the County, promoting diversification in the economy.	+/-	+/-	+/-	+/-	In terms of opportunities for future employees to use sustainable transport to travel to work, the GCC Highways Assessment found that the site is some distance from Bishop's Cleeve, thus opportunities for employees to walk to the site are limited. There may be some potential for cycling, although the presence of HGV's may make this unrealistic, indicating that negative effects are likely in this sense. However, positive effects are associated with the job creation that will result from development of the site, so overall effects are likely to be mixed. Although it is likely that larger facilities will result in higher numbers of jobs being created during construction and operation, this will not always be the case and therefore significant positive effects for larger facilities cannot be assumed.
7. To ensure that waste sites do not compromise the **safety of commercial or military aerodromes**.	-?	0	-?	0	The site is within the Aerodrome Safeguarding zone for Gloucestershire Airport; therefore thermal treatment facilities, which are likely to include tall emissions stacks, could potentially present a hazard to aircraft if developed on this site.

SA Objective	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)	Justification
Site 2: Wingmoor Farm West					
8. To protect, conserve and enhance **biodiversity** in Gloucestershire.	-?	-?	-?	-?	The GCC ecological assessment found that there should be no significant effects on biodiversity from a potential waste management facility developed on the Wingmoor Farm West site, within which Areas A and B lie. However, a number of priority habitats and species lie within 1km or closer, indicating that there is the potential for a minor negative effect on biodiversity for all of the facility types; however this is dependent on the exact design and layout of the facility eventually developed. In addition the initial findings of the HRA Report indicate that any proposal for a thermal treatment facility here will need to demonstrate that there will be no adverse impact on the integrity of Dixton Wood SAC. However, this is at present uncertain as the judgement is subject to the completion of the full HRA Report and further assessment that may be required at the planning application stage.

SA Objective	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)	Justification
Site 2: Wingmoor Farm West					
9. To protect, conserve and enhance the **landscape** in Gloucestershire.	-?	-?	-?	0	Although the site is more than 1km from the nearest AONB and is an existing industrial estate, therefore indicating that a negligible impact on the landscape is likely, GCC assessments have concluded that although both sites A and B could accommodate a medium-sized facility with minimal impact, site A is inappropriate for large-scale development. It was also found that an emissions stack of either medium or large size could have a moderate adverse impact. This potential adverse effect would, however, not be significant due to the presence of similar structures in the surrounding area.
10. To ensure that waste sites have the potential for adequate **screening and / or innovative design** to be incorporated.	+?	+?	+?	+?	The tall emissions stacks incorporated into the design of thermal treatment facilities could make screening of a waste facility at this site more difficult. However, all sites would have the potential for positive effects to be achieved through design, although the effects are uncertain until the exact design of the proposed facility is submitted with a planning application at a later stage. This is particularly likely given that all applications will need to adhere to policy WCS13: Design. The enclosed character of the study area indicates that there may be particular opportunities for a waste site to be well-screened here.

SA Objective	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)	Justification
Site 2: Wingmoor Farm West					
11. To protect conserve and enhance Gloucestershire's **material, cultural and recreational assets**.	+/-	+/-	+/-	+/-	GCC site assessment and GIS analysis indicates that there are no PROW present on site, but that there may be potential to enhance the local footpath network; therefore having a minor positive effect on material, cultural and recreational assets. However, the site is close to a rugby ground and rifle range and may have the potential for a minor negative effect on recreation in the local area by reducing the attractiveness of these facilities to users.
12. To protect conserve and enhance **geodiversity** in Gloucestershire.	0	0	0	0	The site is within 500m of a RIG (Wingmoor Farm Pit) and so development of any type of waste facility here could potentially have a negative effect on local geodiversity. However, the site is a temporary RIG and the Geological Trust makes it clear that it will eventually be landfilled. As such, the likely effect of development at this site on local geodiversity is classed as negligible.
13. To protect conserve and enhance **townscapes** and Gloucestershire's **architectural and archaeological heritage**.	+	+	+	+	The larger Wingmoor Farm West site, within which Areas A and B lie, scored positively (+) in the GCC Archaeology site assessment due to the low potential for development to impact upon known historical or archaeological remains. The site is near to the former Stoke Orchard World War II airfield, but much of the site has already been destroyed by landfill, and the remainder of the airfield is now used by the Coal Research Establishment.

SA Objective	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)	Justification
Site 2: Wingmoor Farm West					
14. To prevent **flooding**, in particular preventing inappropriate development in the floodplain and to ensure that waste development does not compromise sustainable sources of water supply.	+?	+?	+?	+?	The whole of the site lies within Flood Zone 1, although some fluvial flood risk is posed from water bodies present within the wider Wingmoor Farm site; therefore development here is likely to have a positive effect on the flood risk although this is uncertain.
15. To **prevent pollution** and to apply the precautionary principle in consultation with waste regulation authorities.	N/A	N/A	N/A	N/A	In relation to the location of potential waste sites, potential pollution effects are already covered under SA Objectives 1, 3, 16-18. The precautionary principle is inherently being applied to the site allocation process through the Council's own site assessment methodology and this independent SA of Waste Core Strategy and the potential strategic waste sites to be allocated within it.

SA Objective	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)	Justification
Site 2: Wingmoor Farm West					
16. To protect and enhance **soil / land quality** in Gloucestershire.	++	++	++	++	These areas comprise a large sized site located entirely on previously developed land, therefore development here is likely to have a significant positive effect on this objective. Medium sized facilities may result in a smaller area of the site being developed, thus having even greater positive effects, although this is uncertain and will depend on the final design of the facility.
17. To protect and enhance **air quality** in Gloucestershire.	+/-	+	+/-	+	The GCC Highways Assessment found that the site is within reasonable proximity of the strategic highways network via the A435. In addition, it is more than 1km from an AQMA; therefore in this sense the site should have positive impacts on protecting air quality. However, where thermal treatment facilities are proposed, there could also be negative impacts on air quality due to the release of gases through thermal processes. The negative effect would not be significant however, because the overall scale of emissions from thermal treatment facilities is relatively small and also because of the distance of the site from an AQMA.
18. To protect and enhance **water quality** in Gloucestershire.	0	0	0	0	Potential sites for waste management are expected to have no effect on water quality as the requirement for future residual waste management within Gloucestershire is likely to be met by modern facilities within enclosed buildings.

SA Objective	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)	Justification
Site 2: Wingmoor Farm West					
19. To reduce the adverse **impacts of lorry traffic** on the environment and communities through means such as: a) reducing the need to travel b) promoting more sustainable means of transport e.g. by rail or water c) sensitive lorry routing d) the use of sustainable alternative fuels e) promoting the management of waste in one of the nearest appropriate installations.	+/-	+/-	+/-	+/-	The GCC Highways Assessment found that, although the site is adjacent to a mapped freight rail head, at present there are no sidings and thus a new main line connection and loading siding would be required. The cost of installing such a mainline connection is likely to be very high; therefore negative effects in terms of sustainable transport use are likely. However, the GCC Highways Assessment also found that the site is within reasonable proximity to the strategic highways network via the A435, therefore mixed effects are likely overall. There may be some level of variation between the effects of medium and larger sites, as larger sites may result in higher levels of waste transportation. However, as this will not always be the case and cannot be assumed, no differences are reflected in the scores.

SA Objective	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)	Justification
Site 2: Wingmoor Farm West					
20. To **reduce waste to landfill** and in dealing with all waste streams to actively **promote the waste hierarchy** (i.e. Prevent, Reduce, Reuse, Recycle, Recover, Dispose) to achieve the sustainable management	+	+	+	+	The Waste Core Strategy is seeking to allocate strategic sites for recovery of residual municipal waste and C&I waste. All facility types that may be developed on these sites are therefore likely to have minor positive effects by ensuring waste management occurs using processes higher up the waste hierarchy than landfill.

SA Objective	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)	Justification
Site 2: Wingmoor Farm West					
21. To reduce the global **use of primary materials** and minimise net energy balance requirements.	++?	+	++?	+	All facility types that may be developed on sites allocated for residual waste management in the Waste Core Strategy are likely to have positive effects by ensuring that waste management occurs using processes higher up the waste hierarchy than landfill, which should increase levels of recycling, composting and recovering value or energy from waste and reducing use of primary materials. Thermal treatment facilities may have a significant positive effect on this objective if the potential for using the energy produced is realised.

SA Objective	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)	Justification
Site 2: Wingmoor Farm West					
22. To reduce contributions to and to **adapt to Climate Change**.	++	+?	++	+?	The fact that the site is already used for waste management means that there are unlikely to be opportunities for incorporating a CHP scheme. However, where energy is recovered from the waste management process within a thermal treatment facility, there would be significant positive effects on this objective. The contribution of the facility to climate change adaptation will depend more on the specific design of the facility and its layout, and the incorporation of sustainable construction techniques, drainage systems and measures to enable changes to new technologies as they develop. This cannot be assessed until the detailed proposals for a site are made known at the planning application stage, and will be influenced by other Waste Core Strategy policies such as WCS13: Design.

Table 14: Site 3 – Javelin Park

SA Objective	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)	Justification
Site 3: Javelin Park					
1. To promote sustainable development and sustainable communities and improve the **health and wellbeing** of people living and working in Gloucestershire as well as visitors to the County.	-	-?	-	-?	There are a small number of sensitive receptors within 250m of the site boundary, including two residential properties, a garden centre and some retail units. Particularly where thermal treatment facilities are proposed, there could be negative effects on health and well-being as a result of gaseous emissions; however these are classed as minor due to the fact that Government research[37] has concluded that modern waste management practices have at most a minor effect on human health. The fact that the effects are likely to be only minor means that no differentiation between the effects of large and medium-sized thermal facilities is expected. With other types of waste management facilities, the potential adverse effects on health and wellbeing are uncertain and will depend on the precise nature of the facility and any mitigation measures proposed.

[37] Review of Environmental and Health Effects of Waste Management: Municipal Solid Waste and Similar Wastes. Prepared for DEFRA by Enviros and University of Birmingham, May 2004.

SA Objective	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)	Justification
Site 3: Javelin Park					
2. To **educate the public** about waste issues and to **maximise community participation** and access to waste services and facilities in Gloucestershire.	+?	+?	+?	+?	Waste management facilities at any of the strategic sites could have an indirect positive effect on education opportunities, as they may include education centres within the site.

SA Objective	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)	Justification
Site 3: Javelin Park					
3. To safeguard the **amenity of local communities** from the adverse impacts of waste development.	-	-	-?	-?	The site has a small number of sensitive receptors within 250m including two residential properties, a garden centre and some retail units and, as potential waste facilities could potentially be served by large numbers of HGVs there could be a cumulative effect on the two residential properties. This may combine with mechanical operations to increase noise levels, thus having negative effects on local amenity. Medium sized facilities may result in fewer negative effects in this sense as they may generate less traffic. As there is an existing waste facility within 250m of the site, there could be a cumulative effect on the two residential properties, although this is relatively unlikely given that the existing facility is a site for the storage of road surfacing materials. The GCC Highways Assessment for this site found that lorry traffic is unlikely to impact significantly on local amenity as the site is not in close proximity to residential properties, and the vast majority of road traffic should travel directly north to M5.

SA Objective	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)	Justification
Site 3: Javelin Park					
4. To promote **sustainable economic development** in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	+?	+?	+?	+?	The creation of additional waste management facilities within Gloucestershire in any location may have a minor positive impact on encouraging investment and growth of 'green industry' in the county. This site has been previously developed and there is an existing waste facility within 250m. As a result there is potential for positive effects on sustainable local economic activity as complementary activities to waste management may be encouraged, e.g. reprocessing facilities or composting outlets that could make use of recyclate or compost generated. This score is uncertain, however, as it is dependent on the nature of neighbouring industrial/commercial outlets.

SA Objective	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)	Justification
Site 3: Javelin Park					
5. To manage waste in an **economically sustainable** way through means that represent good value for tax payers in Gloucestershire.	+	+	+	+	At this stage it is difficult to assess how the location of new strategic scale waste facilities may affect this objective. However it is important to note that certain sites will be more efficient than others (e.g. in terms of reductions in transport movements & costs), given their proximity to the main sources of waste arisings and to transfer stations and/or any other facilities that may service them. The proximity of the site to Gloucester, along with the fact that there are existing waste facilities nearby, means that transport distances are likely to be lower, having a positive effect in terms of the economically sustainable management of waste. It should also be noted that the type of facilities eventually proposed on sites once allocated in the Waste Core Strategy may differ in terms of overall costs but this will not be known until the planning application stage.

SA Objective	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)	Justification
Site 3: Javelin Park					
6. To provide **employment opportunities** in both rural and urban areas of the County, promoting diversification in the economy.	+/-	+/-	+/-	+/-	In terms of opportunities for future employees to use sustainable transport to travel to work, the GCC Highways Assessment found that the site would be difficult to access by walking or cycling due to the distance and the effective barrier of Junction 12 of the M5 (although some bus access can be provided via the existing Stroud-Gloucester service), meaning that negative effects are likely. However, positive effects are associated with the job creation resulting from development at the site, so overall effects are likely to be mixed. Although it is likely that larger facilities will result in higher levels of employment during construction and operation, this will not always be the case and therefore significant positive effects for larger facilities cannot be assumed.
7. To ensure that waste sites do not compromise the **safety of commercial or military aerodromes**.	0	0	0	0	The site is not within an Aerodrome Safeguarding zone; therefore waste facilities developed on this site are not expected to present a hazard to aircraft.

SA Objective	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)	Justification
Site 3: Javelin Park					
8. To protect, conserve and enhance **biodiversity** in Gloucestershire.	-?	-?	-?	-?	The GCC ecological assessment found that there should be no significant effects on biodiversity from a potential waste management facility at this site. However, a number of protected species have been identified in the vicinity through previous site surveys, indicating that there is the potential for minor negative effects on biodiversity for all of the facility types; but this would be dependent on the exact design and layout of the facility eventually developed. In addition, the initial findings of the HRA Report indicate that the potential for an adverse impact on the Severn Estuary SAC/SPA/Ramsar site, Walmore Common SPA/ Ramsar site, Rodborough Common SAC and Cotswold Beechwoods SAC cannot be ruled out, and that any proposal, in particular for a thermal treatment facility here, will need to demonstrate that there will be no adverse impact on the integrity of these sites. However, this negative score is at present uncertain as the judgement is subject to the completion of the full HRA Report and further assessment that may be required at the planning application stage.

SA Objective	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)	Justification
Site 3: Javelin Park					
9. To protect, conserve and enhance the **landscape** in Gloucestershire.	-?	-?	-?	-?	The site is more than 1km from the nearest AONB and is previously developed; therefore negligible impacts on the landscape may be expected in this sense. However, a facility which is taller and larger than existing surrounding units would contribute to the encroachment of urban fringe development into the agricultural landscape, and an emissions stack may create a significant vertical landmark out of keeping with local character, depending on its height.
10. To ensure that waste sites have the potential for adequate **screening and / or innovative design** to be incorporated.	-?	-?	-?	-?	The GCC site assessment describes the site as containing very little vegetation, with some mature trees along the boundary with the M5 to the west, and considers that screening a large facility would be challenging. The tall emissions stacks incorporated into the design of thermal treatment facilities could make screening particularly difficult. However, the assessment also states that there is the potential to make a high quality architectural statement and that development here presents the opportunity to set the design quality for future development. As such, the potential negative score is uncertain.

SA Objective	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)	Justification
Site 3: Javelin Park					
11. To protect conserve and enhance Gloucestershire's **material, cultural and recreational assets**.	+/-	+/-	+/-	+/-	The GCC site assessment and GIS analysis indicate that there are no PROW present on site, but that there may opportunities for existing routes to be enhanced, therefore having a minor positive effect on material, cultural and recreational assets. However, the site is adjacent to a garden centre and so development here may have a minor negative effect by making this facility less attractive to users.
12. To protect conserve and enhance **geodiversity** in Gloucestershire.	0	0	0	0	The site is more than 500m from a RIG so development here is not expected to have an effect on local geodiversity.
13. To protect conserve and enhance **townscapes** and Gloucestershire's **architectural and archaeological heritage**.	+	+	+	+	The site scored positively (+) in the GCC Archaeology site assessment due to the low potential for development here to impact upon known historical or archaeological remains.

SA Objective	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)	Justification
Site 3: Javelin Park					
14. To prevent **flooding**, in particular preventing inappropriate development in the floodplain and to ensure that waste development does not compromise sustainable sources of water supply.	+	+	+	+	The SFRA Level 2 indicates a very low risk of flooding on this site; therefore development here should have a positive effect on this objective.
15. To **prevent pollution** and to apply the precautionary principle in consultation with waste regulation authorities.	N/A	N/A	N/A	N/A	In relation to the location of potential waste sites, potential pollution effects are already covered under SA Objectives 1, 3, 16-18. The precautionary principle is inherently being applied to the site allocation process through the Council's own site assessment methodology and this independent SA of the Waste Core Strategy and the potential strategic sites to be allocated within it.

SA Objective	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)	Justification
Site 3: Javelin Park					
16. To protect and enhance **soil / land quality** in Gloucestershire.	++	++	++	++	This is a large site located entirely on previously developed land, therefore should have a significant positive effect on this objective. Medium sized facilities may result in a smaller area of the site being developed, thus having even greater positive effects, although this is uncertain and will depend on the final design of the facility which will not be known until the planning application stage.
17. To protect and enhance **air quality** in Gloucestershire.	++/-	++	++/-	++	The GCC Highways Assessment found that the site is within very close proximity to the strategic highways network via Junction 12 of the M5 motorway. In addition, it is more than 1km from an AQMA; therefore in this sense the site should have significant positive impacts on protecting air quality. However, where thermal treatment facilities are proposed, there could also be negative impacts on air quality due to the release of gases through thermal processes. This negative effect would not be significant, however, because the overall scale of emissions from thermal treatment facilities is relatively small and also because of the distance of the site from an AQMA.
18. To protect and enhance **water quality** in Gloucestershire.	0	0	0	0	Potential sites for waste management are expected to have no effect on this objective, as the requirement for future residual waste management within Gloucestershire is likely to be met by modern facilities within enclosed buildings.

SA Objective	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)	Justification
Site 3: Javelin Park					
19. To reduce the adverse **impacts of lorry traffic** on the environment and communities through means such as: a) reducing the need to travel b) promoting more sustainable means of transport e.g. by rail or water c) sensitive lorry routing d) the use of sustainable alternative fuels e) promoting the management of waste in one of the nearest appropriate installations.	++/-	++/-	++/-	++/-	The GCC Highways Assessment found that the site is over 1km west of the existing mainline railway. The construction of a new line is likely to need to be around 1.5km length to avoid Haresfield village and this is likely to be prohibitively expensive and could have land ownership issues; therefore negative effects in terms of sustainable transport use are likely. However, the GCC Highways Assessment also found that the site is within very close proximity to the strategic highways network via Junction 12 of the M5 motorway, therefore mixed effects are likely overall. There may be some level of variation between the effects of medium and larger sites, as larger sites may result in higher levels of waste transportation. However, as this will not always be the case and cannot be assumed, no differences are reflected in the scores.

SA Objective	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)	Justification
Site 3: Javelin Park					
20. To **reduce waste to landfill** and in dealing with all waste streams to actively **promote the waste hierarchy** (i.e. Prevent, Reduce, Reuse, Recycle, Recover, Dispose) to achieve the sustainable management	+	+	+	+	The Waste Core Strategy is seeking to allocate strategic sites for recovery of residual municipal waste and C&I waste. All facility types that may be developed on these sites are therefore likely to have minor positive effects by ensuring waste management occurs using processes higher up the waste hierarchy than landfill.
21. To reduce the global **use of primary materials** and minimise net energy balance requirements.	++?	+	++?	+	All facility types that may be developed on sites allocated for residual waste management in the Waste Core Strategy are likely to have positive effects by ensuring that waste management occurs using processes higher up the waste hierarchy than landfill, which should increase levels of recycling, composting and recovering value or energy from waste and reducing use of primary materials. Thermal treatment facilities may have a significant positive effect on this objective if the potential for using the energy produced is realised.

SA Objective	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)	Justification
Site 3: Javelin Park					
22. To reduce contributions to and to **adapt to Climate Change**.	++	+?	++	+?	The fact that the site is previously developed means that there are unlikely to be opportunities for incorporating a CHP scheme. However, the energy recovered from the waste management process within a thermal treatment facility may still be used for something other than CHP and this would have a significant positive effect on this objective. The contribution of the facility to climate change adaptation will depend more on the specific design of the facility and its layout, and incorporation of sustainable construction techniques, drainage systems and measures to enable changes to new technologies as they develop. This cannot be assessed until the detailed proposals for a site are made known at the planning application stage and will also be influenced by other Waste Core Strategy policies such as WCS13: Design.

Table 15: Site 4 – Land at Moreton Valance

SA Objective	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)	Justification
Site 4: Land at Moreton Valance					
1. To promote sustainable development and sustainable communities and improve the **health and wellbeing** of people living and working in Gloucestershire as well as visitors to the County.	-	-?	-	-?	There are a small number of sensitive receptors within 250m of the site boundary including farmhouses, other residential properties, a campsite and business/light industrial uses at Old Airfield Farm. Particularly where thermal treatment facilities are proposed, there may be negative effects on health and well-being as a result of gaseous emissions; however these are classed as minor due to the fact that Government research[38] has concluded that modern waste management practices have at most a minor effect on human health. The fact that the effects are likely to be only minor means that no differentiation between the effects of large and medium sized facilities is expected. With non-thermal waste management facilities, the potential negative effects are uncertain and will depend on the precise nature of the facility and any mitigation measures proposed.

[38] Review of Environmental and Health Effects of Waste Management: Municipal Solid Waste and Similar Wastes. Prepared for DEFRA by Enviros and University of Birmingham, May 2004.

SA Objective	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)	Justification
Site 4: Land at Moreton Valance					
2. To **educate the public** about waste issues and to **maximise community participation** and access to waste services and facilities in Gloucestershire.	+?	+?	+?	+?	Waste management facilities at any of the strategic sites could have an indirect positive effect on education opportunities, as they may include education centres within the site.

SA Objective	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)	Justification
Site 4: Land at Moreton Valance					
3. To safeguard the **amenity of local communities** from the adverse impacts of waste development.	-	-	-?	-?	The site has a small number of residential properties within 250m including farmhouses, other residential properties, a campsite and business/light industrial uses at Old Airfield Farm and, as facilities are served by large numbers of HGVs, this may combine with mechanical operations to increase noise levels, thus having negative effects on local amenity. Medium sized facilities may result in fewer negative effects in this sense as they may generate less traffic movement than larger facilities. The fact that the site is already used for waste management activities may mean that there is some potential for a cumulative negative effect on local amenity, although this would still be expected to be only a minor negative effect as the GCC Highways Assessment concluded that the site is not in close proximity to a significant number of residential properties whose amenity may be adversely affected by lorry traffic.

SA Objective	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)	Justification
Site 4: Land at Moreton Valance					
4. To promote **sustainable economic development** in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	+?	+?	+?	+?	The creation of additional waste management facilities within Gloucestershire in any location may have a minor positive impact on encouraging investment and growth of 'green industry' in the County. This particular site is an industrial estate with existing waste management uses and as a result there is the potential for positive effects on sustainable local economic activity as complementary activities to waste management may be encouraged, e.g. reprocessing facilities or composting outlets that could make use of recyclate or compost generated. This score is uncertain, however, as it is dependent on the nature of neighbouring industrial/commercial outlets.

SA Objective	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)	Justification
Site 4: Land at Moreton Valance					
5. To manage waste in an **economically sustainable** way through means that represent good value for tax payers in Gloucestershire.	+	+	+	+	At this stage it is difficult to assess how the location of new strategic scale waste facilities may affect this objective. However it is important to note that certain sites will be more efficient than others (e.g. in terms of reductions in transport movements & costs), given their proximity to the main sources of waste arisings and to transfer stations and/or any other facilities that may service them. The proximity of this site to Gloucester, along with the fact that there are existing waste facilities at the site, means that transport distances are likely to be lower, having a positive effect on the economically sustainable management of waste. Additionally, the type of facilities eventually proposed on sites once they have been allocated in the Waste Core Strategy may differ in terms of overall costs but this will not be known until the planning application stage.

SA Objective	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)	Justification
Site 4: Land at Moreton Valance					
6. To provide **employment opportunities** in both rural and urban areas of the County, promoting diversification in the economy.	+/-	+/-	+/-	+/-	In terms of opportunities for future employees to use sustainable transport modes to access the site, the GCC Highways Assessment found that the site is outside reasonable walking distances from nearby settlements, and that cycle and bus access is also likely to be fairly limited, in this sense indicating that there may be negative effects on this objective. However, positive effects are associated with general job creation at the site, so overall effects are likely to be mixed. Although it is likely that larger facilities will result in higher levels of job creation during construction and operation, this will not always be the case and therefore significant positive effects for larger facilities cannot be assumed.
7. To ensure that waste sites do not compromise the **safety of commercial or military aerodromes**.	0	0	0	0	The site is not within an Aerodrome Safeguarding zone; therefore development of any type of waste management facility here would not be expected to have an impact on this objective.

SA Objective	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)	Justification
Site 4: Land at Moreton Valance					
8. To protect, conserve and enhance **biodiversity** in Gloucestershire.	-?	-?	-?	-?	The site has no international, national or local designations within the immediate vicinity and was assessed by GCC as having a potentially positive impact on biodiversity. However, there is a Strategic Nature Area (Severn Vale) located 520m from the site, indicating that a negative effect on biodiversity is possible for all of the facility types; but this is dependent on the exact design and layout of the facility eventually developed. In addition, the initial findings of the HRA Report indicates that the potential for an adverse impact on the Severn Estuary SAC/SPA/Ramsar site, Walmore Common SPA/ Ramsar site, Rodborough Common SAC and Cotswold Beechwoods SAC cannot be ruled out, and that any proposal, in particular for a thermal treatment facility here, will need to demonstrate that there will be no adverse impact on the integrity of these sites. However, this negative score is at present uncertain as the judgement is subject to the completion of the full HRA Report and further assessment that may be required at the planning application stage.

SA Objective	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)	Justification
Site 4: Land at Moreton Valance					
9. To protect, conserve and enhance the **landscape** in Gloucestershire.	-	0	-	0	The site is more than 1km from the nearest AONB and is in an existing waste site/industrial estate; therefore negligible impacts on the landscape may be expected from development at this site. However, although the study area has been found to be able to accommodate development of a similar scale and height as the existing development around the site, an emissions stack of any height could potentially have a detrimental impact on the wider area although it should be noted that a small pyrolysis plant with a small/medium stack has already been permitted on this site.
10. To ensure that waste sites have the potential for adequate **screening and / or innovative design** to be incorporated.	-	-	-	-	The GCC assessment states that screening potential at this site would depend on the size and technology of a proposed facility and that there is currently large bunding screening from the M5 which could potentially be improved. The tall emissions stacks incorporated into the design of thermal treatment facilities could make screening more difficult, and there are several residential properties which have views of the site, thus a potential negative effect is predicted.

SA Objective	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)	Justification
Site 4: Land at Moreton Valance					
11. To protect conserve and enhance Gloucestershire's **material, cultural and recreational assets**.	+/-	+/-	+/-	+/-	The GCC site assessment and GIS analysis indicates that there are no PRoW present within the site and that there may be the potential to enhance the local footpath network, which could have a minor positive effect on material, cultural and recreational assets.. However, the site is close to a campsite and there may be potential for a minor negative effect on recreation locally by making this facility less attractive to users. The overall effect is therefore likely to be mixed.
12. To protect conserve and enhance **geodiversity** in Gloucestershire.	0	0	0	0	The site is more than 500m from a SSSI or RIG, so development here would not be expected to have an impact on local geodiversity.
13. To protect conserve and enhance **townscapes** and Gloucestershire's **architectural and archaeological heritage**.	+	+	+	+	The site scored positively (+) in the GCC Archaeology site assessment due to the low potential for development to impact upon known historical or archaeological remains.

SA Objective	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)	Justification
Site 4: Land at Moreton Valance					
14. To prevent **flooding**, in particular preventing inappropriate development in the floodplain and to ensure that waste development does not compromise sustainable sources of water supply.	++	++	++	++	The site is located entirely within Flood Zone 1 and the GCC assessment scored it significantly positively (++) as there are no historic flood outlines and there are no recorded incidents of flooding from other sources within the site. As such, the site could have a significant positive effect on preventing flooding and reducing the risk to the public water supply.
15. To **prevent pollution** and to apply the precautionary principle in consultation with waste regulation authorities.	N/A	N/A	N/A	N/A	In relation to the location of potential waste sites, potential pollution effects are already covered under SA Objectives 1, 3, 16-18. The precautionary principle is inherently being applied to the site allocation process through the Council's own site assessment methodology and this independent SA of the Waste Core Strategy and the potential strategic waste sites to be allocated within it.

SA Objective	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)	Justification
Site 4: Land at Moreton Valance					
16. To protect and enhance **soil / land quality** in Gloucestershire.	++	++	++	++	This is a large sized site located entirely on previously developed land, therefore should have a significant positive effect on this objective. Medium sized-facilities may result in a smaller area of the site being developed, thus having even greater positive effects, although this is uncertain and will depend on the final design of the facility which will not be known until the planning application stage.
17. To protect and enhance **air quality** in Gloucestershire.	++/-	++	++/-	++	The GCC Highways Assessment found that the site is within close proximity of the strategic highways network via Junction 12 of the M5 motorway (via A38/the Cross Keys roundabout). In addition, the site is more than 1km from an AQMA; therefore in this sense the site should have significant positive impacts on protecting air quality. However, where thermal treatment facilities are proposed, there could also be negative impacts on air quality due to the release of gases through thermal processes. This negative effect would not be significant, however, because the overall scale of emissions from thermal treatment facilities is relatively small and also because of the distance of the site from an AQMA.
18. To protect and enhance **water quality** in Gloucestershire.	0	0	0	0	Potential sites for waste management are expected to have no effect on water quality, as the requirement for future residual waste management within Gloucestershire is likely to be met by modern facilities within enclosed buildings.

SA Objective	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)	Justification
Site 4: Land at Moreton Valance					
19. To reduce the adverse **impacts of lorry traffic** on the environment and communities through means such as: a) reducing the need to travel b) promoting more sustainable means of transport e.g. by rail or water c) sensitive lorry routing d) the use of sustainable alternative fuels e) promoting the management of waste in one of the nearest appropriate installations.	++/-	++/-	++/-	++/-	The GCC Highways Assessment concluded that the site is too far from the existing rail or water infrastructure for these modes of transport to be utilised; therefore negative effects in terms of sustainable transport use are likely. However, the GCC Highways Assessment also found that the site is within close proximity of the strategic highways network via Junction 12 of the M5 motorway (via the A38/the Cross Keys roundabout); therefore mixed effects are likely overall. There may be some level of variation between the effects of medium and larger sites, as larger sites may result in higher levels of waste transportation. However, as this will not always be the case and cannot be assumed, no differences are reflected in the scores.

SA Objective	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)	Justification
Site 4: Land at Moreton Valance					
20. To **reduce waste to landfill** and in dealing with all waste streams to actively **promote the waste hierarchy** (i.e. Prevent, Reduce, Reuse, Recycle, Recover, Dispose) to achieve the sustainable management	+	+	+	+	The Waste Core Strategy is seeking to allocate strategic sites for recovery of residual municipal waste. All facility types that may be developed on these sites are therefore likely to have minor positive effects by ensuring waste management occurs using processes higher up the waste hierarchy than landfill.

SA Objective	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)	Justification
Site 4: Land at Moreton Valance					
21. To reduce the global **use of primary materials** and minimise net energy balance requirements.	++?	+	++?	+	All facility types that may be developed on sites allocated for residual waste management in the Waste Core Strategy are likely to have positive effects by ensuring that waste management occurs using processes higher up the waste hierarchy than landfill, which should increase levels of recycling, composting and recovering value or energy from waste and reducing use of primary materials. Thermal treatment facilities may have a significant positive effect on this objective if the potential for using the energy produced is realised.

SA Objective	Large Facility (Thermal Treatment)	Large Facility (not Thermal Treatment)	Medium Facility (Thermal Treatment)	Medium Facility (not Thermal Treatment)	Justification
Site 4: Land at Moreton Valance					
22. To reduce contributions to and to **adapt to Climate Change**.	++	+?	++	+?	The fact that the site is previously developed means that there are unlikely to be opportunities for incorporating a CHP scheme. However, the energy recovered from the waste management process within a thermal treatment facility may still be used for something other than CHP and this would have a significant positive effect on this objective. The contribution of the facility to climate change adaptation will depend more on the specific design of the facility and its layout, and incorporation of sustainable construction techniques, drainage systems and measures to enable changes to new technologies as they develop. This cannot be assessed until the detailed proposals for a site are made known at the planning application stage and will also be influenced by other Waste Core Strategy policies such as WCS13: Design.

Table 16: Appraisal of Policy WCS5 – Waste Water

SA Objective	SA Score	Justification
Policy WCS5: Waste Water		
1. To promote sustainable development and sustainable communities and improve the **health and wellbeing** of people living and working in Gloucestershire as well as visitors to the County.	+?	A positive impact on health and wellbeing is expected to result from the policy as it allows for the provision of adequate waste water treatment facilities as required to serve Gloucestershire's growing population, and the provision of a clean water supply is essential for ensuring human health and wellbeing. In addition, policy states that any adverse environmental impacts from proposed development must be satisfactorily mitigated, and this is taken to include impacts on sensitive receptors such as odours that may affect public health. However, the wording of the policy indicates that permission may be granted for facilities which will have an adverse environmental impact if the need for the facility outweighs that impact. As such, the positive effect is at present uncertain. However, the policy does require those adverse environmental impacts to be mitigated.
2. To **educate the public** about waste issues and to **maximise community participation** and access to waste services and facilities in Gloucestershire.	0	The policy is not expected to have a direct effect on public education and participation in waste management.
3. To safeguard the **amenity of local communities** from the adverse impacts of waste development.	+?	The policy states that adverse environmental impacts from proposed development must be satisfactorily mitigated, and this is taken to include impacts on sensitive receptors such as odours that may affect the amenity residential properties. However, the wording of the policy indicates that permission may be granted for facilities which will have an adverse environmental impact if the need for the facility outweighs that impact. As such, the positive effect is at present uncertain. However, the policy does require those adverse environmental impacts to be mitigated.
4. To promote **sustainable economic development** in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	0	The policy is not expected to have a direct effect on sustainable economic development.

SA Objective	SA Score	Justification
Policy WCS5: Waste Water		
5. To manage waste in an **economically sustainable** way through means that represent good value for tax payers in Gloucestershire.	0	The policy is not expected to have a direct effect on the economically sustainable management of waste.
6. To provide **employment opportunities** in both rural and urban areas of the County, promoting diversification in the economy.	+	The development or expansion of waste water treatment facilities to accommodate population growth in Gloucestershire may result in some new job creation; however this is likely to be only a small number and so the potential positive impact is minor.
7. To ensure that waste sites do not compromise the **safety of commercial or military aerodromes**.	0	The policy is not expected to have a direct effect on aircraft safety as waste water treatment facilities would not be expected to incorporate tall structures such as emissions stacks which can affect aircraft safety.
8. To protect, conserve and enhance **biodiversity** in Gloucestershire.	+?	The policy states that adverse environmental impacts from proposed development must be satisfactorily mitigated, and this is taken to include impacts on biodiversity assets. In addition, the provision of adequate facilities for the treatment of waste water will help to maintain good quality watercourses which will have a beneficial impact on aquatic species. However, the wording of the policy indicates that permission may be granted for facilities which will have an adverse environmental impact if the need for the facility outweighs that impact. As such, the positive effect is at present uncertain. However, the policy does require those adverse environmental impacts to be mitigated.
9. To protect, conserve and enhance the **landscape** in Gloucestershire.	+?	The policy states that adverse environmental impacts from proposed development must be satisfactorily mitigated, and this is taken to include impacts on the landscape. Where existing facilities are expanded, rather than new ones developed (both expansion and new development are covered by the policy) it is particularly likely that adverse impacts on the landscape can be avoided. However, the wording of the policy indicates that permission may be granted for facilities which will have an adverse environmental impact if the need for the facility outweighs that impact. As such, the positive effect is at present uncertain. However, the policy does require those adverse environmental impacts to be mitigated.

SA Objective	SA Score	Justification
Policy WCS5: Waste Water		
10. To ensure that waste sites have the potential for adequate **screening and/or innovative design** to be incorporated.	0	The policy is not expected to determine the potential for screening or innovative design to be incorporated into new developments; instead this will be determined by the location and design of individual facilities which will not be known until the planning application stage. Other policies within the Waste Core Strategy such as WCS13 will also determine the potential for waste water facilities which are developed as a result of this policy to be well screened by influencing their location and design.
11. To protect conserve and enhance Gloucestershire's **material, cultural and recreational assets**.	0	The policy is not expected to directly affect material, cultural and recreational assets within Gloucestershire; instead this will be determined by the location of waste water treatment facilities which will not be known until the planning application stage. Other policies within the Waste Core Strategy such as WCS13 will also determine the potential for waste water facilities which are developed as a result of this policy to affect such assets by influencing their design.
12. To protect conserve and enhance **geodiversity** in Gloucestershire.	0	The policy is not expected to directly affect geodiversity in Gloucestershire; instead this will be determined by the location of waste water treatment facilities which will not be known until the planning application stage. Other policies within the Waste Core Strategy such as WCS13 will also determine the potential for waste water facilities which are developed as a result of this policy to affect local geodiversity assets by influencing their design.
13. To protect conserve and enhance **townscapes** and Gloucestershire's **architectural and archaeological heritage**.	0	The policy is not expected to directly affect townscapes, architectural and archaeological assets in Gloucestershire; instead this will be determined by the design and location of waste water treatment facilities which will not be known until the planning application stage. Other policies within the Waste Core Strategy such as WCS13 will also determine the potential for waste water facilities which are developed as a result of this policy to affect such assets by influencing their design.
14. To prevent **flooding**, in particular preventing inappropriate development in the floodplain and to ensure that waste development does not compromise sustainable sources of water supply.	0	The policy is not expected to directly affect the risk of flooding in Gloucestershire; instead this will be determined by the location of waste water treatment facilities which will not be known until the planning application stage. Other policies within the Waste Core Strategy such as WCS13 will also determine the potential for waste water facilities which are developed as a result of this policy to affect the risk of flooding by influencing their design.

SA Objective	SA Score	Justification
Policy WCS5: Waste Water		
15. To **prevent pollution** and to apply the precautionary principle in consultation with waste regulation authorities.	++	The overarching purpose of the policy is to ensure that adequate waste water treatment capacity is available in Gloucestershire in order to accommodate the growing population; therefore a significant positive impact on this objective is expected.
16. To protect and enhance **soil/land quality** in Gloucestershire.	0	The policy is not expected to directly affect soil and land quality in Gloucestershire; instead this will be determined by the location of waste water treatment facilities which will not be known until the planning application stage. Other policies within the Waste Core Strategy such as WCS13 will also determine the potential for waste water facilities which are developed as a result of this policy to affect soil and land quality by influencing their design.
17. To protect and enhance **air quality** in Gloucestershire.	0	The policy is not expected to directly affect air quality in Gloucestershire; instead this will be determined by the location of waste water treatment facilities which will not be known until the planning application stage. Other policies within the Waste Core Strategy such as WCS4 and WCS13 will also determine the potential for waste water facilities which are developed as a result of this policy to affect air quality by influencing their design.
18. To protect and enhance **water quality** in Gloucestershire.	++	The overarching purpose of the policy is to ensure that adequate waste water treatment capacity is available in Gloucestershire in order to accommodate the growing population; therefore a significant positive impact on water quality is expected.

SA Objective	SA Score	Justification
Policy WCS5: Waste Water		
19. To reduce the adverse **impacts of lorry traffic** on the environment and communities through means such as: a) reducing the need to travel b) promoting more sustainable means of transport e.g. by rail or water c) sensitive lorry routing d) the use of sustainable alternative fuels e) promoting the management of waste in one of the nearest appropriate installations.	0	The policy is not expected to have a direct effect on this objective. Waste water treatment facilities do not generally generate lorry traffic, as waste water does not require road transport in the way that other forms of waste do.
20. To **reduce waste to landfill** and in dealing with all waste streams to actively **promote the waste hierarchy** (i.e. Prevent, Reduce, Reuse, Recycle, Recover, Dispose) to achieve the sustainable management	0	The policy is not expected to have a direct effect on this objective as waste water is not disposed of via landfill; therefore the development of waste water treatment facilities will not affect the volume of waste being disposed of in this way.
21. To reduce the global **use of primary materials** and minimise net energy balance requirements.	0	The policy is not expected to have a direct effect on the use of primary materials.
22. To reduce contributions to and to **adapt to Climate Change**.	+	The policy gives particular support to facilities that involve anaerobic digestion, which may be used in place of non-renewable fuels; therefore reducing levels of harmful emissions.

SA Objective	SA Score	Justification
Policy WCS5: Waste Water		
Original SA Objective 1: To promote sustainable development and sustainable communities in Gloucestershire in particular giving people the opportunity to live in an affordable and sustainably designed and constructed home.	0	The policy is not considered likely to have a direct effect on this objective.
Original SA Objective 2: To safeguard sites suitable for the location of waste management facilities or future mineral development from other proposed development.	0	The policy is not considered likely to have a direct effect on this objective.

Table 17: Appraisal of Policy WCS6 – Hazardous Waste

SA Objective	SA Score	Justification
Policy WCS6: Hazardous Waste		
1. To promote sustainable development and sustainable communities and improve the **health and wellbeing** of people living and working in Gloucestershire as well as visitors to the County.	+?	The policy recognises that the health of local residents is a key factor for consideration when determining the likely environmental impacts of a facility for recycling and recovery of hazardous waste, and specifies that developments will not be permitted where significant adverse impacts in this sense would result. In addition, the policy recognises the potential for cumulative effects from new and existing waste facilities. However, the wording of the policy indicates that where an adverse impact is not considered significant, a facility may be permitted, indicating that some level of adverse impact would be allowed. As such, the positive impact is currently uncertain.
2. To **educate the public** about waste issues and to **maximise community participation** and access to waste services and facilities in Gloucestershire.	0	The policy is not expected to have a direct effect on public education and participation in waste management.
3. To safeguard the **amenity of local communities** from the adverse impacts of waste development.	+?	The policy recognises that the amenity of local residents is a key factor for consideration when determining the likely environmental impacts of a facility for recycling and recovery of hazardous waste, and specifies that developments will not be permitted where significant adverse impacts in this sense would result. In addition, the policy recognises the potential for cumulative effects from new and existing waste facilities. However, the wording of the policy indicates that where an adverse impact is not considered significant, a facility may be permitted, indicating that some level of adverse impact would be allowed. As such, the positive impact is currently uncertain.
4. To promote **sustainable economic development** in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	0	The policy is not expected to have a direct effect on sustainable economic development in Gloucestershire.

SA Objective	SA Score	Justification
Policy WCS6: Hazardous Waste		
5. To manage waste in an **economically sustainable** way through means that represent good value for tax payers in Gloucestershire.	0	The policy is not expected to have a direct effect on sustainable economic waste management in Gloucestershire.
6. To provide **employment opportunities** in both rural and urban areas of the County, promoting diversification in the economy.	+	The development of hazardous waste management facilities should have a positive impact on local employment by generating jobs; however the number of positions created is likely to be only minor in relation to overall employment in the county.
7. To ensure that waste sites do not compromise the **safety of commercial or military aerodromes**.	0	The policy is not expected to have a direct effect on aircraft safety as the potential impacts will depend on both the type of facility and whether it incorporates an emissions stack, and also on the precise location which is not determined by this facility. Strategic scale sites are allocated under policy WCS4 and other potential smaller sites will not come forward until the planning application stage.
8. To protect, conserve and enhance **biodiversity** in Gloucestershire.	+?	The policy specifies that developments will not be permitted where significant adverse impacts on the environment would result, and this is taken to include biodiversity assets. However, the wording of the policy indicates that where an adverse impact is not considered significant, a facility may be permitted, indicating that some level of adverse impact would be allowed. As such, the positive impact is currently uncertain.
9. To protect, conserve and enhance the **landscape** in Gloucestershire.	+?	The policy recognises that impacts on the land (taken to include landscape) are a key factor for consideration when determining the likely environmental impacts of a facility for recycling and recovery of hazardous waste, and specifies that developments will not be permitted where significant adverse impacts would result. However, the wording of the policy indicates that where an adverse impact is not considered significant, a facility may be permitted, indicating that some level of adverse impact would be allowed. As such, the positive impact is currently uncertain.

SA Objective	SA Score	Justification
Policy WCS6: Hazardous Waste		
10. To ensure that waste sites have the potential for adequate **screening and/or innovative design** to be incorporated.	0	The policy is not expected to determine the potential for screening or innovative design to be incorporated into new developments; instead this will be determined by the location and design of individual facilities which will not be known until the planning application stage. Other policies within the Waste Core Strategy such as WCS13 will also determine the potential for hazardous waste management facilities which are developed as a result of this policy to be well screened by influencing their design.
11. To protect conserve and enhance Gloucestershire's **material, cultural and recreational assets**.	+?	The policy specifies that developments will not be permitted where significant adverse impacts on neighbouring land uses would result, and this is taken to include recreation and cultural assets. However, the wording of the policy indicates that where an adverse impact is not considered significant, a facility may be permitted, indicating that some level of adverse impact would be allowed. As such, the positive impact is currently uncertain.
12. To protect conserve and enhance **geodiversity** in Gloucestershire.	+?	The policy recognises that impacts on the land (taken to include geodiversity) are a key factor for consideration when determining the likely environmental impacts of a facility for recycling and recovery of hazardous waste, and specifies that developments will not be permitted where significant adverse impacts would result. However, the wording of the policy indicates that where an adverse impact is not considered significant, a facility may be permitted, indicating that some level of adverse impact would be allowed. As such, the positive impact is currently uncertain.
13. To protect conserve and enhance **townscapes** and Gloucestershire's **architectural and archaeological heritage**.	+?	The policy specifies that developments will not be permitted where significant adverse impacts on neighbouring land uses would result, and this is taken to include townscapes, architectural and archaeological assets. However, the wording of the policy indicates that where an adverse impact is not considered significant, a facility may be permitted, indicating that some level of adverse impact would be allowed. As such, the positive impact is currently uncertain.
14. To prevent **flooding**, in particular preventing inappropriate development in the floodplain and to ensure that waste development does not compromise sustainable sources of water supply.	+?	The policy specifies that developments will not be permitted where significant adverse impacts on the environment (including water) would result. However, the wording of the policy indicates that where an adverse impact is not considered significant, a facility may be permitted, indicating that some level of adverse impact would be allowed. As such, the positive impact is currently uncertain.

SA Objective	SA Score	Justification
Policy WCS6: Hazardous Waste		
15. To **prevent pollution** and to apply the precautionary principle in consultation with waste regulation authorities.	+?	The policy specifies that developments will not be permitted where significant adverse impacts on the environment (land, air and water) would result. However, the wording of the policy indicates that where an adverse impact is not considered significant, a facility may be permitted, indicating that some level of adverse impact (i.e. pollution of these assets) would be allowed. As such, the positive impact is currently uncertain.
16. To protect and enhance **soil/land quality** in Gloucestershire.	+?	The policy specifies that developments will not be permitted where significant adverse impacts on the land would result. However, the wording of the policy indicates that where an adverse impact is not considered significant, a facility may be permitted, indicating that some level of adverse impact (i.e. pollution of these assets) would be allowed. As such, the positive impact is currently uncertain.
17. To protect and enhance **air quality** in Gloucestershire.	+?	The policy specifies that developments will not be permitted where significant adverse impacts on air would result. However, the wording of the policy indicates that where an adverse impact is not considered significant, a facility may be permitted, indicating that some level of adverse impact (i.e. pollution of these assets) would be allowed. As such, the positive impact is currently uncertain.
18. To protect and enhance **water quality** in Gloucestershire.	+?	The policy specifies that developments will not be permitted where significant adverse impacts on water would result. However, the wording of the policy indicates that where an adverse impact is not considered significant, a facility may be permitted, indicating that some level of adverse impact (i.e. pollution of these assets) would be allowed. As such, the positive impact is currently uncertain.

SA Objective	SA Score	Justification
Policy WCS6: Hazardous Waste		
19. To reduce the adverse **impacts of lorry traffic** on the environment and communities through means such as: a) reducing the need to travel b) promoting more sustainable means of transport e.g. by rail or water c) sensitive lorry routing d) the use of sustainable alternative fuels e) promoting the management of waste in one of the nearest appropriate installations.	+?	The policy recognises that the amenity of local residents is a key factor for consideration when determining the likely environmental impacts of a facility for recycling and recovery of hazardous waste, and specifies that developments will not be permitted where significant adverse impacts in this sense would result (i.e. from lorry traffic). In addition, the policy specifies that the impacts of waste treatment facilities on the local road network are a key consideration when determining the environmental acceptability of a development. However, the wording of the policy indicates that where an adverse impact is not considered significant, a facility may be permitted, indicating that some level of adverse impact would be allowed. As such, the positive impact is currently uncertain.
20. To **reduce waste to landfill** and in dealing with all waste streams to actively **promote the waste hierarchy** (i.e. Prevent, Reduce, Reuse, Recycle, Recover, Dispose) to achieve the sustainable management	++	The overarching aim of the policy is to reduce the volume of hazardous waste going to landfill by developing new facilities to increase the rates of recycling and re-use; therefore a significant positive effect on this objective is expected.
21. To reduce the global **use of primary materials** and minimise net energy balance requirements.	++	Increasing the re-use and recycling of hazardous waste through the development of new waste management facilities, which is the overarching purpose of this policy, is expected to have a significant positive effect on this objective.
22. To reduce contributions to and to **adapt to Climate Change**.	0	The policy is not expected to have a direct effect on climate change mitigation or adaptation.

SA Objective	SA Score	Justification
Policy WCS6: Hazardous Waste		
Original SA Objective 1: To promote sustainable development and sustainable communities in Gloucestershire in particular giving people the opportunity to live in an affordable and sustainably designed and constructed home.	0	The policy is not considered likely to have a direct effect on this objective.
Original SA Objective 2: To safeguard sites suitable for the location of waste management facilities or future mineral development from other proposed development.	0	The policy is not considered likely to have a direct effect on this objective.

Table 18: Appraisal of Policy WCS7 - Cumulative Impact

SA Objective	SA Score	Justification
Policy WCS7: Cumulative Impact		
1. To promote sustainable development and sustainable communities and improve the **health and wellbeing** of people living and working in Gloucestershire as well as visitors to the County.	+	Ensuring that the cumulative impacts of developments are taken into consideration when determining proposals for waste related development is expected to have a positive impact on public health as the policy specifies that issues such as noise, dust and health will be taken into consideration. Adequately addressing the potential for such impacts to accumulate between multiple developments should reduce the likelihood of local communities experiencing adverse impacts on health.
2. To **educate the public** about waste issues and to **maximise community participation** and access to waste services and facilities in Gloucestershire.	0	The policy is not likely to have a direct impact on education or public participation in waste management.
3. To safeguard the **amenity of local communities** from the adverse impacts of waste development.	+	Ensuring that the cumulative impacts of developments are taken into consideration when determining proposals for waste related development is expected to have a positive impact on local amenity as the policy specifies that issues such as noise and odour will be taken into consideration. Adequately addressing the potential for such impacts to accumulate between multiple developments should reduce the likelihood of local communities experiencing adverse impacts on amenity.
4. To promote **sustainable economic development** in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	0	The policy is not likely to have a direct impact on sustainable economic development in Gloucestershire.
5. To manage waste in an **economically sustainable** way through means that represent good value for tax payers in Gloucestershire.	+/-?	The policy specifies that consideration will be given to the economic potential of co-locating waste facilities; indicating that such opportunities may be maximised. However, the opportunities for these economic benefits may be adversely affected where co-location is prevented as a result of environmental considerations such as the potential impacts on local amenity. As such, the overall effects are mixed and uncertain.

SA Objective	SA Score	Justification
Policy WCS7: Cumulative Impact		
6. To provide **employment opportunities** in both rural and urban areas of the County, promoting diversification in the economy.	0	The policy is not likely to have a direct impact on employment provision.
7. To ensure that waste sites do not compromise the **safety of commercial or military aerodromes**.	0	The policy is not likely to have a direct impact on aircraft safety.
8. To protect, conserve and enhance **biodiversity** in Gloucestershire.	+	The policy may result in a positive impact on biodiversity as it will ensure that the likely cumulative impacts of developments, including some which may adversely impact biodiversity such as noise, are adequately considered before a waste related development proposal is approved. In addition, the policy states that particular consideration will be given to environmental quality when assessing the potential cumulative impacts of development.
9. To protect, conserve and enhance the **landscape** in Gloucestershire.	0	The policy is not likely to have a direct impact on the landscape.
10. To ensure that waste sites have the potential for adequate **screening and/or innovative design** to be incorporated.	0	The policy is not likely to have a direct impact on the screening potential or design of individual waste sites.
11. To protect conserve and enhance Gloucestershire's **material, cultural and recreational assets**.	0	The policy is not likely to have a direct impact on Gloucestershire's material, cultural and recreational assets.
12. To protect conserve and enhance **geodiversity** in Gloucestershire.	0	The policy is not likely to have a direct impact on geodiversity.

SA Objective	SA Score	Justification
Policy WCS7: Cumulative Impact		
13. To protect conserve and enhance **townscapes** and Gloucestershire's **architectural and archaeological heritage**.	0	The policy is not likely to have a direct impact on townscapes, architectural and archaeological heritage.
14. To prevent **flooding**, in particular preventing inappropriate development in the floodplain and to ensure that waste development does not compromise sustainable sources of water supply.	+	The policy may result in a positive impact on the risk of flooding as it states that particular consideration will be given to environmental quality when assessing the potential cumulative impacts of development, which is taken to include flood risk.
15. To **prevent pollution** and to apply the precautionary principle in consultation with waste regulation authorities.	+	The policy may result in a positive impact on pollution prevention as it states that particular consideration will be given to environmental quality when assessing the potential cumulative impacts of development, which is taken to include pollution. In addition, the policy states that traffic impacts will be given particular attention, and this should help to mitigate levels of air pollution from road traffic.
16. To protect and enhance **soil/land quality** in Gloucestershire.	+	The policy may result in a positive impact on soil/land quality as it states that particular consideration will be given to environmental quality when assessing the potential cumulative impacts of development, which is taken to include soil quality.
17. To protect and enhance **air quality** in Gloucestershire.	+	The policy may result in a positive impact on water quality as it states that particular consideration will be given to environmental quality when assessing the potential cumulative impacts of development, which is taken to include air quality. In addition, the policy states that assessment of odour, dust and traffic will be included within this broad category, all of which may impact upon local air quality.
18. To protect and enhance **water quality** in Gloucestershire.	+	The policy may result in a positive impact on water quality as it states that particular consideration will be given to environmental quality when assessing the potential cumulative impacts of development, which is taken to include water quality.

SA Objective	SA Score	Justification
Policy WCS7: Cumulative Impact		
19. To reduce the adverse **impacts of lorry traffic** on the environment and communities through means such as: a) reducing the need to travel b) promoting more sustainable means of transport e.g. by rail or water c) sensitive lorry routing d) the use of sustainable alternative fuels e) promoting the management of waste in one of the nearest appropriate installations.	+/-?	The likely effects of the policy on this objective are uncertain. The fact that consideration will be given to the potential economic benefits of co-locating waste facilities may have a positive impact in that where facilities are co-located there may also be opportunities for reducing the transportation of waste by lorry, there may also be negative impacts as a result of the opposite effect where facilities are prevented from co-locating, for example due to the likely impacts on health and amenity. As such, the likely effects may be either positive or negative.
20. To **reduce waste to landfill** and in dealing with all waste streams to actively **promote the waste hierarchy** (i.e. Prevent, Reduce, Reuse, Recycle, Recover, Dispose) to achieve the sustainable management	0	The policy is not likely to have a direct impact on the volume of waste going to landfill.
21. To reduce the global **use of primary materials** and minimise net energy balance requirements.	0	The policy is not likely to have a direct impact on the use of primary materials.
22. To reduce contributions to and to **adapt to Climate Change**.	0	The policy is not likely to have a direct impact on climate change mitigation or adaptation.

SA Objective	SA Score	Justification
Policy WCS7: Cumulative Impact		
Original SA Objective 1: To promote sustainable development and sustainable communities in Gloucestershire in particular giving people the opportunity to live in an affordable and sustainably designed and constructed home.	0	The policy is not likely to have a direct impact on this objective.
Original SA Objective 2: To safeguard sites suitable for the location of waste management facilities or future mineral development from other proposed development.	0	The policy is not likely to have a direct impact on this objective.

Table 19: Appraisal of Policy WCS8 – Safeguarding Sites for Waste Management

SA Objective	SA Score	Justification
Policy WCS8: Safeguarding Sites for Waste Management		
1. To promote sustainable development and sustainable communities and improve the **health and wellbeing** of people living and working in Gloucestershire as well as visitors to the County.	+	Safeguarding waste sites should help to ensure that incompatible land uses are avoided within close proximity, for example the development of housing which would potentially be adversely affected by the waste facility as a result of noise and odours which can impacts upon the health and wellbeing of residents. As such, a positive impact on this objective is likely.
2. To **educate the public** about waste issues and to **maximise community participation** and access to waste services and facilities in Gloucestershire.	0	The policy is not expected to have a direct impact on education and levels of public participation in waste management.
3. To safeguard the **amenity of local communities** from the adverse impacts of waste development.	+	Safeguarding waste sites should help to ensure that incompatible land uses are avoided within close proximity, for example the development of housing which would potentially be adversely affected by the waste facility as a result of noise and odours which can affect local amenity. As such, a positive impact on this objective is considered likely.
4. To promote **sustainable economic development** in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	-?	Safeguarding allocated sites for waste facilities may have an adverse impact on economic development within Gloucestershire, if other land uses with potential economic benefits (e.g. employment sites) are prevented from being developed.
5. To manage waste in an **economically sustainable** way through means that represent good value for tax payers in Gloucestershire.	0	The policy is not expected to have a direct impact on the economically sustainable management of waste within Gloucestershire.

SA Objective	SA Score	Justification
Policy WCS8: Safeguarding Sites for Waste Management		
6. To provide **employment opportunities** in both rural and urban areas of the County, promoting diversification in the economy.	+/-	Safeguarding allocated sites for waste facilities may have an adverse impact on employment opportunities within Gloucestershire, if other land uses with the potential to create jobs are prevented from being developed. However, safeguarding the site will also ensure that it is available and remains suitable for the development of a waste management facility when the time for development is appropriate, also safeguarding the jobs that will be created when the development takes place. As such, the likely effects on this objective are mixed.
7. To ensure that waste sites do not compromise the **safety of commercial or military aerodromes**.	0	The policy is not expected to have a direct impact on aircraft safety as this will depend on the particular locations that are allocated and safeguarded for waste facilities, which is not determined by this policy.
8. To protect, conserve and enhance **biodiversity** in Gloucestershire.	0	The policy is not expected to have a direct impact on biodiversity as this will depend on the particular locations that are allocated and safeguarded for waste facilities, which is not determined by this policy.
9. To protect, conserve and enhance the **landscape** in Gloucestershire.	0	The policy is not expected to have a direct impact on the landscape as this will depend on the particular locations that are allocated and safeguarded for waste facilities, which is not determined by this policy.
10. To ensure that waste sites have the potential for adequate **screening and/or innovative design** to be incorporated.	0	The policy is not expected to have a direct impact on the screening potential of waste sites as this will depend on the particular locations that are allocated and safeguarded for waste facilities and the design of those facilities, which is not determined by this policy.
11. To protect conserve and enhance Gloucestershire's **material, cultural and recreational assets**.	0	The policy is not expected to have a direct impact on material, cultural and recreation assets as this will depend on the particular locations that are allocated and safeguarded for waste facilities, which is not determined by this policy.
12. To protect conserve and enhance **geodiversity** in Gloucestershire.	0	The policy is not expected to have a direct impact on geodiversity as this will depend on the particular locations that are allocated and safeguarded for waste facilities, which is not determined by this policy.

SA Objective	SA Score	Justification
Policy WCS8: Safeguarding Sites for Waste Management		
13. To protect conserve and enhance **townscapes** and Gloucestershire's **architectural and archaeological heritage**.	0	The policy is not expected to have a direct impact on townscapes, archaeological and architectural assets as this will depend on the particular locations that are allocated and safeguarded for waste facilities, which is not determined by this policy.
14. To prevent **flooding**, in particular preventing inappropriate development in the floodplain and to ensure that waste development does not compromise sustainable sources of water supply.	0	The policy is not expected to have a direct impact on flooding as this will depend on the particular locations that are allocated and safeguarded for waste facilities, which is not determined by this policy.
15. To **prevent pollution** and to apply the precautionary principle in consultation with waste regulation authorities.	0	The policy is not expected to have a direct impact on pollution as this will depend on the particular locations that are allocated and safeguarded for waste facilities and the types of facilities to be developed there, which is not determined by this policy.
16. To protect and enhance **soil/land quality** in Gloucestershire.	0	The policy is not expected to have a direct impact on soil and land quality as this will depend on the size and location of the sites that are allocated and safeguarded for waste facilities, which is not determined by this policy.
17. To protect and enhance **air quality** in Gloucestershire.	0	The policy is not expected to have a direct impact on air quality as this will depend on the type and location of the sites that are allocated and safeguarded for waste facilities, which is not determined by this policy.
18. To protect and enhance **water quality** in Gloucestershire.	0	The policy is not expected to have a direct impact on air quality as this will depend on the design, type and location of the sites that are allocated and safeguarded for waste facilities, which is not determined by this policy.

SA Objective	SA Score	Justification
Policy WCS8: Safeguarding Sites for Waste Management		
19. To reduce the adverse **impacts of lorry traffic** on the environment and communities through means such as: a) reducing the need to travel b) promoting more sustainable means of transport e.g. by rail or water c) sensitive lorry routing d) the use of sustainable alternative fuels e) promoting the management of waste in one of the nearest appropriate installations.	0	The policy is not expected to have a direct impact on the impacts of lorry traffic as this will depend on the type and location of the sites that are allocated and safeguarded for waste facilities, which is not determined by this policy.
20. To **reduce waste to landfill** and in dealing with all waste streams to actively **promote the waste hierarchy** (i.e. Prevent, Reduce, Reuse, Recycle, Recover, Dispose) to achieve the sustainable management	+	The policy is likely to have a positive impact on this objective, as the strategic sites to be allocated for waste management facilities (and therefore that would be subject to the safeguarding policy) will be for the management of residual waste. Safeguarding them will therefore ensure that the sites are available for the development of waste management facilities will increase the capacity in the county for dealing with residual waste and avoiding its going to landfill.
21. To reduce the global **use of primary materials** and minimise net energy balance requirements.	0	The policy is not expected to have a direct impact on the use of primary materials as this will depend on the particular type of sites that are allocated and safeguarded for waste facilities, which is not determined by this policy.
22. To reduce contributions to and to **adapt to Climate Change**.	0	The policy is not expected to have a direct impact on contributions to climate change as this will depend on the design, type and location of the sites that are allocated and safeguarded for waste facilities, which is not determined by this policy.

SA Objective	SA Score	Justification
Policy WCS8: Safeguarding Sites for Waste Management		
Original SA Objective 1: To promote sustainable development and sustainable communities in Gloucestershire in particular giving people the opportunity to live in an affordable and sustainably designed and constructed home.	0	The policy is not likely to have a direct effect on this objective.
Original SA Objective 2: To safeguard sites suitable for the location of waste management facilities or future mineral development from other proposed development.	++	The policy is expected to have a significant positive impact on this objective, as the overarching purpose of the policy is to ensure that existing and allocated waste management sites will be safeguarded by requiring consultation with the Waste Planning Authority by developers where incompatibility between land uses is likely to arise.

Table 20: Appraisal of Policy WCS9 – Flood Risk

SA Objective	SA Score	Justification
Policy WCS9: Flood Risk		
1. To promote sustainable development and sustainable communities and improve the **health and wellbeing** of people living and working in Gloucestershire as well as visitors to the County.	+	The measures included within the policy aiming to reduce the likelihood and impact of flooding will have an indirect positive impact on human health and wellbeing, due to the potential adverse impacts that flooding can have in this sense.
2. To **educate the public** about waste issues and to **maximise community participation** and access to waste services and facilities in Gloucestershire.	0	The policy is not expected to have a direct impact on education and public participation in waste management.
3. To safeguard the **amenity of local communities** from the adverse impacts of waste development.	0	The policy is not expected to have a direct impact on local amenity.
4. To promote **sustainable economic development** in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	+	The policy is likely to have an indirect positive impact on sustainable economic development, as a result of the measures included to avoid flooding which can carry a significant financial cost.
5. To manage waste in an **economically sustainable** way through means that represent good value for tax payers in Gloucestershire.	0	The policy is not expected to have a direct impact on the economically sustainable management of waste in Gloucestershire.

SA Objective	SA Score	Justification
Policy WCS9: Flood Risk		
6. To provide **employment opportunities** in both rural and urban areas of the County, promoting diversification in the economy.	0	The policy is not expected to have a direct impact on employment opportunities within Gloucestershire.
7. To ensure that waste sites do not compromise the **safety of commercial or military aerodromes**.	0	The policy is not expected to have a direct impact on aircraft safety.
8. To protect, conserve and enhance **biodiversity** in Gloucestershire.	+	The policy is likely to have a positive impact on biodiversity, as the avoidance of flooding or reduction in the severity of flood events may have positive effects relating to the preservation of habitats.
9. To protect, conserve and enhance the **landscape** in Gloucestershire.	0	The policy is not expected to have a direct impact on the landscape.
10. To ensure that waste sites have the potential for adequate **screening and/or innovative design** to be incorporated.	0	The policy is not expected to have a direct impact on the design or screening potential of waste sites within Gloucestershire.
11. To protect conserve and enhance Gloucestershire's **material, cultural and recreational assets**.	+	The policy should help to reduce the risk posed by flooding in Gloucestershire, both by preventing new developments from increasing the flood risk, and by limiting exposure by preventing new developments (which comprise material assets) from being located in areas where they are most likely to be damaged by flooding. As such, a positive impact on this objective is likely.
12. To protect conserve and enhance **geodiversity** in Gloucestershire.	0	The policy is not expected to have a direct impact on geodiversity in Gloucestershire.
13. To protect conserve and enhance **townscapes** and Gloucestershire's **architectural and archaeological heritage**.	0	The policy is not expected to have a direct impact on townscapes, architectural or archaeological heritage in Gloucestershire.

SA Objective	SA Score	Justification
Policy WCS9: Flood Risk		
14. To prevent **flooding**, in particular preventing inappropriate development in the floodplain and to ensure that waste development does not compromise sustainable sources of water supply.	++	The overarching purpose of the policy is to reduce the risk of flooding by preventing development from taking place where there is already a high risk from flooding, and by designing waste facilities appropriately so that they do not add to the risk of flooding, for example through the inclusion of SuDS. As such, a significant positive impact on this objective is expected.
15. To **prevent pollution** and to apply the precautionary principle in consultation with waste regulation authorities.	0	The policy is not expected to have a direct impact on pollution prevention.
16. To protect and enhance **soil/land quality** in Gloucestershire.	0	The policy is not expected to have a direct impact on soil and land quality.
17. To protect and enhance **air quality** in Gloucestershire.	0	The policy is not expected to have a direct impact on air quality.
18. To protect and enhance **water quality** in Gloucestershire.	0	The policy is not expected to have a direct impact on water quality.

SA Objective	SA Score	Justification
Policy WCS9: Flood Risk		
19. To reduce the adverse **impacts of lorry traffic** on the environment and communities through means such as: a) reducing the need to travel b) promoting more sustainable means of transport e.g. by rail or water c) sensitive lorry routing d) the use of sustainable alternative fuels e) promoting the management of waste in one of the nearest appropriate installations.	0	The policy is not expected to have a direct impact on the impacts of lorry traffic within Gloucestershire.
20. To **reduce waste to landfill** and in dealing with all waste streams to actively **promote the waste hierarchy** (i.e. Prevent, Reduce, Reuse, Recycle, Recover, Dispose) to achieve the sustainable management	0	The policy is not expected to have a direct impact on the volume of waste that is disposed of via landfill.
21. To reduce the global **use of primary materials** and minimise net energy balance requirements.	0	The policy is not expected to have a direct impact on the use of primary materials.
22. To reduce contributions to and to **adapt to Climate Change**.	+	The requirement for the design of waste facilities to take account of the potentially increasing flood risk, for example through the inclusion of SuDS, is likely to have a positive impact in terms of adapting to the likely impacts of climate change.

SA Objective	SA Score	Justification
Policy WCS9: Flood Risk		
Original SA Objective 1: To promote sustainable development and sustainable communities in Gloucestershire in particular giving people the opportunity to live in an affordable and sustainably designed and constructed home.	0	The policy is not expected to have a direct impact on this objective.
Original SA Objective 2: To safeguard sites suitable for the location of waste management facilities or future mineral development from other proposed development.	0	The policy is not expected to have a direct impact on this objective.

Table 21: Appraisal of Policy WCS10 – Green Belt

SA Objective	SA Score	Justification
Policy WCS10: Green Belt		
1. To promote sustainable development and sustainable communities and improve the **health and wellbeing** of people living and working in Gloucestershire as well as visitors to the County.	+?	The policy is not expected to have a direct impact on the health and wellbeing of people within Gloucester; however the retention of the greenbelt through the avoidance of waste developments in this area in most circumstances may have some minor positive effect in terms of the mental health benefits of maintaining open greenspace and preventing urban sprawl.
2. To **educate the public** about waste issues and to **maximise community participation** and access to waste services and facilities in Gloucestershire.	0	The policy is not expected to have a direct impact on education and public participation in waste management.
3. To safeguard the **amenity of local communities** from the adverse impacts of waste development.	+?	The policy is not expected to have a direct impact on amenity within Gloucester; however the retention of the greenbelt through the avoidance of waste developments in this area in most circumstances may have some minor positive effect in terms of the amenity benefits of maintaining open greenspace between towns and preventing urban sprawl.
4. To promote **sustainable economic development** in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	0	The policy is not expected to have a direct impact on sustainable economic development.
5. To manage waste in an **economically sustainable** way through means that represent good value for tax payers in Gloucestershire.	0	The policy is not expected to have a direct impact on economically sustainable waste management.

SA Objective	SA Score	Justification
Policy WCS10: Green Belt		
6. To provide **employment opportunities** in both rural and urban areas of the County, promoting diversification in the economy.	-?	The restrictions placed on developing waste management facilities within the greenbelt may have an indirect negative effect in terms of restricting the opportunities for job creation that is associated with such developments. However, this potential effect would be minor and is dependent on the facility not being able to be located elsewhere with the same employment benefits. As such, the potential negative impact is uncertain.
7. To ensure that waste sites do not compromise the **safety of commercial or military aerodromes**.	0	The policy is not expected to have a direct impact on aircraft safety.
8. To protect, conserve and enhance **biodiversity** in Gloucestershire.	+	Restricting the development of waste facilities within the green belt should benefit local biodiversity by preventing habitat loss and maintaining the area of open greenspace.
9. To protect, conserve and enhance the **landscape** in Gloucestershire.	++	The retention of the green belt through the restriction of development within this area should help to maintain the quality of the landscape around Gloucester and Cheltenham by preventing urban sprawl; therefore having a significant positive impact on the preservation of landscape quality. In addition, the policy requires that, where existing buildings are re-used, the building must be in keeping with the surrounding landscape.
10. To ensure that waste sites have the potential for adequate **screening and/or innovative design** to be incorporated.	0	The policy is not expected to have a direct impact on the screening potential of waste facilities.
11. To protect conserve and enhance Gloucestershire's **material, cultural and recreational assets**.	+	Restricting the development of waste facilities within the green belt will help to preserve this open space for recreational use; therefore a positive effect on this objective is likely.
12. To protect conserve and enhance **geodiversity** in Gloucestershire.	0	The policy is not expected to have a direct impact on geodiversity.

SA Objective	SA Score	Justification
Policy WCS10: Green Belt		
13. To protect conserve and enhance **townscapes** and Gloucestershire's **architectural and archaeological heritage**.	+	The policy is likely to have a positive impact on the townscapes of Gloucester and Cheltenham as restricting development within the green belt will help to prevent urban sprawl and maintain the appearance of the settlements.
14. To prevent **flooding**, in particular preventing inappropriate development in the floodplain and to ensure that waste development does not compromise sustainable sources of water supply.	0	The policy is not expected to have a direct impact on flooding.
15. To **prevent pollution** and to apply the precautionary principle in consultation with waste regulation authorities.	0	The policy is not expected to have a direct impact on pollution in Gloucestershire.
16. To protect and enhance **soil/land quality** in Gloucestershire.	+	The policy is expected to have a positive impact on soil/land quality as it will restrict development taking place on greenfield sites.
17. To protect and enhance **air quality** in Gloucestershire.	0	The policy is not expected to have a direct impact on air quality.
18. To protect and enhance **water quality** in Gloucestershire.	0	The policy is not expected to have a direct impact on water quality.

SA Objective	SA Score	Justification
Policy WCS10: Green Belt		
19. To reduce the adverse **impacts of lorry traffic** on the environment and communities through means such as: a) reducing the need to travel b) promoting more sustainable means of transport e.g. by rail or water c) sensitive lorry routing d) the use of sustainable alternative fuels e) promoting the management of waste in one of the nearest appropriate installations.	0	The policy is not expected to have a direct effect on the impacts of lorry traffic within Gloucestershire.
20. To **reduce waste to landfill** and in dealing with all waste streams to actively **promote the waste hierarchy** (i.e. Prevent, Reduce, Reuse, Recycle, Recover, Dispose) to achieve the sustainable management	0	The policy is not expected to have a direct impact on the proportion of waste going to landfill.
21. To reduce the global **use of primary materials** and minimise net energy balance requirements.	+?	The policy permits the development of existing buildings for waste facilities (subject to certain criteria) where the development of a new facility would not necessarily be approved, which may serve to encourage the re-use of existing buildings for waste facilities. This would have a positive impact on reducing the use of primary materials in such developments.
22. To reduce contributions to and to **adapt to Climate Change**.	+?	The policy permits the development of existing buildings for waste facilities (subject to certain criteria) where the development of a new facility would not necessarily be approved, which may serve to encourage the re-use of existing buildings for waste facilities. This would have a positive impact in terms of reduced emissions associated with the construction process, in comparison to the development of facilities in new buildings.

SA Objective	SA Score	Justification
Policy WCS10: Green Belt		
Original SA Objective 1: To promote sustainable development and sustainable communities in Gloucestershire in particular giving people the opportunity to live in an affordable and sustainably designed and constructed home.	0	The policy is not expected to have a direct impact on this objective.
Original SA Objective 2: To safeguard sites suitable for the location of waste management facilities or future mineral development from other proposed development.	0	The policy is not expected to have a direct impact on this objective.

Table 22: Appraisal of Policy WCS11 – Areas of Outstanding Natural Beauty

SA Objective	SA Score	Justification
Policy WCS11: Areas of Outstanding Natural Beauty		
1. To promote sustainable development and sustainable communities and improve the **health and wellbeing** of people living and working in Gloucestershire as well as visitors to the County.	+?	The policy is not expected to have a direct impact on health and wellbeing; however preserving the quality of Gloucestershire's two AONBs through restricting inappropriate development in and around them may have indirect benefits associated with the mental health benefits of maintaining open greenspace with recreational value.
2. To **educate the public** about waste issues and to **maximise community participation** and access to waste services and facilities in Gloucestershire.	0	The policy is not expected to have a direct impact on education and public participation in waste management.
3. To safeguard the **amenity of local communities** from the adverse impacts of waste development.	+?	The policy is not expected to have a direct impact on amenity; however preserving the quality of Gloucestershire's two AONBs through restricting inappropriate development in and around them may have indirect benefits associated with the maintenance of open greenspace with amenity value.
4. To promote **sustainable economic development** in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	0	The policy is not expected to have a direct impact on this sustainable economic development.
5. To manage waste in an **economically sustainable** way through means that represent good value for tax payers in Gloucestershire.	0	The policy is not expected to have a direct impact on the economically sustainable management of waste.

SA Objective	SA Score	Justification
Policy WCS11: Areas of Outstanding Natural Beauty		
6. To provide **employment opportunities** in both rural and urban areas of the County, promoting diversification in the economy.	0	The policy is not expected to have a direct impact on employment opportunities within Gloucestershire.
7. To ensure that waste sites do not compromise the **safety of commercial or military aerodromes**.	0	The policy is not expected to have a direct impact on aircraft safety.
8. To protect, conserve and enhance **biodiversity** in Gloucestershire.	0	The policy is not expected to have a direct impact on biodiversity.
9. To protect, conserve and enhance the **landscape** in Gloucestershire.	++	The overarching aim of the policy is to protect the designated landscapes (AONBs) in Gloucestershire from the potentially adverse impacts of the development of waste facilities; therefore a significant positive impact on this objective is expected. The restrictions placed on such developments within the AONB should ensure that their character and quality is maintained.
10. To ensure that waste sites have the potential for adequate **screening and/or innovative design** to be incorporated.	0	The policy is not expected to have a direct impact on the potential for waste sites to be well-screened.
11. To protect conserve and enhance Gloucestershire's **material, cultural and recreational assets**.	++	The two AONBs in Gloucestershire comprise an important cultural and recreational resource within the county; therefore the conservation of their character and quality through restricting the development of waste sites within these areas is expected to have a significant positive impact on this objective.
12. To protect conserve and enhance **geodiversity** in Gloucestershire.	0	The policy is not expected to have a direct impact on geodiversity.
13. To protect conserve and enhance **townscapes** and Gloucestershire's **architectural and archaeological heritage**.	0	The policy is not expected to have a direct impact on the townscapes and architectural/archaeological assets of Gloucestershire.

SA Objective	SA Score	Justification
Policy WCS11: Areas of Outstanding Natural Beauty		
14. To prevent **flooding**, in particular preventing inappropriate development in the floodplain and to ensure that waste development does not compromise sustainable sources of water supply.	0	The policy is not expected to have a direct impact on flooding.
15. To **prevent pollution** and to apply the precautionary principle in consultation with waste regulation authorities.	0	The policy is not expected to have a direct impact on pollution prevention.
16. To protect and enhance **soil/land quality** in Gloucestershire.	0	The policy is not expected to have a direct impact on soil and land quality.
17. To protect and enhance **air quality** in Gloucestershire.	0	The policy is not expected to have a direct impact on air quality.
18. To protect and enhance **water quality** in Gloucestershire.	0	The policy is not expected to have a direct impact on water quality.

SA Objective	SA Score	Justification
Policy WCS11: Areas of Outstanding Natural Beauty		
19. To reduce the adverse **impacts of lorry traffic** on the environment and communities through means such as: a) reducing the need to travel b) promoting more sustainable means of transport e.g. by rail or water c) sensitive lorry routing d) the use of sustainable alternative fuels e) promoting the management of waste in one of the nearest appropriate installations.	0	The policy is not expected to have a direct impact on the impacts of lorry traffic.
20. To **reduce waste to landfill** and in dealing with all waste streams to actively **promote the waste hierarchy** (i.e. Prevent, Reduce, Reuse, Recycle, Recover, Dispose) to achieve the sustainable management	0	The policy is not expected to have a direct impact on the proportion of waste going to landfill.
21. To reduce the global **use of primary materials** and minimise net energy balance requirements.	0	The policy is not expected to have a direct impact on the use of primary materials.
22. To reduce contributions to and to **adapt to Climate Change**.	0	The policy is not expected to have a direct impact on adaptation to climate change.

SA Objective	SA Score	Justification
Policy WCS11: Areas of Outstanding Natural Beauty		
Original SA Objective 1: To promote sustainable development and sustainable communities in Gloucestershire in particular giving people the opportunity to live in an affordable and sustainably designed and constructed home.	0	The policy is not expected to have a direct impact on this objective.
Original SA Objective 2: To safeguard sites suitable for the location of waste management facilities or future mineral development from other proposed development.	0	The policy is not expected to have a direct impact on this objective.

Table 23: Appraisal of Policy WCS12 – Biodiversity and Nature Conservation

SA Objective	SA Score	Justification
Policy WCS12: Biodiversity and Nature Conservation		
1. To promote sustainable development and sustainable communities and improve the **health and wellbeing** of people living and working in Gloucestershire as well as visitors to the County.	0	The policy is not expected to have a direct impact on health and wellbeing.
2. To **educate the public** about waste issues and to **maximise community participation** and access to waste services and facilities in Gloucestershire.	0	The policy is not expected to have a direct impact on education and community participation in waste management.
3. To safeguard the **amenity of local communities** from the adverse impacts of waste development.	0	The policy is not expected to have a direct impact on local amenity.
4. To promote **sustainable economic development** in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	0	The policy is not expected to have a direct impact on sustainable economic development.
5. To manage waste in an **economically sustainable** way through means that represent good value for tax payers in Gloucestershire.	0	The policy is not expected to have a direct impact on the economically sustainable management of waste.

SA Objective	SA Score	Justification
Policy WCS12: Biodiversity and Nature Conservation		
6. To provide **employment opportunities** in both rural and urban areas of the County, promoting diversification in the economy.	0	The policy is not expected to have a direct impact on employment opportunities within the county.
7. To ensure that waste sites do not compromise the **safety of commercial or military aerodromes**.	0	The policy is not expected to have a direct impact on aircraft safety.
8. To protect, conserve and enhance **biodiversity** in Gloucestershire.	++/-?	The overarching purpose of the policy is to ensure that the development of waste facilities does not have an adverse impact on the biodiversity assets of Gloucestershire, indicating that a significant positive impact on this objective is likely. However, the policy is focused on SSSIs and NNRs and other designated sites, and it is important that the conservation and enhancement of all biodiversity assets, not just those that have been formally designated, is assured through the Waste Core Strategy. In addition, the policy also indicates that developments will be allowed, even where they may be harmful to biodiversity assets, if it is proven that the benefits are judged to outweigh adverse impacts. As such, there is also potential for adverse impacts on biodiversity and the overall effects are currently mixed but uncertain.
9. To protect, conserve and enhance the **landscape** in Gloucestershire.	0	The policy is not expected to have a direct impact on the landscape.
10. To ensure that waste sites have the potential for adequate **screening and/or innovative design** to be incorporated.	0	The policy is not expected to have a direct impact on the potential for waste sites to be well-screened or to incorporate innovative design.
11. To protect conserve and enhance Gloucestershire's **material, cultural and recreational assets**.	0	The policy is not expected to have a direct impact on Gloucestershire's material, cultural and recreational assets.

SA Objective	SA Score	Justification
Policy WCS12: Biodiversity and Nature Conservation		
12. To protect conserve and enhance **geodiversity** in Gloucestershire.	0	The policy is not expected to have a direct impact on geodiversity.
13. To protect conserve and enhance **townscapes** and Gloucestershire's **architectural and archaeological heritage**.	0	The policy is not expected to have a direct impact on townscapes, architectural or archaeological assets.
14. To prevent **flooding**, in particular preventing inappropriate development in the floodplain and to ensure that waste development does not compromise sustainable sources of water supply.	0	The policy is not expected to have a direct impact on flooding.
15. To **prevent pollution** and to apply the precautionary principle in consultation with waste regulation authorities.	0	The policy is not expected to have a direct impact on pollution prevention.
16. To protect and enhance **soil/land quality** in Gloucestershire.	0	The policy is not expected to have a direct impact on soil/land quality.
17. To protect and enhance **air quality** in Gloucestershire.	0	The policy is not expected to have a direct impact on air quality.
18. To protect and enhance **water quality** in Gloucestershire.	0	The policy is not expected to have a direct impact on water quality.

SA Objective	SA Score	Justification
Policy WCS12: Biodiversity and Nature Conservation		
19. To reduce the adverse **impacts of lorry traffic** on the environment and communities through means such as: a) reducing the need to travel b) promoting more sustainable means of transport e.g. by rail or water c) sensitive lorry routing d) the use of sustainable alternative fuels e) promoting the management of waste in one of the nearest appropriate installations.	0	The policy is not expected to have a direct impact on the impacts of lorry traffic within Gloucestershire.
20. To **reduce waste to landfill** and in dealing with all waste streams to actively **promote the waste hierarchy** (i.e. Prevent, Reduce, Reuse, Recycle, Recover, Dispose) to achieve the sustainable management	0	The policy is not expected to have a direct impact on the proportion of waste going to landfill.
21. To reduce the global **use of primary materials** and minimise net energy balance requirements.	0	The policy is not expected to have a direct impact on the use of primary materials.
22. To reduce contributions to and to **adapt to Climate Change**.	0	The policy is not expected to have a direct impact on adaptation to climate change.

SA Objective	SA Score	Justification
Policy WCS12: Biodiversity and Nature Conservation		
Original SA Objective 1: To promote sustainable development and sustainable communities in Gloucestershire in particular giving people the opportunity to live in an affordable and sustainably designed and constructed home.	0	The policy is not expected to have a direct impact on this objective.
Original SA Objective 2: To safeguard sites suitable for the location of waste management facilities or future mineral development from other proposed development.	0	The policy is not expected to have a direct impact on this objective.

Table 24: Appraisal of Policy WCS13 - Design

SA Objective	SA Score	Justification
Policy WCS13: Design		
1. To promote sustainable development and sustainable communities and improve the **health and wellbeing** of people living and working in Gloucestershire as well as visitors to the County.	0	The policy is not expected to have a direct impact on health and wellbeing.
2. To **educate the public** about waste issues and to **maximise community participation** and access to waste services and facilities in Gloucestershire.	0	The policy is not expected to have a direct impact on education and public participation in waste management.
3. To safeguard the **amenity of local communities** from the adverse impacts of waste development.	+	The policy aims to ensure that a high quality of design is used within waste developments, which should have a positive impact on the visual amenity of settlements by ensuring that facilities are appropriately integrated into their surroundings.
4. To promote **sustainable economic development** in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	0	The policy is not expected to have a direct impact on sustainable economic development.
5. To manage waste in an **economically sustainable** way through means that represent good value for tax payers in Gloucestershire.	0	The policy is not expected to have a direct impact on the economically sustainable management of waste.

SA Objective	SA Score	Justification
Policy WCS13: Design		
6. To provide **employment opportunities** in both rural and urban areas of the County, promoting diversification in the economy.	0	The policy is not expected to have a direct impact on employment opportunities within Gloucestershire.
7. To ensure that waste sites do not compromise the **safety of commercial or military aerodromes**.	0	The policy is not expected to have a direct impact on aircraft safety.
8. To protect, conserve and enhance **biodiversity** in Gloucestershire.	0	The policy is not expected to have a direct impact on biodiversity.
9. To protect, conserve and enhance the **landscape** in Gloucestershire.	++	The overarching aim of the policy is to ensure that waste facilities are developed to high standards of design, which should ensure that they are appropriate to their surroundings and do not adversely impact upon the landscape. The policy specifies the need for the use of high quality architecture and landscaping in the development of waste management facilities. As such, a significant positive impact on this objective is expected.
10. To ensure that waste sites have the potential for adequate **screening and/or innovative design** to be incorporated.	++	The overarching aim of the policy is to ensure that waste facilities are developed to high standards of design in order to be appropriate to their surroundings and to not adversely impact upon the landscape. The policy specifies the need for the use of high quality architecture and landscaping in the development of waste management facilities. As such, a significant positive impact on this objective is likely.
11. To protect conserve and enhance Gloucestershire's **material, cultural and recreational assets**.	++	The policy aims to ensure that waste facilities use high quality architecture, which will help to ensure that they do not have an adverse impact on the setting of existing architectural assets in the county; therefore a significant positive impact on this objective is expected.
12. To protect conserve and enhance **geodiversity** in Gloucestershire.	0	The policy is not expected to have a direct impact on geodiversity.

SA Objective	SA Score	Justification
Policy WCS13: Design		
13. To protect conserve and enhance **townscapes** and Gloucestershire's **architectural and archaeological heritage**.	++	The overarching aim of the policy is to ensure that waste facilities are developed to high standards of design and to ensure that they are appropriate to their surroundings and do not adversely impact upon the setting of existing architectural assets in the county; therefore a significant positive impact on this objective is expected.
14. To prevent **flooding**, in particular preventing inappropriate development in the floodplain and to ensure that waste development does not compromise sustainable sources of water supply.	++	The impacts of waste developments on the flood risk will depend largely on their specific location, which is not determined by this policy. However, the policy makes specific reference to the need to incorporate sustainable drainage into waste developments in order to ensure their durability, adaptability and sustainability. As such, a significant positive impact on this objective is likely.
15. To **prevent pollution** and to apply the precautionary principle in consultation with waste regulation authorities.	0	The policy is not expected to have a direct impact on pollution prevention.
16. To protect and enhance **soil/land quality** in Gloucestershire.	0	The policy is not expected to have a direct impact on soil/land quality.
17. To protect and enhance **air quality** in Gloucestershire.	0	The policy is not expected to have a direct impact on air quality.
18. To protect and enhance **water quality** in Gloucestershire.	0	The policy is not expected to have a direct impact on water quality.

SA Objective	SA Score	Justification
Policy WCS13: Design		
19. To reduce the adverse **impacts of lorry traffic** on the environment and communities through means such as: a) reducing the need to travel b) promoting more sustainable means of transport e.g. by rail or water c) sensitive lorry routing d) the use of sustainable alternative fuels e) promoting the management of waste in one of the nearest appropriate installations.	0	The policy is not expected to have a direct impact on the impacts of lorry traffic within Gloucestershire.
20. To **reduce waste to landfill** and in dealing with all waste streams to actively **promote the waste hierarchy** (i.e. Prevent, Reduce, Reuse, Recycle, Recover, Dispose) to achieve the sustainable management	0	The policy is not expected to have a direct impact on the proportion of waste which is disposed of via landfill.
21. To reduce the global **use of primary materials** and minimise net energy balance requirements.	+?	The policy states that waste facilities must make the most efficient use of their sites, which should include the re-use of existing buildings. This would have a positive impact on reducing the amount of primary materials used in the construction of waste facilities; therefore a positive impact is likely, although this is currently uncertain due to the lack of specific mention of the re-use of buildings within the policy wording.
22. To reduce contributions to and to **adapt to Climate Change**.	+	The incorporation of SuDS into the design of new waste facilities should help to ensure that they are able to adapt to and help to mitigate the increased risk of flooding which is expected to occur as a result of climate change.

SA Objective	SA Score	Justification
Policy WCS13: Design		
Original SA Objective 1: To promote sustainable development and sustainable communities in Gloucestershire in particular giving people the opportunity to live in an affordable and sustainably designed and constructed home.	0	The policy is not expected to have a direct impact on this objective.
Original SA Objective 2: To safeguard sites suitable for the location of waste management facilities or future mineral development from other proposed development.	0	The policy is not expected to have a direct impact on this objective.

Table 25: Appraisal of Policy WCS14 – Sustainable Transport

SA Objective	SA Score	Justification
Policy WCS14: Sustainable Transport		
1. To promote sustainable development and sustainable communities and improve the **health and wellbeing** of people living and working in Gloucestershire as well as visitors to the County.	+	The policy should lead to a reduction in the volume of waste being transported by lorry on Gloucestershire's roads, which result in improvements in air quality, which will have a positive impact on public health in the county.
2. To **educate the public** about waste issues and to **maximise community participation** and access to waste services and facilities in Gloucestershire.	0	The policy is not expected to have a direct impact on education and levels of public participation in waste management.
3. To safeguard the **amenity of local communities** from the adverse impacts of waste development.	+	Increasing the volume of waste which is transported via sustainable modes of transport such as by rail or water should have a positive impact on amenity in Gloucestershire by reducing the amount of lorry-based transport of waste around the county, and therefore lessening the potential adverse impacts associated with lorry movements such as noise and visual intrusion.
4. To promote **sustainable economic development** in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	0	The policy is not expected to have a direct impact on sustainable economic development.
5. To manage waste in an **economically sustainable** way through means that represent good value for tax payers in Gloucestershire.	0	The policy is not expected to have a direct impact on the economically sustainable management of waste.

SA Objective	SA Score	Justification
Policy WCS14: Sustainable Transport		
6. To provide **employment opportunities** in both rural and urban areas of the County, promoting diversification in the economy.	-?	It is possible that the policy may result in a negative impact on employment opportunities in Gloucestershire, if the requirements placed on developers, such as for Transport Assessments and/or financial contributions to the cost of monitoring Travel Plans, deter waste-related developments from going ahead. If this were to occur, the employment creation from new waste facilities would be lost.
7. To ensure that waste sites do not compromise the **safety of commercial or military aerodromes**.	0	The policy is not expected to have a direct impact on aircraft safety.
8. To protect, conserve and enhance **biodiversity** in Gloucestershire.	0	The policy is not expected to have a direct impact on biodiversity.
9. To protect, conserve and enhance the **landscape** in Gloucestershire.	0	The policy is not expected to have a direct impact on the landscape.
10. To ensure that waste sites have the potential for adequate **screening and/or innovative design** to be incorporated.	0	The policy is not expected to have a direct impact on the potential for waste facilities to be well-screened or to incorporate innovative design.
11. To protect conserve and enhance Gloucestershire's **material, cultural and recreational assets**.	0	The policy is not expected to have a direct impact on material, cultural or recreation assets.
12. To protect conserve and enhance **geodiversity** in Gloucestershire.	0	The policy is not expected to have a direct impact on geodiversity.
13. To protect conserve and enhance **townscapes** and Gloucestershire's **architectural and archaeological heritage**.	0	The policy is not expected to have a direct impact on townscapes, architectural or archaeological assets within Gloucestershire.

SA Objective	SA Score	Justification
Policy WCS14: Sustainable Transport		
14. To prevent **flooding**, in particular preventing inappropriate development in the floodplain and to ensure that waste development does not compromise sustainable sources of water supply.	0	The policy is not expected to have a direct impact on flooding.
15. To **prevent pollution** and to apply the precautionary principle in consultation with waste regulation authorities.	+	A reduction in the volume of waste being transported around Gloucestershire via lorry should result in a reduction in the air pollution created by traffic emissions; therefore having a positive impact on pollution prevention.
16. To protect and enhance **soil/land quality** in Gloucestershire.	0	The policy is not expected to have a direct impact on soil/land quality.
17. To protect and enhance **air quality** in Gloucestershire.	+	A reduction in the volume of waste being transported around Gloucestershire via lorry should result in a reduction in the air pollution created by traffic emissions, having a positive impact on air quality within the county.
18. To protect and enhance **water quality** in Gloucestershire.	0	The policy is not expected to have a direct impact on water quality.

SA Objective	SA Score	Justification
Policy WCS14: Sustainable Transport		
19. To reduce the adverse **impacts of lorry traffic** on the environment and communities through means such as: a) reducing the need to travel b) promoting more sustainable means of transport e.g. by rail or water c) sensitive lorry routing d) the use of sustainable alternative fuels e) promoting the management of waste in one of the nearest appropriate installations.	++	The overarching purpose of this policy is to reduce the adverse impacts of lorry traffic by encouraging the transportation of waste via other more sustainable modes of transport. As such, a significant positive impact on this objective is likely to result from the policy.
20. To **reduce waste to landfill** and in dealing with all waste streams to actively **promote the waste hierarchy** (i.e. Prevent, Reduce, Reuse, Recycle, Recover, Dispose) to achieve the sustainable management	0	The policy is not expected to have a direct impact on the proportion of waste being disposed of via landfill.
21. To reduce the global **use of primary materials** and minimise net energy balance requirements.	0	The policy is not expected to have a direct impact on the use of primary materials.
22. To reduce contributions to and to **adapt to Climate Change**.	++	The overarching purpose of this policy is to reduce the adverse impacts of lorry traffic by encouraging the transportation of waste via other more sustainable modes of transport. This will result in a reduction in emissions from lorry traffic, which contribute to climate change; therefore having a significant positive impact on this objective.

SA Objective	SA Score	Justification
Policy WCS14: Sustainable Transport		
Original SA Objective 1: To promote sustainable development and sustainable communities in Gloucestershire in particular giving people the opportunity to live in an affordable and sustainably designed and constructed home.	0	The policy is not expected to have a direct impact on this objective.
Original SA Objective 2: To safeguard sites suitable for the location of waste management facilities or future mineral development from other proposed development.	0	The policy is not expected to have a direct impact on this objective.